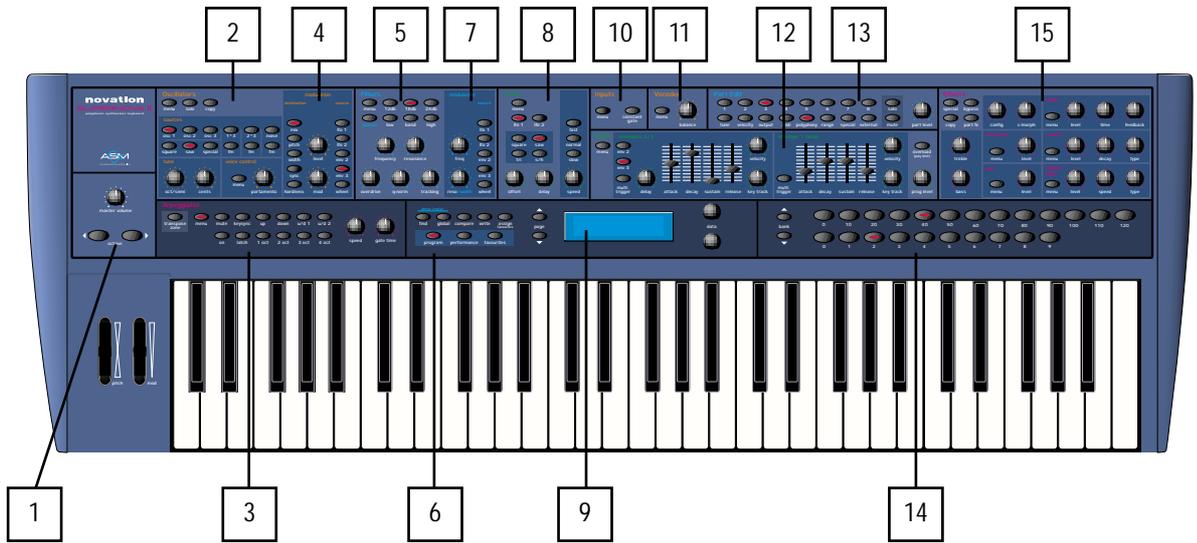


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1- Master Volume Section

This section contains the Master Volume knob and the Octave Up & Down buttons.

2- Oscillator Section

This section contains all the Knobs and buttons associated with the Oscillators.

3- Arpeggiator Section

This section contains all the Knobs and buttons associated with the Arpeggiator.

4- Oscillator Modulation Matrix Section

This section contains all the Knobs and buttons associated with the Oscillators Modulation Matrix.

5- Filter Section

This section contains all the Knobs and buttons associated with the Filter.

6- Mode Section

This section contains all the buttons used to select the various playing modes.

7- Filter Modulation Matrix Section

This section contains all the Knobs and buttons associated with the Filter Modulation Matrix.

8- LFO Section

This section contains all the Knobs and buttons associated with the 2 LFOs.

9- Display Section

This section contains the Display, the Data Knobs and Page buttons.

10 - Input Section

This section contains all the buttons associated with the 2 Inputs.

11- Vocoder Section

This section contains the Menu button and Balance knob associated with the Vocoder.

12 - Envelopes Section

This section contains all the knobs, sliders and buttons associated with the 3 Envelopes.

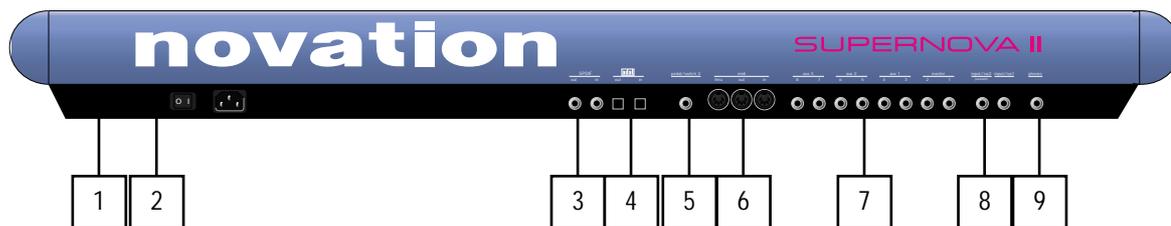
13 - Part Edit Section

This section contains all the knobs and buttons associated with Parts of a Performance.

14 - Keypad Section

This section contains all the buttons used to select sounds.

10 - Effects Section



This section contains all the knobs and buttons associated with the Effects section.

1- Power On/Off - Switch.

This switch turns the mains power supply in the Supernova II keyboard on and off. Edited and newly-created Programs or Performances that have not been written into a memory location will be lost when the Supernova II keyboard is switched off. The edit buffers will not be preserved, so be sure to save edited Programs & Performances to memory before switching Supernova II keyboard off. Refer to pages 38 & 41 for details of writing Programs and Performances into memory.

2- IEC Mains Connector.

This socket is for the supplied Mains lead. This socket accepts 110V, 220V & 240V mains supplies at 50 or 60 Hz. This ensures the Supernova II keyboard will work on any country's mains supply.

3- SPDIF Phono In & Out Connectors.

These phono sockets provide SPDIF format digital inputs and outputs supplied when the optional SPDIF/ADAT card is installed.

4- ADAT Optical In & Out Connectors.

These optical connectors provide ADAT format digital inputs and outputs supplied when the optional SPDIF/ADAT card is installed.

5- Pedal / Switch 3 Socket.

This 1/4 inch jack socket allows the connection of either an optional footswitch or expression pedal to be connected. The functions of these sockets are defined in the Global menu.

6- MIDI IN / MIDI OUT / MIDI THRU Connectors.

The MIDI IN connector is used to receive MIDI Data from an external device.

The MIDI OUT connector is used to transmit MIDI Data to an external device.

The MIDI THRU connector re-transmits MIDI Data received by the MIDI IN socket to an external device.

7- Master Left & Right /Aux 1 /Aux 2 & Aux 3 Audio Outputs.

The Master Left & Right 1/4 inch Jack sockets deliver a Stereo Line Level output signal for connection to a mixing desk or amplifier. The level of these outputs is controlled by the Master Volume Knob on the front panel.

The Aux 1 1/4 inch Jack sockets deliver a Stereo Line Level output signal for connection to a mixing desk or amplifier. These outputs can be used in addition with the Master Audio Outputs for more flexibility in live and studio applications.

The Aux 2 1/4 inch Jack sockets deliver a Stereo Line Level output signal for connection to a mixing desk or amplifier. These outputs can be used in addition with the Master Audio and the Aux. 1 Outputs for even more flexibility in live and studio applications.

The Aux 3 1/4 inch Jack sockets deliver a Stereo Line Level output signal for connection to a mixing desk or amplifier. These outputs can be used in addition with the Master Audio and the Aux. 1 & 2 Outputs for even more flexibility in live and studio applications.

8- Input/SW2 & input/SW1 Connectors.

These 1/4 inch Jack sockets provide 2 audio inputs for synthesis, filtering or effect processing or as footswitch inputs. The function of these sockets is user defined in the Global menu. When used as audio inputs, the sensitivity is user defined in the inputs menu.

9- Headphones - Socket.

Use this 1/4 inch Jack Socket to monitor the Left & Right output of the Supernova II keyboard via headphones. This output will drive any type of headphones. The Supernova II keyboard's headphone amplifier will deliver a louder signal if low impedance

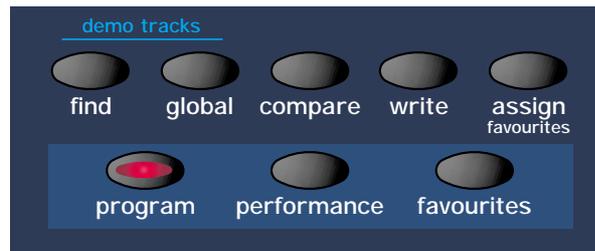
headphones are used (i.e. 8 ohms impedance). Be aware that the sound pressure level obtainable with low impedance headphones could damage hearing.

Connect the Master left & Right Audio Outputs (and the Aux. 1, Aux. 2 & Aux. 3 Audio Outputs if required) of the Supernova II keyboard to a suitable amplifier or mixing desk's stereo inputs and set the Master Volume control on the Supernova II keyboard to a reasonably high output level (9 - 10). This will maintain a good signal to noise ratio. Make sure the input volume on your amplifier or mixing desk is initially set to zero.

Make sure that the Supernova II keyboard's mains switch is in the "OFF" position. Connect the Mains supply with the supplied lead to the Mains Socket on the Supernova II keyboard. Connect the other end to the mains supply and switch the supply on. The display should now illuminate showing the Performance, Program or Favourite that was selected when the global settings were last written into memory. Refer to page 47 for details on this function. Now switch on your amplifier and adjust the volume accordingly whilst playing the keyboard.

The keyboard will be playing the currently selected Performance, Program or Favourite. To listen to all of the Factory sounds, make sure you are in the Performance, Program or Favourite Mode by pressing the appropriate Performance, Program or Favourite mode Button. The Keypad section can now be used to call up the different sounds. For details on how to select the different Performances and Programs, refer to page 33.

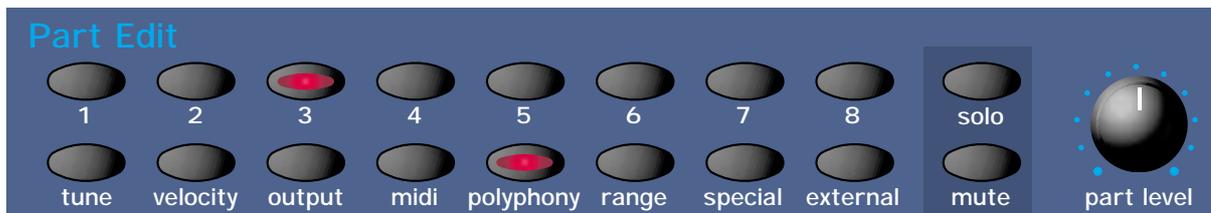
The Demo mode is activated by either pressing the 'Find' and 'Global' buttons simultaneously or pressing just the 'Find' button while currently within the Global Menu.



When demo mode is activated the display shows :

DEMO MODE : Press
Part buttons to play

The Part edit buttons will be flashing to indicate which buttons can be pressed to start a demo. The Display shows which Demo is currently playing.



Once a demo has finished, the next demo in sequence will automatically start.



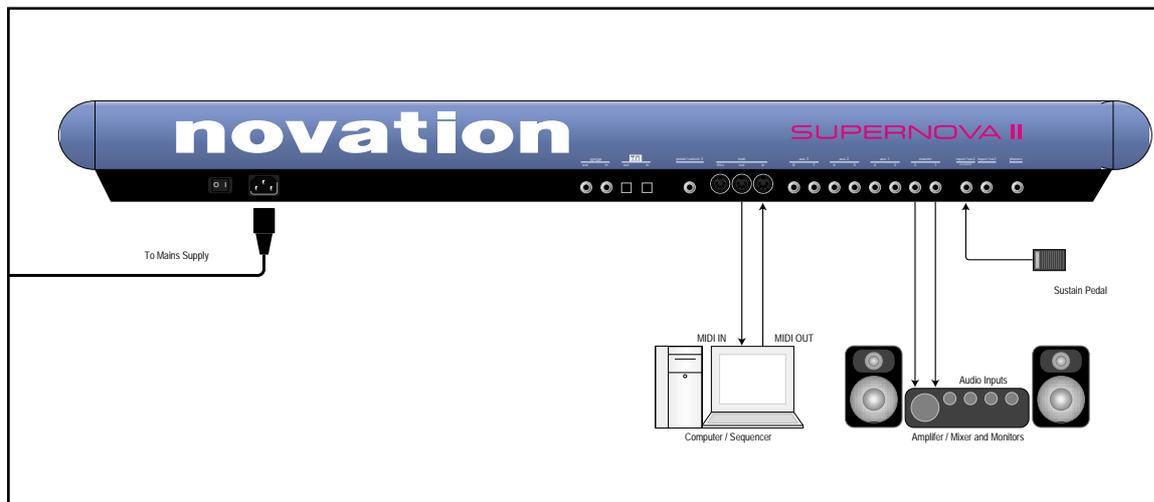
Once the last demo has finished playing, the sequence of demos loop and the first demo starts again.



Pressing a Part edit button while the demos are playing, causes the current demo to stop and the new appropriate demo to start from the beginning. Additionally the current demo can also be selected using the higher Data knob.



A demo can be stopped at any time by pressing the 'Find' button again while the demo is playing. Pressing the 'Find' button once more restarts the demos, starting from Demo number 1. A playing demo may also be stopped and Demo Mode exited by simply selecting any normal mode button or selecting any Menu button.



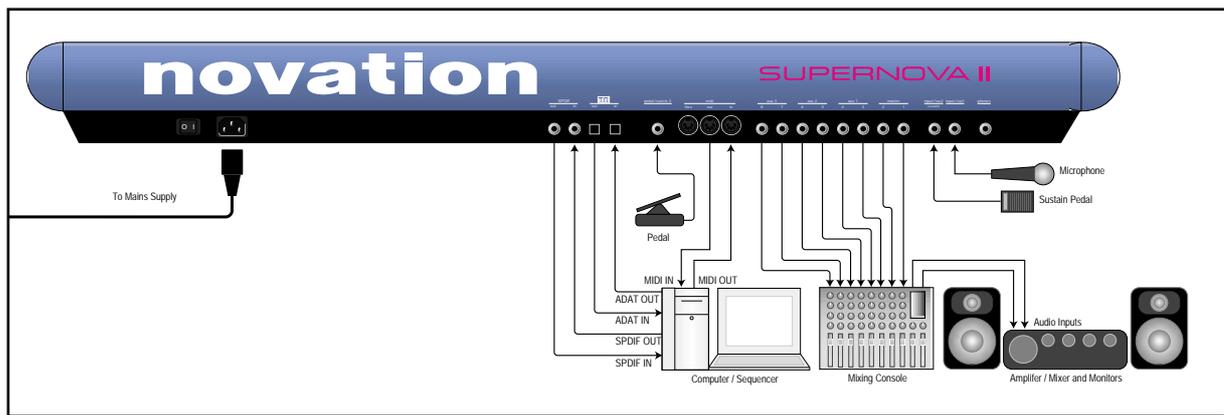
Above is a diagram of the basic way to set-up the Supernova II keyboard. Normally the set-up would be as follows: Connect the Supernova II keyboard as shown above. Set the "Local On/Off" parameter on page 7 of the Global mode to OFF. Turn the Computer Software / Sequencer's "Soft Thru" (or sometimes called "Echo Back") to the "ON" or "Enabled" position. Now when selecting a "Track" in the computer Software / Sequencer that is assigned to the same channel as the Supernova II keyboard is set to receive on (If this is a Performance you can set the receive channels individually for each "Part". Refer to page 136 for details, If this is a Program, Programs are played on the "Global MIDI Channel (refer to page 48 for details). Playing the keyboard should produce sounds through the Headphones / Monitors.

The Supernova II keyboard can have virtually any parameter controlled via MIDI. The movement of any knob, the pressing of any button or change to any parameter can be recorded with this setup. These recordings can then be easily edited on a sequencer. Details on all the controllers and NRPNs (Non Registered Parameter Numbers) used by the Supernova II keyboard can be found on pages 167 to page 180.



NOTE:

If there are additional keyboards / Modules connected via MIDI, this diagram does not include audio for the keyboards / Modules. The audio outputs of these devices must also be connected to the mixer.



This is the one of the more advanced ways to set up the Supernova II keyboard. Connect the Supernova II keyboard as shown above. Set the "Local On/Off" parameter on page 7 of the Global mode to OFF. Turn the Computer Software / Sequencer's "Soft Thru" (or sometimes called "Echo Back") to the "ON" or "Enabled" position. Now when selecting a "Track" in the computer Software / Sequencer that is assigned to the same channel as the Supernova II keyboard is set to receive on (If this is a Performance you can set the receive channels individually for each "Part". Refer to page 136 for details, If this is a Program, Programs are played on the "Global MIDI Channel". Refer to page 48 for details.) playing the keyboard should produce sounds through the Headphones / Monitors.

The Supernova II keyboard can have virtually any parameter controlled via MIDI. The movement of any knob, the pressing of any button or change to any parameter can be recorded with this setup. These recordings can then be easily edited on a sequencer. Details on all the controllers & NRPNs (Non Registered Parameter Numbers) used by the Supernova II keyboard can be found on pages 167 to page 180.

There are 4 stereo pairs of Outputs connected to the mixer. This allows individual sounds to be processed externally by the mixer and other outboard equipment. To direct "Parts" of a "Performance" to these separate outputs Refer to page 136 for details. Additionally, the Supernova II keyboard automatically redirects the effects outputs for the selected part to go to the same outputs as the part, so even if separate outputs are assigned the associated effects follow automatically.

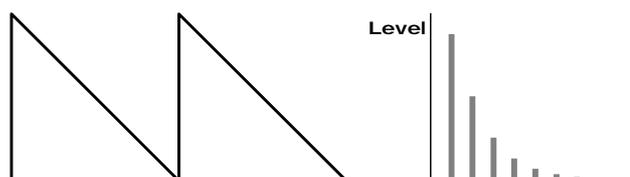
Additionally a microphone is connected to Input/SW1 & this allows external signals to be processed by the synthesis engine (including filtering) and/or effects processors and Vocoder of the Supernova II keyboard. In fact virtually any type of signal can be used by the Supernova II keyboard, as the gain of the 2 inputs can be adjusted from Microphone level through to Studio levels (+4dBm). Refer to page 100 for details on how to use the inputs. The inputs can also double as Footswitch inputs. A footswitch is shown connected to Input/SW2. The function of this socket is determined in the Global Menu. Refer to page 52 for details.

An expression pedal input is also shown, allowing a optional pedal to be connected. Virtually any parameter can be controlled via the expression pedal using the "Pedal/breath" parameter on page 4 of the Global menu. Alternatively, this socket can be used as a footswitch input. The function of this Pedal/Switch input can be user determined in the Global Menu. Refer to page 53 for details.

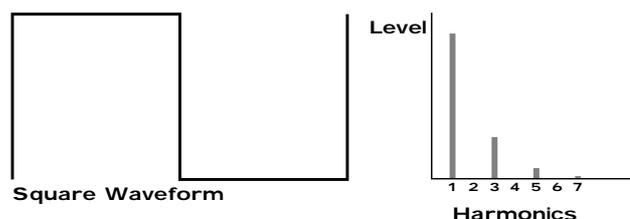
An Optional Digital I/O card can be fitted to the Supernova II keyboard providing an ADAT Optical & SPDIF Coaxial digital Input and output. When connected to suitable hardware (such as a KORG 1212 PCI Card or any similar digital audio card for computers or a digital Mixer such as the Yamaha O2R with suitable digital interfaces), the Supernova II keyboard can transfer sound digitally. This allows the Supernova II keyboard to integrate easily within a modern digital studio and allows some unique possibilities such as separate filtering and effects processing of 8 ADAT tracks of audio from a computer hard disk recording system simultaneously, and then digitally transferring the processed tracks back to the computer via the ADAT out, or alternatively using the Supernova II keyboard as an I/O system as there are 2 analogue inputs & 8 analogue outputs.

OSCILLATORS -pitch

To understand synthesis, it is necessary to have some understanding about sound itself. Sound is a vibration or oscillation. These vibrations create changes in air pressure which is picked up by your ears and perceived as sound. When dealing with musical sounds, the vibrations or oscillations occur at regular intervals and are perceived as the "Pitch" or "Frequency" element of a sound. The simplest musical sound is actually a sine wave because it contains only one "Pitch" and is perceived as a very "Pure" tone similar to a whistle. Most musical sounds consist of several different "Pitches" or "Frequencies". The lowest is referred to as the "Fundamental" and determines the perceived "Pitch" of the note. The other frequencies present are called "Harmonics", and in musical sounds usually occur in multiples of the fundamental frequency. i.e. if the fundamental note is 440Hz then a musical harmonic series would be 2nd harmonic = 880Hz, 3rd harmonic = 1320Hz, 4th harmonic = 1760Hz, 5th harmonic = 2200hz etc. The number and loudness of these "Harmonics" determines the "Timbre" or "Tone" of a sound. This gives a sound character and is why a violin sounds different from a guitar, and a piano sounds different again. In an Analogue synthesiser, you have the choice of several different waveforms. Each waveform has different amounts of harmonics and so the "Timbre" of each one is quite different. Below are descriptions of some of the waveforms and indications on what they can be best used for.



Sawtooth waves have all the harmonics of the fundamental frequency. As you can see, every harmonic has half the amplitude of the previous one. This sound is pleasing to the ear and is useful for basses, leads or synthesising stringed instruments.



Square waves have only the odd harmonics present. These are at the same amplitudes as the odd harmonics in a saw wave. Square waves have a hollow / metallic sound to them and so are useful in creating unusual synthesiser and oboe-like sounds.



White noise has no fundamental and so all harmonics are the same value. This wave can be used by itself to synthesise explosions or wind, and when used in conjunction with other waveforms can be used to create the illusion of "Breath" in an instrument.

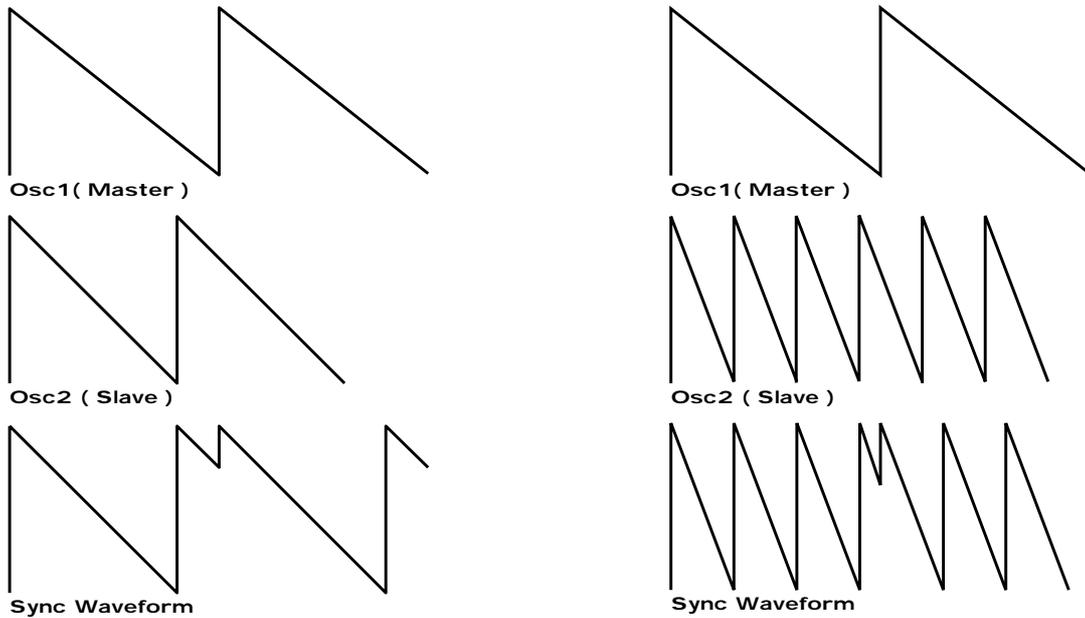
P W M (P U L S E W I D T H M O D U L A T I O N)

The choice of waveform is important as it determines the basic "Timbre" of the sound you are making. There are additional methods of synthesis that allow more harmonics to be generated. The First of these is Pulse Width Modulation. (PWM for short). Essentially the duty cycle of the normally symmetrical square wave is varied. This means the wave form goes from a Square wave to a Pulse wave like so:



This has a very pleasant "thickening" chorus like effect and is often used in Pad type or String section type sounds.

Additionally there is a synthesis method called Oscillator sync. This takes two oscillators, using one (the Master) to reset the other (The Slave) each time it starts a new cycle. The effect is most noticeable when the two oscillators are out of tune as shown below.

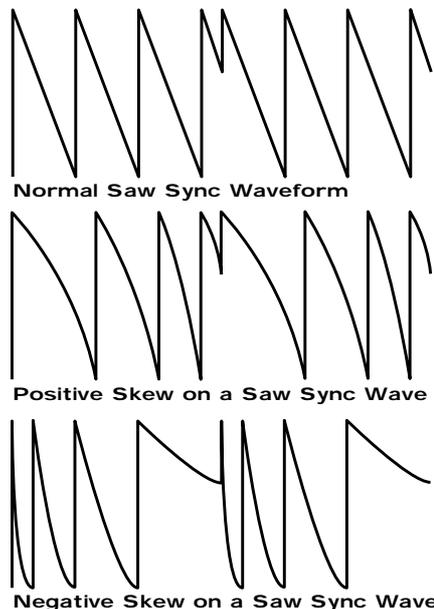


This Sync Effect creates very piercing and metallic sounds, often used a lot as lead sounds. It is worth noting that the Supernova II keyboard does not require 2 oscillators to create this effect. The Sync "Effect" is created by the Analogue Sound Modelling process without the need for a Sync Oscillator. There is merely a "Sync" parameter that creates the classic Sync Effect. This means that each of the 3 oscillators in one Supernova II keyboard "voice" can be independently Sync'ed as if there were 3 Master and 3 Slave oscillators.

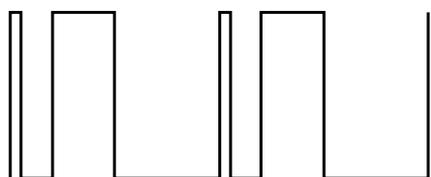
Analogue Sound Modelling technology also enables the creation of some new "Sync" related parameters that are not found on analogue synthesisers. These are "Key Sync", "Sync Skew" & "Formant Width".

Normally on an analogue synthesiser, even though the Master and Slave oscillators are detuned relative to each other, they both track keyboard pitch equally. i.e. if you play notes one octave apart, both the Master and the Slave oscillator will be transposed one octave. On the Supernova II Keyboard, "Key Sync" allows the virtual slave oscillator to have its pitch tracking adjusted independently. This means that the "Sync Effect" will change as you play different notes up and down the keyboard.

Sync Skew manipulates the frequency of the "virtual" slave oscillator within one cycle of the master oscillator. The result is that the Sync Effect seems to have a higher frequency at the end of each cycle with positive modulation and at the start of the cycle with negative modulation. This parameter makes the sync waveform sound even harsher. This is particularly good for aggressive lead sounds.



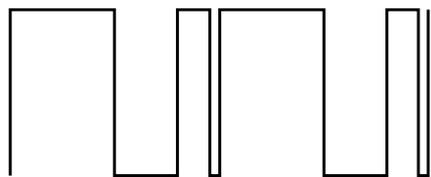
Sync Skew also effects the standard Square and Saw waveforms. The effect is to “squash” the waveform at the end of its cycle with positive modulation, squashing the waveform at the beginning of the cycle. On a square wave, moderate amounts of this effect produce similar effects to Pulse width modulation except width modulation over 100% can be achieved, allowing many cycles to be “squashed” into one original one. This can also be described as Frequency Modulation within the cycle and so mimics classic “Cross Modulation” with a Saw wave. This can produce effects similar to Sync but when this parameter is used in conjunction with Formant Width, the results can be very different. Below are examples of Sync Skew on standard Square and Saw waveforms. Note how the wave is squashed at one end and how more than one cycle has been squashed into the original cycle.



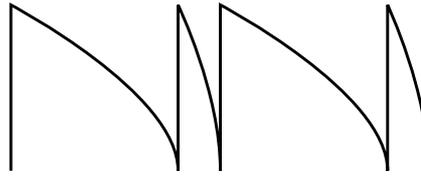
Negative Skew on a Square Wave



Negative Skew on a Saw Wave



Positive Skew on a Square Wave

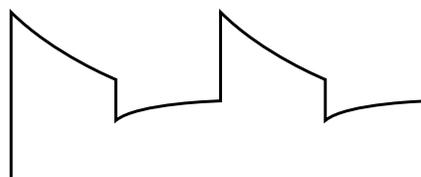


Postive Skew on a Saw Wave

Formant width is a parameter that controls the level of the cycles of the “virtual” slave oscillator. This can be used to simulate resonance within the oscillator itself by using the “Harden” parameter to smooth out the sharp edges of this wave form. The effect is to reduce the level of every successive slave cycle. Additionally this parameter has an effect on the normal Saw and Square waveforms, boosting the treble content of these waves.



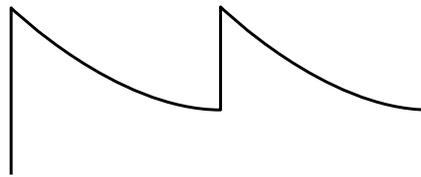
Sync Waveform



Formant Width on a Square Wave



Sync Formant Width Waveform

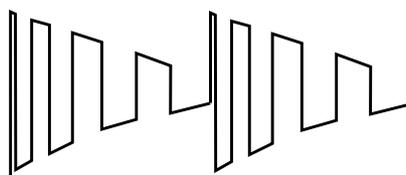


Formant Width on a Saw Wave

Both Sync Skew and Formant Width can be used in conjunction to create yet even more waveforms. Below are examples.

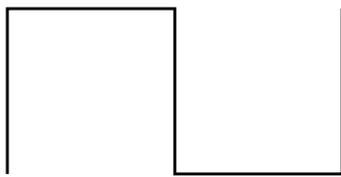


Negative Skew & Formant Width on a Saw Wave

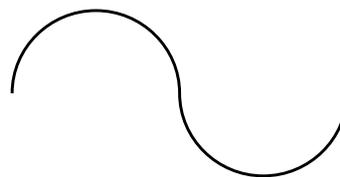


Negative Skew & Formant Width on a Saw Wave

Analogue Sound Modelling technology allows even more control over the waveform. Once you have selected your basic oscillator waveforms, you can further modify them using a “Hardening” process. At low values, the “Hardness” parameter rounds off all the “Sharp” edges of the waveform, thereby reducing its harmonic content. Below is an example of what the “Harden” parameter does to a Square wave.



Square Waveform

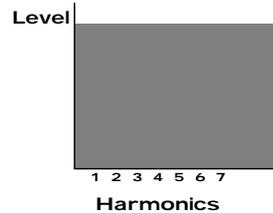


Softened Square Waveform

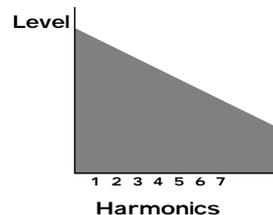
The Harden parameter is completely variable and can reduce a square wave to only one harmonic, producing a Sine wave. The Harden process can also be applied to the noise generator providing control over the harmonic content of the noise. Below is an example of what the "Harden" parameter does to Pink Noise.



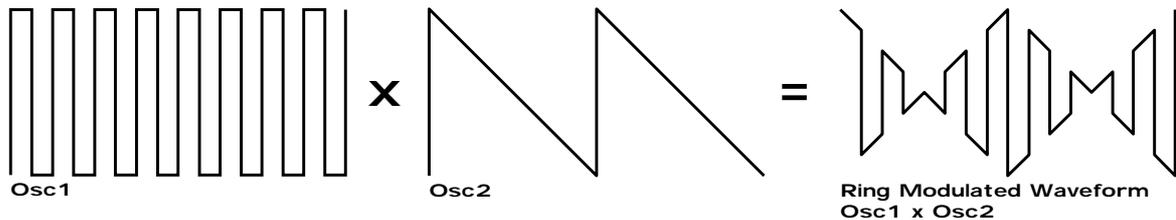
Noise Waveform



Softened Noise Waveform

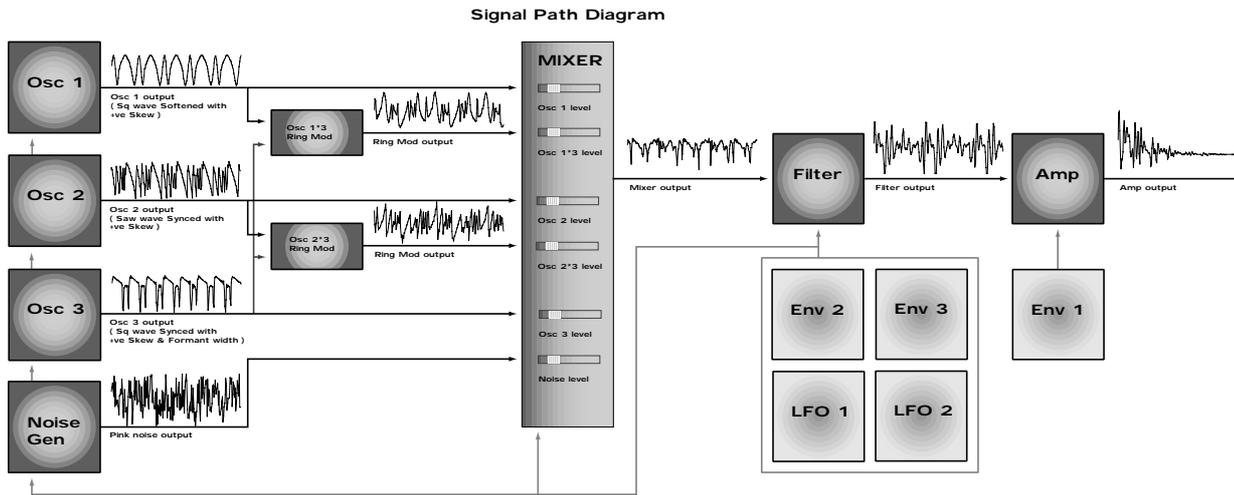


Finally there is Ring modulation. This uses two oscillators but instead of adding them together like in a mixer, they are multiplied together. This is very similar to FM and produces the kind of effect shown below:



The Ring Modulation effect creates metallic and bell-like sounds, often used generally for lead sounds, but if used subtly, can be used to produce Electric Pianos etc. If used radically, Ring Modulation can produce unusual sound effects.

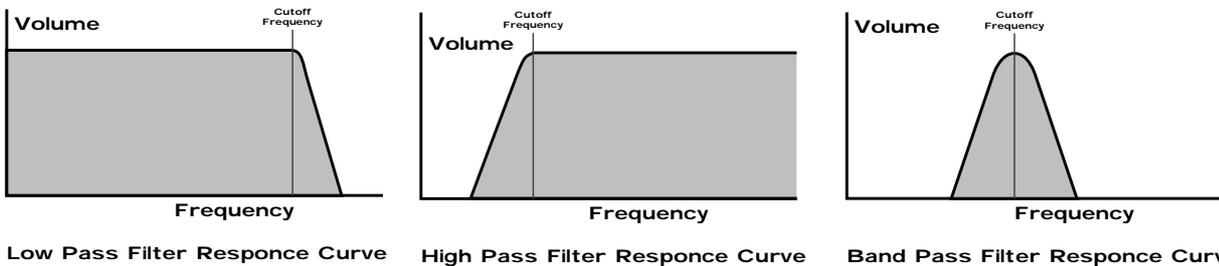
All these methods further enhance the basic Oscillator waveforms to provide further waveforms or a useful mix of harmonics. Once the waveforms have been selected, you can then "fine tune" the harmonic content of the mixture of different waveforms by passing them through a "Filter" to remove unwanted harmonics. The filter in an Analogue synthesiser is a very powerful "Tone Control". A tone control on a stereo can alter how things sound, but it cannot change the style of music being played on the record. Similarly, the filter in a synthesiser can alter the "tone" of a sound but is restricted by the basic "Timbre" of the waveforms. For this reason, several waveforms are available at once (using different Oscillators) and you can "Mix" them together to provide more harmonically rich waveforms. Below is a diagram showing the signal path in the Supernova II keyboard and the waveforms at various locations.



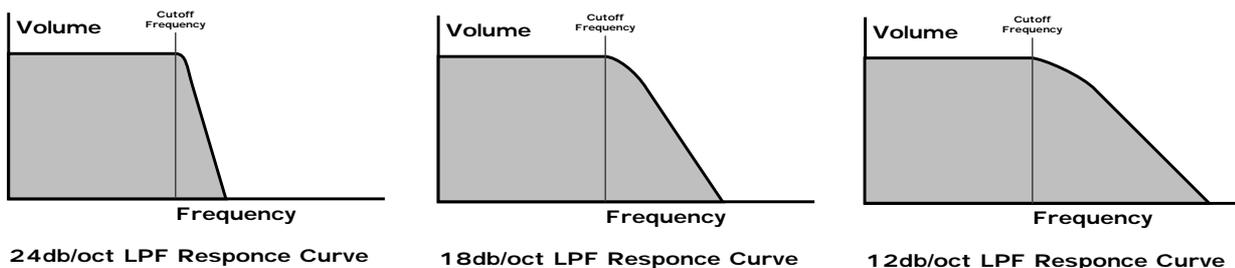
Different waveforms are being produced by different Oscillators using different techniques. The Oscillators, Ring Modulators & the Noise Generator can all be mixed together and fed to the Filter. The filtered signal is then in turn fed to the Amplifier. Oscillator 1 is shown using a Square wave modulated by Sync Skew and then hardened to create a sine-like wave (except it has an extra bump in it). This produces a pure, Whistle like sound. Oscillator 2 is shown using a Saw wave modulated by Sync Skew and Sync, producing a Harsh sound. Oscillator 3 is shown using a Square wave modulated by Sync Skew and Formant Width to produce a bright PWM like waveform. The 1*3 Ring modulator and 2*3 Ring modulator are shown producing complex waveforms. These, along with all the Oscillators and Noise generator are fed to the Mixer.

FILTER - tone

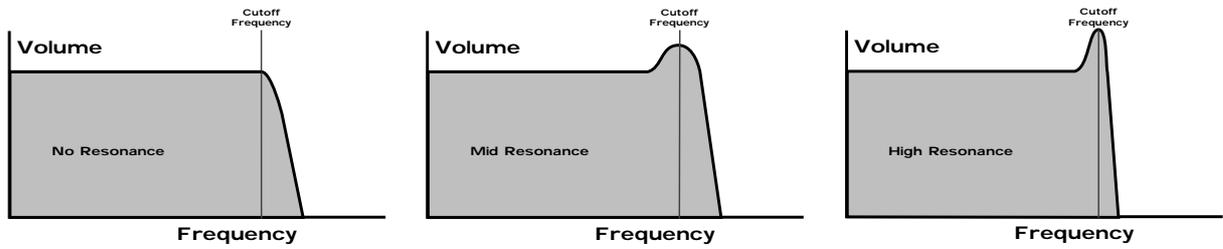
There are several different types of filter. These are Low Pass Filter, High Pass Filter & Band Pass Filter. The Low Pass Filter allows harmonics below a set frequency to pass through the filter (hence the term Low Pass). The High Pass Filter allows harmonics above a set frequency to pass through the filter (hence the term High Pass). The Band Pass Filter allows a band of harmonics at a set frequency to pass through the filter. The harmonics above and below the set frequency do not pass through (hence the term Band Pass). Below are the frequency response curves of the three types of filters.



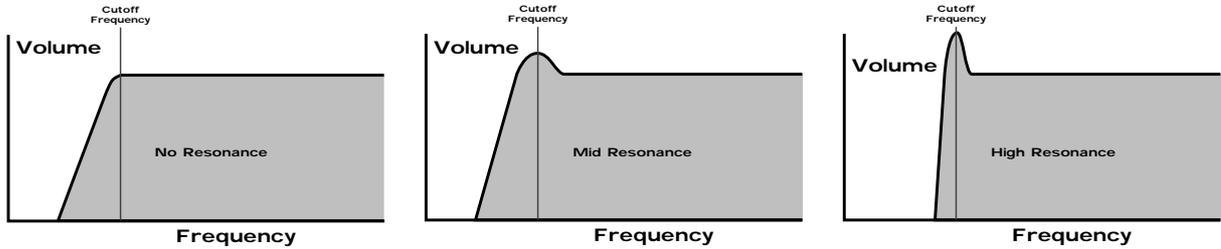
Additionally, the slope of the curve at which the filter rejects unwanted harmonics can be altered. The effect is similar to a "Q" control on a parametric EQ. In the 12dB position, the Cutoff Frequency slope is less steep, so the higher frequencies are not attenuated (reduced) as much as they are in the 24 or 18dB positions. This makes the resulting filtering in the 12dB position more subtle than the 24 or 18dB positions, which should be selected if the Cutoff Frequency is to be made more obvious. The slope is measured in dB per Octave. Below are the response curves of a Low Pass Filter with 24, 18 & 12 dB per Octave slopes.



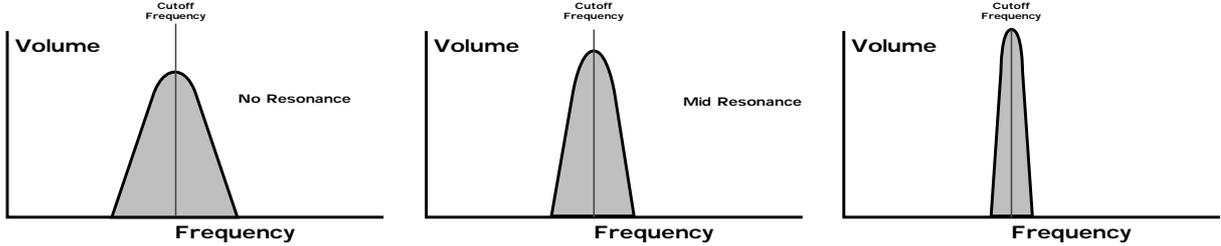
All these filters have a Resonance parameter. This has the effect of emphasising harmonics at the cutoff frequency of the filter. This is very useful for creating large tonal differences to a basic waveform. The effect is shown below as frequency response curves when resonance is applied in the Filter.



Low Pass Filter with Resonance Response Curves



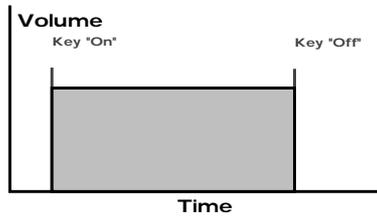
High Pass Filter with Resonance Response Curves



Band Pass Filter with Resonance Response Curves

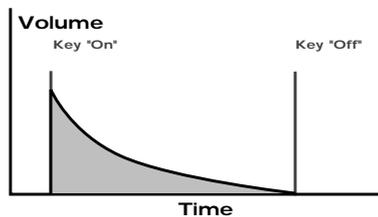
AMPLIFIER - volume

The last major process that makes up a sound is its "Volume". The "Volume" of sounds often vary as time goes by, and so an Organ has very different volume characteristics than that of a Piano or String section. See the following diagrams for details.



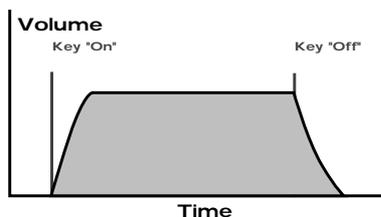
"Organ" Type Volume Response Curve

The "Organ" can be seen to go to full volume instantly when a key is pressed and then stay there until the key is released at which point the volume drops instantly to zero.



"Piano" Type Volume Response Curve

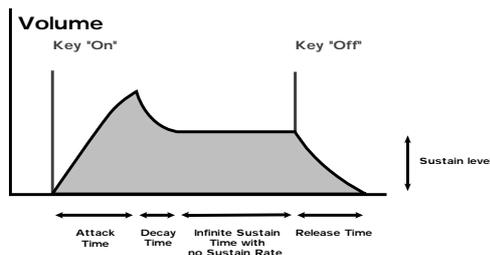
The "Piano" can be seen to go to full volume instantly when a key is pressed and then gradually fall back down to zero over several seconds while the note is held.



"String Section" Type Volume Response Curve

The "String section" volume curve can be seen to go to full volume gradually over several seconds when a key is pressed and then stay there until the key is released, when gradually over a couple of seconds the volume drops to zero.

These volume curves are called "Envelopes". In an Analogue synthesiser, "Envelope Generators" are used to recreate them. Envelope Generators have 4 main parameters which are used to adjust the shape of the envelope. See the diagram below:



ADSR Type Volume Response Curve

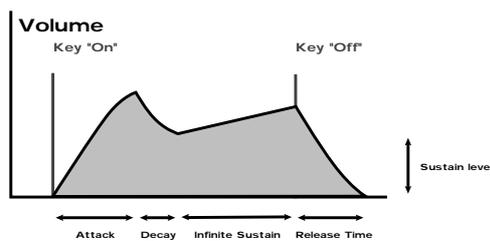
Attack time is used to adjust the time it takes when the key is pressed for the envelope to go from zero to full value (Fade in).

Decay time is used to adjust the time it takes for the envelope to go from full value to the value set by the Sustain level. (Piano like decay of volume)

Sustain level is used to set the level that the envelope remains at while the key is held down.

Release time is used to adjust the time it takes when the key is released for the level to go from the sustain value to zero. (Fade out)

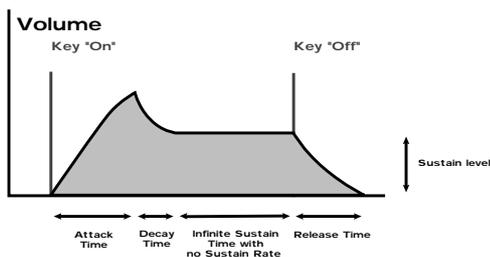
The Supernova II keyboard also offers additional envelope features to the classic ADSR types allowing even more flexibility, see the diagram below:



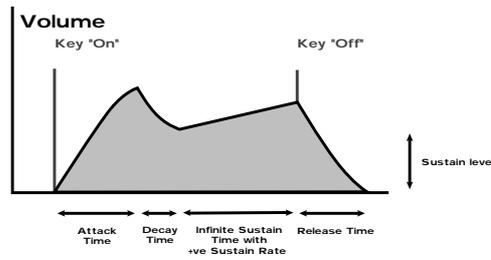
ADSR Type Volume Response Curve

In addition to the Attack, Decay, Sustain & Release parameters there are also 3 new parameters. These are:

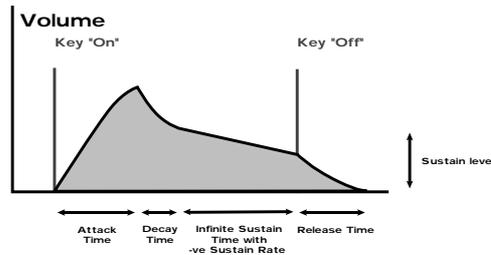
Sustain Rate which is used to control the slope of the "Sustain" phase of the envelope. When this parameter is set to zero, the curve is normal like so:



When this parameter has a +ve value, during the "Sustain" phase of the envelope, the Sustain value will rise to full at a "Rate" determined by this parameter as can be seen below:



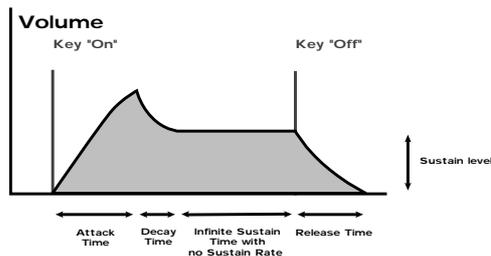
Low values like +01 will produce a very slow rise. High values will produce a quick rise to full intensity. When this parameter has a -ve value, during the "Sustain" phase of the envelope the Sustain value will fall to zero at a "Rate" determined by this parameter as can be seen below:



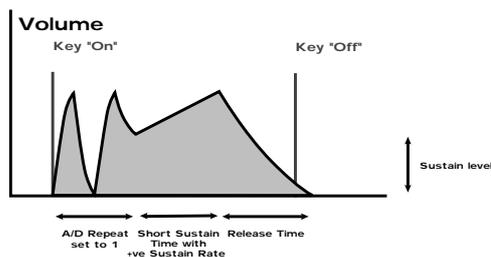
Low values like -01 will produce a very slow fall, while high negative values will produce a quick fall to zero intensity.

A-D Repeat allows the Attack & Decay phases of the envelope to be looped, producing repeated cycles of Attack & Decay curves. This is fully adjustable from Off (normal ADSR operation), up to 126 repeats or Infinity.

Sustain Time which is used to control how long the "Sustain" phase of the envelope will last. When this parameter is set to 127 (infinite) the curve is normal like so:



When this parameter is set to anything less than 127 the "Sustain" phase has a defined time duration and can be adjusted from very long to very short. This means the "Sustain" phase may end before the key played is released, at which point the "Release" phase will start automatically. Below is an example of all 3 new parameters working together:



Summary

An Analogue Synthesiser can be broken down into three main elements.

- 1 - The Oscillator is the part of a synthesiser that generates "Waveforms" at a certain "Pitch".
- 2 - The type of "Waveform" selected in the Oscillator & the settings of the "Filter" determine the "Tone" of the sound.
- 3 - The sound is then passed through an "Amplifier" which is controlled by an "Envelope Generator". These alter the "Volume" of a sound over time.

All of these three main elements can be controlled by various methods. For example:

The "Pitch" of a note can be played on a keyboard or a synthesiser. Additionally it can be manipulated in real time using the "Pitch Bend Wheel" to create "Slides" and "Bends" in pitch. LFOs (low frequency oscillators) can be used to "Wobble" the pitch of a note at a specific rate creating a "Vibrato" effect. An Envelope Generator can also be used to "Slide" the pitch in an automatic way.

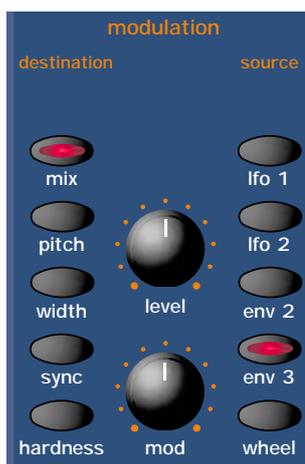
The Filter can be manipulated by LFOs to vary the "Tone" of a sound at a specific rate creating a "Wah Wah" type of effect. An Envelope Generator can also be used on the Filter so that the "Tone" of a sound changes over time. A feature called "Keyboard Tracking" can also be used on the Filter so that the "Tone" of a sound changes depending on the note being played.

The Amplifier can be manipulated by Envelope Generators so that changes in the "Volume" of a sound over time can make the sound short and percussive or more like a piano, or even like an organ. Additionally the "Velocity" at which you hit the keys can also be used to manipulate volume making a sound more "expressive".

The elements that manipulate these three main synthesis elements are called "Modulation Sources".

The Supernova II keyboard features 3 Envelope generators and 2 LFOs (Low Frequency Oscillators) as Modulation "Sources". In addition to these modulators, Velocity (the dynamics of your keyboard playing. i.e. ppp to fff), Aftertouch (Pressure on the key-board while note(s) are held) and the Modulation Wheel are included as additional "Sources" of modulation signals in a "Modulation Matrix". This allows almost any "Source" to modulate a given parameter. It is even possible to have combinations of different "Sources" modulating one parameter simultaneously. In the Supernova II keyboard this has been neatly arranged on the front panel so that accessing all the possible combinations of modulation is quick and easy. Below is the Modulation Matrix for the Oscillator section.

Oscillator Modulation Matrix



Simply by selecting the desired "Source" (using the row of buttons on the right) and the desired "Destination" (using the row of buttons on the left), the "Level" or "Mod Depth" knobs allows the creation of complex modulation setups easily. On older modular Analogue Synthesisers this was done with "Patch" leads that physically connected the "Sources" and "Destinations" together.

This allows some very powerful performance features to be implemented. i.e. It is possible to sweep the "Sync" effect, "Harden" effect, Pulse Width Modulation and alter the Mix of all three oscillators independently plus open the Filter Cutoff Frequency, Reduce the Filter Resonance, add lots more Distortion and Delay and reduce the Chorus and Reverb - all by simply moving the Mod Wheel forward! With the Modulation Matrix, relationships such as these are quick to set up and will transform a "static" sound into one with real "hands on" control and flexibility.

This is where most synthesisers end. However, the Supernova II keyboard also features a very powerful Effects section. It could be said that effects are as much "part" of a sound as the raw sound itself. Some of the larger old Analogue systems had built in spring reverb. And with the development of DSP technology, digital effects have become available in modern synthesisers. However, when in a "Multimbral" application, many modern synths pass all the sounds through one set of effects, compromising flexibility.

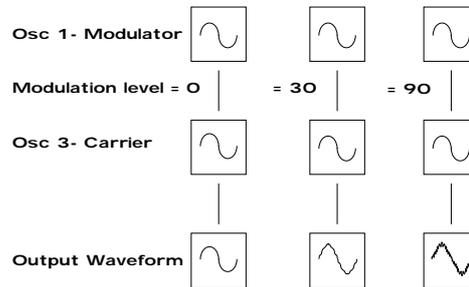
In the Supernova II keyboard, a block of 7 effects is part of the "Program" and can be considered to be part of the synthesis engine. These effects include Distortion, EQ, Reverb, Chorus/Flanger/Phaser, Delay, Panning & Comb Filter effects. These can simulate "Real World" effects like Echo and Room Reverberation etc. or they can be used to just do really weird things to your sound! For details on what each effect does and how best to use them, refer to the About Effects section of this manual on page 20.

The best thing to do is just get in there and tweak those knobs, after all that's why we put them there! Experiment and you'll soon be creating your own sounds. Nothing beats hands-on experience when learning how to make the most of the Supernova II Keyboard.

Basic Theory

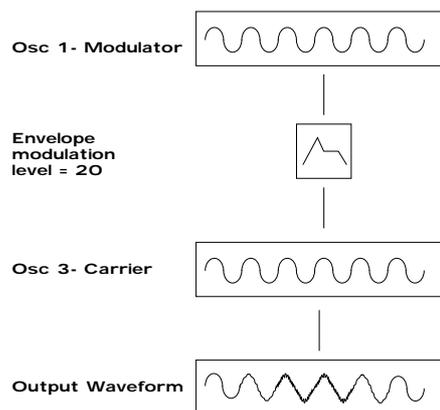
Earlier in this manual we were introduced to the basics of subtractive synthesis and became familiar with terms such as harmonics, timbre, waveforms and oscillators. FM Synthesis is the technique of using one waveform (Oscillator) to Frequency Modulate - FM - another to produce a resultant more harmonically complex waveform.

For purposes of illustration we will assume that the oscillators are producing sine waves.



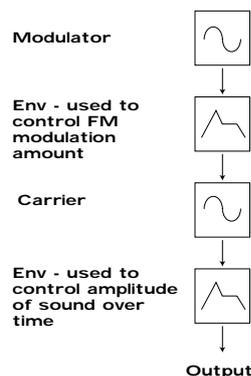
As we have already discovered, it is the CHANGE in harmonics over time that starts to make a sound interesting to our ears. In FM synthesis, an envelope generator is inserted between the modulator and carrier waveforms. This gives control over of how much Frequency modulation is taking place with respect to time.

Adding this envelope makes the basic FM building block look like this



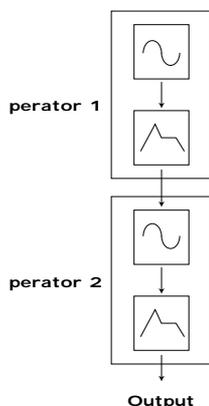
We can see that the output waveform starts off as the same as the carrier, becomes more complex (HARMONICS ARE ADDED) as the amount of FM modulation increases via the envelope, and then returns to a simple wave again as the envelope decays. *THE TIMBRE OF THE WAVEFORM IS CHANGING WITH TIME.* This is the opposite of subtractive synthesis where often a LOW PASS FILTER is used to REMOVE HARMONICS.

To complete this simple synthesizer, we need to add one further envelope to control the volume of what we are hearing. The complete building block will now look like this.



Yamaha popularised FM synthesis in the 1980's with the famous DX7 synthesiser. The basic building block of the original Yamaha machine was referred to as an OPERATOR. An operator is just one oscillator with one envelope generator that can control the output level of the Oscillator.

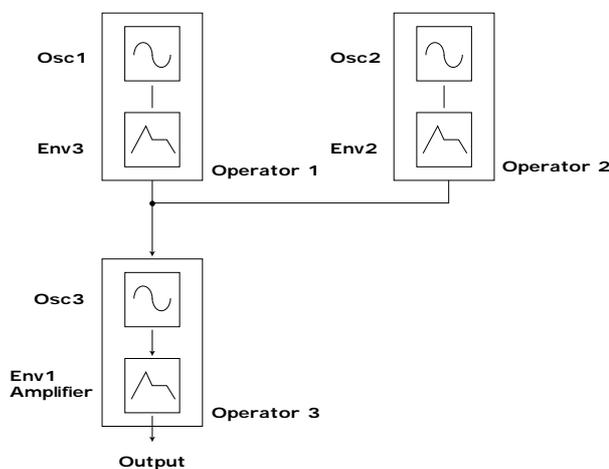
Referring to our simple synthesiser in the diagram above we can outline the different sections and see that it comprises of two blocks, each one containing one oscillator and one envelope. This is known as a 2 OPERATOR SYSTEM in DX7 Language.



The DX7 had six operators and these were presented to the user in preset combinations referred to as ALGORITHMS. This terminology of OPERATORS & ALGORITHMS immediately presented users of this new digital technology with a mystifying machine interface, thus creating original sounds was very often left to professional programmers. We will attempt to make things clearer with the SUPERNOVA II so you may gain the knowledge to create your own FM sounds.

Programming of your own FM sounds using the Supernova II keyboard.

In any one PROGRAM of the Supernova II keyboard, we can make up to 3 OPERATORS using the oscillators and envelopes available. We can also add a noise waveform for special effects & Drum/Percussion sounds. For simplicity, most of the factory presets use the same structure as in the diagram below.



A Noise waveform maybe substituted for Osc1 or Osc2

Many musical instruments contain much of the detailed sonic information during the first few moments that the instrument is plucked, struck or blown. For example, when a Xylophone is struck, during the small amount of time after the beater has made contact with the wood it will resonate and contain many harmonics. The sound will then settle down to a more periodic waveform.

The easiest way to learn and understand FM is to study a few of the factory presets. So lets start with the Xylophone

Select the FM sound Program H056"FMpt Xylo Lo".

When manipulating FM sounds, most of the "tweaking" will be done using the envelope section and oscillator section.

Because we are now using an additive form of synthesis, it is not really necessary to use the filter section (remember FM synthesis *adds* harmonics instead of *subtracting* them). However, the Filter may still be used to enhance the sound further if required.

When using the Supernova II keyboard for FM synthesis it is important to note that it is ALWAYS Oscillator 3 that is heard as an output to the mixer section. If you are creating sounds from scratch, we recommend using the program H126 "FM Init Program" as a starting point, as in this Program all the oscillators are set to sine waves and only oscillator 3 has its mix level turned up.

Referring to the graphic above, we have Oscillator 3 doing the "Body" of the sound. We then have Oscillator 1 via env3 Modulating Oscillator 1 for a small amount of time to simulate the effect of the beater. To hear just the body of the sound, press "osc3" in the Oscillator Section and press "solo". - Make sure that the button "fm" under the 1*3 is NOT LIT. Play the keyboard and listen to the sound. You are hearing a softened square wave that is in fact a sine wave. Whilst playing the keyboard, press the "hardness" button and slowly rotate the "Level" knob. Notice how the sound becomes harder. Turn the knob back so that the hardness level is zero. Now press the "fm" button. You can hear the FM effect of Oscillator 1 coming in via envelope 3. The extra harmonics are now audible at the start of the sound and it resembles a real Xylophone.

The amount of time in which FM is taking place and the FM intensity is controlled by Env3. Env3 is allowing an amount of Oscillator 1 to FM Oscillator 3. Experiment by selecting env3 in the Envelopes section and varying the decay time. Also Experiment with changing the pitch of Osc1. To do this press the "osc1" button and turn the "oct/semi" or "cents" knob.

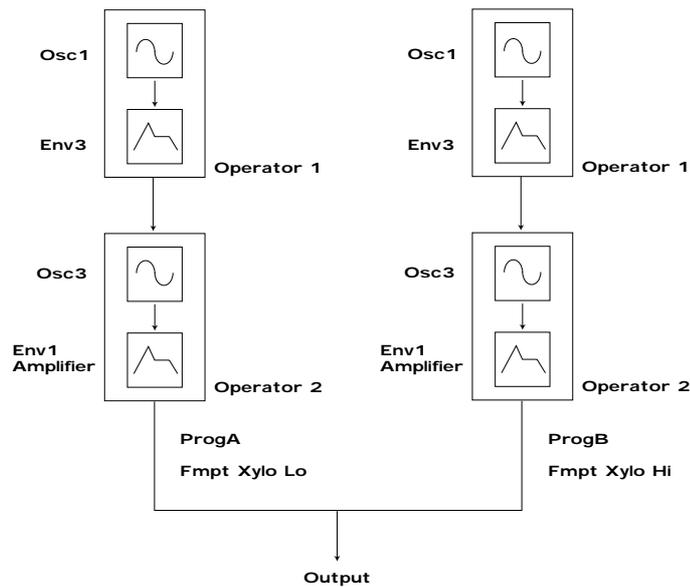
A general rule in FM synthesis is that the HIGHER THE FM MODULATION AMOUNT, THE HARDER OR BRIGHTER THE SOUND BECOMES.

The real power of FM in the Supernova II keyboard is the ability to "stack" programs into performances.

The Performance "FM Xylophone" in B025 is actually made from 2 programs. The program as described above (FMpt Xylo Lo) & FMpt Xylo Hi. From the names you can work out which program is doing what part of the sound !!!!!

To hear the 2 programs together select Performance B025. This is a layer of the 2 programs.

In terms of Operators this sound will now look like this in block diagram form.



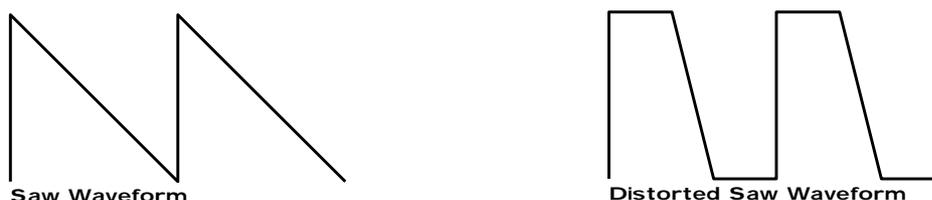
The Supernova II keyboard's effect section is arguably one of the most powerful in a synthesiser of this type today. With all this power it is possible to obtain a level of production that was previously unattainable.

Effects can be "Effects" or they can be "Acoustic Simulations". Both are useful in the production of modern music. In fact they are almost essential. Clever use of effects can enhance a track beyond compare. However, slapping loads of effect on everything can do the reverse.

In the Supernova II keyboard there are 7 effects units per Program. They are: Distortion, EQ (Equalisation), Comb Filter, Reverb, Chorus/Flanger/Phaser (This is one effect that can be a Rotary Speaker or an Ensemble or a Chorus or a Flanger or a Phaser), Delay & Panner/Tremolo. Let's look at all of these effects one by one.

Distortion .

This is usually an effect reserved for Guitar players. As the name suggests, this has the effect of distorting the incoming signal as can be seen in the diagram below.



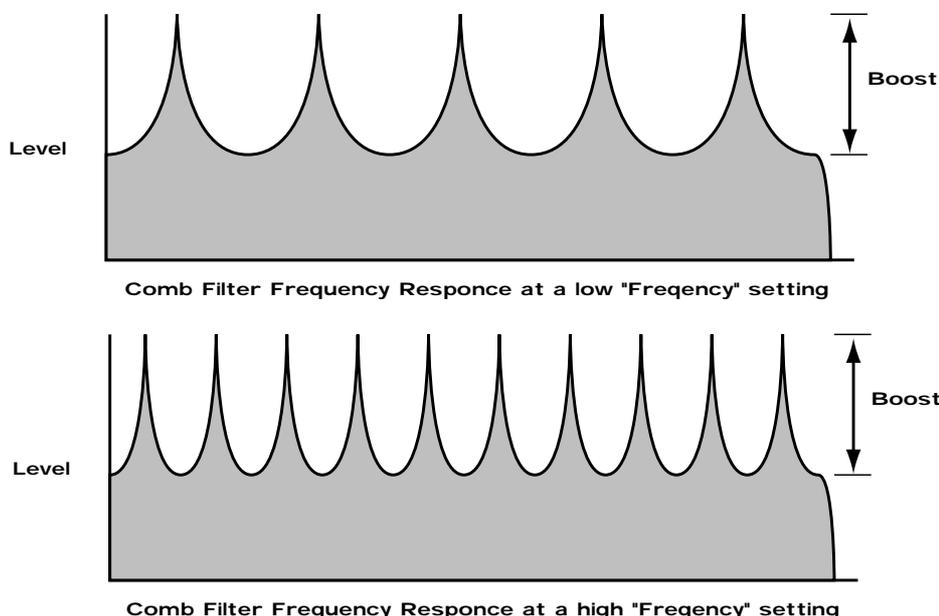
This effect not only gives the sound a hard edge and a dirty kind of quality, it also has several other characteristics that are worthy of note. Firstly, low level harmonics within the waveform are exaggerated. "Resonant" waveforms and indeed any resonance or additional harmonics will jump out if this effect is used. Secondly, the maximum level that comes out of the distortion effect is relatively constant so there is a definite compression effect present as well. This can be useful for mixing, as the level of the sound is the same. The Distortion parameter as its name implies introduces Distortion.

E Q .

This effect is not normally found on most synthesisers, but is found on mixing desks and is very useful for fine tweaking the individual sounds to make them "fit" together in a mix. Very often a sound may be too "muffled" sounding or a bass too "twangy" sounding. This is where EQ comes in. Muffled sounds have insufficient treble, so adjusting the Treble EQ will either boost or reduce the treble. Similarly, the Bass EQ will either boost or reduce the bass. In the Supernova II keyboard there is a Treble EQ control and a Bass EQ control.

Comb Filter .

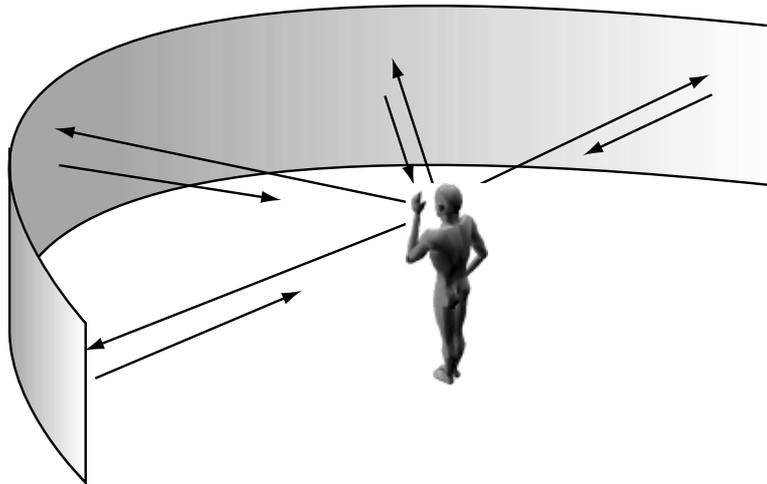
This effect is a filter that generates many peaks in the frequency response of the signal. This can be seen in the frequency Response curve below.



There are many peaks and they look like a “comb” hence the name Comb Filter. There are two main parameters associated with this effect. Comb frequency controls the “frequencies” at which the peaks occur, and Comb boost controls how high the peaks are. The effect is to alter the timbre of the sound. Although similar to EQ, this effect can produce effects not possible using a standard EQ. The resulting sound tends to be quite “Metallic” sounding especially when large “Boosts” are applied.

Reverb .

This is an “Acoustic Simulation of a room. Why does singing sound good in the toilet? Reverb that’s why! The Reverb Effect is a computer model of the acoustics of a room. The type of room is up to you, anywhere from the toilet to the local Concert hall is possible. Below is a simplified diagram of the reflections of sound in a room. Note there are many reflections from all directions.



When the Reverb button is pressed, the knob in the effect section controls how much Reverb there is. Anticlockwise there is little effect This can be thought of as being very close to the sound source within the hall. Fully clockwise, there is lots and this can be thought of as being at the other end of the hall from the sound source. Basically one way of looking at this parameter is “where you are and where the sound source is in the hall”.

Different types of rooms and halls have different acoustics. For this reason, Supernova II keyboard features several different Reverb types. These range from very, very small rooms like the “Dry Chamber” setting to the very large hall like the “Large type 2” setting. Additionally, “special” types have been included. These are “Gated” types and are an artificial type of reverberation that sustains for a period and typically dies away suddenly rather than smoothly decaying away as reverb does naturally. These types can be used as a special effect, especially on drums.

Most rooms have dominant large reflective surfaces (Larger walls typically) and these create dominant echoes in the reverberated signal. Early ref (reflection) level simulates these reflections. Large amounts of Early ref level will produce strong signal at the beginning of the reverb.

Decay Time is the time it takes for the Reverb to die away after the sound has stopped. This can be thought of a “what the hall is made of”. Very acoustically reflective rooms tend to have long decay times and very non reflective rooms have short ones.

HF damp is short for High Frequency Damping. This controls the “tone” of the decaying Reverb. This can be thought of as the amount of carpet and drapes in the hall. Carpet and drapes tend to absorb high frequencies as a sound “bounces” around the hall , giving you your Reverb effect. With each bounce the sound loses a little treble. No HF Damping is a little unusual in the “real” world but can be used to emphasise sibilant or trebly sounds. Normally a little HF Damping is applied to give the Reverb a natural kind of sound.

Chorus /Flanger /Phaser .

This is one effect that can be a Rotary Speaker, Ensemble, Quad Chorus, Chorus / Flanger or a Phaser.

Rotary Speaker - an overview .

This effect is designed to simulate the effect created by a “Leslie” cabinet (often used in conjunction with an Organ such as a Hammond B3). The effect was created by 2 separate speakers in the Leslie cabinet that are spun around independently with 2 motors. Hence the name of this effect, “Rotary Speaker”. One of the speakers in the Leslie cabinet is a “Horn” (Tweeter) and the

other is a "Rotor". (Woofer) The effect has 2 settings: a "Speed 1" setting, (where the speakers are usually set to rotate slowly) and a "Speed 2" setting (where the speakers are usually set to rotate fast). The speakers are quite heavy, so when changing from one setting to another, the speed change is not instant but gradual due to the speaker's inertia.

Ensemble - an overview .

This effect is designed to simulate the "Ensemble" effects found in classic "String Ensemble" keyboards like the Solina or the Roland SE101. This is similar to Chorus in the sense that Ensemble provides an effect that fattens up sounds and provides a stereo image but without the swirling sensation. It could in actual fact be thought of as 4 independent Choruses all running at different speeds, thus masking the "wobbly" sensation that Chorus can produce. This is particularly suitable for string sounds as it sounds smoother than Chorus for this purpose.

Chorus - an overview .

This is an effect originally designed to simulate the effect when many people sing together as opposed to one person or the sound of a 12 string guitar as opposed to a 6 string guitar. Chorus is an effect that is produced by detuning the signal slightly and mixing it back together with the original signal. The characteristic Chorus swirling effect is produced by an LFO that controls the amount of detuning the chorus performs.

Quad Chorus .

This is effectively 4 Choruses running at once from one LFO but in different phases. This creates a particularly "thick" Chorus effect suitable for String Ensemble and other "Lush" sounds.

Chorus/Flanger .

Normal Chorus and Flanger effects are quite similar. Using this effect as a Chorus provides a Stereo effect with a smooth, swirling sensation that fattens up sounds and provides a stereo image. This type of Chorus differs from the Quad Chorus in the sense that although not as "thick" sounding, this Chorus retains the "definition" of the effected sound, making it more suitable for basses, organs & percussive sounds. The Flanger effect is similar to a chorus but tends to use more detuning and feedback to produce an effect with a pronounced swirling sensation that emphasises the harmonics in the sound as it sweeps through them.

Phaser .

This effect is almost the reverse of a Flanger. A small amount of phase shift is applied to the signal via an LFO. When this is added back together with the original signal, a pronounced swirling effect is produced that cancels out harmonics in a sound as it sweeps through them.

Chorus Speed. This parameter controls how fast the LFO for this effect is going. Generally a fairly slow speed is used. Higher speeds tend to induce a vibrato like quality to the sound.

Mod Depth controls the amount of detuning or phase shift that the effects LFO produces. Again, large amounts of modulation from this parameter will produce a more noticeable effect. Generally moderate amounts are often used, but you will find that bass sounds benefit from more Mod Depth than normal. Feedback controls how much of the treated signal is fed back into the input. Subtle effects like chorus benefit from low levels of feedback. Flangers and Phasers on the other hand often sound better with more feedback. Feedback emphasises the harmonics in a Flanger and emphasises the cancellation of harmonics in a Phaser.

The Type parameter determines if this effect is going to be a Chorus or a Flanger or a Phaser. Select the one you want.

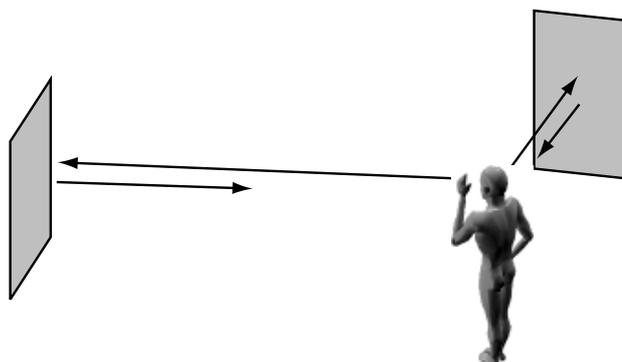


NOTE:

The effects LFO should not be confused with the front panel Program LFOs.

Delay .

This effect is normally a single acoustic reflection of a sound. This is commonly called Echo. This effect can be heard naturally anywhere where there is a large flat surface, like a concrete wall. A "Stereo" version can be considered to be two concrete walls and this is the type that the Supernova II keyboard uses. The distance from the walls determines the delay time and in the example below, the distance between the left wall and left ear of the listener is different to the distance between the right wall and the right ear of the listener. This creates a Stereo "staggering" effect of the echoes and is normally referred to as "Multi Tap Delay" or "Tap Delay".



Delay Time. This parameter controls the amount of time it takes for the delayed signal to be heard after the original signal. In the example given above, this is the same effect as the distance you are from the wall. A large distance produces a long delay and a short distance produces a short delay. In the Supernova II keyboard, the Delay time is the time of the Longest delay. The shorter delay will be a percentage of this value (see "Ratio" below).

Feedback. This parameter controls how much of the delayed signal is fed back into the delay's input. No feedback produces a "Slapback Echo" effect, that is just one delayed signal with no repeats. Small amounts of feedback produce "repeated" signals giving the "Echo" effect. This can be thought of as standing in-between two parallel concrete walls. The sound bounces back and forth between them. In this case, the Decay Time represents the distance between the walls.

HF Damping. HF Damping is short for High Frequency Damping. This controls the "tone" of the decaying Echo. This can be thought of as the amount of drapes on the walls. Drapes tend to absorb high frequencies so as a sound "bounces" from wall to wall giving you your Echo effect. With each bounce the sound loses a little treble. No HF Damping is a little unusual in the "real" world but can be used to emphasise sibilant or trebly sounds. This characteristic was found in older "Tape" based echo units. Higher values of this parameter simulates the effect of worn out tape or heads in a tape echo. Normally a little HF Damping is applied to give the Echo a natural kind of sound.

Delay Ratio. The Ratio parameter automatically adjusts the "Ratio" of the Longest Delay time and the shorter Delay time into timings that are useful for Musical use. This parameter does not effect the Delay Time parameter but does alter the shorter Delay time so that it works well with the Delay Time setting.

Width is the Stereo spread between the long and shorter Delay times. At a width of zero, both delays appear in the middle of the stereo field. (Monoaural) At a width of 127, the long delay will appear on one output and the shorter delay on the other producing a dramatic stereo effect.

Pan .

This effect controls where the sound "sits" in the stereo field. In the Supernova II keyboard, this performs exactly the same function as Pan does on a Mixing console. It can be used to statically position a sound anywhere from Left to Right in the stereo field. This (as everything else on Supernova II keyboard) can be controlled via MIDI controllers.

Pan Type determines if the Pan is set to Pan automatically. If set to "Autopan" the sound will swing from side to side of the stereo field at a rate determined by the Speed parameter. If set to "Tremolo" the sound goes up and down in volume at a rate determined by the Speed parameter.

Pan Speed determines the speed of the Autopan and Tremolo effects.

Pan Depth determines how much the Autopan and Tremolo effects control the Volume of the sound. Small amounts produces subtle movements and full amount produces change from no sound to full volume.

In this manual there are several terms used that may lead to confusion if not fully understood. Below is an explanation of all the Novationish used in this manual.

Program

This is the simplest type of sound Supernova II keyboard can create. These are accessed by pressing the Program button. The Supernova then enters Program Mode. Other Manufacturers sometimes call these Patches or Partials.

Drum Map

This is the special arrangement where many Programs are arranged across the keyboard (one drum Program for each note). All drum sounds are available simultaneously. The Drum Maps are accessed by pressing the Program button and the Bank buttons. On the Supernova, all Drum Map sounds use a single set of effects. Other Manufacturers sometimes call these Drumkits.

Performance

This is the most complex type of sound the Supernova II keyboard can create. It is made up of 8 different sounds called Parts. Each Part contains its own Program and Part settings. These Parts can be layered or set up as splits to form the Performance. Performances are accessed by pressing the Performance button. The Supernova then enters Performance Mode. Other Manufacturers sometimes call these Multis, Multisetups or Combinations.

Part

This is one of the 8 sounds or Parts of a Performance. The sound assigned to a Part is called a Program. Other Manufacturers sometimes call these Timbres.

Favourites

This is a special set of memories storing all your "Favourite" Programs, Performances and Arpeggiator patterns. These are accessed by pressing the Favourites button. The Supernova then enters Favourites Mode.

Voice

This is a measurement of polyphony. One voice is the equivalent of one note being played. One voice in the Supernova II keyboard uses three Oscillators, two Ring Modulators and a Noise generator as sound sources. All these sound sources can be used simultaneously in one Voice.

Oscillator

This is the basic waveform generator in the Supernova II keyboard. As described above, there are three Oscillators per Voice.

Sync Effect

This is a parameter of one oscillator that simulates the "Sync Effect" generated by 2 Analogue oscillators in a "Oscillator Sync" configuration. For more details refer to page 6 - About Analogue Synthesis.

Hardness Effect

This is a parameter that controls the harmonic content of any waveform. Full Hardness Effect on a waveform produces a normal wave. Minimum Hardness produces a near sine wave. This is similar to having a separate LPF for each oscillator. For more details refer page 6 - About Analogue Synthesis.



Analogue Sound Modelling

This is the Synthesis System the Supernova II keyboard uses to create sound. Created by Novation, this new method of synthesis was first used in the Award winning Novation Drum Station.



NOTE:

When this symbol appears in the manual this indicates an important feature or destructive function such as Writing data to memory etc.

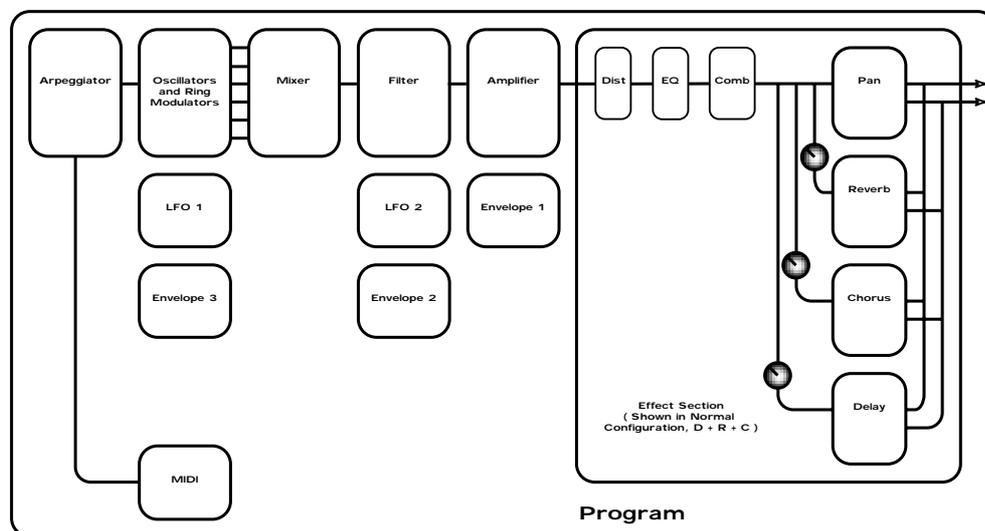
There are 3 types of "Sounds" you can select in the Supernova II keyboard. These are Programs, Drum Maps & Performances.

When the Program Button is selected, the Supernova enters Program Mode and a single Program is recalled from memory. A Program is the most basic type of sound in the Supernova II keyboard. This sound is made up of the 3 oscillators, the 2 ring modulators and the noise generator. These are Mixed together and are fed through the Filter, Amplifier and effects processors. The sound produced by a Program in Program Mode always comes out of outputs 1 & 2. Program Mode always uses the "Global MIDI Channel" to send and receive MIDI Data. In Program Mode, the Program covers the entire range of notes on a keyboard and has the standard velocity curve. On other synthesisers, a "Program" is sometimes referred to as a "Patch" or "Partial". This is fairly standard amongst synthesisers except that the Supernova II keyboard differs in 2 areas.

Firstly, the Effects Section is memorised with the Program. Although this may seem standard in comparison to other equipment, the real difference happens in Performance Mode when a Performance is selected. Because the Supernova II keyboard can run 56 Effects at once, all 8 "Parts" of a Performance have their own Effects Section. This allows all the "Parts" of a Performance to sound exactly the same in Performance mode as they do in Program mode. This is unique to the Supernova II keyboard and is literally like having the equivalent of 8 separate synthesisers with 8 sets of effects sections allowing a very high level of production to be achieved with just one box.

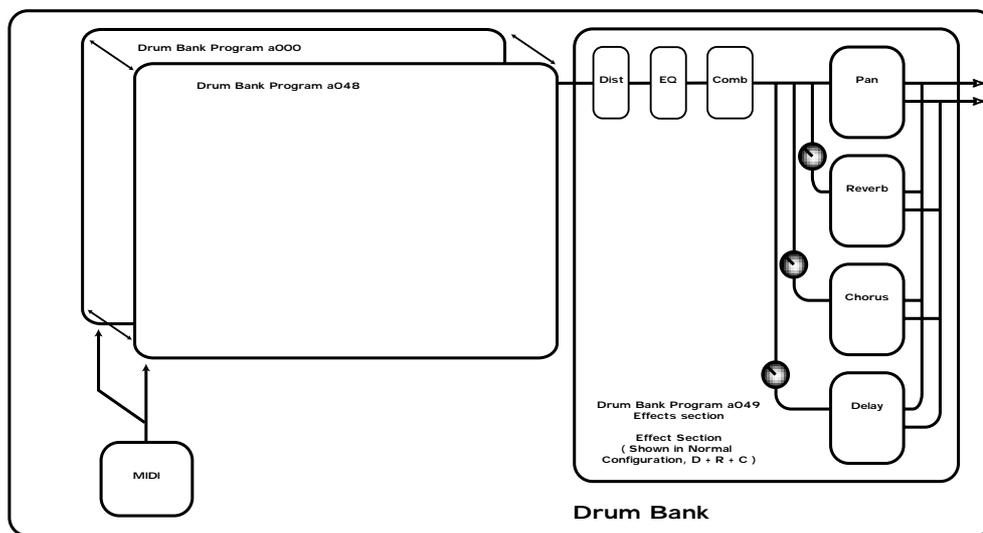
Secondly, the Arpeggiator Sections parameters are also memorised with a Program. Similarly, because the Supernova II keyboard can run up to 8 Arpeggiators at once, all 8 "Parts" of a Performance have their own Arpeggiation settings.

Below is a simplified block diagram of a "Program" in the Supernova II keyboard.



In a Program, incoming MIDI messages get processed by the Arpeggiator (If it is "On") and control the Oscillators. The signals produced are mixed together in the Mixer section and the resulting signal is passed on to the Filter. The signal then is passed to the Amplifier which then sends the signal into the effects section. This signal path is reflected on the front panel of the Supernova II keyboard allowing easy understanding of the synthesis process. All the essential controls of this process are on the front panel and in Program mode, adjusting the controls will directly affect the sound produced. For a deeper understanding of the creation of sounds refer to the section "About Analogue Synthesis" on page 8 for details.

A Drum Map is a special way of playing Programs. A Drum Map can be thought of as a special bank of 50 Programs rather than the 128 Programs found in a normal Program Bank. Normally, a Program is transposed and is played over the entire range of the keyboard. In a Drum Map, each program is assigned to a single note on the keyboard and every note from C1 (bottom C on the keyboard) to B4 plays a different program. Basically a separate "Program" is assigned to each note in a Drum Map. This allows the keyboard to access different Drum sounds on each key. This is particularly useful when using the Supernova II keyboard with a sequencer, as a Drum Bank can be assigned to a single "Part" of a Performance allowing many different drums to be played on one MIDI channel. Each Drum Bank contains 50 Programs. Below is a block diagram of a Supernova II keyboard Drum Map.



The incoming note data is split up and fed to one of the 50 Programs in the Drum Map. These Programs are numbered 000 to 049. Drum Map Programs 000 to 048 are for storing sound data. The output of all these programs is mixed together and fed through one effects section. The effects section's parameters are actually stored in Drum Map Program 049, so adjusting the effects section of any Program within a particular Drum Map will actually alter the effects on Drum Map Program 049 and hence the whole Drum Map. When a Drum Map program is saved, the sound data is stored in the desired location and any edits to the effects data is stored in Drum Map Program 049. Effects settings from other normal Programs can be imported into a Drum Bank by saving the Program that has the desired effects in Drum Map Program location 049.

In the Supernova II keyboard there are 8 Drum Maps. These are referred to as Drum Maps 'a' to 'h'. Note the use of lower case to avoid confusion with standard Program Banks which are labelled 'A' to 'H'.



NOTE:

Adjusting the effects settings of any Drum Map Program will affect all the sounds in the entire Drum Map.



NOTE:

Any Program written into Drum Bank location 049 will not make a sound but will write the source Programs effects on the entire Drum Map.



NOTE:

It is perfectly possible to write a "normal" type of Program into a Drum Map and to write a Drum Map Program into a "normal" Program's location within Banks 'A' to 'H' using the write procedure.



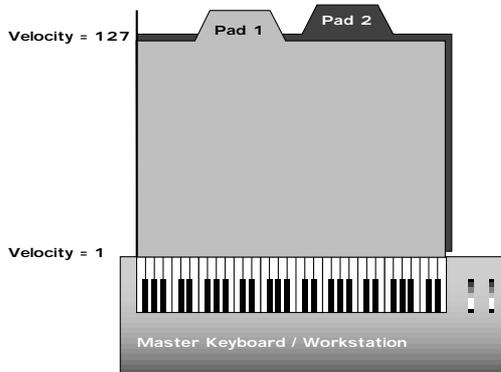
NOTE:

When using Drum Maps with a sequencer, it is possible that "note dropouts" can occur, especially when repetitive notes occur (Such as snare rolls). This is because some sequencers occasionally get the note on/off messages out of sequence. It is not a fault with the Supernova II keyboard but rather the sequencer. This is a typical example of what happens, when a snare roll of say 16th notes with a gate time of 16ths is programmed into a sequencer, the expected Midi output would be as follows:
 Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, etc.
 Occasionally, What actually happens is : Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note on, Note off - (gap of 1 16th) - Note off, etc.

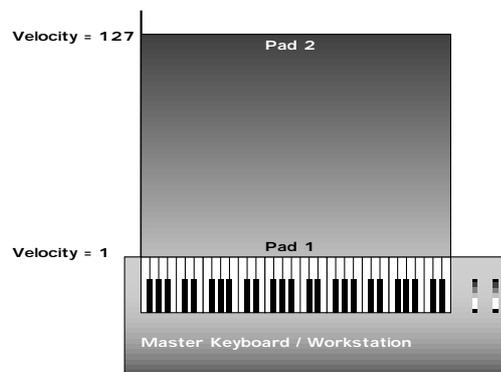
This happens presumably because as far as the sequencer is concerned, certain Note off and the Next note on events happen in theory at the same time. Most of the time the sequencer will output them in the right order but occasionally it will get the order wrong, resulting in the odd note dropping out. The solution is to either make the Gate time (Note length) of the notes less than the distance between the notes (forcing the sequencer to output the Note on and off messages correctly) or to use the Drum One-Shot parameter in the Voice Control Menu to make each drum sound ignore Note off messages. See page 80 for details.

Performance Mode is a mode where you can use Supernova II keyboard "Multitimbrally" as opposed to Program Mode where only one type of sound is available for playing at any one time. Performance Mode allows the Supernova II keyboard to play up to 8 different sounds simultaneously on up to 8 different MIDI Channels. Each "Part" of a Performance can have a separate MIDI channel setting.

Different Parts in a Performance need not be assigned to different MIDI channels however. Parts set to use the same MIDI channel may be layered together to create a "Fatter" sound or spread across the keyboard range creating dynamic split points. Remember, each one of the Parts can have its own Program settings, and as explained before, this means each "Part" has its own Effects Section and Arpeggiator. This means it is possible to layer up to 8 Programs or create a 8 way split of different sounds across the keyboard or any combination of the two. Below are some examples.

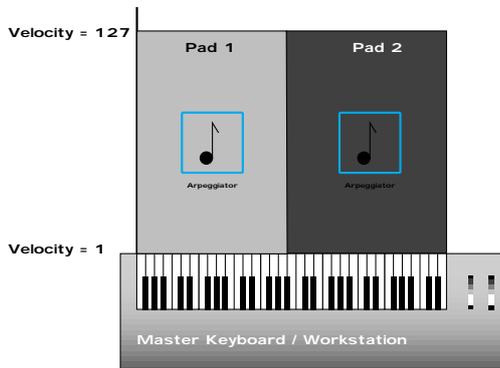


Keyboard Range
PERFORMANCE LAYER EXAMPLE

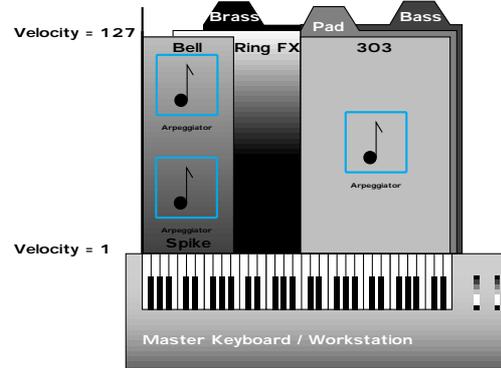


Keyboard Range
PERFORMANCE VELOCITY CROSSFADE EXAMPLE

In the Performance Layer example there are 2 Pad Programs layered together over the entire range of the keyboard. Playing any one note will play both the sounds on that note. In the Velocity Crossfade example, playing the keyboard softly will mean Pad 1 is heard. Playing the keyboard hard will mean Pad 2 will be heard. Playing the keyboard with medium feel will produce a mixture of Pad 1 and Pad 2.



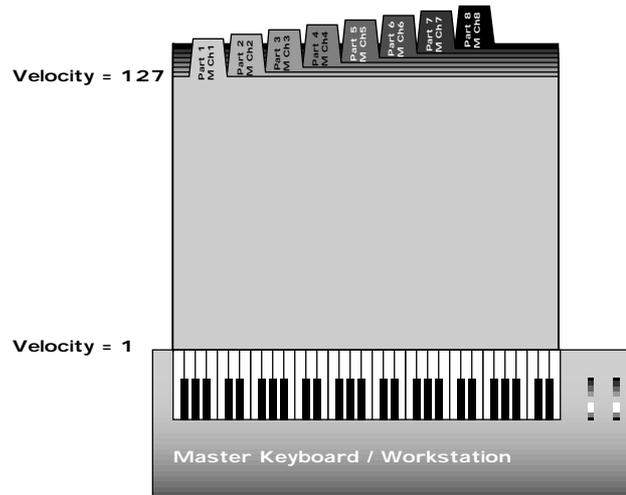
Keyboard Range
PERFORMANCE SPLIT EXAMPLE



Keyboard Range
PERFORMANCE MULTIPLE EXAMPLE

In the Performance Split example, play the higher end of the keyboard and Pad 1 will be heard. Play the low end and Pad 2 will be heard. Additionally, it can be seen here that different Arpeggiators are assigned to the Lower and Upper parts of the keyboard. Both of these can be played at the same time.

The Performance Multiple example is much more complex. A Performance can have up to 8 "Parts". In this case, 7 Parts have been used. The lower half of the keyboard is a 3-way layer of Programs. There is a Pad, a Bass & an Arpeggiated 303 sound. These all sound at the same time when a note is pressed within their note range. A little further up the keyboard, a Brass sound has been assigned. When the keyboard is struck hard, a Ring mod FX is added. Further up the keyboard still, there are 2 Arpeggiated sounds assigned. These are arranged in a Velocity crossfade so that playing the keyboard in this range softly produces a Spike sound with an Arpeggiation. Playing it heavily produces a Bell sound with a different Arpeggiation. To set the split points use the "Range" Parameter to specify over which "Range" of notes the selected "Part" will sound. To set the velocity crossfades use the "Velocity Curve" Parameter to specify how the selected "Part" will respond to note velocity.



Keyboard Range

MULTI TIMBRAL PERFORMANCE EXAMPLE

Above is an example of 8 different sounds assigned to 8 different MIDI Channels. Set the individual "Parts" to the required MIDI channels and make sure the "Part" Note Ranges are set to cover the full range of the keyboard. Velocity Curve settings are set to the normal setting otherwise unexpected results may occur. Also it can be seen that combinations of Multitimbral and Split/Layered Performances can be made. For example, a performance could be set up so that Parts 1 to 4 were assigned to MIDI Channels 1 to 4 and Parts 5 & 6 assigned to MIDI channel 5 with key ranges set so that a split is created. Parts 7 & 8 are assigned to MIDI channel 6 with full key ranges so that a layer is created.



NOTE:

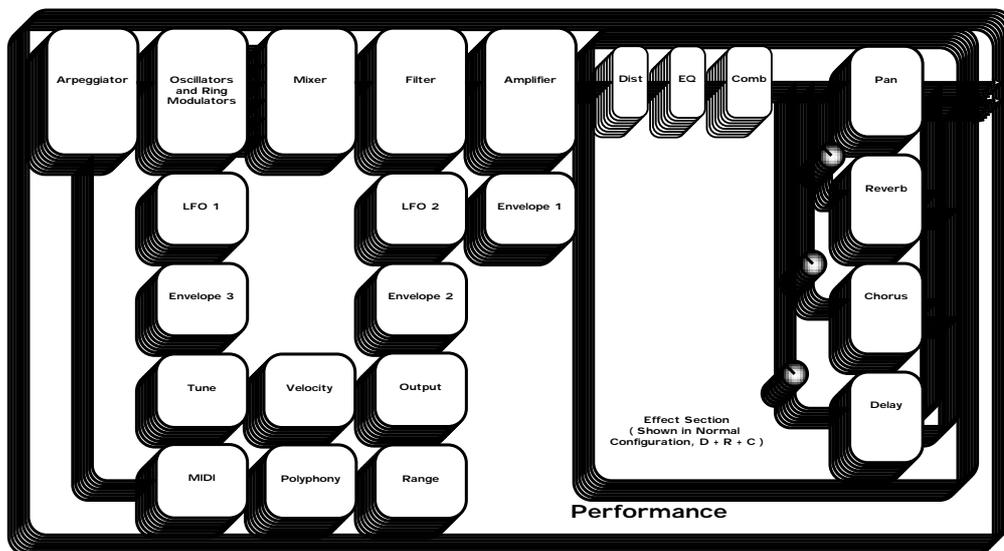
When a Program change message is received on the Global MIDI channel it will change the selected Program or Performance, possibly selecting Program or Performance Mode. If a Program change is received on a Part MIDI Channel that is not the Global one, it will change the assigned Program for that Part. When it does so, the effects settings stored in the Program will be loaded into the Part's Effects section if the Effects used parameter in the Output menu is set to "Program". If this parameter is set to "Performance" the Program will change but the effects setting for that part will not be altered. Additionally the Arpeggiator Parameters from the Program will be loaded into the Part's Arpeggiator.



NOTE:

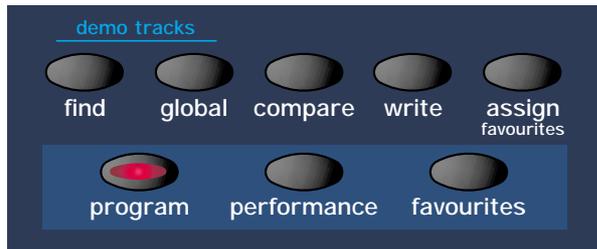
There is only one Arpeggiator Speed control in a Performance. Adjusting the speed of any Parts Arpeggiator will control the tempo of all 8 Arpeggiators.

Below is a simplified block diagram of a "Performance" in the Supernova II keyboard.



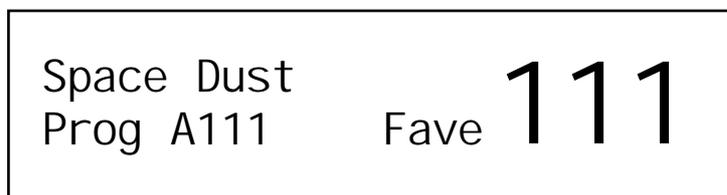
A Performance is literally a duplication of 8 Programs, including the Effects Sections and the Arpeggiators.

The Supernova II keyboard features a "Favourites Section" that allows any 2 button selection made on the Keypad section or any incoming MIDI Program Change command to call up any Program or Performance from any Bank or select a new Arpeggiator Pattern for the currently selected program. The Favourites Section is user programmable and is Memorised with the Global settings.



To select the Favourites Section, simply press the Favourites button in the Mode section or send a MIDI Bank Message of 0 (Controller 32 with a value of 0).

To select a Favourite requires a maximum of only 2 button presses, even if the number has 3 digits. For example to select Favourite 111, make sure the Supernova II keyboard is in the Favourites mode (the Favourites button is lit). Now simply press the '110' button and the '1' button in the Keypad section. The display shows:



To select Favourite 001, make sure the Supernova II keyboard is in the Favourites mode (the Favourites button is lit). Now simply press the '0' button on the top row of the Keypad section and the '1' button on the bottom row of the Keypad section. In some cases, only one button press is required. For example, if Favourite 111 is currently selected, to select 112 only requires the '2' button to be pressed.



NOTE:

The Favourites map can be made active via MIDI at all times by setting the "Incoming program change" parameter on page 13 of the Global Menu to "Favourites".



NOTE:

The Favourites mode can be memorised as the power up default made by saving the Global data when this mode is selected. This allows Master Keyboards trying to control the Supernova II keyboard which do not transmit Bank Select Messages to be able to call up any Program or Performance in any Bank.



NOTE:

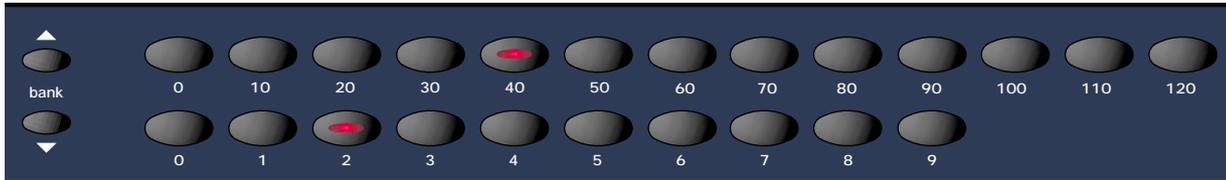
When a Program/Part receives a valid Bank Select Message (Controller 32) via MIDI IN, the bank will continue to remain selected for the Program/Part until another Bank Select Message is received via MIDI IN.



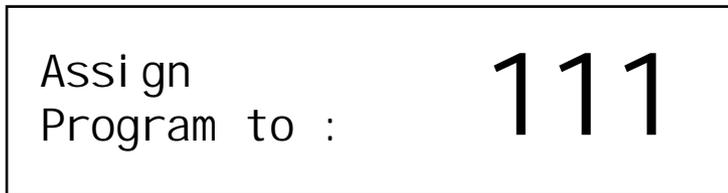
NOTE:

This "Favourites" mode is assigned to MIDI Bank 0 (Controller 32 with a value of 0). If this message is received the Supernova II keyboard will switch from normal operation to the Favourites mode. Any Program changes received after that will be re-mapped according to the Favourites map. This can be disabled by sending another MIDI Bank Message calling up either one of the Program or Performance Banks. See page 166 for details on the Bank Messages received by Supernova II keyboard.

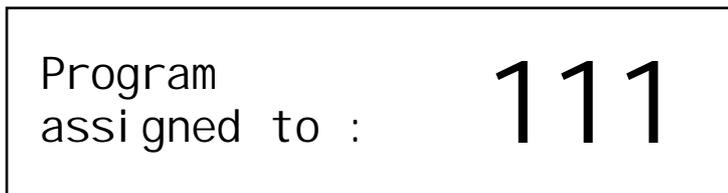
To assign a Program or performance to a specific Favourites location is easy. Simply select the desired Program or Performance using the Program or Performance buttons in the Mode section, the Bank buttons and keypad section.



Now press the Assign (favourites) button in the Mode section. It will light to show it is active. Select the Destination "Favourite" location while in this mode using the keypad buttons or data knobs. The display will show:



Press the Assign (favourites) button again and the display shows this message momentarily:



Indicating that the program has now been assigned to Favourite 111. It is possible to assign all your "Favourites" in this way, but the assignments are not actually written to Flash memory until a write procedure has been done. Now to write this into flash, press the Favourites button to enter the Favourites mode and press the Write button.



NOTE:

If the Write button is not pressed while in Favourites mode, the Flash memory will not be written. All assignments will be lost on power off.

It is also possible to assign Arp Pattern changes to Favourites. To do this, enter the Arp Menu and go to page 1 where the display shows the Pattern bank and Pattern Number parameters. Select the Bank and Pattern to be assigned. Press the Assign Favourites button and set the Favourites location for the Pattern assignment using the Keypad buttons or data knobs. Press the Assign button again to confirm the assignment. Press the Write button to write the assignment to Flash memory.



NOTE:

If the Write button is not pressed while in Favourites mode, the Flash memory will not be written. All assignments will be lost on power off.

It is also possible to assign "Current" program changes to Favourites. "Current" means a program or performance will be selected at a specified location within the "Currently" selected bank. You could think of this as Favourite that is just a program change without the bank change data. To do this enter the Favourites mode. Select the desired "Current" value with the keypad section. Press the Assign Favourites button and set the Favourites location for the Current assignment using the Keypad buttons. Press the Assign button again to confirm the assignment. Press the Write button to write the assignment to Flash memory.



NOTE:

If the Write button is not pressed while in Favourites mode the Flash memory will not be written. All assignments will be lost on power off.

When setting up a Favourites selection, it is quite possible that there may be a situation where a new "Favourite" may need to be inserted within an existing arrangement of Favourites. To this end, the Supernova II keyboard features a special mode where a new Favourite can be inserted within an existing map, moving all the following Favourites up by one position.

Firstly select the Favourite location at which a Favourite is to be inserted. In this case the selection is Favourite 111. The display shows:

Space Dust Fave 1 1 1
 Prog A111

Now press the page up button. The display shows:

Insert favourite ?
 Write to insert

Now pressing the Write button in the Mode section will insert a default Favourite into location 111 and shift all Favourites above Favourite 111 up one location. Press the write button. The display momentarily shows:

New favourite
 inserted.

Then the display will show the default Favourite inserted at location 111. You can now assign any new Program, Performance or Arp pattern to this new location.



NOTE:

If the Write button is not pressed while in Favourites mode the Flash memory will not be written. All assignments and edits to the Favourites map will be lost on power off.



NOTE:

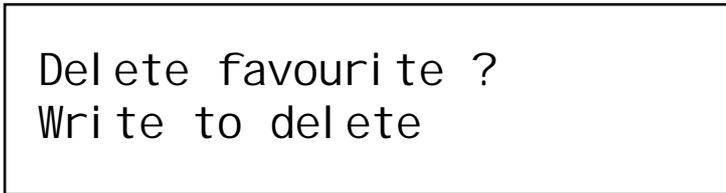
When a Favourite is inserted, Favourite 127 is lost as all the proceeding favourites are moved up one location.

When setting up a Favourites selection, it is quite possible that there may be a situation where a "Favourite" may need to be deleted within an existing arrangement of Favourites. To this end the Supernova II keyboard features a special mode where a Favourite can be deleted within an existing map, moving all the following Favourites down one position.

Firstly select the Favourite location at which a Favourite is to be inserted. In this case the selection is Favourite 111. The display shows



Now press the Page Down button. The display shows:



Now pressing the Write button in the Mode section will shift all Favourites above Favourite 111 down one location and insert a default Favourite into location 127. Press the write button. The display momentarily shows:



Then the display will show the default Favourite previously at location 112, which the Supernova II keyboard has moved down one location to 111.



NOTE:

If the Write button is not pressed while in Favourites mode, the Flash memory will not be written. All assignments and edits to the Favourites map will be lost on power off.



NOTE:

When a Favourite is deleted, a new Favourite at location 127 is created as all the proceeding favourites are moved down one location.

There are a lot of sounds in Supernova II keyboard. These are arranged into "Banks". There are 4 Banks of 128 Performances (512 Performances in total), 8 Banks of 128 Programs (1024 Programs in total), 8 Drum Maps each with 50 Programs and a single Bank of 128 Favourites. Pressing the Program button will activate the Program Mode. The display will show:

Uni *Syn	Prog A000
----------	-----------

The lit Program button indicates Program Mode has been selected. The bottom line of the display is indicating "Prog" followed by the Bank and number of the Program. The top line displays the name of the Program.

Press the Bank Up button. The display changes to:

Z-Plane VeloPick	Prog B000
------------------	-----------

Program Bank B has now been selected. A further 2 digit entry is required to determine the location of the sound within this Bank if different from the current selection. Press '120' then '3' on the keypad. The display shows:

Snotty Nose	Prog B123
-------------	-----------

And the selected Program has changed.

Pressing the Bank Down button once will bring Supernova II keyboard back to the A Bank.

Selecting Performances or Favourites is done in exactly the same way.

When sounds are selected from the front panel, the appropriate MIDI Bank and Program change messages are sent on the last entry of the keypad. These can be recorded on Computer Software / Sequencer. Selecting sounds via MIDI is very simple, just send the appropriate MIDI Bank number and Program change commands to Supernova II keyboard from the Computer Software / Sequencer. To change Programs and Performances, these messages should be sent on the Global MIDI Channel. If however you have a Multitimbral Performance, individual parts can be changed with suitable Bank number and Program change messages on the individual MIDI Channels assigned to the "Parts" of the Performance.

There is a chart on page 166 outlining all the different Bank numbers for selecting the different modes via MIDI.

Pressing the Program button will activate the Program Mode. The display will show:

Uni *Syn
Prog A000

The lit Program button indicates that Program Mode has been selected. The bottom line of the display is indicating "Prog" followed by the Bank and number of the Program. The top line is displaying the name of the Program.

Press the Bank Up button 8 times. The display changes to:

909 Kick 2
Drum a000

Drum Map a000 has now been selected. A further 2 digit entry is required to determine the location of the sound within this Drum Map if different from the current selection. Press the higher '0' button followed by the lower '2' button on the keypad. The display shows:

808 Snare 2
Drum a002

And the sound has changed showing Drum Program a002. Alternatively as all the 50 programs in Drum Bank a are simultaneously available on the keyboard, the selection can be made from the keyboard. Play the keyboard until the sound desired is found. Now play the note while holding down the Page Down button. If D1 is played the display should look the same as above.

When sounds are selected from the front panel, the appropriate MIDI Bank and Program change messages are sent on the last entry of the keypad and can be recorded on Computer Software / Sequencer. Selecting sounds via MIDI is very simple, just send the appropriate MIDI Bank number and Program change commands to Supernova II keyboard from the Computer Software / Sequencer. To change Programs and Performances, these messages should be sent on the Global MIDI Channel. If however you have a Multitimbral Performance, individual parts can be changed with suitable Bank number and Program change messages on the individual MIDI Channels assigned to the appropriate "Parts" of the Performance.

There is a Chart on page 166 outlining all the different Bank numbers for selecting the different modes via MIDI.

Editing and writing Arpeggio patterns is a bit like "Step" sequencing. It is not immediate and requires understanding of all the parameters necessary to create an Arpeggio pattern which performs how you want. To fully understand this guide it is necessary to have a good understanding of all the standard Arpeggiator's parameters.

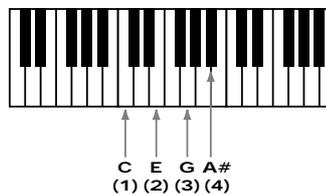
The first thing to do is select a Program you want to use with an Arpeggiation. Use the Program, Bank and Keypad to make your selection. Next, turn on the Arpeggiator if not already on with the Arpeggiator On/Off button. Assign a "User" pattern to the arpeggiator with the "Pattern Bank" Parameter in page 1 of the Arpeggiator Menu button pages. You now have to decide what type of Pattern you wish to create.

There are two basic types of Arpeggio patterns available. These are Monophonic, i.e. a chord is played on the keyboard and single notes are played from that chord sequentially at a speed determined by the "Speed" knob. Polyphonic arpeggiation is also available, i.e. a chord is played on the master keyboard and all the notes are played simultaneously, but may be transposed, at a speed determined by the "Speed" knob. To make a Monophonic pattern, select a "User" pattern in page 1 of the Arpeggiator Menu button pages. Select a pattern between 000 and 063 (these are the Monophonic ones). Make a note of the pattern number you have selected. For reasons that become clear below, we suggest that for the purposes of learning initially set the "Sync" parameter to a low value (i.e. 8ths) and the "Fill In" parameter to "Off". Both of these parameters are on page 4 of the Arpeggiator Menu pages. Enter the Global Menu by pressing the Global Button. Go to page 7 and switch the Memory Protect parameter to Off. On page 18 select the same pattern you assigned to the Arpeggiator in the Program. You are now ready to start creating a Pattern. The procedures for editing Monophonic and Polyphonic patterns are slightly different.

Monophonic Patterns

A Monophonic pattern can be 1 step long (although there would not be much point in this except for recreating effects like LFO triggered basslines) or up to 64 steps long. Bear in mind that this can be also thought of as the "Resolution" of the pattern as the pattern can be "Synchronised" at differing time signatures. i.e. a 16 Step pattern synchronised at 16ths would be the same time duration as a 32 step pattern synchronised at 32nds. Decide on the number of steps you want to use and set the "No of Steps" parameter on page 18 of the Global Menu to suit. We suggest that for the purposes of learning, initially set this to a low value. i.e. 8, this will mean that The Arpeggiator is synchronised to 8ths and the Number of steps you have assigned to the Pattern is 8. So this is a 1 bar pattern.

In a Monophonic pattern, you decide which "Order" the individual "notes" within the "chord" you play are played. Imagine you are playing the notes shown below:



There are 4 notes being played C, E, G & A# creating a C 7 Chord. The Supernova II keyboard scans the keyboard and "labels" each of the played notes with a note number, starting with the lowest (if the "Note ordering" parameter is set to "Up"). In this case C = 1, E = 2, G = 3 & A# = 4. If a D was played instead of the E the numbering would be as follows C = 1, D = 2, G = 3 & A# = 4. If a D was played instead of the C the numbering would be as follows D = 1, E = 2, G = 3 & A# = 4. It is important to understand this relationship to understand the next step.

As you remember, there are 8 steps allocated in the assigned pattern. You can edit each step individually by selecting the step you wish to edit with the "Step" parameter on Page 18 of the Global Menu, similarly altering the "Note" number assigned to that step on the same page with the "Note" parameter.



NOTE:

A "Gate" of "Norm" or "Glide" must be assigned to the currently selected step on this page for the "Note" parameter on this page to become available.

For example to create a simple Up/Down pattern program the following:

Step 1 = Note 1, Step 2 = Note 2, Step 3 = Note 3, Step 4 = Note 4, Step 5 = Note 4, Step 6 = Note 3, Step 7 = Note 2, Step 8 = Note 1. The sequence of notes played is 1,2,3,4,4,3,2,1 etc. etc.



NOTE:

If more or less notes are played than you have programmed, the pattern will not play as expected. In the above example, if 6 notes were played, the 5th and 6th notes played would never sound because the pattern data does not reference notes 5 or 6. In the above example, if 2 notes were played the following would occur:

Step 1 = Note 1, Step 2 = Note 2, Step 3 = Note 2, Step 4 = Note 2, Step 5 = Note 2, Step 6 = Note 2, Step 7 = Note 2, Step 8 = Note 1.

The sequence of notes played is 1,2,2,2,2,2,1 etc. etc. This is why the "Fill In" parameter is there. It should be currently in the "Off" setting. In this setting you can program your patterns more efficiently, but for the best results when played, it should be set to "On". In this position, the keyboard notes normally missed out by Arpeggiator are intelligently inserted so that larger or less numbers of notes than are programmed into the pattern can be used.



NOTE:

In Monophonic patterns, there is a limit of 12 different note values which can be programmed into a pattern.

Of course much more interesting sequences are possible. i.e.

Step 1 = Note 4, Step 2 = Note 1, Step 3 = Note 3, Step 4 = Note 2, Step 5 = Note 3, Step 6 = Note 2, Step 7 = Note 1, Step 8 = Note 4.

This produces the sequence of notes 4, 1, 3, 2, 3, 2, 1, 4 etc. etc- a kind of inside-out Up/Down sequence of notes. When you consider that there are up to 64 steps available, it can be seen that there are many interesting things possible. There are 2 other parameters associated with programming Monophonic patterns. On page 19 of the Global Menu, you can also assign a note velocity value for each of the pattern steps. On the same page, Gate type can also be assigned for each step of the pattern. When the "Gate" parameter is set to "Normal" the setting of the "Gate" knob applies. When the "Gate" parameter is set to "Tie" the note is "Tied" to the note in the previous pattern step. This allows syncopated rhythms to be created and can be used to great effect if the pattern is set to have many steps. When the "Gate" parameter is set to "Rest", no note is played on the selected step. Finally, when the "Gate" parameter is set to "Glide", the Portamento is engaged when the selected step switches to the next step. Then the Portamento is switched off. This is great for creating those TB303 type patterns with slides.



NOTE:

Glide will only work when the polyphony of the Program / Part is set to Mono.

Arpeggiator Pattern data can be also entered in via the keyboard. Note and Velocity settings for each step can be easily entered using the keyboard. Using a sustain pedal also allows gate characteristics to be entered. Refer to the "Arp pattern editing via kbd" Parameter on page 17 of the Global Menu for details.

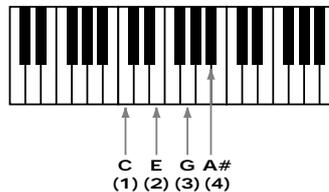


NOTE:

The Constant pitch parameter does not apply to Monophonic patterns. For these, it will do nothing if set to On or Off.

Polyphonic patterns

To create a Polyphonic pattern, select a "User" pattern on page 1 of the Arpeggiator Menu pages. Select a pattern between 064 and 127 (these are the Polyphonic ones). Make a note of the pattern number you have selected. Polyphonic patterns differ in the sense that all the notes played on the keyboard sound at once. Initially this can be thought of as a kind of "Gater". Instead of assigning which "Note" out of the ones you are playing will be played at each step in the pattern, in a Polyphonic pattern, all the notes may be transposed at each step by a definable amount. The 'Note' value when edfining each pattern step therefore refers to the amount of transposition applied to *all playing notes*. Here is an example. The keyboard notes being played are shown below:



This is a C7 chord. Below is an example Polyphonic Pattern, again of 8 steps in length:

Step 1 = Note 0, Step 2 = Note 2, Step 3 = Note -2, Step 4 = Note 0, Step 5 = Note 0, Step 6 = Note 12, Step 7 = Note -12, Step 8 = Note 0.

This results in a chord sequence of C7, D7, A#7, C7,C7, C7 (one octave up), C7 (one octave below), C7. etc. etc.



NOTE:

In Polyphonic patterns there is a limit of -36 to +36 semitones range that can be programmed into a pattern.

Negative as well as positive values can be entered into the "Note" parameter in Polyphonic patterns. Again, when you consider that there are up to 64 steps available in a pattern, it will be realised there are many things possible. Like the Monophonic patterns, there are 2 other parameters for each pattern step associated with programming Polyphonic patterns. They perform the same functions in Polyphonic patterns as for Monophonic patterns. On page 19 of the Global Menu you can assign velocity values for each of the steps. On the same page, the Gate time can be assigned for each step of the pattern.

When the "Gate" parameter is set to "Normal", the setting of the "Gate" knob applies. When the "Gate" parameter is set to "Tie", the note is "Tied" to the note in the previous pattern step. This allows syncopated rhythms to be created and can be used to great effect if the pattern is set to have many steps. When the "Gate" parameter is set to "Rest", no note is played on the selected step. When the "Gate" parameter is set to "Glide", the Portamento is engaged. When the selected step switches to the next step, the Portamento is switched off. This is great for creating those TB303 type patterns with slides.



The "Fill In" parameter does not apply for Polyphonic patterns and does nothing if switched "On" or "Off".



Glide will only work when the polyphony of the Program / Part is set to Mono.

Several Monophonic and Polyphonic patterns can be used at once in a Performance. For example, one doing a Bass type Pattern, one doing a TB303 thing, one doing a "Classic" Up/Down thing etc. etc. It is even possible to have the Arpeggiators in the different programs synchronised to different time signatures. When doing this, turning the "Speed" knob will alter the speed of all the arpeggiators since although they may be running at different time signatures, they will still all reference the same MIDI clock. In other words, it is not possible to have multiple arpeggiators running on different clock speeds. If you wish the arpeggiators to run at differing time signatures, set the "Sync" parameter in the Arpeggiator Menu to differing values.

Editing Programs is easy on the Supernova II keyboard as virtually all the controls needed to create a sound are found on the front panel. First make sure that the Supernova II keyboard is in the Program mode. The Program button should be lit. Now it is just a case of adjusting the knobs and buttons in the Oscillator, Filter, LFOs, Envelopes, Arpeggiator and Effects Sections until the desired sound is created. Notice that the display changes to display the name of the rotary control you are currently editing. The display will remain displaying this parameter after you stopped adjusting the rotary control (unless currently within a "Menu"). The display shows the first rotary control to be adjusted, of course many rotary controls can be adjusted at once, but in this case the display only shows the last control to be moved.

**NOTE:**

Writing Programs is a destructive operation. It is strongly advised to make back-ups of your data occasionally to a Computer, Sequencer or Data filing device. Factory sounds in Program banks A,B,C & D can be recalled from the Supernova II Keyboard's on-board ROM. See page 52 for details on how to do this.

Once a sound has been created, it may be stored in any of the 8 banks of 128 Programs. To do so press the Write button. The display shows:

Write Prog A000 to A000?
Uni *Syn

The top line of the display shows the current Program location on the left and the Program's destination on the right. The bottom line displays the Program's name, in this case Uni*Syn.

While in this saving mode, it is possible to change the destination of the new sound using the bank and keypad buttons or the upper Data knob. For example, when pressing the Bank button in the above example, the display will show:

Write Prog A000 to B000?
Z-Plane Vel oPi ck

Bank B has now been selected as the destination. A further 2 digit entry is required to determine the location of the sound within this Bank if different from the current selection. Press '120' and '3' on the keypad. The display shows:

Write Prog A000 to B123?
Snotty Nose

The destination of the sound to be written is now B Bank number 123.

**NOTE:**

While in this mode, the Compare button has a different function to its normal operation. The Compare button in this mode toggles between the currently edited sound and the destination Program. The "Program" button will flash when this function is active.

Once the destination for the Program has been decided, press the Write button again. The display shows:

Name Prog B123
' Uni *Syn

The name of the Program can be altered when in this mode. In the display the first character of the Program's name has a cursor under it. Using the higher Data knob you can scroll through the character set for that character. Using the lower Data knob you can move the cursor horizontally to a different character position in the name.



NOTE:

Pressing the Page Up button while in this mode inserts a space at the cursor position. Pressing Page Down while in this mode deletes the character at the cursor. The Keypad and Bank buttons also provide useful shortcuts when in this mode. Pressing the Keypad buttons with or without the 2 bank buttons perform several functions. These are as follows.

Top Row

a b c d e f g h I j k l m

Top Row + Bank Up button (momentary action)

n o p q r s t u v w x y z

Top Row + Bank Down button (latched action)

A B C D E F G H I J K L M

Top Row + Bank Up & Down buttons together

N O P Q R S T U V W X Y Z

Bottom Row

0 1 2 3 4 5 6 7 8 9

Bottom Row + Bank Up button (momentary action)

Space . - # () [] ! *

Bottom Row + Bank Down button (latched action)

[Current word 1st] [Current word Last] [Previous word 1st] [Next word 1st] [Previous word last]
[Next word last] [Previous space] [Next space] [1st char] [Last char]

Bottom Row + Bank Up & Down buttons together

[Toggle case char] [Char upper case] [Char lower case] [All words lower case with Upper case first letter] [All words upper case]
[All words lower case] [Rotate text left] [Rotate text right] [Clear text] [Restore text]

Once the name has been selected, press Write again. The display shows:



The Supernova II keyboard is asking for confirmation that you wish to write over the destination Program, replacing it with the newly edited sound. On the top line of the display, it can be seen that there is the category parameter. This is where you set the category of the Program so that the "Finder" mode can locate programs with the same category assigned. To adjust this parameter, use the higher Data knob. There are 20 different categories. Refer to page 47 for details on the categories.

To complete the operation, press the Write button to confirm. The display shows:



This will stay on the screen for several seconds then revert back to the standard Program Mode display.





NOTE:

At any stage during the write procedure, pressing the Program button will exit the write procedure (the Program will not be saved) and return the Display to showing the Program name and location.



NOTE:

The current selection of various buttons such as Oscillator, LFO, ENV2 or 3 plus the selection of Mod Sources & Destinations in the Oscillator and Filter sections are memorised when a Program is written into memory. This allows any setup to be recalled when the program is recalled. This can be very useful in live performance situations.

Editing Drum Map Programs is almost the same as editing normal Programs. There is one extra Drum Map parameter that only applies when the Program is placed within a Drum Map, defining the pitch the Program will play at when it is in a Drum Map. To do this, select Program mode (Program button is lit) and access the desired Drum Map with the bank buttons. For example, if Drum Map 'a' was selected, the display should show:

909 Kick 2	Drum a000
------------	-----------

While in this mode, press the Tune button in the Part edit section. The display will show:

Drum played as	E3
----------------	----

The parameter is "Drum played as", in this case with a value of E3.

This parameter determines the note the Drum Program will be pitched at. This is not the note on the keyboard that the Drum Program is triggered from (that is determined by the location within the Drum Map and is not re-assignable), but it is the pitch of the Program when sounded. This can be set with the higher Data knob or directly by using the keyboard. To do this, simply play the desired note on the keyboard while holding down the Page Up button while this display is showing. The appropriate note value will automatically be inserted for the currently selected Program. The range of this parameter is C-2 to G8. This parameter is memorised with a Program, even if the Program is not currently located within a Drum Map.

Writing of Drum Map Programs into memory is done in exactly the same way as Programs. Normal Programs can be freely written into Drum Map Program locations and vice versa.



NOTE:

This parameter only takes effect when the Program is situated within a Drum Map.

Editing Performances is very easy. After Pressing the Performance button the button lights and the Display shows:

Blaster Master	Perf A000
----------------	-----------

Performances are made up of up to 8 Parts. The next thing to do is select the "Part" of the Performance you wish to edit. To do this press the appropriate Part button in the Part edit section. In the above example, pressing Part 1 button the display will show:

Di gi TrowserCough	Prog E030
--------------------	-----------

The display is showing the Program currently assigned to the selected Part. Although this display is identical to the one used in Program Mode, it is important to realise we are still in Performance Mode. The Performance button remains lit to confirm this. Any Program from any one of the Program Banks or any Drum Map can be assigned to any Part of a Performance. You can use the Bank button and the keypad buttons to alter the Program assigned to this Performance Part.

When in this mode, pressing the Tune, Velocity, Output, MIDI, Polyphony and Range Menu buttons will display the relative parameters for the currently selected Part. If any of the Tune, Velocity, Output, MIDI, Polyphony and Range buttons are pressed, it will flash indicating that the appropriate Menu has been selected. This allows easy comparison of values in different Parts. For example, press the MIDI button after Part 1 of a Performance has been selected. The display will show:

Sustain	Enabl e
MIDI channel	Gl obal

The MIDI button is flashing indicating the MIDI Menu is selected. Pressing another Part button will light the selected Part button and the display will show the MIDI parameters for the newly selected Part as shown below.

Sustain	Di sabl e
MIDI channel	8

To exit any of the Tune, Velocity, Output, MIDI, Polyphony or Range Menus, simply press the Performance button again. The display will change back to showing the currently selected Performance as shown below:

Blaster Master	Perf A000
----------------	-----------

Alternatively, pressing the flashing Menu button will return the display to the Performance (If no part button had been selected) or the display will show the Program assigned to the currently selected part (If a Part button had been selected).

For details on the parameters in the "Tune", "Velocity", "Output", "MIDI", "Polyphony", and "Range" menus, refer to the "Part Edit Section" of this manual, starting on page 134.



NOTE:

Pressing any of the Part buttons when in Performance Mode not only makes the display show the Part's Program name and location but also brings the selected Part up on the front panel controls. This allows editing of Programs while in Performance Mode. All the edits made are transmitted as Controllers or NRPNs using the MIDI channel assigned to the Part of the Performance, so in a Multitimbral Performance, each Part can be individually edited, recorded on a sequencer and played back into the Supernova II keyboard.



NOTE:

At any stage during editing a Performance, pressing the Performance button will exit the "Part" display. The Display will revert to showing the Performance name and location.

It is possible to temporarily "Mute" Parts of a performance allowing the easy auditioning of separate parts of a Performance whilst editing or even during live performance situations. This is done by simply pressing the Mute button (the Mute button will light indication that the Mute mode is active) and pressing the Part button that you want muted. The muted Part button will flash indicating that it is muted. The display will change to:

Di gi TrowserCough
(Muted) Prog E030

The part is Muted. Pressing the Part button again while the Mute mode is active will un-mute the Part. The Part's button will stop flashing and remain lit. The display will change to:

Di gi TrowserCough
Part un-muted

The part is now re-activated. The display remains like this for a few moments and then reverts to:

Di gi TrowserCough
Prog E030

The muting status of each part in a Performance is memorised with a Performance when it is saved to memory. This is handy for live applications as a complete setup is stored complete with mutes. For example, 7 Parts of a Performance can be memorised with Mutes on, leaving 1 Part active which is playing say a Bassline. Simply pressing the mute button and un-muting/muting Parts while the sequencer is playing makes it easy to realise Breakdowns and Builds on the fly during a live performance.

Similarly there is a Solo function for auditioning sounds. This is done by simply pressing the Solo button (the Solo button will light indicating that the Solo mode is active) and pressing the Part button that you want soloed. The Soloed Part's button will light indicating that it is soloed and all the other part buttons will flash indicating that they are muted. The display will temporarily change to:

Di gi TrowserCough
Part sol oed

The part isSoloed. Pressing any other part button will similarly Solo that Part. Only one part can be soloed at one time. To cancel the Solo mode, simply press the Solo button again. It is now unlit.

**NOTE:**

To assign no Program to a Part (Off) set the Polyphony Parameter in the Polyphony button menu to "Off".

**NOTE:**

Only one Performance can be used at any one time. Performances cannot be used as Parts of other Performances. You cannot assign different Performances to different MIDI channels and expect to get Multiple Performances.

**NOTE:**

When Performance mode is entered, whatever Part happened to be selected when the Performance was saved is now selected. To adjust the Program assigned to any Part (for example Part 1), press Part 1 button even if it is already lit. It will stay lit and the display will change from showing the Performance Bank, Number and Name to displaying the Part's Program with its Number and name. To return to the display to the Performance Bank, Number and Name, press the Performance button.

**NOTE:**

Writing Performances is a destructive operation. It is strongly advised to make back-ups of your data occasionally to a Computer, Sequencer or Data filing device. Factory sounds in Performance banks A and B can be recalled from ROM see page 52 for details

Once a Performance has been created, you can store the Performance in any one of the 512 Performance memories. To do so, press the Write button. The display shows:

Write Perf A000 to A000?
Blaster Master

The top line of the display shows the current Performance location on the left and the Performance's destination location on the right. The bottom line displays the destination Performance's name, in this case Blaster Master!

While in this mode, it is possible to change the destination Performance memory by using the Bank and Keypad buttons. For example, when selecting 001 on the keypad in the above example, the display will show:

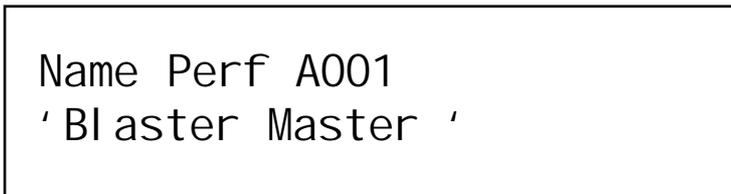
Write Perf A000 to A001?
Pad on Spec

The destination of the Performance to be written is now A001.

**NOTE:**

While in this mode, the Compare button has a different function to its normal operation. The Compare button in this mode toggles between the currently edited Performance and the destination Performance. The "Performance" button will flash when this function is active.

Once the destination for the Performance has been decided, press the Write button again. The display shows:



The name of the Performance can be altered when in this mode. In the display, the first character of the Performances name has a cursor under it. Using the higher Data knob you can scroll through the character set for that character. Using the lower Data knob you can move the cursor horizontally to a different character position within the name.



Pressing the Page Up button while in this mode inserts a space at the cursor position. Pressing Page Down while in this mode deletes the character at the cursor. The Keypad and Bank buttons also provide useful shortcuts when in this mode. Pressing the Keypad buttons with or without the 2 bank buttons perform several functions. These are as follows.

Top Row
a b c d e f g h I j k l m

Top Row + Bank Up button (momentary action)
n o p q r s t u v w x y z

Top Row + Bank Down button (latched action)
A B C D E F G H I J K L M

Top Row + Bank Up & Down buttons together
N O P Q R S T U V W X Y Z

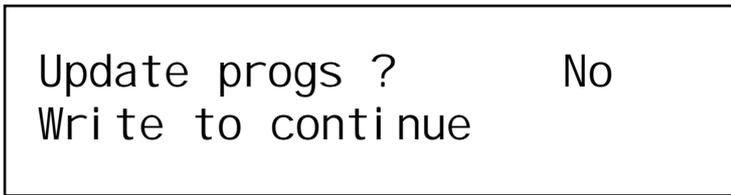
Bottom Row
0 1 2 3 4 5 6 7 8 9

Bottom Row + Bank Up button (momentary action)
Space . - # () [] ! *

Bottom Row + Bank Down button (latched action)
[Current word 1st] [Current word Last] [Previous word 1st] [Next word 1st] [Previous word last]
[Next word last] [Previous space] [Next space] [1st char] [Last char]

Bottom Row + Bank Up & Down buttons together
[Toggle case char] [Char upper case] [Char lower case] [All words lower case with Upper case first letter] [All words upper case]
[All words lower case] [Rotate text left] [Rotate text right] [Clear text] [Restore text]

Once the name has been selected, press write again. The display shows:



The Supernova II keyboard is asking confirmation that you wish to write over the destination Performance, replacing it with the newly edited Performance. On the top line of the display, the Supernova II keyboard is asking if you wish to update (re-write) all the Programs used in the currently selected Performance. If this parameter is set to "No" then the only the Performance-specific data is written into memory. Any changes made to the Program parameters will be lost.

If this parameter is set to "Yes" then any alterations made to the Programs (excluding the over-rides such as Part Volume, Arp On/Off and Effects settings (if the Parts Effects used parameter in the Output menu is set to Part) will be written into all the Programs used in the selected Performance. The revised Program data will-overwrite the original Program memories.

If this parameter is set to "Each", then any alterations made to the Programs (excluding the over-rides such as Part Volume, Arp On/Off and Effects settings (if the Part Effect parameter is set to Part i.e. lit) can be selectively saved one by one. This option is ideal if Program data has been altered, but you wish to re-save the new versions in a different Program memory, avoiding over-writing the original version.

The Supernova II keyboard checks each Part's Program in turn, comparing it to the original version. If any differences are found, the Supernova II Keyboard asks for confirmation to save each Part individually, showing the Part number and the Program number. Individual Parts can be left unsaved (Skipped) at this stage by turning the lower Data knob while in this mode.



When in this mode, the Compare button toggles between the destination Program and the edited Program. Both the Performance and the Program buttons will flash when this Compare mode is active.

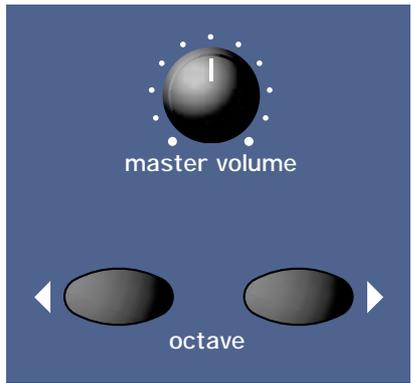
To complete the operation press the Write button to confirm. The display shows:

Performance A001
Saved!

This will stay on the screen for several seconds then revert back to the standard Performance page.



At any stage during the write procedure, pressing the Performance button will exit the write procedure (The Performance and Part Programs will not be saved) and return the standard Performance Mode Display to showing the Performance name and location.



Volume - Knob

This knob adjusts the overall output of the Supernova II keyboard on the Left and Right outputs.



NOTE:

This can be overridden by MIDI Controller Data. If a MIDI Controller 97 with a value of "0" has been received by the Supernova II keyboard, no output will be heard regardless of the position of this knob. To reset the volume either transmit the relevant MIDI Volume level or move the Volume knob. (This automatically overrides the MIDI setting.)



NOTE:

The volumes of each "Part" in a Performance can be set individually using the Part select buttons and the Part Level knob in the Part Edit Section.

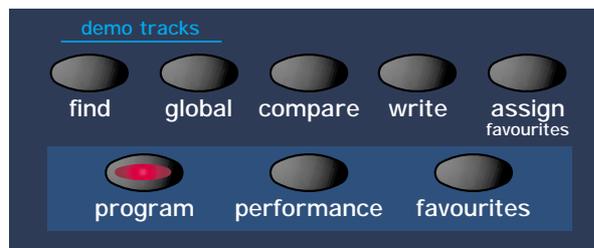
Octave - Buttons

These buttons change the octave range played by the Keyboard. If both buttons are unlit, then the transposition is normal (i.e. C1 to C6). Pressing the Octave > button transposes the Keyboard up one octave (i.e. C2 to C7) and the button will light indicating an upwards transposition has been made. The < Octave button works in a similar way but transposes down an octave. Successive presses of these buttons produce more shifts in transposition at whole octave intervals. The maximum range of transposition possible is +/- 3 octaves.



NOTE:

If either of the octave buttons are lit, (octave transposition up or down is active) the normal transposition of C2 to C7 can be recalled by pressing both the Octave buttons at the same time.



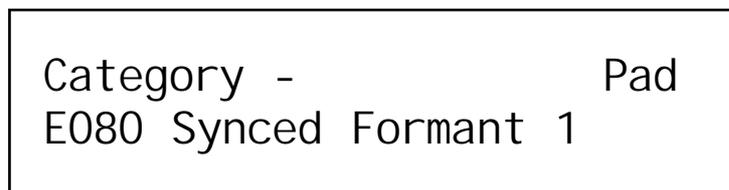
This is where you select the various operating modes of the Supernova II keyboard, initiate the Finder function, edit Global parameters, Compare and Write Performances or Programs, assign Programs or Performances to the Favourites map, select Program, Performance or Favourites Mode and play the Factory Demo.

Find - Button

With so many sounds, it can be a little difficult to find your favourite sounds quickly. For this reason the Supernova II keyboard features a "Finder" mode that can find similar types of sounds. The Supernova II keyboard has 20 "Categories" of sounds. They are as follows:

1	Bass	9	Pad	17	User 1
2	Hard Bass	10	Strings	18	User 2
3	Soft Lead	11	Keyboard	19	User 3
4	Hard Lead	12	SFX	20	User 4
5	Porta Lead	13	Drums		
6	Arpeggio	14	Piano		
7	Motion	15	Organ		
8	Bell	16	Brass		

Each Program in the Supernova II keyboard has a "Category" assigned to it. The Finder uses categories to find similar sounds. To use the Finder, press the Find button (a small sequence suitable for the selected sound category will play if the "Finder demos" parameter on page 10 of the global mode is set to On). When the Find button is pressed the display will show the currently selected Program, along with its category. For example :



The higher parameter is "Category". In this case with a value of Pad. The category relevant to the currently selected Program is initially selected. This parameter determines which category of sound you wish to find. Use the upper Data knob to select a different category. The range of this parameter is Bass, Hard Bass, Soft Lead, Hard Lead, Porta Lead, Arpeggio, Motion, Bell, Pad, Strings, Keyboard, SFX, Drums, Pianos, Organ, Brass & User 1 to User 4.

The lower parameter shows the Program found in the selected category. In this case with a value of E080 Synced Formant 1. Use the lower Data knob to find the previous or next Program in the same category.

To return to normal operation, press the Program or Performance button.

Global - Button

The Global Menu contains all the parameters that affect the "Global" operation of Supernova II keyboard. This menu is accessed by pressing the Global button.



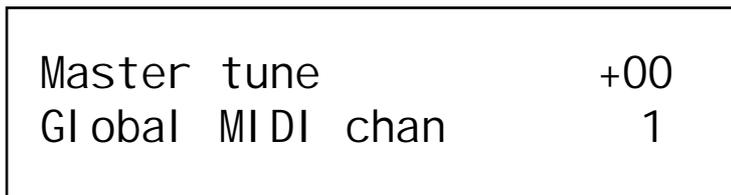
NOTE:

When any Global data is written into memory, the currently selected Program or Performance will become the "Power Up" sound. i.e. the sound the Supernova II keyboard defaults to when switched on.

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section. In the Global Menu there are 19 pages available. These are selected using the Page Up & Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:



The higher parameter is "Master tune". In this case with a value of +00. This parameter determines Global tuning of Supernova II keyboard. Use the upper Data knob to adjust this parameter. The range of this parameter is -64 to +63 cents. This parameter is memorised with the Global settings.



NOTE:

To write any changes to this parameter into memory, press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

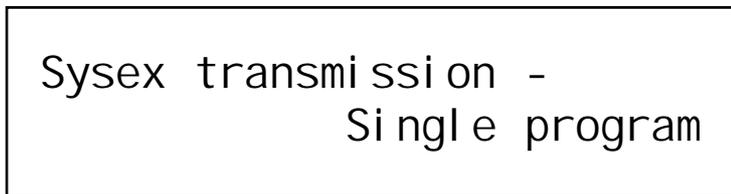
The lower parameter is "Global MIDI chan". In this case with a value of 1. This parameter determines the Global MIDI Channel for the Supernova II keyboard. This Channel is always used when in Program Mode. This setting is also used for transmission and reception of Sysex data and for selecting Program Mode or Performance Mode via MIDI. Use the lower Data knob to adjust this parameter. The range of this parameter is 1 to 16. This parameter is memorised with the Global settings.



NOTE:

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

Page 2 looks like so:



The only parameter on this page is "Sysex transmission", In this case with a value of Single Program. This parameter selects the type of data to be dumped via MIDI System Exclusive. Use the lower Data knob to adjust this parameter. The range of this parameter is Single program, All programs, Single prog request, All progs request, Single performance, All performances, Single perf request, All perfs request, Single arp pattern, All arp patterns, Single patt request, all patts request, Global parameters, Globals request, Program bank A, Program bank B, Program bank C, Program bank D, Program bank E, Program bank F, Program bank G, Program bank H, Program bank A request, Program bank B request, Program bank.C request, Program bank D request, Program bank E request, Program bank F request, Program bank.G request, Program bank H request, Performance bank A, Performance bank B, Performance bank C, Performance bank D, Performance bank A request, Performance bank B request, Performance bank C request, Performance bank D request, Drum map a, Drum map b, Drum map c, Drum map d, Drum map e, Drum map f, Drum map g, Drum map h, Drum map a request, Drum map b request, Drum map c request, Drum map d request, Drum map e request, Drum map f request, Drum map g request, Drum map h request, Patt bank U, Patt bank V, Patt bank W, Patt bank U request, Patt bank V request, Patt bank W request, Total data & Total data request. This parameter is memorised with the Global settings.

Once the desired type of Sysex dump has been selected, the dump is initiated by pressing the MIDI button in the Part Edit section. Sysex dumps can only be transmitted in this way while this Menu page is displayed.



NOTE:

When a Sysex dump is transmitted, the current Global MIDI channel setting is encoded into the dump. Normally, the Supernova II Keyboard will only accept a Sysex dump which corresponds to its current Global MIDI channel setting. This is a safety feature in case there is more than one Supernova II Keyboard present in the MIDI network. It is possible to send a Sysex dump which will always be accepted by a Supernova regardless of its Global MIDI channel setting. This is done by holding down the Compare button before pressing the MIDI button to initiate the dump. This feature is useful if for example, you are preparing a sound library for other people to load or the Global MIDI channel setting is not known for the destination Supernova II Keyboard.

**NOTE:**

The Supernova II keyboard can accept System Exclusive dumps while in any mode.

**NOTE:**

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

Page 3 looks like so:

<p>Sysex reception - Normal (RX as sent)</p>
--

The only parameter on this page is "Sysex Reception". In this case with a value of Normal (Rx as sent).

This parameter determines how incoming Sysex data will be received. If the incoming sysex message is a bank dump, it is possible to over-ride which bank it will be written into. Use the lower Data knob to adjust this parameter. If this parameter is set to "Normal (Rx as sent)", system exclusive reception is enabled and any incoming bank dumps will be stored in the same location as they were sent from. i.e. a Prog bank A dump will be written to Prog bank A. If this parameter is set to "All progs to bank A", any incoming Program bank dump will be written into Program bank A regardless of its original location when transmitted. If this parameter is set to "All perfs to bank A", any incoming Performance bank dump will be written into Performance bank A regardless of its original location. If this parameter is set to "Disabled" no sysex messages will be accepted. The range of this parameter is Disabled, Normal (Rx as sent), All progs to bank A, All progs to bank B, All progs to bank C, All progs to bank D, All progs to bank E, All progs to bank F, All progs to bank G, All progs to bank H, All progs to Dmap a, All progs to Dmap b, All progs to Dmap c, All progs to Dmap d, All progs to Dmap e, All progs to Dmap f, All progs to Dmap g, All progs to Dmap h, All perfs to bank A, All perfs to bank B, All perfs to bank C, All perfs to bank D, All patts to user (U), All patts to user (V) & All patts to user (W). This parameter is memorised with the Global settings.

**NOTE:**

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

Page 4 looks like so:

<p>MIDI clock Pedal /breath</p>	<p>Int Off</p>
-------------------------------------	--------------------

The higher parameter is "MIDI clock". In this case with a value of Int.

This parameter determines if the Supernova II keyboard is syncing to Internal Clock, External MIDI Clock or either. Use the upper Data knob to adjust this parameter. When set to "Int", internal clock will always be used and the tempo can be controlled by the Arpeggiator Speed knob. When set to "Ext", external MIDI clock will always be used. When set to "Auto", internal clock will be used unless an external MIDI clock is detected, at which point the External MIDI clock will then be used instead. The range of this parameter is Int, Ext & Auto. This parameter is memorised with the Global settings.

**NOTE:**

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

The lower parameter is "Pedal/breath". In this case with a value of Off.

This parameter determines if the Supernova II keyboard re-maps incoming Pedal data and Breath Control MIDI data (CC no 2). It is possible to remap these messages into Mod wheel data (CC no 1), Aftertouch data or any controller from 3 to 119, as well as Pitchbend data . Use the lower Data knob to adjust this parameter. This allows incoming Pedal & Breath Control data to manipulate most of Supernova II keyboard's key parameters directly. The range of this parameter is Off, MW, A/T, CC3 to CC119, Bend, Bend+, Bend-, NRPN75 to NRPN77, NRPN95 and NRPN96. This parameter is memorised with the Global settings.



NOTE:

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

Page 5 looks like so:

Breath mode	Absolute
Breath sensing	Norm

The higher parameter is "Breath mode". In this case with a value of Absolute.

This parameter determines how incoming Breath controller information is interpreted by the Supernova II keyboard. Use the higher Data knob to adjust this parameter. If this is set to Absolute then the destination (the parameter assigned with the "Pedal/breath" parameter on Page 4 of Global Menu) will be modulated directly regardless of its setting in the currently assigned program. If this parameter is set to Mod+, then the breath control value would be added to the value of the destination in the currently loaded program. If this parameter is set to Mod-, then the breath control value would be subtracted from the value of the destination in the currently loaded program. i.e. In Absolute mode, if the destination is Cut-off Frequency and the currently assigned program's Cut-off Frequency is 64, when a breath control message with a value of 1 is received the Cut-off Frequency would change to 65. If in this case this parameter was set to Mod+ the value of the Cutoff Frequency would be 65. If in this case this parameter was set to Mod-, the value of the Cutoff Frequency would be 63. The range of this parameter is Absolute, Mod+ and Mod-. This parameter is memorised with the Global setting.



NOTE:

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

The lower parameter is "Breath sensing". In this case with a value of Norm.

This parameter determines how sensitive the Supernova II keyboard is to incoming breath controller messages. Incoming Breath control messages can be dealt with as they are when this parameter is set to normal. If this parameter is set to a negative number (-3 for example), incoming breath control messages are scaled down. Alternatively, incoming breath control messages can be exaggerated or amplified by setting this parameter to a positive number (+3 for example). Use the lower Data knob to adjust this parameter. The range of this parameter is -5 to -1, Norm, +1 to +5. This parameter is memorised with the Global settings.

Page 6 looks like so:

Arp trans chan	Kbd
Arp trans ref	C3

The higher parameter is "Arp trans chan" (Arpeggiator real-time transpose channel), in this example with a value of Kbd. Use the upper Data knob to adjust this parameter. This parameter is used to specify a MIDI channel which can be used to transpose all Arpeggiators in real-time. When this parameter is set to Kbd, only the real-time transpose zone on the keyboard (active when the Real Time Transpose button is lit) can be used for this purpose. When this parameter contains the value 1 to 16, note information on an external MIDI channel can also be used for real-time transposition. The real-time transpose zone on the keyboard (active when the Real Time Transpose button is lit) may still be used to transpose Arpeggiators, in which case the corresponding Note information is transmitted via MIDI using the Arpeggiator real-time transpose channel specified by this parameter. The range of this parameter is Kbd, 1 to 16. This parameter is memorised with the Global settings.

The amount of transposition applied to an Arpeggiator corresponds to the difference in semitones between the note played and the note defined by the "Arp Transpose Reference Note" (also set on this Global Menu page – see below). The transposition can be negative as well as positive. For example, if the "Arp Transpose Reference Note" is defined as note C3, playing C#3 will result in the whole arpeggio being transposed up one semitone from its original key. If Bb3 is played, the whole arpeggio will now be transposed down two semitones from its original key and so on. To return the arpeggio to its original key (a transposition of zero semitones), it is necessary to play the same note value as defined by the "Arp Transpose Reference Note".

The lower parameter is "Arp trans ref" (Arp transpose reference note), in this example with a value of C3. Use the lower Data knob to adjust this parameter. This parameter determines the reference note as described above for the real-time Arpeggio transpose function. The range of this parameter is C-2 to G8. This parameter is memorised with the Global settings.



NOTE:

An Arpeggiator must have its Real-time transpose parameter (set in the Arpeggiator Menu) set to On for real-time transposition to take effect.



NOTE:

Whenever realtime transpose note data is received via MIDI or generated from the keyboard, the Transpose Zone button will blink briefly.



NOTE:

To write any changes to this parameter into memory press the "Write" button while in this mode. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

Page 7 looks like so:

Local control	On
Memory protect	Off

The higher parameter is "Local Control". In this case with a value of On.

This parameter is normally set to On. With this setting, any knob movements or button presses on the front panel are transmitted via MIDI and also control the synth engine directly. i.e. turning a knob will alter the sound produced regardless of any MIDI setup. If this parameter is set to Off, knob movements and button presses on the front panel still transmit MIDI data *but make no DIRECT alteration to the sound*. This is the best way to use the Supernova II keyboard with a sequencer as all the Channel re - mapping features in sequencers can be taken advantage of fully. This parameter is memorised with the Global settings.



NOTE:

If there is no MIDI feedback loop connected at all (a sequencer with MIDI out of the Supernova II keyboard connected to MIDI in on the sequencer and MIDI out of the sequencer connected to MIDI in on the Supernova II keyboard for example), when local control is set to off, the knobs and buttons on the front panel will appear to do nothing although changing parameter values may be displayed on the display (this is to give an indication of the values in the MIDI data being transmitted).



NOTE:

When changing Programs, Performances or Favourites with the Local off and no MIDI loop present, the display will indicate any change made on the keypad section but will not change the name of the sound. This is because the Supernova II keyboard is indicating that a change has been transmitted with the numbers but this message has not been received and therefore the sound and its name has not changed.



NOTE:

If local control is set to off, When Parts are muted or soloed in Performance mode, flashing Part buttons will indicate the MIDI information transmitted, not necessarily relevant to each Part's current mute status.

The lower parameter is "Memory protect". In this case with a value of Off.

This parameter determines if the memory can be written to or not. Use the lower Data knob to adjust this parameter. In the "On" position, Programs, Performances, Patterns or Global Data cannot be written into memory - a useful safety feature. In the "Off" position, Programs, Performances, Patterns or Global Data can be written into memory. This parameter is memorised with the Global settings.

Page 8 looks like so:

Restore from ROM:
One program



NOTE:

Pressing the Write button while this page is displayed starts the Restore procedure.

The single parameter on this page is "Restore from ROM:". In this case with a value of One program. This parameter allows the factory Programs, Performances, Global data and Arp Pattern data to be restored to the Factory settings. Use the lower Data knob to adjust this parameter. Whatever selection is made with the lower Data knob is restored into memory (ERASING WHAT WAS THERE!!) when the "Write" button is pressed while in this mode. Additional pages appear depending on the selection. i.e. if "All data" is selected the Supernova II keyboard asks for confirmation which is set with the lower Data knob. If you set this to "Yes" and press the "Write" button again to proceed, all the factory settings will be restored. If however "One prog" was selected, the Supernova II keyboard asks which Program you want to restore. This is selected using the lower Data knob and when pressing the "Write" button again, the Supernova II keyboard asks for the destination location (Program bank and number) where the Program is to be stored. The range of this parameter is One prog, One perf, One patt, All progs, All perfs, All patts, Globals, Favourites, All data, Prog bank A, Prog bank B, Prog bank C, Prog bank D, Perf bank A, Perf bank B, Dmap a, Dmap b, Dmap c & Dmap d.



NOTE:

When All arp patterns is selected, pressing the Write button will bring up another page, this looks like so:

Write whole bank to
Arp pattern bank U

Here it is possible to restore the Factory User pattern Bank (Pattern Bank U) to any of the 3 User Pattern Banks. Use the lower Data knob to select the destination Bank. The Range of this parameter is Arp pattern bank U, Arp pattern bank V & Arp pattern bank W.



NOTE:

Only Program Banks A to D, Drum Maps a to d, Performance Banks A to B, Arp Pattern Bank U and the Global parameters can be restored from ROM. The data for Program Banks E to H, Drum Maps e to h, Performance Banks C to D & Arp Pattern Banks V to W are not held in the ROM and so cannot be restored. These are however available as .MID files free on the Novation website at <http://www.novationmusic.com>

Page 9 looks like so:

Input/sw 1	Audio in
Input/sw 2	Audio in

The higher parameter is "Input/sw 1". In this case with a value of Audio in. This parameter determines the function of the Input/sw 1 input socket. Use the higher Data knob to adjust this parameter. In the Audio in position the Input is configured to accept external audio signals. In the Switch position, the input is configured to work as a Footswitch input for a Footswitch/Sustain pedal that is normally open. In the Switch-I position the input is configured to work as a Footswitch input for a Footswitch/Sustain pedal that is normally closed. The range of this parameter is Audio in, Switch & Switch-I. This parameter is memorised with the Global settings.

The lower parameter is "Input/sw 2". In this case with a value of Audio in.

This parameter determines the function of the Input/sw 2 input socket. Use the higher Data knob to adjust this parameter. In the Audio in position the Input is configured to accept external audio signals. In the Switch position, the input is configured to work as a Footswitch input for a Footswitch/Sustain pedal that is normally open. In the Switch-I position the input is configured to work as a Footswitch input for a Footswitch/Sustain pedal that is normally closed. The range of this parameter is Audio in, Switch & Switch-I. This parameter is memorised with the Global settings.

Page 10 looks like so:

Pedal /sw 3	Pedal -R
Finder demos	Off

The parameter is "Pedal/sw 3". In this case with a value of Pedal-R.

This parameter determines the function of the Pedal/sw 3 input socket. Use the higher Data knob to adjust this parameter. In the Pedal-R position, the input is configured to work as an Expression Pedal input (actually transmitting Breath Control CC2 messages) and so can mapped into any controller using the Pedal/breath parameter on page 4 of this menu. In this case, for an Expression Pedal with the control output on the ring of the pedal jack. In the Pedal-T position, the input is configured to work as an Expression Pedal input (actually transmitting Breath Control CC2 messages) and can mapped into any controller using the Pedal/breath parameter on page 4 of this menu. In this case, for an Expression Pedal with the control output on the tip of the pedal jack. i.e. a Korg EXP2 Expression Pedal. In the Switch position, the input is configured to work as a Footswitch input. In this case, for a Footswitch/Sustain pedal that is normally open. In the Switch-I position the input is configured to work as a Footswitch input. In this case, for a Footswitch/Sustain pedal that is normally closed. The range of this parameter is Pedal-R, Pedal-T, Switch & Switch-I. This parameter is memorised with the Global settings.

The lower parameter is "Finder demos". In this case with a value of Off.

This parameter determines if the "Finder" plays a category demo or not when activated. Use the lower Data knob to adjust this parameter. In the On position, whenever the Finder mode is activated a small demo tune will play in the style of the category currently assigned to the selected program. In the Off position the finder function still works but no demo plays. This is useful when working with an external sequencer and auditioning sounds while the sequencer is running. The range of this parameter is On & Off. This parameter is memorised with the Global settings.

Page 11 looks like so:

Vel sensing	Hard
Knob mode	Pickup

The higher parameter is "Vel sensing". In this case with a value of Hard.

This parameter alters the velocity curve of the Supernova II keyboard. Use the upper Data knob to adjust this parameter. This is global and applies to all playing modes. In the Hard position, large Velocity changes are required to create a big change in response. This is good for weighted and semi-weighted keyboard actions. In the Soft position, not so large Velocity changes are required to create a big change in response. This is good for cheaper keyboard actions. The range of this parameter is Hard & Soft. This parameter is memorised with the Global settings.

The lower parameter is "Knob mode". In this case with a value of Pickup.

This parameter determines if the values of parameters altered by front panel Knobs jump immediately to the actual position of the Knob as soon as it is turned or if the Knob has to pass "through" the value of the edited parameter before the knob starts editing the parameter. Use the lower Data knob to adjust this parameter. In the Normal position, the value of the parameter being edited jumps to the value of the Knob as soon as a knob is turned. This is good when creating sounds as the parameters are always "Live". In the Pickup position, no change to the parameter being edited will take place until the Knob is turned so that the it has passed "through" the value of the edited parameter, thereby "picking it up". The knob then becomes "live" and will start editing the parameter, transmitting the appropriate controller. The range of this parameter is Normal & Pickup.



When this parameter is set to "Pickup" mode no MIDI controller data will be sent and no edits to the parameter by Knob movements will occur until the Knob parameter has been picked up.

Page 12 looks like so:

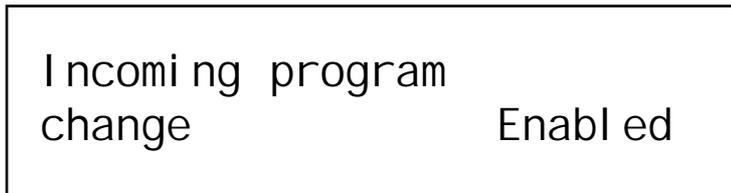


The parameter is "Incoming control change". In this case with a value of Enabled. This parameter determines if the Supernova II keyboard responds to incoming MIDI controller messages or not. Use the lower Data knob to adjust this parameter. This filter is global and applies to all playing modes. The range of this parameter is Enabled & Disabled. This parameter is memorised with the Global settings.



The Incoming Control Change filter does not filter out Bank select messages (CC00 and CC32). These can be filtered using the Incoming Program Change filter if required (see below).

Page 13 looks like so:

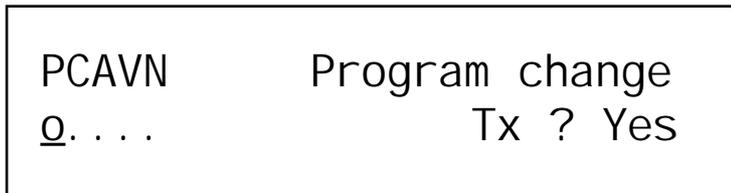


The parameter is "Incoming program change". In this case with a value of Enabled. This parameter determines if the Supernova II keyboard responds to incoming MIDI program change messages or not. Use the lower Data knob to adjust this parameter. When this parameter is set to Enabled, any Program Change messages sent on Bank 0 will refer to the Program Map. This can be overridden by sending Bank & Program Change messages to a different Bank. Refer page 147 for details on the Bank messages received by Supernova II keyboard. When this parameter is set to Favourites, any Program Change messages will always refer to the Favourites map regardless of any Bank messages that have been received. When this parameter is set to Disabled, all incoming bank and program change messages are ignored. This filter is global and applies to all playing modes. The range of this parameter is Enabled, Favourites & Disabled. This parameter is memorised with the Global settings.



If the Incoming Program Change filter is set to Disabled, it also filters out Bank select messages (CC00 and CC32).

Page 14 looks like so:



The higher parameter is "PCAVN". In this case with a value of Program change. These parameters determine if the Supernova II keyboard transmits various types of MIDI data. These are Program change, Controllers, Aftertouch, Key Velocity or Arpeggiator keyboard note data. Use the upper Data knob to select the type of data to be transmitted. The current selection is indicated on the top right of the display. On the bottom row of the display, an "." or a "o" indicates if the current selected option is transmitted or not. Confirmation is displayed on the bottom right of the display as Yes or No.

When the Program change selection is set to No, no Program change messages and Bank messages are transmitted. When the Program change selection is set to Yes, Program change messages and Bank messages are transmitted when a new Program/Performance/Favourite is selected.

When the Controller selection is set to No, no Controllers are transmitted. When the Controller selection is set to Yes, Controllers are transmitted when knobs or buttons are edited.

When the Aftertouch selection is set to No, no Aftertouch messages are transmitted. When the Aftertouch selection is set to Yes, Aftertouch messages are transmitted when pressure is applied to the keyboard.

When the Key Velocity selection is set to No, the Velocity of notes transmitted is fixed at 127. When the Key Velocity selection is set to Yes, the Velocity of notes transmitted is determined by how hard the key are depressed.

When the Arpeggiator keyboard notes section is set to No, notes played on the keyboard which trigger arpeggios are never transmitted via MIDI. This can be used when recording the Arpeggiator's output into a sequencer to make sure that only the Arpeggiator's note output is recorded. This setting is global and affects all Programs. When set to Yes, notes played on the keyboard to trigger arpeggios are transmitted via MIDI provided that the Program/Part's MIDI channel does not conflict with the Arpeggiator's 'Output' MIDI channel. If there *is* conflict, then keyboard notes are never transmitted anyway. In summary, when this parameter is set to Yes and when Arpeggio notes to : parameter (in the Arpeggiator Menu) is set to Program only, keyboard notes are always transmitted. When Arpeggio notes to : parameter is set to Program & MIDI or MIDI only, keyboard notes *are* transmitted provided the Output MIDI ch parameter is not set to Input (in which case there is always conflict) *and* the Output MIDI ch parameter is not the same MIDI channel as is being used to trigger the Program/Part.

The range of this parameter is Program change, Controllers, Aftertouch, Key Velocity or Arpeggiator notes. This parameter is memorised with the Global settings.



NOTE:

This Key Velocity parameter only affects how the information is transmitted via MIDI. All internal sounds played by the keyboard will always respond to the amount of velocity used to play the keyboard. This parameter does not affect the Arpeggiator's output if it is transmitting notes via MIDI, though the keyboard notes actually used to trigger the Arpeggio will be transmitted (subject to the rules above) with a maximum velocity setting of 127 if this parameter is set to "No".



NOTE:

The Controllers part of this parameter does not affect transmission of Bank select controllers when selecting new Programs / Performances or the transmission of the Modulation Wheel.

Page 15 looks like so:

Sysex Tx delay	070ms
Temp disp time	100

The higher parameter is "Sysex TX delay". In this case with a value of 070ms.

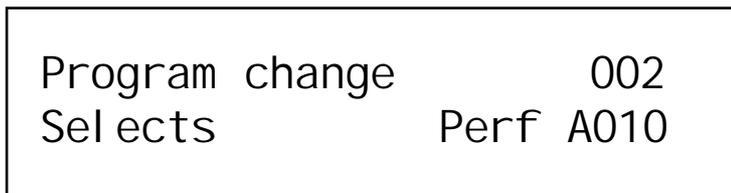
This parameter determines the speed at which Data dumps made by the Supernova II keyboard are transmitted. Between each discrete Sysex packet, the appropriate delay is inserted. Use the higher Data knob to adjust this parameter. This can be useful when working with some PCs and MIDI interfaces which cannot receive the sysex data reliably (i.e. Packet errors happen when the dump is played back in.). The range of this parameter is in Milliseconds and describes the pause between separate dumps in a sysex stream. The range of this parameter is 050ms to 177ms. This parameter is memorised with the Global settings.



This is not a definite "Fix it" for Packet errors. If the problem still persists try a different Computer/Sequencer package/MIDI Interface. Packet errors are not a "Bug" in the Supernova II keyboard but a reliability problem with the device recording and playing back the Sysex dump. This parameter simply tries to make it easier for equipment that does not work properly.

The lower parameter is "Temp display time". In this case with a value of 100. This parameter determines the amount of time that temporary displays remain on the display (for example if any menu is open. i.e. flashing when any knob is adjusted, the display will change from the menu to the knob parameter until the adjustment of the knob is stopped. Then after a short period the display reverts to the menu. This parameter determines that time). Use the lower Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with the Global settings.

Page 16 looks like so:



The Supernova II keyboard features a "Favourites" mode that allows any incoming MIDI Program Change message or Keypad selection to call up any Program or Performance from any Bank, or select a new Arpeggiator Pattern for the currently selected program. This Global Menu page provides an alternative way of assigning Favorites to the method described on page 29.

The Favourites are user programmable and can be memorised. To select the Favourite, simply press the Favourites button in the Mode Section. See page 29 for details on the Favourites button. To select the Favourites mode via MIDI send a Bank Message of 0 (Controller 32 with a value of 0). When this Favourites Mode is selected, any incoming MIDI Program Changes or Keypad selections conform to the sequence in the Favourites memories. Assigning Programs, Performances and Arp patterns to Favourite locations can be done with the assign button in the Mode section. See page 30 for details on the Assign (favourites) button. On this menu page, not only Programs & Performances can be assigned but also Arpeggiator Patterns and 'Current Bank' status.



Editing Favourites from within this menu provides a convenient way of inspecting/editing the Favourites without having to enter the Favourites Mode.

The higher parameter is "Prog change". In this case with a value of 002. This parameter shows which Part of the Favourites Map will be displayed / Edited. Use the higher Data knob to adjust this parameter. The Favourites Map allows incoming MIDI Program Change Messages to call up any sound in the Supernova II keyboard. This not only allows keyboards and sequencers that do not support MIDI Bank Select Messages access to any sound via MIDI but also allows a user "Order" of sounds to be created which can be very useful in live performance. The range of this parameter is 000 to 127. This parameter is memorised with the Global settings.



The Program map can be made active at all times by setting the "Incoming program change" parameter on page 13 of the Global mode to "Favourites".



When a Program/Part receives a valid Bank Select Message (Controller 32) via MIDI IN, the bank will continue to remain selected for the Program/Part until another Bank Select Message is received via MIDI IN.



This "Favourites Map" is assigned to MIDI Bank 0 (Controller 32 with a value of 0). If this message is received, the Supernova II keyboard will switch from normal operation to Favourites Mode. Any Program changes received after that will be re-mapped according to the "Favourites Map". This can be disabled by sending another MIDI Bank Message calling up either one of the Program or Performance Banks. See page 145 for details on the Bank Messages received by the Supernova II keyboard.



NOTE:

To write any changes to the Favourites Map into memory, press the "Write" button while this page is displayed. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

The lower parameter is "Selects". In this case with a value of Perf A010.

This parameter shows which selection is assigned to the selected Program Message set in the parameter above. Use the lower Data knob and the Bank buttons to adjust this parameter. In this case, the sound assigned is Performance A010. Pressing the Bank buttons while in this mode allows the selection of any Performance, Program, Drum Map or Arp Pattern Bank. Using the lower Data knob allows any sound from the selected Bank to be set. The "Curr" setting is short for "Current" and when this setting is used, incoming Program change messages will select a sound from the "Currently" selected bank. The range of this parameter is Curr, Perf A, Perf B, Prog A, Prog B, Prog C, Prog D, Perf C, Perf D, Prog E, Prog F, Prog G, Prog H, Drum a, Drum b, Drum c, Drum d, Drum e, Drum f, Drum g, Drum h, Arp M, Arp P, Arp U, Arp V & Arp W. This parameter is memorised with the Global settings.

Page 17 looks like so:

Arp pattern editing via kbd	Off
--------------------------------	-----

The parameter is "Arp pattern editing via kbd". In this case with a value of Off.

This parameter determines if the Arpeggiator pattern data can be entered via the keyboard or not. When this parameter is set to Off, no editing of Arpeggiator patterns via a keyboard is possible, only the step type editing on pages 20 of the Global Menu can be used for this purpose. If this parameter is set to On, Notes and Velocity values for each pattern step can be entered directly from the keyboard. To do this, set this parameter to On, then select a Pattern for editing. Select the number of steps in the pattern required in page 18 of the Global Menu. Now go to page 19 of the Global Menu and check that the pattern is on step 1. On this page, pressing a note on the keyboard will enter the note value and velocity value directly into the pattern. Releasing the keyboard note will automatically advance the pattern to the next step. A sustain pedal on the keyboard can also be used when in this mode. If no note is held down and the sustain pedal is pressed, a Rest is inserted at the current step. Releasing the sustain switch advances the pattern to the next step. Similarly, pressing the pedal while no note is being played then, while still pressing the sustain switch, a note is played on the keyboard, inserts a tie at the current step. Releasing the Note on the keyboard then advances the pattern to the next step. Pressing the pedal while a note is being played inserts a Glide to at the current step. Releasing the Note on the keyboard then advances the pattern to the next step. The range of this parameter is Off, On, Note only, Vel only & Gate only. This parameter is memorised with the Global settings.

Page 18 looks like so:

User pattern	U000
No of steps	32

The higher parameter is "User Pattern". In this case with a value of U000.

This parameter determines which of the User Patterns for the Arpeggiator is to be edited with the following pages. Use the upper Data knob to select the Pattern number. Use the Bank buttons to select the Pattern Bank U, V or W. The range of this parameter is U000 to U127, V000 to V127 & W000 to W127. This parameter is memorised with the Global settings.



NOTE:

User Patterns 000 to 63 are User Monophonic Patterns. User Patterns 64 to 127 are User Polyphonic Patterns.



NOTE:

To write any changes to the currently selected pattern into memory press the "Write" button while any of the pattern edit pages are displayed. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

The lower parameter is "No of Steps". In this case with a value of 32.
 This parameter determines the number of steps in the chosen User Pattern. Use the lower Data knob to adjust this parameter. The range of this parameter is 01 to 64. This parameter is memorised as Pattern data.

Page 19 looks like so:

Step	<u>N</u> ote	Vel.	Gate
01	01	127	Norm

The higher parameter is "Step Note Vel. Gate". In this case with a value of Note.
 This parameter determines the pattern parameter to be edited with the lower Data knob. Use the upper Data knob to select the parameter to be edited. The cursor indicates the current selection, in this case Note.

When this parameter is set to "Step", the value of the parameter below it determines the step to be edited. Use the lower Data knob to adjust this parameter. The possible range of this parameter is 01 to 64 but the maximum value depends on the value set in the "No of Steps" parameter described above.

When this parameter is set to "Note", the value of the parameter below it determines the note value of the currently selected step. Use the lower Data knob to adjust this parameter. The range of this parameter is 01 to 12 for the User Monophonic patterns (patterns 000 to 063) or -36 to +36 for the User Polyphonic patterns (patterns 064 to 127).

When this parameter is set to "Vel.", the value of the parameter below it determines the velocity of the note at the currently selected step. Use the lower Data knob to adjust this parameter. The range of this parameter is 1 to 127.

When this parameter is set to "Gate", the value of the parameter below it determines the gate type of the note at the currently selected step. With the Normal Gate setting, the gate equals one step (unless the following step is a tie). With the Tie Gate setting, the notes are tied together to the previous pattern step. With the Rest Gate setting, the note is silent. With the Glide Gate setting, the Portamento effect is engaged as it does in Autoglide. Use the lower Data knob to adjust this parameter. The range of this parameter is Norm, Tie, Rest, Glide. Refer to page 35 for details on programming user patterns. These parameters are memorised as Pattern data.



NOTE:

The Note parameter can only be accessed if the current step's gate is set to Norm or Glide.



NOTE:

To write any changes to the currently selected pattern into memory press the "Write" button while any of the pattern edit pages are displayed. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

While on this pattern editing page in the Global Menu, additional functions may be accessed by pressing the Bank buttons. Pressing Bank Up will take you directly to the "Insert" page, while pressing Bank Down will take you directly to the "Delete" page. All three options form a sub - menu of three linked pages. To access the "Rotate" page you must therefore press a Bank button and then use Page Up until you reach the Rotate page.

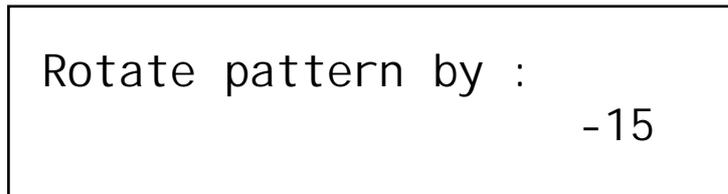
The Delete Page looks like so:

Delete step at pattern step	16
--------------------------------	----

The Insert Page looks like so:

Insert rest at pattern step	16
--------------------------------	----

The Rotate Page looks like so:



To Insert a step or Delete a step, you may select explicitly the step you wish to affect with the lower fast data pot. (The initial default is the currently selected step for editing). To execute the insertion/deletion, press the Write button. You will then be taken back to the pattern editing page in the Global Menu. To return directly back to the Global Menu without inserting or deleting pattern steps, simply press the Global button.

To rotate the pattern, you must select how many steps you wish to rotate with the lower fast data pot. Positive values rotate the pattern forwards, negative values rotate the pattern backwards. Initially, this value is set to 0 (no rotation). The number of steps you may rotate the pattern depends on how many steps are defined for use by the pattern. To execute the rotation, press the Write button. You will then be taken back to the pattern editing page in the Global Menu. To return directly back to the Global Menu without rotating pattern steps, simply press the Global button.



NOTE:

All changes to the pattern using these options affects only the pattern buffer. To make the changes permanent, the pattern must still be written to Flash memory in the normal way.

Compare - Button

This button is used to activate the Compare function. When editing a Program, it is often convenient to monitor the original version of the Program in Flash memory (before any edits were made) in comparison to the newly modified version. This is called the compare function. To enable this feature, simply press and hold down the Compare button. As soon as the button is released, the modified version of the Program will once again be available.



NOTE:

While the Compare button is held, it is also possible to inspect any of the original Program's knob parameters - simply adjust any knob while the Compare button is being held. The display will show for a short while the value of the original Program's setting then revert back to the last edited parameter. No knob parameter can actually be altered while the Compare button is held.



NOTE:

If you wish to inspect the value of a modified Program knob parameter (rather than the original Program in Flash memory) without altering its value, simply follow the above procedure and once you have finished turning the relevant knob, release the Compare button quickly before the temporary display disappears. As soon as the Compare button is released, the temporary display will revert to showing the current modified Program's parameter rather than the original Program's parameter.

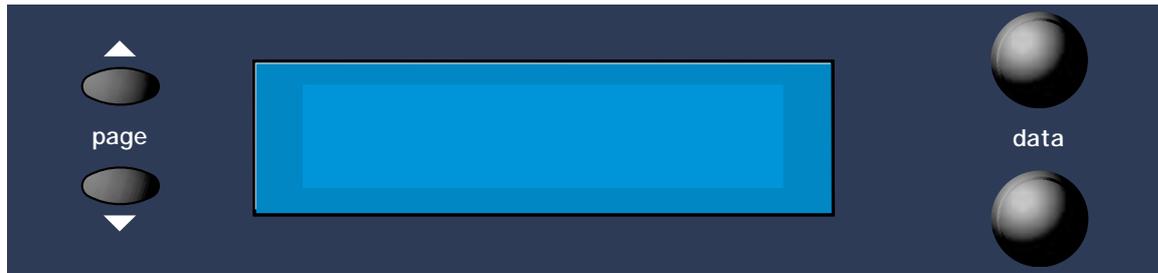


NOTE:

In the "Write" phase, the Compare button performs a different function to its normal operation. The Compare button in this mode toggles between the currently edited Performance or Program and the destination Performance or Program. When the destination Program or Performance compare mode is selected, the Program and/or Performance buttons will flash and the Compare button will be lit indicating that the sound currently being produced by the Supernova II keyboard is the original version still stored in memory.

Write - Button

This button is used to write the currently selected Performance, Program, Global Data, Arpeggiator Pattern or Favourites Map into memory depending on the currently selected mode. In Performance mode, this button is used to write a Performance into memory. Refer to page 41 for details. In Program mode, this button is used to write a Program into memory. Refer to page 38 for details. In the Global Menu, this button is used to write the Global data / User Arpeggiator Patterns / Favourites Map into memory. Refer to page 47 & 35 respectively for details.



The display shows the currently selected Performance or Program Name, Bank and Number. When editing Knobs on the front panel, the relevant parameter description and value is displayed.

Data - Knobs

When editing parameters in Menus, the upper Data Knob on the right of the display is used to edit the higher parameter's value. Similarly, the lower parameter's value can be edited in the same way using the lower Data knob.

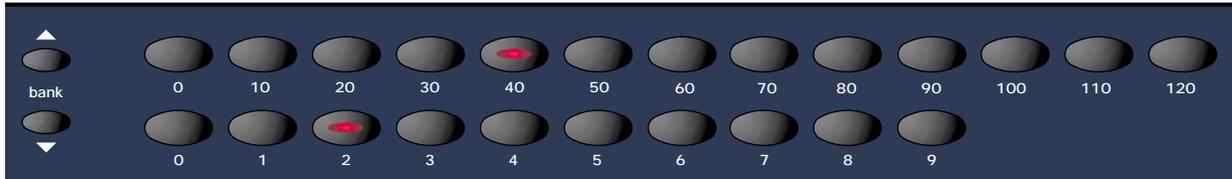
Page - Buttons

When editing parameters in Menus, there are usually several "Pages" within each menu. The Default page on pressing any menu button is the page selected when the Globals were last saved. Higher pages can be accessed by pressing the "Page Up" button and lower pages can be accessed by pressing the "Page Down" button. Pressing and holding down either of the page buttons will make the display scroll through the pages automatically. This can be handy for menus (such as the Global Menu) which have quite a few pages.



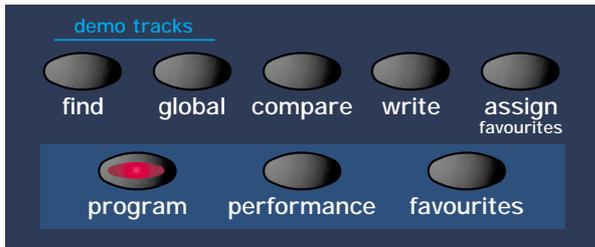
NOTE:

The page buttons can sometimes be used in conjunction with the keys on the keyboard to directly enter note values into certain parameters such as "Range" in Part edit of Performances (see page 140 for details) or "Tuning" of Drum Programs (see page 135 for details).



This section contains all the buttons used in the selection of Programs, Performances and Favourites.

Firstly select the desired mode (Program, Performance or Favourites) using the Mode section.



To select a specific number requires only 2 button presses - even if the number has 3 digits. For example to select Program 123, make sure the Supernova II keyboard is in Program Mode (the Program button is lit). Now simply press the '120' button followed by the '3' button in the Keypad section. The display shows:



To select Program 001, make sure the Supernova II keyboard is in Program Mode (the Program button is lit). Now simply press the '0' button on the top row of the Keypad section followed by the '1' button on the bottom row of the Keypad section. The display shows:



The Bank buttons in the Keypad section change the Bank currently selected. There are 8 Banks of 128 Programs, 4 banks of 128 Performances, 8 Drum Maps (each containing 50 Programs) and 1 Bank of Favourites. Press the Bank Up button once. The display shows:



NOTE:

As there is only 1 Bank of Favourites, the Bank buttons will do nothing in Favourites Mode.



NOTE:

When selecting a Drum Map Program, it is only possible to select programs 000 to 049.



In the write procedure the Keypad can be used for entering characters into the soundname. When in the naming page of the write procedure, the display shows for example:

Name Prog B001
' FM EP ' ,

The name of the sound can be altered using the Data knobs when in this mode, but also by using the Page Up & Down buttons, the Keypad and the Bank buttons. Pressing the Page Up button while in this mode inserts a space at the cursor position. Pressing Page Down while in this mode deletes the character at the cursor. The Keypad & Bank buttons also provide useful shortcuts when in this mode. Pressing the Keypad buttons with or without the 2 bank buttons perform several functions. These are as follows.

Top Row

a b c d e f g h I j k l m

Top Row + Bank Up button (momentary action)

n o p q r s t u v w x y z

Top Row + Bank Down button (latched action)

A B C D E F G H I J K L M

Top Row + Bank Up & Down buttons together

N O P Q R S T U V W X Y Z

Bottom Row

0 1 2 3 4 5 6 7 8 9

Bottom Row + Bank Up button (momentary action)

Space . - # () [] ! *

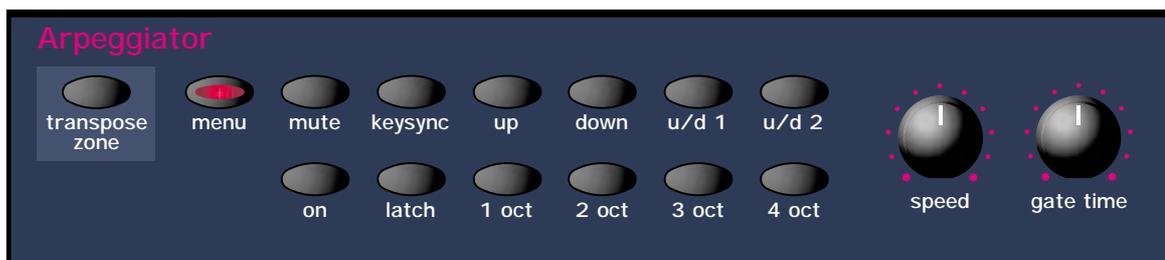
Bottom Row + Bank Down button (latched action)

[Current word 1st] [Current word Last] [Previous word 1st] [Next word 1st] [Previous word last]

[Next word last] [Previous space] [Next space] [1st char] [Last char]

Bottom Row + Bank Up & Down buttons together

[Toggle case char] [Char upper case] [Char lower case] [All words lower case with upper case first letter] [All words upper case] [All words lower case] [Rotate text left] [Rotate text right] [Clear text] [Restore text]



This section contains all the Knobs and buttons associated with the Arpeggiator.

Transpose Zone - Button

This button when pressed, makes an area of the keyboard active for real-time Arpeggiator transposition. When active, the Real Time Transpose zone button is lit. While the real-time transpose zone is active, playing notes within the zone will transpose Arpeggiators in real-time (providing their Real-time transpose parameter is set to On – this parameter is accessed in the Arpeggiator Menu). Notes played within an active real-time transpose zone can only be used for this purpose. They will not trigger voices in Programs or Parts.

The amount of transposition applied to an Arpeggiator corresponds to the difference in semitones between the note played and the note defined by the "Arp Transpose Reference Note" (set in the Global Menu). The transposition can be negative as well as positive. For example, if the "Arp Transpose Reference Note" is defined as note C3, playing C#3 will result in the whole arpeggio being transposed up one semitone from its original key. If Bb3 is played, the whole arpeggio will now be transposed down two semitones from its original key and so on. To return the arpeggio to its original key (a transposition of zero semitones), it is necessary to play the same note value as defined by the "Arp Transpose Reference Note".

The size and limits of the real-time transpose zone can be set by pressing the Range button (in the Part Edit section) while the Arpeggiator Menu is active (the Arp Menu button is flashing).

The whole real-time transpose zone can be detuned by up to $-64 / +63$ semitones. This can be particularly useful if the defined real-time transpose zone does not include the "Arp transpose reference note" (set in the Global Menu) to which all real-time transpositions are relatively calculated. The detuning of the real-time transpose zone can be set by pressing the Tune button (in the Part Edit Section) while the Arpeggiator Menu is active (the Arp Menu button is flashing).

The size and detuning of the real-time transpose zone as well as the Real Time Transpose button status (which determines whether the zone is active or not) are saved along with the Program when in Program Mode or a Performance if in Performance Mode.



NOTE:

There is only one real-time transpose zone when in Performance Mode. Playing notes within the zone can potentially affect the Arpeggiators in every Part simultaneously.



NOTE:

If the keyboard is transposed up or down by using the transpose buttons, the position of the real-time transpose zone is also moved accordingly.



NOTE:

When the "Arpeggiator Real-time Transpose channel" parameter (set in the Global Menu) is set to a value in the range 1 to 16, playing a note within the active zone will also result in the transmission of a MIDI note message using the "Arpeggiator Real-time Transpose channel" MIDI channel. Playing this note information back from a sequencer will then transpose the Arpeggiators in the same manner as when the notes were originally played on the keyboard.

This feature could alternatively be used to provide an additional keyboard area used solely to control external MIDI equipment – even when in Program Mode. Of course, any Arpeggiators used by the Program / Performance would probably then need their realtime transposing parameter disabled.

Menu - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Arpeggiator. In the Arpeggiator Section there are 8 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Pattern Bank	Mono
Pattern no.	120

The higher parameter is "Pattern bank". In this case with a value of Mono.

This parameter determines the type of Pattern the Arpeggiator will use. Use the upper Data knob to adjust the value. The "Mono" Bank contains 128 preset patterns that are Monophonic (a single note is played at any one time). The "Poly" Bank contains 128 preset patterns that are Polyphonic (all the notes played on the keyboard are played at once and transposed). The "User (U)" Bank contains 128 patterns which are user programmable from within the Global Menu. Similarly, the "User (V)" and "User (W)" Banks each have another 128 patterns that are user programmable from within the Global Menu. In the each of the User Pattern Banks, Patterns 000 to 063 are Monophonic and 064 to 127 are Polyphonic. The range of this parameter is Mono, Poly, User(U), User(V) & User(W). This parameter is normally memorised with a Program. However, if in Performance mode and the Arp Bank and Pattern Used parameter on page 1 of the Special menu in the Part Edit section is set to Part, then the parameter is memorised with a Performance.

The lower parameter is "Pattern no.". In this case with a value of 120.

This parameter determines which pattern within in the bank specified by the parameter above is used by the Arpeggiator. Use the lower Data knob to adjust the value The range of this parameter is 000 to 127. This parameter is normally memorised with a Program. However, if in Performance mode and the Arp Bank and Pattern Used parameter on page 1 of the Special menu in the Part Edit section is set to Part, then the parameter is memorised with a Performance.



NOTE:

You can assign pattern changes into Favourites locations when this menu page is displayed. Simply select the Pattern bank and Pattern number you wish to save into a favourite location and press the Assign (favourites) button. Now select the favourites location using the Keypad and then press the Assign (favourites) button again to write it into the Favourites map.



NOTE:

In Program Mode, the Pattern Bank and Pattern number displayed on this page will possibly be different to the Pattern Bank and Pattern number displayed when in Performance Mode. In Performance Mode, each Part may have its own pattern settings which can over-ride the settings normally saved within the Program data. The Arp bank and Pattern Used parameter on page 1 of the Special menu in the Part Edit section determines whether The Program's Pattern Bank and Pattern number settings are used or whether the Part's Pattern Bank and Pattern number settings are used.

Page 2 looks like so:

Latch type	Constant
Quantize	Mode 1

The higher parameter is "Latch type". In this case with a value of Constant.

This parameter determines how the "Latch" function behaves. Use the upper Data knob to adjust the value.

In the "Constant" position, when the "Latch" is "On", the Arpeggiator always remembers what notes you last played. i.e. If you play a C triad and then release the keys on the keyboard, the Arpeggiator will not stop, it will continue to sweep through the C triad until a new set of notes is played, then it will sweep through the new notes until another set it played. etc. etc. In the "Pattern" position, the Arp will behave as above except that it will stop when it reaches the end of the pattern. This is like playing a loop on a sampler. Again another powerful feature for live performance. The range of this parameter is Constant & Pattern. This parameter is memorised with a Program.

The lower parameter is "Quantize". In this case with a value of Mode 1.

This parameter determines if the Arpeggiation played is quantised to the Arp Sync parameter's time signature or not. Use the lower Data knob to adjust the value. The Arpeggiator can correct timing errors for you in several different ways. The arpeggiator can correct timing errors by quantising the played notes like a sequencer package (we will refer to this method as "Quantised"). This corrects the mistakes but can introduce a "Skip" if you play late. i.e. the first note played is on the next quantised step. This is what would happen in a sequencer as well, but can be not so useful for live performance so we have introduced a kind of "Intelligent Quantise". i.e. If you play slightly late those notes will sound immediately and the *next* step will be quantised. Additionally, things change if external MIDI Clock is being used. The Arpeggiator reads MIDI Start/Continue Messages. The pattern will start running in the background when one of these messages is received, but will not make any sound. When the keyboard is played in this condition, the Arpeggiator will then play the correct step in the pattern keeping in step with other data on the sequencer, not start from the beginning of the pattern. Below is a table showing the different options:

MODES

Off	Not quantised.
Mode 1	Quantised.
Mode 2	Intelligently quantised.
Mode 3	Quantised with the pattern locked to the sequencer and/or other quantised Arpeggiators.
Mode 4	Intelligently quantised with the pattern locked to the sequencer and/or other quantised Arpeggiators.

The range of this parameter is Off, Mode 1, Mode 2, Mode 3 & Mode 4. This parameter is memorised with a Program.



NOTE:

In Performances, if more than one Part has a Program with Arpeggiators activated and these Programs have the Arpeggiators "Quantize" parameter set to active (modes 1, 2, 3 or 4), then activating any Arpeggiator will start all of the Arpeggiators in the Performance running in Sync with each other (Although you won't actually hear them until the correct Range and/or MIDI channel is triggered). This means that the phrases created by the separate Arpeggiators are always in sync with each other - even if triggered at different times.



NOTE:

This parameter also affects how the Keysync parameter on the front panel behaves. Refer page 69 for details.

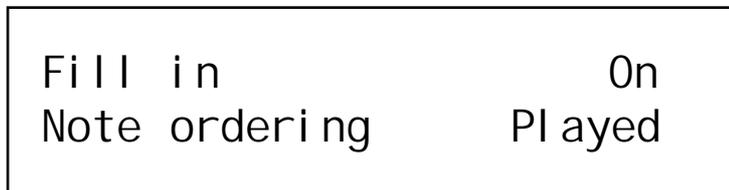
Page 3 looks like so:

Velocity	Played
----------	--------

The higher parameter is "Velocity". In this case with a value of Played.

This parameter determines how the velocity of the notes played effect the notes in the arpeggiation. Use the upper Data knob to adjust the value . If this parameter is set to "Played" then the velocities of the notes played on the keyboard will be duplicated in the notes played in the arpeggiation. If this parameter is set to "Full" then the velocities of the notes played will be at full velocity (127). If this parameter is set to "Half" then the velocities of the notes played will be at half velocity (63). If this parameter is set to "Prog" then the velocities of the notes played will be at the values programmed into the patterns. The range of this parameter is Played, Full, Half & Prog. This parameter is memorised with a Program.

Page 4 looks like so:



The higher parameter is "Fill in", in this case with a value of On.

This parameter applies only to Monophonic patterns. It has no affect on polyphonic patterns. Use the upper Data knob to adjust the value. This parameter determines how the Arpeggiator behaves when you play more or less notes than the Arpeggiator pattern was written to cope with.

When this parameter is set to "Off", if you play less notes than the pattern is expecting, the highest note you have played will be used for all the notes in the pattern data which are greater than your highest played note. If however, you have played more notes than the pattern was written to cope with, then played notes which are higher than the highest note in the pattern data are not played.

When this parameter is set to "On", if you play less notes than the pattern is expecting, your played notes will be used intelligently for all the notes in the pattern data which are greater than your highest played note. If however, you have played more notes than the pattern was written to cope with, then played notes which are higher than the highest note in the pattern data are used, replacing their corresponding lower notes every other time the pattern cycles around. Perhaps the best way to understand how this works is by experimentation - altering the values and number of notes played on the keyboard while a mono arpeggiation is running. The most musical setting for this parameter is with this parameter set to "On". The range of this parameter is On & Off. This parameter is memorised with a Program.



NOTE:

When the Arpeggiator is using one of the standard Up / Down patterns (Mono patterns 000 to 003), Fill-in has a different function. It can be used to determine how the pattern sweeps through the number of octaves selected. When the Fill-in parameter is set to "On", the pattern will sweep through all of the available in octaves in a single pass of the pattern. When the Fill-in parameter is set to "Off", the pattern will use each octave in turn for a single pass of the pattern.

The lower parameter is "Note ordering", in this case with a value of Played.

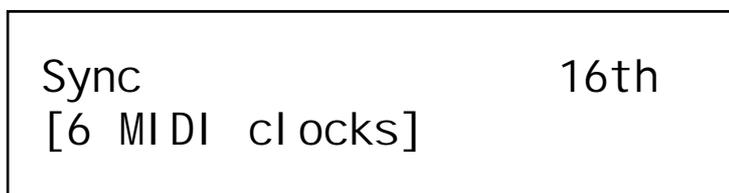
This parameter applies only to Monophonic patterns. It has no affect on polyphonic patterns. This parameter determines which note ordering system is used for the pattern. When set to "Up", note 1 in the pattern data will refer to the lowest note played on the keyboard, note 2 the next note up and so on. When set to "Down", note 1 in the pattern data will refer to the highest note played on the keyboard, note 2 the next note down and so on. When set to "Played", note 1 in the pattern data will refer to the earliest note played on the keyboard, note 2 the next note to be played and so on. By adjusting this value, you can in effect, treble the number of available monophonic patterns you have access to !



NOTE:

The Note ordering parameter is ignored by Mono Patterns 000 to 010 which generate arpeggios by algorithms rather than fixed pattern data.

Page 5 looks like so:



The single parameter on this page is "Sync". In this case with a value of 16th.

This parameter determines the time signature at which the Arpeggiator runs from the Internal or External MIDI Clock.

Use the higher Data knob to adjust the value of this parameter. On the bottom of the display, the number of MIDI clock 'ticks' for the chosen setting is displayed, in this case 6 MIDI clocks. The range of this parameter is 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program.

Page 6 looks like so:

Arpeggio notes to :
Program & MIDI

The single parameter on this page is "Arpeggio notes to:". In this case with a value of Program & MIDI.

This parameter determines if the Arpeggiation is sent to the Supernova II keyboard's sound engine, MIDI output or both. Use the lower Data knob to adjust the value. If this parameter is set to "Program", then no MIDI note data appears when the Arpeggiator is played but the Supernova II keyboard is played by the Arpeggiation. If this parameter is set to "Program & MIDI", then the Supernova II keyboard is heard playing the Arpeggiation and the Arpeggiation is also output via MIDI. If this parameter is set to "MIDI Only", then no sound is heard from Supernova II keyboard when the Arpeggiator is played but the Arpeggiator is output via MIDI. The range of this parameter is Program Only, Program & MIDI, and MIDI Only. This parameter is memorised with a Program.

Page 7 looks like so:

Output MIDI ch Input
Real time trans On

The higher parameter is "Output MIDI ch", in this case with a value of Input.

This parameter determines which MIDI channel is used to transmit the Arpeggio notes (when the Arpeggiator is configured to send its notes to "MIDI only" or "Program & MIDI") for the currently selected Program or Part. Use the higher Data knob to adjust this parameter. If this parameter is set to Input, the MIDI channel used for transmission will be the same MIDI channel as was originally used to trigger the Arpeggiator (i.e. the same MIDI channel that the Program/Part is set to receive on). If this parameter is set from 1 to 16 then the Arpeggiator's output is transmitted on the MIDI channel specified here. The range of this parameter is Input, 1-16. This parameter is memorised with a Program.

To record an arpeggiation into a sequencer, we suggest using the following method: With local control set to "Off" and the Output MIDI ch parameter set to Input Record the chord sequence onto a track on the sequencer. Set the Output MIDI ch parameter to a suitable MIDI channel different to the Global MIDI channel or any Part (if you are using the Arp in a Performance). Create a new track on the same MIDI channel. Now playing the sequencer will play the chords into the Arp on the correct channel and the Arpeggio notes will be output on a different channel and you can record them on the new track. No MIDI feedback will occur.

The lower parameter is "Real time trans", in this example with a value of On.

This parameter is used to determine whether the Arpeggiator can be transposed in real-time. Use the lower Data knob to adjust the value. If set to "On", the whole arpeggio can be transposed in real-time either by a note played inside the real-time transpose zone on the keyboard (active when the 'real time transpose' button is lit) or by notes received on the "Real-time Transpose Channel" (set in the Global Menu).

The amount of transposition applied to the Arpeggiator corresponds to the difference in semitones between the note played and the note defined by the "Arp Transpose Reference Note" (also set in the Global Menu). The transposition can be negative as well as positive. For example, if the "Arp Transpose Reference Note" is defined as note C3, playing C#3 will result in the whole arpeggio being transposed up one semitone from its original key. If Bb3 is played, the whole arpeggio will now be transposed down two semitones from its original key and so on. To return the arpeggio to its original key (a transposition of zero semitones), it is necessary to play the same note value as defined by the "Arp Transpose Reference Note" (set in the Global Menu).

If this parameter is set to "Off", then no real-time transposition will be applied to the arpeggiator. It will continue to play in its original key even if note information is sent from the real-time transpose zone on the keyboard or the "Real-time Transpose Channel". The range of this parameter is On & Off. This parameter is memorised with a Program.

SETTING REAL-TIME TRANSPOSE ZONE PARAMETERS

These following parameters can be set only while the Arpeggiator Menu is active (the Arp Menu button is flashing)

REAL-TIME TRANSPOSE ZONE RANGE

This parameter can be edited by pressing the Range button (in the Part Edit section) while the Arpeggiator Menu is active (the Arp Menu button is flashing). The Range button lights up and the display shows :

Kbd t-zone hi	C2
Kbd t-zone lo	C1

The higher parameter is "Kbd t-zone hi" (Keyboard Real-time Transpose Zone highest note), in this example with a value of C2. Use the upper Data knob to adjust the value. Alternatively, you may edit this parameter by pressing the Page Up button (the Page Up button lights up while it is pressed) and playing the appropriate note on the keyboard while the button is held down. This parameter represents the highest note value used in the Real-time transpose zone range. The range of this parameter is C-2 to G8. This parameter is memorised with a Program when in Program Mode, or memorised with a Performance if in Performance Mode.

The lower parameter is "Kbd t-zone lo" (Keyboard Real-time Transpose Zone lowest note), in this example with a value of C1. Use the lower Data knob to adjust the value. Alternatively, you may edit this parameter by pressing the Page Down button (the Page Down button lights up while it is pressed) and playing the appropriate note on the keyboard while the button is held down. This parameter represents the lowest note value used in the Real-time transpose zone range. The range of this parameter is C-2 to G8. This parameter is memorised with a Program when in Program Mode, or memorised with a Performance if in Performance Mode.

To return to the previous display in the Arpeggiator Menu, press the Range button again (the Range button goes out).



NOTE:

It is possible to define the transpose zone with the highest note set to a value lower than the lowest value. This creates a reverse zone with a "hole" between the highest note and lowest note where the zone is not active.

REAL-TIME TRANSPOSE ZONE DETUNE

This parameter can be edited by pressing the Tune button while the Arpeggiator Menu is active (the Arp Menu button is flashing). The Tune button lights up and the display shows :

Kbd arp transpose zone detune	+12
----------------------------------	-----

The only parameter on this page is "Kbd arp transpose zone detune", in this example with a value of +12. Use the lower fast data knob to adjust the value. This parameter detunes the note value played from the transpose zone by the indicated amount of semi-tones. Therefore a value of +12 would shift all note values in the whole transpose zone up by one whole octave. This feature can be particularly useful if the transpose zone range does not include the "Arp Transpose Reference Note" (set in the Global Menu) to which all real-time transpositions are relatively calculated. The range of this parameter is -64 to +63. This parameter is memorised with a Program when in Program Mode, or memorised with a Performance if in Performance Mode.

To return to the previous display in the Arpeggiator Menu, press the Tune button again (the Tune button goes out).

Page 8 looks like so:

Constant pitch	Off
Output ranging	Off

The higher parameter is "Constant pitch". In this case with a value of Off.

This parameter applies only to Polyphonic patterns. If this parameter is set to "On" then all Arpeggiator note(s) will be sounded at a fixed pitch regardless of where they have been played from the keyboard. If this parameter is set to "Off" then the transposition of the notes played by the Arpeggiator will be at the values programmed into the patterns. Use the upper Data knob to adjust the value. The range of this parameter is On & Off. This parameter is memorised with a Program.



NOTE:

The purpose of this parameter is to allow a sequence of notes to be played in exactly the same musical key regardless of where it has been triggered from the keyboard (real time transposing can still be used to transpose poly patterns if required). This is especially important if the Arpeggiator is being used to trigger drum patterns on an external Drum Machine or Sampler where each drum sound has a specific note value. When used in this way, Polyphonic arpeggio patterns can behave in a similar manner to a 'phrase sequencer'.



NOTE:

When Constant Pitch is activated, the Arp Poly pattern behaves monophonically (i.e. only one note is played for each pattern step, regardless of how many notes are actually held on the keyboard), since if a chord was played on the keyboard, it would be pointless to send several NOTE ONs to the Program / MIDI OUT each with exactly the same note value.

The lower parameter is "Output ranging". In this case with a value of Off.

This parameter applies when Arpeggiators are used in Performance Mode. When set to 'On', this parameter checks to see if the Arpeggiator's final note value (taking into account the current 'octaves' shift & any 'real-time' transposing) falls within the Part's note range parameters. If the final note value falls outside this range, it is not passed on to the Program or MIDI. When Output Ranging is set to 'Off', the final note value will always be passed on to the Program or MIDI. Use the lower Data knob to adjust the value. The range of this parameter is On & Off. This parameter is memorised with a Program.



NOTE:

When Output Ranging is set to 'on', it is possible to obtain interesting Arp pattern variations by adjusting the Part's range values in such a way that certain Arpeggiated notes fall outside the Part's range and are not sounded.

Mute - Button

This button determines if the Arpeggiator is heard in the currently selected Program. When this button is unlit the Arpeggiator is on and the sound can be heard. In the "Muted" (Lit) position, the Arpeggiator is still running in the background, keeping track of which pattern step would normally be played, but is no longer passing the notes to the Program or MIDI. The sound can no longer be heard. This parameter is memorised with a Program.

This feature will mute/unmute an external synthesiser being controlled by the arpeggiator via MIDI. (If the Arpeggio notes to: parameter on page 6 of the Arp menu is set to MIDI only or Program & MIDI)

Keysync - Button

This parameter controls the way the Arpeggiator resets itself when new notes are played on the keyboard. In the "Off" position (unlit) the cycle of the Arpeggiator is not interrupted when new notes are played on the keyboard, the Arpeggiator simply changes the notes being played to the new ones. In the "On" position (lit) the cycle of the Arpeggiator is reset to the start of its patterns when any new notes are played on the keyboard. In this condition, if the Quantize parameter on page 2 of the Arp menu is set to "Off" it behaves like triggering a loop in a sequencer. If the Quantize parameter is set to modes 1 or 3, the reset will occur at the start of the next step. If Quantize is set to modes 2 or 4, notes played slightly late will reset immediately and following steps will be in sync. The range of this parameter is On & Off. This parameter is memorised with a Program.

Up - Button

This button assigns the Monophonic Up pattern (Mono pattern 000) to the Arpeggiator when lit. This parameter is memorised with a Program.

**NOTE:**

It is not possible to have a different pattern assigned to the Arpeggiator in the Pattern bank and Pattern No parameters of the Arp Menu when this button is active.

Down - Button

This button assigns the Monophonic Down pattern (Mono pattern 001) to the Arpeggiator when lit. This parameter is memorised with a Program.

**NOTE:**

It is not possible to have a different pattern assigned to the Arpeggiator in the Pattern bank and Pattern No parameters of the Arp Menu when this button is active.

U/D 1 - Button

This button assigns the Monophonic Up/Down 1 pattern (Mono pattern 002) to the Arpeggiator when lit. This parameter is memorised with a Program.

**NOTE:**

It is not possible to have a different pattern assigned to the Arpeggiator in the Pattern bank and Pattern No parameters of the Arp Menu when this button is active.

U/D 2 - Button

This button assigns the Monophonic Up/Down 2 pattern (Mono pattern 003) to the Arpeggiator when lit. This parameter is memorised with a Program.

**NOTE:**

It is not possible to have a different pattern assigned to the Arpeggiator in the Pattern bank & Pattern No parameters of the Arp Menu when this button is active.

On - Button

This button determines if the Arpeggiator is active or disabled in the currently selected program. Pressing this button makes the Arpeggiator active and the button will light. Pressing it again will deactivate the Arpeggiator and the light will go out. The range of this parameter is On & Off. This parameter is memorised with Programs in Program mode and Performances in Performance mode.

Latch - Button

This button determines the way in which the Arpeggiator remembers which notes you are playing or have played on the keyboard. When this is "Off" (unlit) the Arpeggiator will only sweep through its patterns when you hold down notes on the keyboard. If you are not playing any notes on the keyboard, no arpeggio will be heard. If the "latch" is set to "On" (Lit) the Arpeggiator remembers what notes you last played (i.e. If you play a C triad and then release the keys on the keyboard, the Arpeggiator will not stop, it will continue to sweep through the C triad until a new set of notes is played, then it will sweep through the new notes until another set it played. etc. etc.). The range of this parameter is On & Off. This parameter is memorised with a Program. See page NN for related Latch type details.

**NOTE:**

This parameter can be controlled via the Sustain pedal in Performance Mode. To do so, connect a Sustain Pedal to the Input/sw 1 (Sustain) socket and assign the socket to act as a suitable polarity Footswitch socket on page 9 of the Global Menu. The Supernova II keyboard can read Sustain information as Arpeggiator latch On / Off, so depressing the Sustain Pedal connected to the Input/sw 2 socket will switch the Arpeggiator Latch "On". Releasing the Sustain Pedal will switch it "Off". For this to work properly, set the "Sustain" parameter in the MIDI button menu for the selected Part to "Arp Latch". Additionally, this parameter may work in reverse to the manner described if the incorrect footswitch is used with the keyboard. If this is the case, change the polarity of the Footswitch socket on page 9 of the Global Menu. In Program Mode, the Sustain Pedal always latches the Arpeggiator while it is enabled. If the Arpeggiator is not enabled, the Sustain Pedal will act as a normal Sustain.

1 Oct - Button

This parameter determines the number of octaves the Arpeggiator will sweep through. When this button is active (lit) the range of the Arpeggiator's sweep is 1 octave. This parameter is memorised with a Program

2 Oct - Button

This parameter determines the number of octaves the Arpeggiator will sweep through. When this button is active (lit) the range of the Arpeggiator's sweep is 2 octaves. This parameter is memorised with a Program.

3 Oct - Button

This parameter determines the number of octaves the Arpeggiator will sweep through. When this button is active (lit) the range of the Arpeggiator's sweep is 3 octaves. This parameter is memorised with a Program.

4 Oct - Button

This parameter determines the number of octaves the Arpeggiator will sweep through. When this button is active (lit) the range of the Arpeggiator's sweep is 4 octaves. This parameter is memorised with a Program..

**NOTE:**

When this parameter is set to use octaves greater than 1, the "Fill in" parameter will affect how the the pattern sweeps through the octaves on the Monophonic Up/Down patterns (Mono 000 to 003). Refer to the notes on the "Fill in" parameter on page 65 for details.

**NOTE:**

It is not possible to have more than one of the Octave buttons selected at any one time.

Speed - Knob

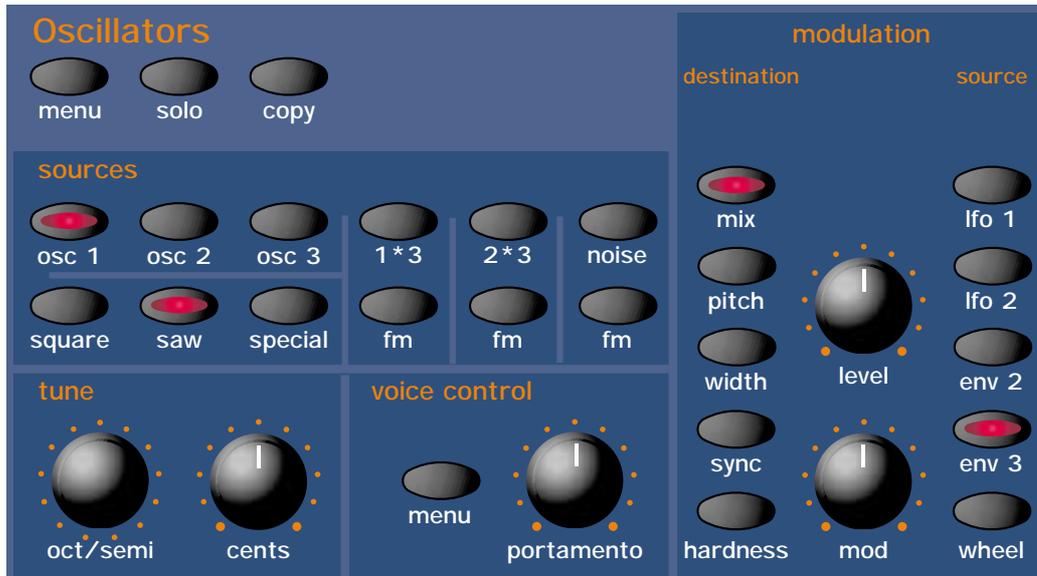
This knob controls the speed at which the Arpeggiator sweeps through is patterns. Anticlockwise the speed is slow, clockwise the speed is fast. The range of this parameter is 64 bpm to 191bpm. This parameter is memorised with Programs in Program mode and Performances in Performance mode.

**NOTE:**

If the synchronisable features such as the LFOs are synchronised to Internal Clock, then as well as controlling Arpeggiator speed, this control sets the speed of the Internal Clock ensuring the LFOs, Delay etc. will be synchronised with the Arpeggiator at whatever time signature has been selected in the LFOs, Delay etc. Note that this applies only if the MIDI Clock parameter in the Global Menu is not set to External.

Gate time - Knob

This knob controls the "gate" time or duration of the notes being played by the Arpeggiator. Small values of gate time produce a "Staccato" effect while large values produce a "Legato" effect to the Arpeggiation. Anticlockwise, the gate time is very short, clockwise the gate time is long. The range of this parameter is 1% to 99%. This parameter is memorised with Programs.



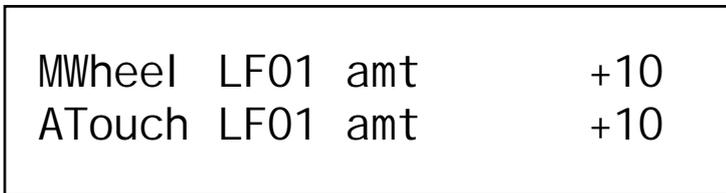
This section contains all the knobs and buttons associated with the Oscillators and Mixer.

Menu - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Oscillators. In the Oscillator Menu there are 6 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:



The higher parameter is "MWheel LFO 1 amt". In this case with a value of +10. This parameter determines how the Mod Wheel affects the amount of LFO1 modulation on the currently selected Oscillator. Use the upper Data knob to adjust the value of this parameter. With this parameter it is possible to set the amount of modulation individually for each oscillator. The range of this parameter is -64 to +63. This parameter is memorised with a Program.



NOTE:

Mod Wheel LFO Amt does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to access this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

The lower parameter is "AT LFO 1 amt". In this case with a value of +10. This parameter determines how the Aftertouch affects the amount of LFO1 modulation on the currently selected Oscillator. Use the lower Data knob to adjust the value of this parameter. With this parameter it is possible to set the amount of modulation individually for each oscillator. The range of this parameter is -64 to +63. This parameter is memorised with a Program.



NOTE:

Aftertouch LFO 1 Amt does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to alter this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

Page 2 looks like so:

Formant width	010
Sync skew	+10

The higher parameter is "Formant width". In this case with a value of 010.

This parameter determines how much Formant Width is applied to the currently selected Oscillator. Use the upper Data knob to adjust the value of this parameter. With this parameter it is possible to set the amount of modulation individually for each oscillator. Refer to page 6 in the "About Analogue Synthesis" section for details on this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



NOTE:

Formant Width does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to alter this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

The lower parameter is "Sync skew". In this case with a value of +10.

This parameter determines how much of the Sync Skew effect is applied to the currently selected Oscillator. Use the lower Data knob to adjust the value of this parameter. With this parameter it is possible to set the amount of modulation individually for each oscillator. Refer to page 6 in the "About Analogue Synthesis section" for details on this parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program.



NOTE:

Sync Skew does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to alter this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

Page 3 looks like so:

Sync key follow	010
Pitch bend range	+10

The higher parameter is "Sync key follow". In this case with a value of 010.

This parameter determines how the "Virtual" Sync oscillator is transposed across the keyboard for the currently selected Oscillator. Use the upper Data knob to adjust the value of this parameter. With this parameter it is possible to set the amount of modulation individually for each oscillator. Refer to page 6 in the "About Analogue Synthesis section" for details on this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



NOTE:

Sync Key Follow does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to alter this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

The lower parameter is "Pitch bend range". In this case with a value of +10.

This parameter determines how the Pitch Bend Wheel affects the pitch of the currently selected Oscillator. Use the lower Data knob to adjust the value of this parameter. With this parameter it is possible to set the pitch bend range individually for each oscillator allowing the creation of effects like using the Pitch bend control to bend into a chord. The range is -12 to +12 in semitone steps. This parameter is memorised with a Program.



NOTE:

Pitch bend Range does not apply to the 1*3, 2*3 or Noise buttons. If you attempt to alter this parameter when these buttons are selected, the display will show "Menu Only Available For Osc 1,2 or 3" whilst the adjustment is being made then the display will revert back to the last edited parameter.

- Osc1 - Button
- Osc2 - Button
- Osc3 - Button
- 1*3 - Button
- 2*3 - Button
- Noise - Button
- 1*3 - FM - Button
- 2*3 - FM - Button
- Noise - FM - Button

All these buttons “select” which oscillator is going to be manipulated by the other parameters in this section. the Osc 1 button selects Oscillator 1 for editing, the Osc 2 button selects Oscillator 2 for editing, the Osc 3 button selects Oscillator 3 for editing, the 1*3 button selects the output of the Ring Modulator between Oscillators 1 & 3 for editing, the 2*3 button selects the output of the Ring Modulator between Oscillators 2 & 3 for editing and the Noise button selects the Noise Generator for editing.

The 1*3 - FM button changes the modulation between Oscillators 1 & 3 from Ring Modulation to FM, the 2*3 - FM button changes the modulation between Oscillators 2 & 3 from Ring Modulation to FM and the Noise - FM button changes the modulation between Oscillator 3 & the Noise source from Ring Modulation to FM.

To adjust the tuning setting of Oscillator 1 press the “Osc 1” button (it will light up indicating it is selected). Now turn the “Oct / Semi” knob within the Oscillator section. Adjusting the knob will now change the octave and semitone tuning setting of only Oscillator 1. The Display will remain like this until another sound source is selected or another parameter is adjusted, in which case it will update to display the new parameter. To return to the display of the Program / Performance name and number press the appropriate Program or Performance button.



NOTE:

Only one Oscillator or one of the Ring Modulator / FM or the Noise Source can be selected / edited at one time.



NOTE:

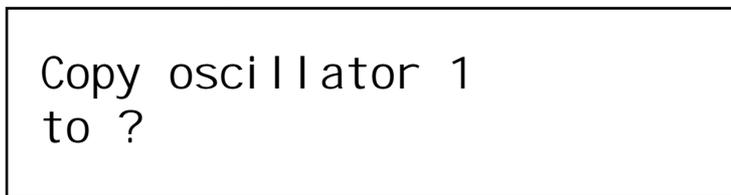
Some parameters do not apply to all sound sources. i.e. The “Octave / Semitone” parameter has no effect on the Noise generator. If this is the case, the display will read “Not Available” when the control is adjusted.

Solo - Button

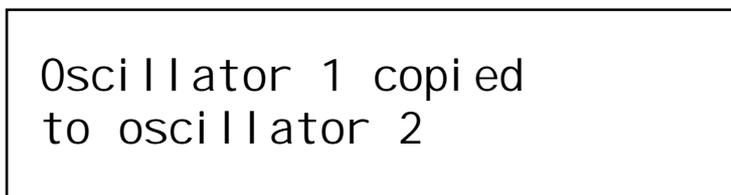
This button is similar to a “solo” button on a mixing console. Pressing this button activates the solo function (The button is lit) and only the currently selected sound source will be heard. This is useful when for example, auditioning the single Oscillator settings within a sound. To return to normal operation press the solo button again. (unlit)

Copy - Button

This button activates an Oscillator Copying utility. This allows the complete settings of one Oscillator to be quickly copied to another Oscillator. Pressing the button (The button is lit) when Oscillator 1 is selected activates the copying function for Oscillator 1’s parameters. The display shows:



It is now a simple matter of pressing the destination (the Oscillator that you wish to copy oscillator 1’s settings to). i.e. Press Oscillator 2 button and the display shows:



All of Oscillator 2’s settings will now be identical to Oscillator 1’s settings.



NOTE:

It is only possible to copy an Oscillator to another Oscillator.



NOTE:

To exit this mode without copying an Oscillator, press the copy button again. (the Copy button is unlit)

- Saw Waveform - Button
- Sq waveform - Button
- Special Waveform - Button

This is a selection of oscillator waveforms for the oscillator currently selected with the Osc 1, 2, & 3 buttons. To adjust the waveform of oscillator 1, press the "Osc 1" button and select the waveform required. The selected waveform button will light. The Saw button selects a Sawtooth waveform, the Sq button selects a Square waveform and the Special button selects either Audio input 1, Audio input 2 or the DoubleSaw "special" waveform.

DoubleSaw

When the DoubleSaw wave form is selected, the currently selected Oscillator actually becomes 2 Saw waves which can be independently phase shifted or detuned with the use of an LFO. If all Oscillators are set to Double Saw then each voice has effectively 6 Oscillators. This has no effect on total Polyphony and can allow Unison type sounds to be created without the need to use the Unison feature, thereby saving voices. Of course, it is still possible to Unison a Double Saw Program to create truly HUGE sounds (Whoever said size does not matter is deluding themselves!).



NOTE:

All the functions like Mix, Pitch, Sync and Hardness still apply, but these parameters will modulate both Saw waves simultaneously.



NOTE:

Sync sounds can cause clicks when LFOs are used to detune Double Saw waves. This will happen when the modulating LFO is set to anything BUT Tri waves.

- Special Waveform - Button

When the Special button in the Oscillator Section is pressed the Display shows:



The only parameter is "Special Wave" In this case with a value of Double saw. This parameter determines which special waveform the currently selected oscillator will use. Use the lower Data knob to adjust this parameter. If this parameter is set to Audio input (1), Audio input 1 will be substituted for the standard Oscillator waveform. If this parameter is set to Audio input (2), Audio input 2 will be substituted for the standard Oscillator waveform. If this parameter is set to Double saw, the Double saw waveform as described above will be substituted for the standard Oscillator waveform. The range of this parameter is Audio input (1), Audio input (2) & Double Saw. This parameter is memorised with a Program.

How to use the Double Saw waveform

- Width - Button
- Level - Knob

When the Double Saw wave is selected, the Width part of the matrix is used to control the "Difference" in phase between the 2 Saw waves. The Level control controls the static phase difference between the 2 Saw waves. When this is set to 000, there is no difference between the waves and so at this setting, Double Saw waves sound identical to a standard Saw wave.



As both waves are adding together exactly when no phase difference is set between the 2 Saw waves, the resulting "Single" Saw wave is twice as loud as a standard Saw wave. This can be handy when severe filtering is being employed.

When this parameter is set to a positive value, the phase difference between the 2 Saw waves is modulated by a positive amount. Similarly negative values produce a negative phase shift between the 2 Saw waves. Fully clockwise or fully anticlockwise the phase shift is 180° shifted positive or negative respectively. The range of this parameter is -64 to +63. This parameter is memorised with a program.

The key way to understand how this works is to understand that detuning can be expressed as continually accelerating (or decelerating) phase shift. When looking at the waves of detuned Oscillators on an Oscilloscope it can be clearly seen that one waveform accelerates (or decelerates - the result is the same) in respect to the other. The greater the detuning, the greater the difference in phase shift acceleration or deceleration between the two Oscillators.

So how is this done? The answer is with an LFO. Because the modulation of an LFO has been tailored to modulate a Double Saw wave exactly from 0° phase shift to 360° when set to FULLY positive or negative modulation (180° phase shift of modulation of each positive and negative cycle are used providing 360° of phase shift), continuous detuning effects can be reproduced.

To create straight pitch shift detuning effects, use a Saw wave on the modulating LFO. Moderate speed is required. Typically 110 when set to "Slow". Slow speeds produce small pitch shifts. Fast speeds produce large ones.

To create chorus like detuning effects, use a Tri wave on the modulating LFO. Fairly slow speeds are all that is required.



Anything less than FULL positive or negative modulation will result in a less than 360° phase shift and clicks will occur.

Tips and Tricks

Try setting the modulating LFOs Keysync parameter to Keysync to get really percussive attacks to Double Saw sounds. This simulates all the Oscillators starting in phase. Setting this parameter to Freewheel means all Oscillators will start at random phase locations.

Below is an example of how to set up a detuning effect using a Double Saw wave.

Width	-	Button
Mod Depth	-	Knob
LFO 1	-	Button

This combination can be used to create a Pitch shift using LFO 1. The first this that needs to be done is set the LFO (in this case LFO 1) to a Saw wave running at a moderate speed, i.e. 110. When set to Slow, Turning the Mod Depth Knob clockwise introduces a pitch shift in one of the Saw waves in a positive direction. Turning the Mod Depth Knob anticlockwise introduces a pitch shift in one of the Saw waves in a negative direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This is actually set up in Program D123 "DOUBLE SAW Init". In this program, LFO1 is used positively and negatively on 2 oscillators and LFO2 is used at a slightly different speed to make sure all 6 oscillator waves are at different pitches.



The detune effect will not be smoothly produced if anything less than a modulation level of -64 to +63 is used. Anything else may produce clicky artifacts, but these in themselves may be interesting.



These buttons do not apply to the Ring Mod Oscillators (1*3 & 2*3) or the Noise Generator.

Octave/Semi - Knob
Cents - Knob

These knobs determine the Octave setting, Semitone transposition and fine tuning of the currently selected Oscillator. Turning the Octave/Semi knob clockwise raises the pitch of the selected oscillator by one semitone per click. Similarly, turning the Octave/Semi knob anticlockwise lowers the pitch of the selected oscillator by one semitone per click. The total amount of transposition available is +/- 3 Octaves.

When this knob is turned clockwise one click from the 0 oct 0 semi setting position, the display shows:

Octave	0
Semi tones	+1

When this knob is turned anticlockwise one click from the 0 oct 0 semi setting position, the display shows:

Octave	-1
Semi tones	+11

When this knob is turned clockwise one click from the 0 oct +11 semi setting position, the display shows:

Octave	+1
Semi tones	0

When this knob is turned anticlockwise one click from the -1 oct 0 semi setting position, the display shows:

Octave	-2
Semi tones	+11

Of course the upper data knob will alter octaves and scale the semitones appropriately. Similarly the semitone values of +/- 12 should be interpreted as octave shifts and the semitone value returned to 0.

The Cents knob will shift the selected oscillator up 63 cents when turned fully clockwise & down 64 cents when turned fully anticlockwise. These parameters are memorised with a Program.

Menu - Button (Voice control section)

Page 1 looks like so:

Porta type	Glissando
Porta mode	Exp

The higher parameter is "Porta type". In this case with a value of Glissando.

This parameter determines If the Portamento effect is smooth or stepped in semitones. Use the upper Data knob to adjust the value of this parameter. In the Porta position, the Portamento effect is smooth. Notes glide smoothly from one pitch to another determined by the Porta Time setting. In the Gliss position, the Portamento effect is Glissando. Notes glide in semitone steps from one pitch to another determined by the Porta Time setting. The range is Porta & Gliss. This parameter is memorised with a Program.

The lower parameter is "Porta mode". In this case with a value of Exp.

This parameter determines if the glide curve of the Portamento effect is Linear or Exponential. Use the lower Data knob to adjust the value of this parameter. Some synthesisers like the TB303* have an Exponential curve which gives them a certain "Character" to the way slides are performed. On the other hand for Portamento lead, Linear is the norm. The range is Lin & Exp. This parameter is memorised with a Program.

Page 2 looks like so:



The higher parameter is "Poly mode". In this case with a value of Mode 1.

This parameter determines If new voices are used when the same note is played. Use the upper Data knob to adjust the value of this parameter. In the "Mode 1" position, the voice allocation behaves like most modern synthesisers. i.e. a new voice is allocated to every new note played even if the new note is being already played by another voice. In the "Mode 2" position the voice allocation behaves like vintage 8 / 6 voice analogue synthesisers. i.e. If a new note is played that is already being played by another voice, the existing voice is soft retriggered and plays the new note. No new voice is allocated. The range is Mode 1 & Mode 2. This parameter is memorised with a Program.

The lower parameter is "Osc mode". In this case with a value of Percussive.

This parameter determines if the Oscillators phase are reset at note on time or not. Use the lower Data knob to adjust the value of this parameter. In the "Percussive" position, the Oscillators are reset at note on. This makes it possible to create "Punchy" basses and Drum sounds. In the "Ensemble" position, all the Oscillators are free running and this allows the creation of fat string sounds etc. The range is Percussive & Ensemble. This parameter is memorised with a Program.



NOTE:

If this parameter is set to Ensemble, then the Osc start phase parameter on page 6 of this menu will not have any effect as this makes all oscillators freewheel. No phase control is operational.

Page 3 looks like so:



The only parameter on this page is "Glide type". In this case with a value of Normal Glide.

This parameter determines how the Portamento is controlled. Turning the lower Data knob fully anticlockwise sets this parameter to the "Normal" position. In this mode, the Portamento behaves normally. Turning this knob clockwise selects the "AutoGlide" option". In this mode, the Portamento will be switched off when notes are played with a gap in-between them. However, when Legato (overlapping) notes are received, the Portamento effect is switched on. This is particularly useful as it makes TB303* type glides in a sequencer very easy to program by simply overlapping the notes where you want the glide to occur. From this position, turning the knob clockwise brings up the Preglide options. When these options are selected, a "Preglide" is applied to the pitch of the oscillators starting at a pitch determined by the PreGlide selected and gliding up or down to the normal pitch. The time it takes to do this is determined by the Portamento time. The Preglide is triggered with every note received. Below is a description of the different types of PreGlide available.

- | | |
|-------------------|---|
| 2 semitones down | A Glide from 2 semitones down is applied to the Oscillators. |
| 2 semitones up | A Glide from 2 semitones up is applied to the Oscillators. |
| 5 semitones down | A Glide from 5 semitones down is applied to the Oscillators. |
| 5 semitones up | A Glide from 5 semitones up is applied to the Oscillators. |
| 7 semitones down | A Glide from 7 semitones down is applied to the Oscillators. |
| 7 semitones up | A Glide from 7 semitones up is applied to the Oscillators. |
| 12 semitones down | A Glide from 12 semitones down is applied to the Oscillators. |
| 12 semitones up | A Glide from 12 semitones up is applied to the Oscillators. |

The range of this parameter is Normal Glide, Auto Glide, 2 semitones down, 2 semitones up, 5 semitones down, 5 semitones up, 7 semitones down, 7 semitones up, 12 semitones down & 12 semitones up. This parameter is memorised with a Program.



NOTE:

You cannot have different settings of this parameter for different Oscillators.

* TB303 is a trademark copyright of Roland Corp. Japan.

Page 4 looks like so:

Uni son	Off
Uni son mode	2 voice

The higher parameter is "Unison". In this case with a value of Off.

This parameter activates the Unison mode. Use the upper Data knob to adjust the value of this parameter. When this parameter is set to Off, only one voice is used per note in a Program. When this parameter is set to On, more than one voice is used per note in a Program. The number of voices used per note is determined by the Unison Mode parameter on the lower line of this page. The Detuning of the voices is controlled by the Unison Detune parameter on the next menu page. The range of this parameter is On & Off. This parameter is memorised with a Program.



NOTE:

The Unison mode will not appear to do very much unless the Unison detune parameter has a value greater than 0.

The lower parameter is "Unison mode". In this case with a value of 2 voice.

This parameter determines the number of voices used per note when the Unison mode is active. Use the lower Data knob to adjust the value of this parameter. Larger values tend to create fatter sounds. The range of this parameter is 2 to 8. This parameter is memorised with a Program.



NOTE:

Large voice settings of the Unison mode can be quite polyphony hungry. For example a setting of 8 voice will produce a fat sound but 3 notes will consume 24 voices. Bear in mind the Polyphony available fitted to your Supernova II Keyboard.

Page 5 looks like so:

Uni son detune	008
VCO dri ft	064

The higher parameter is "Unison detune". In this case with a value of 8.

This parameter determines the relative detuning of voices when the Unison mode (detailed above) is active. Use the upper Data knob to adjust this parameter. When this parameter is set to low values, only small shifts in tuning are applied to the different voices. When this parameter is set to high values, larger shifts in tuning are applied to the different voices. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

The lower parameter is "VCO drift". In this case with a value of 064.

This parameter determines the how the tuning of all the oscillators behave. Use the lower Data knob to adjust this parameter. When this parameter is set to 000 the tuning between the oscillators is perfect. This is the case on "DCO" (Digitally Controlled Oscillator) synthesisers such as the Roland Juno 106* or Juno 60*. Tuning this parameter up gradually increases the classic "VCO" (Voltage Controlled Oscillator) characteristics. At relatively low levels this parameter is similar to a quality VCO synth with all its oscillators tuned up. At 127 the oscillators are quite out of tune and it sounds like a VCO synth in need of a service! The range of this parameter is 000 to 127. This parameter is memorised with a Program.

* Juno 106 & Juno 60 are trademarks copyright of Roland Corp. Japan.

Page 6 looks like so:

Osc start phase	000
Drum one-shot	Off

The higher parameter is "Osc start phase". In this case with a value of 000.

This parameter determines the phase at which the oscillators start at when a key is pressed. Use the upper data knob to adjust the value of this parameter. When this parameter is set to 000, the start phase of the oscillators is at 0°. When set to 32, the start phase of the oscillators is 90°. When set to 64, the start phase of the oscillators is 180°. When set to 96, the start phase of the oscillators is 270° and when set to 127, the start phase of the oscillators is approx. 355°. The phase is smoothly adjustable from 0° to nearly 360° with this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



NOTE:

This parameter will not have any effect at all if the Osc mode parameter on page 2 of this menu is set to Ensemble as this makes all oscillators freewheel, in which case no phase control is operational.



NOTE:

This parameter is useful in the creation of "Percussive" sounds or drums when set to either 32 (= 90°) or 96. (= 270°)

The lower parameter is "Drum one-shot". In this case with a value of Off.

This parameter can simulate the 'One shot' feature found on samplers. Use the lower data knob to adjust the value of this parameter. When this parameter is set to Off, Note Off messages received from the keyboard or MIDI will force the Envelopes to jump immediately to their Release stage. This is normal Envelope operation. When this parameter is set to On, as soon as a note is triggered from the keyboard or from MIDI, the whole note envelope will be sounded. Any Note Off messages from the keyboard or MIDI will have no effect on the sound and will not force the Envelopes to immediately jump to their Release stages. This parameter is memorised with a Program.



NOTE:

This parameter is especially useful when creating drum sounds and using Drum Maps with a sequencer. It is possible that "note dropouts" can occur, especially when repetitive notes occur (Such as snare rolls). This is because some sequencers occasionally get the note on/off messages out of sequence. It is not a fault with the Supernova II keyboard but rather the sequencer. This is a typical example of what happens : when a snare roll of say 16th notes with a gate time of 16ths is programmed into a sequencer, the expected Midi output would be as follows:

Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, etc.

Occasionally, what actually happens is :

Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note on, Note off - (gap of 1 16th) - Note off, etc.

This happens presumably because as far as the sequencer is concerned, certain Note off and the Next note on events happen in theory at the same time. Most of the time the sequencer will output them in the right order but occasionally it will get the order wrong, resulting in the odd note dropping out. Setting the Drum one-shot parameter to On eliminates this problem, since Note Off messages are effectively ignored and therefore notes will never appear to dropout. Another solution is to either make the Gate time (Note length) of the notes less than the distance between the notes (forcing the sequencer to output the Note on and off messages correctly).

Portamento - Knob

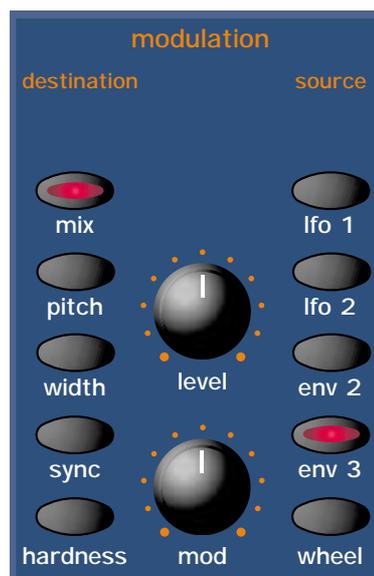
This knob adjusts the Portamento effect on the currently selected Program. Fully anticlockwise no Portamento is heard. Turning the knob clockwise brings in the Portamento effect and notes will smoothly glide from one pitch to the next. The range of this parameter is 000 to 127. This parameter is memorised with Programs.



NOTE:

The Portamento effect will only work when the polyphony of the Program / Part is set to Mono.

Oscillator Modulation Matrix



This is an extremely powerful feature of the Supernova II keyboard. These controls affect the modulation of the currently selected oscillator or sound source. The buttons on the left are all “Destinations”. They can all be modulated by the “Sources” which are the buttons on the right. The amount of modulation applied from any source is determined by the setting of the Mod Depth Knob. This can be either *Positive* modulation (Turning the Mod Depth Knob Clockwise) or *Negative* modulation (Turning the Mod Depth Knob Anticlockwise). Additionally, there is a manual Level Knob that allows a static “Offset” or “level” to be applied to any of the destinations.

For example, to adjust the level of the “Harden” setting of Oscillator 1 press the “Osc 1” button (it will light up indicating it is selected) and then press the “Harden” button within the modulation section to define the modulation destination. Now adjusting the Level knob will change the Harden setting of Oscillator 1.

Similarly, to adjust the level of the envelope 3 modulation of the “Harden” setting of Oscillator 1, press the “Osc 1” button (it will light up indicating it is selected) and then press the “Harden” button within the modulation section to define the modulation destination. Press the Env 3 button to define the modulation source. Now adjusting the Mod depth knob clockwise will modulate the Harden setting of Oscillator 1 by envelope 3.



NOTE:

This makes it possible for *all* modulation sources to affect any one destination in varying amounts and even in different polarities.

The display will change to indicate the parameter which has been selected and show the newly edited value. The Display will stay like this until another parameter is adjusted, in which case it will change to display the new parameter. To return to the display of the Program / Performance name and number, press the Program or Performance button.



NOTE:

Only one source and destination can be edited at one time.



NOTE:

Even though only one source and destination combination can be edited at one time, All available combinations can happen at the same time.



NOTE:

Some combinations do not apply. For example, Pulse Width Modulation of Noise Generator. When such a parameter is edited the display shows “Not Available” and no audible effect is heard.

Possible Combinations and the effects Produced.



NOTE:

All these parameters are memorised with a Program.

Mix - Button
 Level - Knob

This combination controls the Volume of the selected Oscillator, Noise Generator or Ring Modulator. Turning the Level Knob fully clockwise turns the selected sound source to full volume & fully anticlockwise turns the selected sound source to off (No Volume). The range of this parameter is 000 to 127.

Mix - Button
 Mod Depth - Knob
 LFO 1 - Button

This combination controls the modulation of the Mix of the selected Oscillator, Noise Generator or Ring Modulator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Mix modulation from LFO 1 to the selected sound source in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Mix modulation from LFO 1 to the selected sound source in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

Mix - Button
 Mod Depth - Knob
 LFO 2 - Button

This combination controls the modulation of the Mix of the selected Oscillator, Noise Generator or Ring Modulator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Mix modulation from LFO 2 to the selected sound source in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Mix modulation from LFO 2 to the selected sound source in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

Mix - Button
 Mod Depth - Knob
 ENV 2 - Button

This combination controls the modulation of the Mix of the selected Oscillator, Noise Generator or Ring Modulator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Mix modulation from ENV 2 to the selected sound source in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Mix modulation from ENV 2 to the selected sound source in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

Mix - Button
 Mod Depth - Knob
 ENV 3 - Button

This combination controls the modulation of the Mix of the selected Oscillator, Noise Generator or Ring Modulator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Mix modulation from ENV 3 to the selected sound source in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Mix modulation from ENV 3 to the selected sound source in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

Mix - Button
 Mod Depth - Knob
 Wheel - Button

This combination controls the modulation of the Mix of the selected Oscillator, Noise Generator or Ring Modulator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Mix modulation from the Mod Wheel to the selected sound source in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Mix modulation from the Mod Wheel to the selected sound source in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

Pitch - Button

Level - Knob

This combination controls the Pitch Tracking of the selected oscillator. Turning the Level Knob fully clockwise makes the selected Oscillator track the keyboard in the normal way. i.e. Notes played one octave apart keyboard are transposed one octave apart. In the "Mid" position notes played one octave apart on the keyboard are transposed 1/2 an octave apart and fully anticlockwise notes played one octave apart on the keyboard produces no transposition at all. This can be useful for Ring Mod effects. The range of this parameter is 000 to 127.

**NOTE:**

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected.

Pitch - Button
 Mod Depth - Knob
 LFO 1 - Button

This combination controls the Pitch Modulation of the selected Oscillator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Vibrato from LFO 1 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Vibrato from LFO 1 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Pitch - Button
 Mod Depth - Knob
 LFO 2 - Button

This combination controls the Pitch Modulation of the selected Oscillator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Vibrato from LFO 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Vibrato from LFO 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Pitch - Button
 Mod Depth - Knob
 ENV 2 - Button

This combination controls the Pitch Modulation of the selected Oscillator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Pitch shift from ENV 2 to the selected Oscillator in a *Positive* direction (Up). Turning the Mod Depth Knob fully anticlockwise introduces Pitch shift from ENV 2 to the selected Oscillator in a *Negative* direction (Down). In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Pitch - Button
 Mod Depth - Knob
 ENV 3 - Button

This combination controls the Pitch Modulation of the selected Oscillator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Pitch shift from ENV 3 to the selected Oscillator in a *Positive* direction (Up). Turning the Mod Depth Knob fully anticlockwise introduces Pitch shift from ENV 3 to the selected Oscillator in a *Negative* direction (Down). In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Pitch - Button
 Mod Depth - Knob
 Wheel - Button

This combination controls the Pitch Modulation of the selected Oscillator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Pitch shift from Mod Wheel to the selected Oscillator in a *Positive* direction (Up). Turning the Mod Depth Knob fully anticlockwise introduces Pitch shift from Mod Wheel to the selected Oscillator in a *Negative* direction (Down). In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This parameter is calibrated in semitones, so a setting of +12 will produce an octave shift (Up) in the selected oscillator when a Mod Wheel value of 127 is received.



This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Level - Knob

This combination controls the Pulse Width of the selected Oscillator. Turning the Level Knob fully clockwise makes the selected Oscillator Pulse Width very thin. In the mid position the Pulse Width is 25% - 75% and fully anticlockwise, the Pulse Width is 50% - 50%. The range of this parameter is -64 to +63.



This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Mod Depth - Knob
 LFO 1 - Button

This combination controls the Pulse Width Modulation of the selected Oscillator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Pulse Width Modulation from LFO 1 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Pulse Width Modulation from LFO 1 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Mod Depth - Knob
 LFO 2 - Button

This combination controls the Pulse Width Modulation of the selected Oscillator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Pulse Width Modulation from LFO 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Pulse Width Modulation from LFO 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Mod Depth - Knob
 ENV 2 - Button

This combination controls the Pulse Width Modulation of the selected Oscillator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Pulse Width Modulation from ENV 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Pulse Width Modulation from ENV 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Mod Depth - Knob
 ENV 3 - Button

This combination controls the Pulse Width Modulation of the selected Oscillator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Pulse Width Modulation from ENV 3 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Pulse Width Modulation from ENV 3 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Width - Button
 Mod Depth - Knob
 Wheel - Button

This combination controls the Pulse Width Modulation of the selected Oscillator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Pulse Width Modulation from the Mod Wheel to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Pulse Width Modulation from the Mod Wheel to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.

**NOTE:**

This does not apply to the Oscillators that have Saw Waveforms selected or the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Level - Knob

This combination controls the Sync Effect on the selected Oscillator. Turning the Level Knob fully clockwise introduces the Sync Effect fully to the selected Oscillator & fully anticlockwise there is no Sync Effect at all. The range of this parameter is 000 to 127.

**NOTE:**

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Mod Depth - Knob
 LFO 1 - Button

This combination controls the modulation of the Sync Effect on the selected Oscillator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Sync Effect from LFO 1 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Sync Effect from LFO 1 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Mod Depth - Knob
 LFO 2 - Button

This combination controls the modulation of the Sync Effect on the selected Oscillator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Sync Effect from LFO 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Sync Effect from LFO 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Oscillators that have the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Mod Depth - Knob
 ENV 2 - Button

This combination controls the modulation of the Sync Effect on the selected Oscillator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Sync Effect from ENV 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Sync Effect from ENV 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Mod Depth - Knob
 ENV 3 - Button

This combination controls the modulation of the Sync Effect on the selected Oscillator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Sync Effect from ENV 3 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Sync Effect from ENV 3 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Sync - Button
 Mod Depth - Knob
 Wheel - Button

This combination controls the modulation of the Sync Effect on the selected Oscillator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Sync Effect from the Mod Wheel to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Sync Effect from the Mod Wheel to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the Noise, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Harden - Button
Level - Knob

This combination controls the Harden Effect on the selected Oscillator or noise waveforms. Turning the Level Knob fully clockwise introduces the Harden effect fully to the selected Oscillator and fully anticlockwise, there is no Hardening at all. The range of this parameter is 000 to 127.



NOTE:

This does not apply to the 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Harden - Button
Mod Depth - Knob
LFO 1 - Button

This combination controls the modulation of the Harden effect of the selected Oscillator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Harden from LFO 1 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Harden from LFO 1 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the Oscillators that have the, 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Harden - Button
Mod Depth - Knob
LFO 2 - Button

This combination controls the modulation of the Harden Effect on the selected Oscillator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Harden Effect from LFO 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Harden Effect from LFO 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Harden - Button
Mod Depth - Knob
ENV 2 - Button

This combination controls the modulation of the Harden Effect on the selected Oscillator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Harden Effect from ENV 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Harden Effect from ENV 2 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

Harden - Button
 Mod Depth - Knob
 ENV 3 - Button

This combination controls the modulation of the Harden Effect on the selected Oscillator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Harden Effect from ENV 3 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Harden Effect from ENV 3 to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".

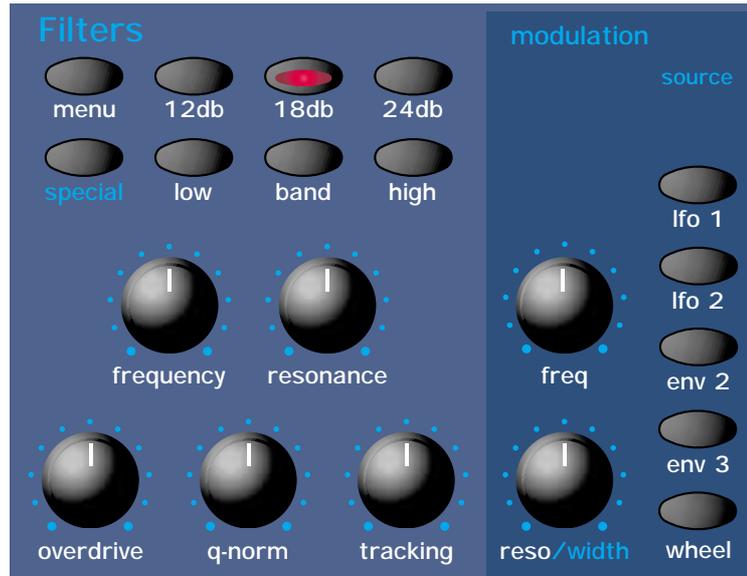
Harden - Button
 Mod Depth - Knob
 Wheel - Button

This combination controls the modulation of the Harden Effect on on the selected Oscillator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Harden Effect from the Mod Wheel to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Harden Effect from the Mod Wheel to the selected Oscillator in a *Negative* direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This does not apply to the 1*3 & 2*3 Ring Modulator outputs. No audible effect to these sound sources will be heard if an attempt is made to adjust this parameter when these sound sources are selected and the display will show "Not Available".



This section contains all the knobs and buttons associated with the Filter.

Menu - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Filter section. In the Filter section there are 5 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Fq Mwh LFO2 amt	+63
Res Mwh LFO2 amt	+63

The higher parameter is "Fq MWh LFO2 amt". In this case with a value of +63. This parameter determines how the Modulation Wheel affects the amount of Modulation of the Cutoff Frequency of the Filter from LFO 2. This produces a Wah Wah type of effect. When the upper Data knob is set to +00, there is no change to the Filter Cutoff Frequency when the Modulation Wheel is engaged. Anticlockwise of +00, there will be an increasing amount of Negative modulation. i.e. The Filter will be closed more by LFO 2 when the Modulation Wheel is engaged. Clockwise of +00, the modulation is Positive. i.e. The Filter will be increasingly opened by LFO 2 when the Modulation Wheel is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Res MWh LFO2 amt". In this case with a value of +63. This parameter determines how the Modulation Wheel affects the amount of Modulation of the Resonance of the Filter from LFO 2. When the lower Data knob is set to +00, there is no change to the Filter Resonance when the Modulation Wheel is engaged. Anticlockwise of +00, there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant by LFO 2 when the Modulation Wheel is engaged. Clockwise of +00, the modulation is Positive. i.e. The Filter will be increasingly made more Resonant by LFO 2 when Modulation Wheel is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 2 looks like so:

Fq AT LFO2 amt	+63
Res AT LFO2 amt	+63

The higher parameter is "Fq AT LFO2 amt". In this case with a value of +63. This parameter determines how the Aftertouch affects the amount of Modulation of the Cutoff frequency of the Filter from LFO 2. This produces the Growl effect. When the upper Data knob is set to +00, there is no change to the Filter Cutoff Frequency when the Aftertouch is engaged. Anticlockwise of centre there will be an increasing amount of Negative modulation. i.e. The Filter will be closed more by LFO 2 when the Aftertouch is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly opened by LFO 2 when the Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Res AT LFO2 amt". In this case with a value of +63. This parameter determines how the Aftertouch affects the amount of Modulation of the Resonance of the Filter from LFO 2. When the lower Data knob is set to +00, there is no change to the Filter Resonance when the Aftertouch is engaged. Anticlockwise of +00, there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant by LFO 2 when the Aftertouch is engaged. Clockwise of +00, the modulation is Positive. i.e. The Filter will be increasingly made more Resonant by LFO 2 when the Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 3 looks like so:

Fq AT amt	+63
Res AT amt	+63

The higher parameter is "Fq AT amt". In this case with a value of +63. This parameter determines how the Aftertouch affects the amount of Modulation of the Cutoff frequency of the Filter. When the upper Data knob is set to +00, there is no change to the Filter Cutoff Frequency when the Aftertouch is engaged. Anticlockwise of +00, there will be an increasing amount of Negative modulation. i.e. The Filter will be closed more when the Aftertouch is engaged. Clockwise of +00, the modulation is Positive. i.e. The Filter will be increasingly opened when the Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Res AT amt". In this case with a value of +63. This parameter determines how the Aftertouch affects the amount of Modulation of the Resonance of the Filter. When the lower Data knob is set to +00, there is no change to the Filter Resonance when the Aftertouch is engaged. Anticlockwise of +00, there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant when the Aftertouch is engaged. Clockwise of +00, the modulation is Positive. i.e. The Filter will be increasingly made more Resonant when the Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 4 looks like so:

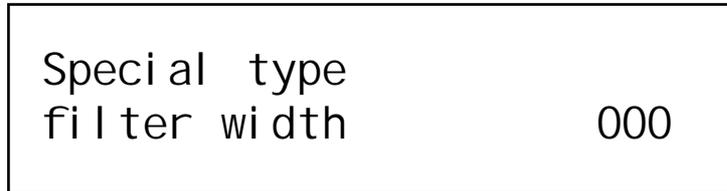
Overdrive curve	-64
Oscs filt bypass	Off

The higher parameter is "Overdrive curve." In this case with a value of -64. This parameter determines the characteristic of the Overdrive effect. Use the upper Data knob to adjust this parameter. With a setting +00 normal clipping type of Distortion occurs. With a +ve value additional symmetrical distortion effects are introduced. With a -ve value additional asymmetrical distortion effects are introduced. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Oscs filt bypass". In this case with a value of Off.

This parameter determines if the Oscillators and Ring modulator outputs actually pass through the Filter or not. This allows the noise to be filtered independently of the Oscillators. This is particularly useful when creating drum sounds. When this parameter is set to the On position, all the oscillator and Ring Modulator outputs minus the Noise (which is still going through the filter) are routed past the filter, directly to the Amp envelope. When this parameter is set to the On position, all sound sources - the oscillators, the Ring Modulators plus the Noise are routed to the filter. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 5 looks like so:



The parameter is "Special type filter width". In this case with a value of 000.

This parameter determines the spacing/offset in filter cutoff frequencies between the two elements of the "Special" filters. This is a duplicate of the Filter width parameter that is displayed when the special page is active. The reason for duplicating this parameter here is that it was found to be nice for the display to jump back to this parameter when editing. This parameter can provide "Formant" type filters enabling speech like qualities to be easily realised. The Filter width is calibrated in semitones and allows specific offsets to be easily created. The range of this parameter is 000 to 127. Note that the Resonance modulation Knob in the Filter Modulation Matrix actually modulates the "Filter width" parameter instead of the resonance when the "Special" filters are selected. The Resonance knob still retains its function as filter Resonance when in this mode. This parameter is memorised with a program.



NOTE:

Adjusting the value of this parameter will alter the value in the Special page (displayed when a Special Filter type is selected from the front panel buttons). It is not possible to have different values set in the 2 pages.

- 12dB - Button
- 18dB - Button
- 24dB - Button

These buttons select the slope of the cutoff curve of the Filter. Only one can be selected at one time. The effect is similar to a "Q" control on a parametric EQ. In the 12db position, the Cutoff Frequency slope is less steep. So in a Low Pass Filter, the higher frequencies are not attenuated as much as they are in the 24 or 18db positions. This makes the resulting filtering in the 12db position more subtle than the 24db or 18db positions which you should select if you want the Cutoff Frequency to be more obvious.

- Low - Button
- High - Button
- Band - Button

These buttons select the type of Filter to be used in this program. All have a very different sound. Below is a description of how the various types of filter allow sounds to pass through.

The Low button configures the Filter into a Low Pass Filter. A Low Pass Filter allows harmonics below a set frequency to pass through the Filter. Hence the name Low Pass Filter.

The High button configures the Filter into a High Pass Filter. A High Pass Filter allows harmonics above a set frequency to pass through the Filter. Hence the name High Pass Filter.

The Band button configures the Filter into a Band Pass Filter. A Band Pass Filter allows harmonics at a set frequency to pass through the Filter. The harmonics above and below the set frequency do not pass through the Filter. Hence the name Band Pass Filter. The setting of these buttons is memorised with a Program.

Special - Button

When the special filter button is pressed the display shows:

Filter type	Res LPF
Filter width	064

The higher parameter is "Filter type". In this case with a value of Res LPF. This parameter determines what type of Special filter is applied. Use the Higher data knob to adjust this parameter. There are 9 different special filters. Each one is made up of 2 filter blocks. The "Hyper Resonant" types are in series configuration. These are the Res LPF, Res BPF & Res HPF filters. These types are very resonant and the Filter width parameter allows the Cutoff frequencies of each filter block to be set at different frequencies.

The remaining Special Filter types have the 2 filter blocks configured in parallel. Again, the Filter width parameter allows the Cutoff frequencies of each filter block to be set at different frequencies. The range of this parameter is Res LPF, Res BPF, Res HPF, Notch, LPF + LPF, BPF + BPF, HPF + HPF, LPF + BPF, & BPF + LPF. This parameter is memorised with a program.

The lower parameter is "Width". In this case with a value of 00. This parameter determines the spacing/offset in filter cutoff frequencies between the two elements of the "Special" filters. This is a duplicate of the Special type filter width parameter that is displayed on page 5 of the Filter Menu. The reason for this is that it was found to be nice when editing for the display to jump back to this parameter when editing. This parameter can provide "Formant" type filters enabling speech like qualities to be easily realised. The Filter width is calibrated in semitones and allows specific offsets to be easily created. The range of this parameter is 000 to 127. Note that the Resonance modulation Knob in the Filter Modulation Matrix actually modulates the "Filter width" parameter and not the resonance when the "Special" filters are selected. The Resonance knob still retains its function as filter Resonance when in this mode. This parameter is memorised with a program.



NOTE:

Adjusting the value of this parameter will also alter the value displayed in the Filter menu. It is not possible to have different values set in the 2 pages.

Q Normalise - Knob

This knob determines how the Resonance of the Filter behaves. Fully Anticlockwise, the Resonance is added to the incoming signal to the filter. This means that higher levels of resonance will produce a louder output signal from the Filter. Fully Clockwise, the output level of the filter is maintained regardless of the position of the resonance control. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Tracking - Knob

This knob controls the amount of change to the Filter Cutoff Frequency (initially set by the Frequency knob) by the pitch of the note being played. Fully anticlockwise this parameter does not effect the Cutoff Frequency of the filter if notes at different pitches are played. Clockwise from this position there will be an increasing amount of modulation. i.e. The Filter will be opened more as higher notes are played in the keyboard. This control is used to determine how the timbre of a sound changes over the keyboard. At the fully clockwise position, the Filter tracks the pitch changes in a 1:1 ratio. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Frequency - Knob

This knob controls the "Cutoff Frequency" of the Filter. When fully Clockwise and the Filter's Cutoff frequency is set to the highest position, this generally produces a very trebly sound. When fully anticlockwise and the Filter's Cutoff frequency is set to the lowest position, this generally produces a very mellow sound. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



NOTE:

It is possible to set the Filter so that it filters out all of the sound. This normally happens at extreme settings. i.e. The Frequency knob set fully anticlockwise in Low Pass Filter mode or the Frequency knob set fully clockwise in the High Pass Filter mode.

Resonance - Knob

This knob controls the amount of Resonance the Filter has. The effect is to emphasise the harmonics around the Cutoff Frequency (Set by the Frequency knob detailed above). For this reason, on some synths this control is known as Emphasis. Fully anticlockwise, there is no boosting of the Cutoff Frequency, but as you turn the knob clockwise, this frequency will be boosted until when fully clockwise, it goes in to oscillation producing a new pitched element (similar to feedback on an electric guitar). Increasing the Resonance is very good for bringing out modulation (movement or change) in the Filter's Cutoff Frequency, such as in TB303 basslines. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Overdrive - Knob

This knob determines how much Overdrive is applied to the Filter. This can warm sounds up, giving them a different harmonic content from the standard waveforms. "Warmer" sounds are produced by modelling the "Saturation effect" common in classic Analogue Filters. Fully anticlockwise, the signal will be unaffected by the Overdrive. When fully clockwise, full drive will be applied. This parameter's characteristics can be altered by the amount of mix level feed to the Filter. For really overdriven effects, it is recommended that all the oscillators are used, each set at maximum Mix levels. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



NOTE:

The characteristics of the Overdrive can be altered quite drastically with the Overdrive curve parameter on page 4 of the Filter menu.

Filter Modulation Matrix



This is an extremely powerful feature of the Supernova II keyboard. These controls affect the modulation of the Filter. The knobs on the left are "Destinations". They can all be modulated by the "Sources" which are the buttons on the right. The amount of modulation applied from any source is determined by the setting of the knobs. This can be either positive modulation (Turning either or both of the knobs Clockwise) or negative modulation. (Turning either or both of the knobs Anticlockwise)

For example, to adjust the level of Envelope 2 modulation of the the "Freq" setting of the Filter, press the Env 2 button to define the modulation source. Now adjusting the "Freq" knob will modulate the Frequency setting of the Filter by Envelope 2.



NOTE:

This makes it possible for *all* modulation sources to affect any one destination in varying amounts and even in different polarities.

The display will change to indicate the parameter that has been selected and display the newly edited value. The Display will stay like this until another parameter is adjusted, in which case it will change to display the new parameter. To return to the display of the Program / Performance name and number, press the Program or Performance button.



NOTE:

Only one source and destination can be edited at one time.



Even though only one source and destination combination can be edited at one time, all available combinations can happen at the same time.

Possible Combinations and the effects Produced.



The range of all these parameters is -64 to +63. All these parameters are memorised with a Program.

Frequency Mod- Knob
LFO 1 - Button

This combination controls the amount of change to the Filter Cutoff Frequency (Initially set by the Frequency knob) by LFO 1. With the Frequency Mod knob set to the central position there is no change to the Filter Cutoff Frequency. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will be closed more by LFO 1. Clockwise of centre the modulation is *Positive*. i.e. The Filter will be increasingly opened by LFO 1.

Frequency Mod- Knob
LFO 2 - Button

This combination controls the amount of change to the Filter Cutoff Frequency (Initially set by the Frequency knob) by LFO 2. With the Frequency Mod knob set to the central position there is no change to the Filter Cutoff Frequency. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will be closed more by LFO 2. Clockwise of centre the modulation is *Positive*. i.e. The Filter will be increasingly opened by LFO 2.

Frequency Mod- Knob
ENV 2 - Button

This combination controls the amount of change to the Filter Cutoff Frequency (Initially set by the Frequency knob) by ENV 2. With the Frequency Mod knob set to the central position there is no change to the Filter Cutoff Frequency. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will be closed more by ENV 2. Clockwise of centre the modulation is *Positive*. i.e. The Filter will be increasingly opened by ENV 2.

Frequency Mod- Knob
ENV 3 - Button

This combination controls the amount of change to the Filter Cutoff Frequency (Initially set by the Frequency knob) by ENV 3. With the Frequency Mod knob set to the central position there is no change to the Filter Cutoff Frequency. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will be closed more by ENV 3. Clockwise of centre the modulation is *Positive*. i.e. The Filter will be increasingly opened by ENV 3.

Frequency Mod- Knob
Wheel - Button

This combination controls the amount of change to the Filter Cutoff Frequency (Initially set by the Frequency knob) by the Mod Wheel. With the Frequency Mod knob set to the central position there is no change to the Filter Cutoff Frequency. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will be closed more by the Mod Wheel. Clockwise of centre the modulation is *Positive*. i.e. The Filter will be increasingly opened by the Mod Wheel.

Resonance/Width - Knob
LFO 1 - Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by LFO 1. With the Resonance Mod knob set to the central position there is no change to the Resonance. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will become less resonant by LFO 1. Clockwise of centre the modulation is *Positive*. i.e. The Filter will become more resonant by LFO 1.



When "Special" Filter types are selected (which are all Dual Filters), this parameter no longer modulates the Resonance of the Filters but the spacing or "Width" between the 2 Filter's Cutoff frequencies.

Resonance/Width - Knob
LFO 2 - Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by LFO 2. With the Resonance Mod knob set to the central position there is no change to the Resonance. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will become less resonant by LFO 2. Clockwise of centre the modulation is *Positive*. i.e. The Filter will become more resonant by LFO 2.



NOTE:

When "Special" Filter types are selected (which are all Dual Filters), this parameter no longer modulates the Resonance of the Filters but the spacing or "Width" between the 2 Filter's Cutoff frequencies.

Resonance/Width - Knob
ENV 2 - Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by ENV 2. With the Resonance Mod knob set to the central position there is no change to the Resonance. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will become less resonant by ENV 2. Clockwise of centre the modulation is *Positive*. i.e. The Filter will become more resonant by ENV 2.



NOTE:

When "Special" Filter types are selected (which are all Dual Filters), this parameter no longer modulates the Resonance of the Filters but the spacing or "Width" between the 2 Filter's Cutoff frequencies.

Resonance/Width - Knob
ENV 3 - Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by ENV 3. With the Resonance Mod knob set to the central position there is no change to the Resonance. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will become less resonant by ENV 3. Clockwise of centre the modulation is *Positive*. i.e. The Filter will become more resonant by ENV 3.



NOTE:

When "Special" Filter types are selected (which are all Dual Filters), this parameter no longer modulates the Resonance of the Filters but the spacing or "Width" between the 2 Filter's Cutoff frequencies.

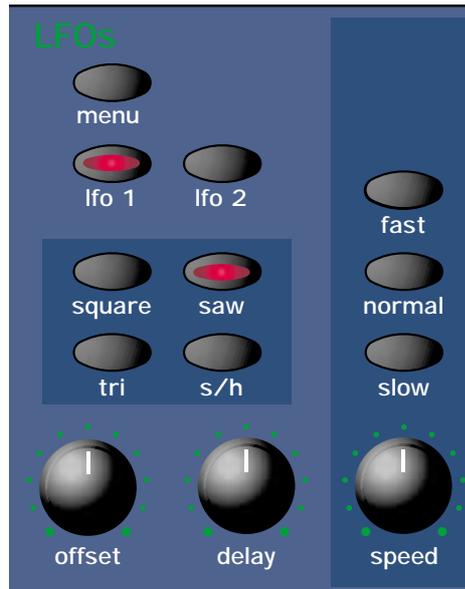
Resonance/Width - Knob
Wheel - Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by the Mod Wheel. With the Resonance Mod knob set to the central position there is no change to the Resonance. Anticlockwise of centre there will be an increasing amount of *Negative* modulation. i.e. The Filter will become less resonant by the Mod Wheel. Clockwise of centre the modulation is *Positive*. i.e. The Filter will become more resonant by the Mod Wheel.



NOTE:

When "Special" Filter types are selected (which are all Dual Filters), this parameter no longer modulates the Resonance of the Filters but the spacing or "Width" between the 2 Filter's Cutoff frequencies.



This section contains all the Knobs and buttons associated with the LFOs. The LFOs (Low Frequency Oscillators) produce regular electronic variations which are normally too low a frequency to be heard when converted into audio vibrations. However, when used to modify various elements of the sound they can be used to create regular changes in pitch (Vibrato) or Pulse width and Filter Modulation (these create tonal changes in the waveforms) for example.

Menu - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to the LFO section. In the LFO section there are 6 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

LFO slew amount	000
Env 3 speed mod	+63

The higher parameter is "LFO slew amount". In this case with a value of 000. This parameter determines how fast the selected LFO can change to another value (a bit like portamento). Use the upper data knob to adjust this parameters value. In the 000 position (fully anticlockwise) no slewing is applied to the selected LFO and the LFO behaves normally. Turning the upper data knob introduces the slewing effect. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

The lower parameter is "Env 3 speed mod". In this case with a value of +63. This parameter determines how Env 3 effects the speed of the selected LFO. In the central +00 position, there is no change to the selected LFO's speed. Anticlockwise of centre, there will be an increasing amount of negative modulation. i.e. the selected LFO will slow down as the Envelope rises, and speed back up as the envelope falls. Clockwise of centre, there will be an increasing amount of positive modulation. i.e. the selected LFO will speed up as the Envelope rises, and slow down as the envelope falls. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 2 looks like so:

MWh speed mod	+10
AT speed mod	+10

The higher parameter is "MWheel speed mod". In this case with a value of +10.

This parameter determines how the Mod Wheel affects the speed of the selected LFO. If this parameter is set to +00, there is no change to the selected LFO's speed. Negative values of this parameter will produce an increasing amount of negative modulation. i.e. the selected LFO will slow down as the Modulation Wheel is moved forward, and speed back up as it is brought back. Positive values of this parameter will produce an increasing amount of positive modulation. i.e. the selected LFO will speed up as the Modulation Wheel is moved forward, and slow down as it is brought back. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "AT speed mod". In this case with a value of +10.

This parameter determines how the Aftertouch affects the speed of the selected LFO. If this parameter is set to +00, there is no change to the selected LFO's speed. Negative values of this parameter will produce an increasing amount of negative modulation. i.e. the selected LFO will slow down as the Aftertouch is applied, and speed back up as it is disengaged. Positive values of this parameter will produce an increasing amount of positive modulation. i.e. the selected LFO will speed up as the Aftertouch is applied, and slow down as it is disengaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 3 looks like so:

Sync	16th
[6 MIDI clocks]	

The higher parameter is "Sync". In this case with a value of 16th.

This parameter determines where the selected LFO gets its Clock and its resolution. Turning the upper Data knob fully anticlockwise selects the "Off" option which means the selected LFO is running on its own dedicated clock and is not in sync with anything else. Turning the knob clockwise from this position makes the selected LFO sync to Internal or External MIDI Clock in various signatures ranging from 12 Bars to 32nd Triplets. On the bottom of the display, the number of MIDI clocks for the chosen setting is displayed, in this case 6 MIDI clocks. The range of this parameter is Off, 32 Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 Bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program.

Page 4 looks like so:

LFO delay mode	Fade
LFO delay fade	In

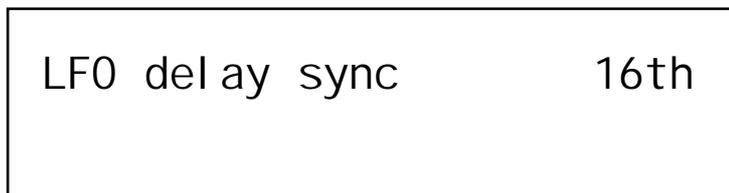
The higher parameter is "LFO delay mode". In this case with a value of Fade.

This parameter determines how the LFO fade feature operates. When set to Fade, the LFO effect is introduced gradually over the time period specified by the LFO's Delay parameter. When set to Gate, the LFO effect is introduced abruptly after the LFO's Delay time has expired. Use the upper data knob to alter this parameter's value. The range of this parameter is Fade & Gate. This parameter is memorised with a Program.

The lower parameter is "LFO Delay fade". In this case with a value of In.

This parameter determines how the selected LFO's Delay parameter behaves. Turning the lower Data knob anticlockwise selects the "In" option which means if a Delay is set using the LFO Delay Knob, no modulation will be present at the start of the note but LFO modulation will "Fade in" over the Delay period. Turning the lower Data knob clockwise selects the "Out" option which means if a Delay is set using the LFO Delay Knob, then LFO modulation will be present at the start of the note and will "Fade out" over the Delay period. The range of this parameter is In & Out. This parameter is memorised with a Program.

Page 5 looks like so:



The only parameter on this page is "LFO delay sync". In this case with a value of 16th.

This parameter enables the currently selected LFO's delay time period to be synchronised to internal or external MIDI clock. Use the lower data knob to adjust the value of this parameter. When this parameter is set to "Off", the LFO delay time is not synchronised to the clock, and the LFO Delay knob on the front panel is used to specify the LFO delay time period. When any other synchronisation rate is selected, the front panel LFO delay knob will have no effect. The range of this parameter is Off, 32 Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 Bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program.

Page 6 looks like so:



The upper parameter is "Delay trigger". In this case with a value of Multi.

This parameter determines how the "Delay" parameter is triggered on the currently selected LFO. Turning the upper Data knob anticlockwise selects the "Multi" option. This means the LFO Delay Time is reset to the start value every time any key is pressed. Turning the upper Data knob clockwise selects the "Single" option. This means the LFO Delay Time is reset to the start value only if no other keys are currently held down. The range of this parameter is Multi & Single. This parameter is memorised with a program.

The lower parameter is "Triggering". In this case with a value of Keysync.

This parameter determines how the selected LFO is triggered. Turning the lower Data knob anticlockwise selects the "Freewheel" option. This means all the LFOs of the "Voices" that are being played are not in phase or in sync. This is the most natural sounding for vibrato effects etc. Turning the lower Data knob clockwise selects the "Keysync" option. This means all the LFOs of the "Voices" that are being played are in phase and the cycles of the LFOs are reset to start from the beginning when a new note is struck. The range of this parameter is Freewheel & Keysync. This parameter is memorised with a Program.

LFO 1 - Button

LFO 2 - Button

The LFO 1 and LFO 2 buttons select which LFO the Offset, Speed & Delay knobs are going to adjust. These buttons also select which LFO will be edited by most of the parameters within the LFO Menu. To adjust LFO 1 press the LFO 1 button. To adjust the LFO 2 press the LFO 2 button.

Offset - Knob

The Offset knob controls an "Offset" (or DC shift) applied to the LFO waveform. This allows the creation of realistic Stringed instrument Vibrato effects by making it possible to create vibrato that is only up for example. Fully Anticlockwise, there is no effect on the normal operation of the LFO. Tuning this knob clockwise of this position introduces an increasing amount of offset applied to the selected LFO's waveform until at fully clockwise the LFO's waveform is only in the upwards direction. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Delay - Knob

The Delay knob controls how long after the note is struck before the selected LFO begins to take effect. If the knob is fully anticlockwise, the LFO will begin immediately. As the knob is turned clockwise it will take increasingly longer for the LFO effect to be introduced.



NOTE:

This is particularly useful for vibrato effects where the LFO if present as the note is struck, can make the note sound out of tune. By turning the Delay Knob slightly clockwise, the selected LFO will not be introduced until after the note is struck, thereby removing the problem.



NOTE:

If you have problems getting the selected LFO to take effect, make sure the delay knob is not set fully clockwise.

Fast - Button
 Normal- Button
 Slow - Button
 Speed - Knob

The Fast, Normal & Slow buttons select the frequency range for the currently selected LFO. If the Slow button is selected, the Speed knob of the selected LFO will have a range that goes from stopped to moderate speeds. If the Normal button is selected, the Speed knob of the selected LFO will have a range equivalent to that found on a normal synthesizer. If the Fast button is selected the Speed knob of the selected LFO will have a range of stopped to several KHz. This parameter is memorised with a Program.

Speed - Knob

The Speed knob controls the rate at which the selected LFO oscillates. Turning the Speed knob fully anticlockwise sets the LFO running at its slowest speed (which is actually stopped). Turning the Speed knob fully clockwise sets the LFO running at its highest speed. (Which can be KHz)

Square - Button
 Saw - Button
 Tri - Button
 S/H - Button

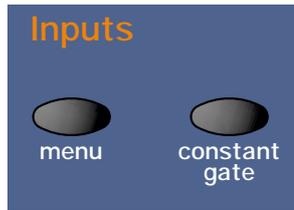
These Buttons select which waveform the currently selected LFO uses.

The Tri button selects a Triangle waveform. This waveform gives the smoothest, continuous change in level to the LFO and is therefore probably the most useful setting. When used in the Oscillator Section, it gives you vibrato (if used at moderate speed in subtle amounts) or "Siren" effects (if used at slow speeds in large amounts) or FM type effects (if used at high speed in subtle amounts). If used with the Filter, slow speeds produce Wah Wah effects.

The Saw button selects a Sawtooth waveform. This waveform looks like the teeth of a saw (from which it gets its name). This gives you a falling level which suddenly jumps back up to full level. When used in the Filter, it produces a rhythmic pulsating effect, similar to a sequenced repeated bass line. When used in the Oscillator Section, it can be used to create "Alarm" type sounds.

The Square button selects a waveform that looks square (from which it gets its name). This waveform changes instantly from one level to another. This is useful for Trill and Computer Game effects.

The S/H button selects the Sample & Hold waveform (sometimes called Random). At a regular interval (governed by the Speed knob), the level of the LFO jumps to a new random level and stays there until the next jump. This creates a rhythmic effect particularly if used on the Filter and assigned to the Cutoff Frequency (refer to the Filter section on page 92 for details). Useful results can also be obtained when used in the Oscillator Section in the creation of Computer Game effects. The setting of these buttons are memorised with a Program.

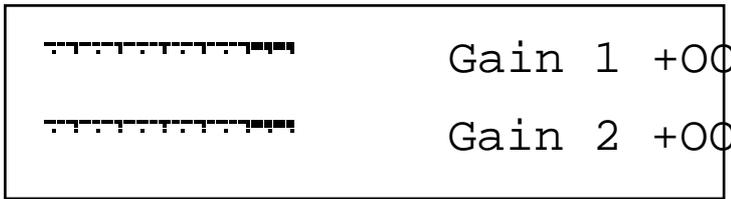


Menu - Button

When this button is pressed, there is 1 page available on the display containing parameters relevant to the Inputs section.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:



Inputs 1 & 2 can be monitored, and the sensitivity of the inputs can be adjusted using this page. Peak Program Meters show the level of both inputs. The levels of each of these signals can be adjusted from +60 dB gain to -8 dB attenuation using the upper and lower Data knobs. These parameters are memorised with the Global settings.



NOTE:

The setting of these parameters is saved along with all the other Global parameters when the Global parameters are saved while in the Global menu.



NOTE:

A slight click may be heard at certain intervals as the gain is adjusted. This is due to switching of analogue circuits and is normal.

Constant Gate - Button

When this button is lit, the envelopes are "constantly" gated on as if C3 was being played and held down. This allows signals fed into the Inputs (and that are assigned as Special waveforms to the Oscillators) to be passed through the Nova II keyboard's synthesis engine without requiring a MIDI Note message to trigger the envelopes. Also, this feature can be used to create sustained sound effects that require no trigger note. When a Program that has this parameter activated is selected, the Program will sound straight away as if C3 was played. This will continue until another program is selected. This parameter is memorised with a Program.

Setting up the Sensitivity/ Input level of the Inputs .

Plug a sound source into one of the Supernova II keyboard's Inputs. Adjust the sensitivity with The Gain Parameter on Page 1 of the Inputs Menu to the type of sound source connected. As a guideline, in the -4 position the input sensitivity is suitable for accepting signals from Studio equipment such as Samplers, Synths, Workstations, Mixers etc (+4dB). In the +10 position, the sensitivity is suitable for Consumer Audio Equipment such as Cassette decks etc (-10dB). In the + 25 position, the sensitivity is suitable for guitars etc (-25dB). In the +55 position, the sensitivity is suitable for Microphones etc (-55dB). These settings may vary from equipment to equipment. To set this correctly, press the menu button in the Input section and go to page 1. The display looks like so:



In this page meters are available showing the level of incoming signals on each of the 2 Inputs. The 2 Data knobs access "Gain" controls allowing -8dBm attenuation (a signal of +8dbm will clip) to +60dBm of boost or gain to the signal. When the meters reach the highest segment of the display, the signal is clipping. Set the "Gain" controls to get the loudest possible signal without clipping.



NOTE:

The "Gain" can be set individually for each input.

The Inputs on the Supernova II keyboard can be used in 3 different ways. Firstly, an Input can be used to "Tack on" to an effects chain in a Program or to the Effects chain of a Part of a Performance. Secondly, as a waveform that can be processed by the Filter, LFOs, ENVs and in turn, the Effects. Thirdly, as a Modulator or Carrier in a Vocoder setup. Let's look at these individually.

Setting the Inputs to be routed to the effects.

Set up the Input sensitivity with the "Gain" parameters as shown above. To connect an Input to an effects chain in Program or Performance Mode, simply press the menu button in the Effects section. Go to page 5 of the Effects section's Special menu and set the "Pass to effects:" parameter to either "Input 1", "Input 2", "Program & Input 1" or "Program & Input 2". The "Input 1" or "Input 2" settings mean that only the selected Input goes to the effects used on the selected Program or Part. The sound assigned to the Program or Part is mute. The "Program & Input 1" or "Program & Input 2" settings mean that both the selected Input and the sound assigned to the Program or Part go the effects. Remember, there are 7 effects available in each program or Part, so a lot of effects processing can be used on the Inputs. Additionally, in a Performance, the output of the effects can be routed to different output pairs allowing separate returns to be realised. To do this, select the Part of the Performance you wish to re-route and set the Part outputs parameter on page 2 of the Output menu in the Part edit section to the output pair you require.

Passing an Input signal through the Filter and Effects.

Passing loops and other signals through Filters has become popular over the last couple of years. The Supernova II keyboard allows either Input to be processed in this way. Set up the Input sensitivity with the "Gain" parameters as shown above. Simply selecting the "H125 Input/sw1" Program will assign Input 1 to an Oscillator and will therefore pass this signal through the Filter. Additionally, this Program also uses the "Constant Gate" parameter, meaning no MIDI event is required to trigger the envelopes. Alternatively you can set up your own Program.

To set this up, it is necessary create a Program that is set up so that an Oscillator waveform is substituted with an Input signal, and to supply a MIDI note to "trigger" the Envelopes (the Amp Envelope in particular). Alternatively, set the Constant gate parameter to On so that you can hear the signal.

The best thing to do is to use an Init Program as a starting point from which to create an "Input" Program. Select the Program h049 Init Program in Drum Map h (you may copy this single Drum Map Program to any standard Program Bank destination of your choice). Select Oscillator 1 and then press the Mix button (so that it is lit) in the Oscillator Mod Matrix. Turn the Level knob in the Oscillator Mod Matrix fully clockwise to a value of 127 (This turns Osc 1 up to a volume of 127).

Select Oscillator 2 and then press the Mix button (so that it is lit) in the Oscillator Mod Matrix. Turn the Level knob in the Oscillator Mod Matrix fully anticlockwise to a value of 000 (This turns Osc 2 down to a volume of 000).

Select Oscillator 3 and then press the Mix button (so that it is lit) in the Oscillator Mod Matrix. Turn the Level knob in the Oscillator Mod Matrix fully anticlockwise to a value of 000 (This turns Osc 3 down to a volume of 000).

Now the only audible Oscillator should be Oscillator 1.

Select Oscillator 1 and then press the Special waveform button. Use the lower fast data knob to select the desired Input. Now when pressing a note on the Supernova II keyboard, the Input signal should be heard.



NOTE:

If no signal is present on the Input, no sound will be heard.

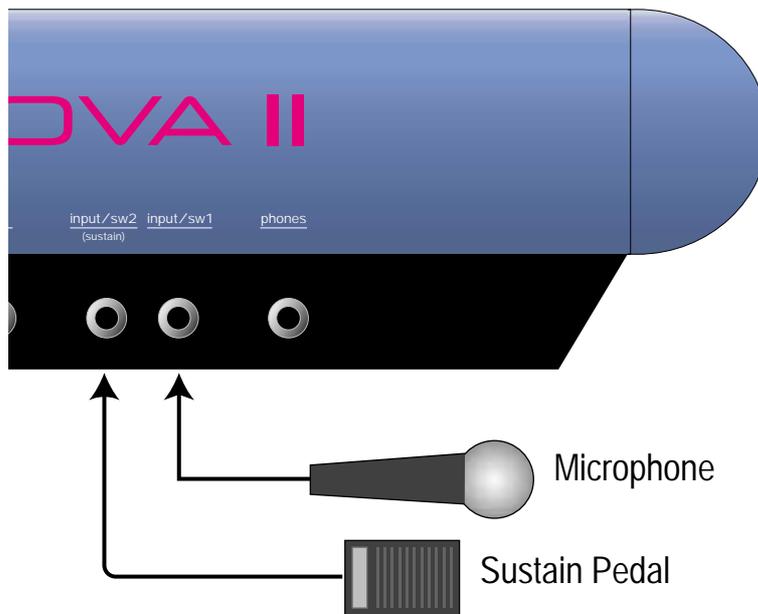


If no MIDI note is sent to the Supernova II keyboard and the Constant gate parameter is set to Off, no sound will be heard. Also, if no signal is present on the assigned Input at the moment the MIDI Note is played, then no sound will be heard.

Now all that remains to be done is set up the Filter, Envelopes, LFOs & Effects to the type/settings that you require. Once that is done, Save the Program so you can recall it later. Some cool things can be done here. Filter sweeps can be carried out by the envelopes and / or LFOs. LFOs of course can be synced to MIDI clock and used to Modulate the Oscillator Mix level thereby creating "Gater" effects. In an unsynced mode and with the LFO range parameter set to Fast, strange effects can be achieved when "Gating" the Inputs at Khz (similar to Decimator type effects). Remember that Envelope 3 can also modulate the speed of the LFO that is being used for the "Gating" effect.



Input choices are memorised with the program, so different programs could use different Inputs or even both at once by using



Located on the Nova II keyboard's rear panel are two 1/4" jack sockets labelled "Input / sw 1" & "Input / sw 2" which may be used to connect either an audio source (from a microphone, CD player, sampler etc.) or a Sustain pedal / footswitch. A third 1/4" jack socket labelled "Pedal / switch 3" may be used exclusively for connecting either an Expression Pedal or a Sustain pedal / Footswitch.

Connecting Footswitches

To use a footswitch with the Nova II keyboard, it is first necessary to specify which type of device is being connected to which 1/4" jack. This is set up on pages 9 (for Input / sw1 & Input / sw2) and 10 (for Pedal / sw3) of the Global menu.

Page 9 looks like so:

Input/sw 1	Audi o i n
Input/sw 2	Audi o i n

Page 10 looks like so:

Pedal /sw 3	Pedal -R
F i n d e r d e m o s	Off

You need to set the appropriate parameter (depending if you are using sw1, 2 or 3) to behave as a footswitch.

For example. If you are using a KORG standard Footswitch (open circiut when not pressed), connected to Input / sw2, set the Input / sw2 parameter on page 9 of the Global mode to "Switch". The Footswitch should now behave as a sustain switch while in Program Mode.

You may connect a footswitch / Sustain Pedal to any of the three inputs.

Footswitch operation in Program Mode

A footswitch connected to the "Input / sw 1" jack activates the Arp Mute function when pressed and de-activates Arp Mute when released.

If the Arpeggiator is turned off, a footswitch connected to the "Input / sw 2" jack sustains notes when pressed and turns off sus-tained notes when released. If the Arpeggiator is turned on, pressing the footswitch activates the Arp Latch function and releasing the footswitch turns off the Arp Latch function.

A footswitch connected to the "Pedal / switch 3" jack freezes the Vocoder spectrum when pressed, and 'un-freezes' the Vocoder spectrum when released. Freezing the Vocoder spectrum while the Vocoder is being used is great for producing sustaining vowel sounds which will last for as long as the footswitch is held - experiment !

Footswitch operation in Performance Mode

In Performance Mode, each individual Part has its own settings which determine whether it transmits footswitch data and how the Part responds to any MIDI data generated by a footswitch (both when received directly from the footswitch or played back later from a sequencer). These parameters are accessed on pages 1, 2 & 4 in the Part edit Midi Menu.

Page 1 looks like so:



The "Sus/sw2" parameter on page 1 of the Midi Menu determines how the Part will respond to sustain MIDI messages (CC 64). These messages could be generated directly by a footswitch connected to the "Input / sw 2" jack or received from a sequencer via MIDI In. The options available allow a wide range of features from normal sustain operation to Arp latching, Arp muting etc. including inverted operation.

Page 2 looks like so:



The "Sw 1" parameter on page 2 of the Midi Menu determines how the Part will respond to NRPN 9082 MIDI messages. These messages could be generated directly by a footswitch connected to the "Input / sw 1" jack or received from a sequencer via MIDI In. The options available allow a wide range of features from sustain operation to Arp latching, Arp muting etc. including inverted operation.

The "Sw 3" parameter on page 2 of the Midi Menu determines how the Part will respond to NRPN 9338 MIDI messages. These messages could be generated directly by a footswitch connected to the "Pedal / switch 3" jack or received from a sequencer via MIDI In. The options available allow a wide range of features from sustain operation to Arp latching, Arp muting etc. including inverted operation.

Page 4 looks like so:



Page 4 in the Midi menu has a single parameter for each of the three pedal / switch jack sockets. This parameter determines whether pedal / switch MIDI data will be transmitted (and passed on to the Part). If the jack socket parameter is set to "Enabled" ("o"), then when the pedal / footswitch is moved, the appropriate MIDI data will be transmitted using the Part's own MIDI channel. This MIDI data will then be passed to the Part.



NOTE:

If you use the jack marked "Input / sw 1" you will not be able to use this jack to send signals for Audio input 1 for any of your Programs or Performances while the footswitch is connected. When the footswitch is used, it will **not** generate MIDI data using the Sustain controller (CC64) but generates NRPN 9082. (LSB = 122 MSB = 035 or 237A hexadecimal)

**NOTE:**

If you use the jack marked "Input / sw 2" you will not be able to use this jack to send signals for Audio input 2 for any of your Programs or Performances while the footswitch is connected. However, when the footswitch is used, it will generate MIDI data using the Sustain controller (CC64). You should therefore always connect your footswitch to this jack if you wish to use it to sustain notes on external MIDI devices connected to the Nova II keyboard.

**NOTE:**

If you use the jack marked "Pedal / switch 3" you will not be able to use an expression foot pedal for any of your Programs or Performances. When the footswitch is used, it will **not** generate MIDI data using the Sustain controller (CC64) but generates NRPN 9338. (LSB = 122 MSB = 036 or 247A hexadecimal)

**NOTE:**

There are actually two different types of footswitch available, the type which normally has its switch open when not pressed and a type which normally has its switch closed when not pressed. If you have the first type of switch then you should select the "Switch" option for the appropriate jack. If you have the second type of footswitch then select the "Switch-I" option. If you are not sure which type of switch you have, try the "Switch" option first. If the footswitch then seems to behave in the opposite manner to what you would expect, then come back to this menu and change the parameter to "Switch-I" instead.

**NOTE:**

Remember to save your Global parameters if you wish the Nova II keyboard to remember the footswitch settings after it has been turned off.

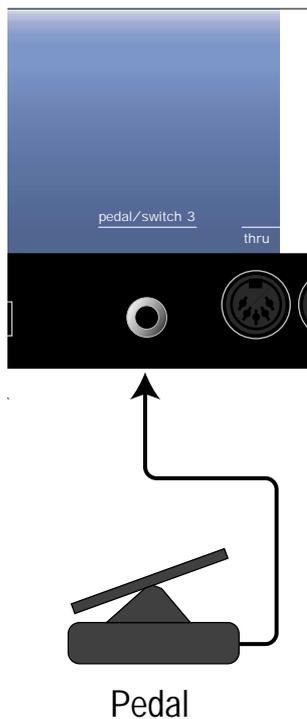
Footswitches and MIDI

When configured correctly in the Global menu and connected, footswitches and expression pedals generate MIDI data when they are moved.

A footswitch connected to the "Input / sw 1" jack transmits MIDI data using NRPN 9082. (LSB = 122 MSB = 035 or 237A hexadecimal) When configured properly, it transmits a data value of 127 when pressed and a data value of 0 when released.

A footswitch connected to the "Input / sw 2" jack transmits MIDI data using CC 64. When configured properly, it transmits a data value of 127 when pressed and a data value of 0 when released.

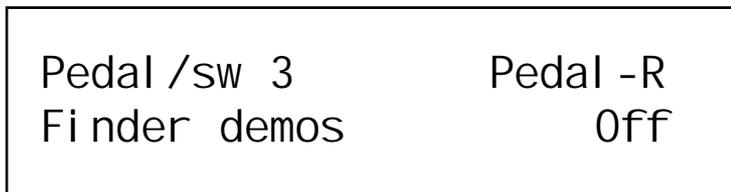
A footswitch connected to the "Pedal / switch 3" jack transmits MIDI data using NRPN 9338. (LSB = 122 MSB = 036 or 247A hexadecimal) When configured properly, it transmits a data value of 127 when pressed and a data value of 0 when released.



Connecting an Expression Foot Pedal

Foot pedals should always be connected to the jack marked "Pedal / switch 3". To configure the jack socket for use with an expression pedal, you should set the "Pedal/sw 3" parameter on page 10 of the Global menu to either "Pedal-R" or "Pedal-T".

Page 10 looks like so:



Use "Pedal-R" for expression pedals which have the control output on the ring of the pedal jack. Use "Pedal-T" for expression pedals which have the control output on the tip of the pedal jack (for example a Korg EXP2 pedal). If you are not sure which type of expression pedal you have, try the "Pedal-R" option first. If the pedal then seems to behave in the opposite manner to what you would expect, then come back to this menu and change the parameter to "Pedal-T" instead.



NOTE:

Remember to save your Global parameters if you wish the Nova II keyboard to remember the expression pedal setting after it has been turned off.

Pedals and MIDI

An expression pedal connected to the "Pedal / switch 3" jack transmits MIDI CC 2 (also known as breath control).



NOTE:

In Performance Mode, MIDI messages will only be transmitted if at least one Part has the appropriate pedal / footswitch jack socket set to "Enabled" on page 4 of the Part edit Midi menu.

Pedal operation in Program Mode

An expression pedal connected to the "Pedal / switch 3" jack generates breath control data which can then be re-mapped according to the setting of the "Pedal/breath" parameter on page 4 of the Global Menu.

Page 4 looks like so:

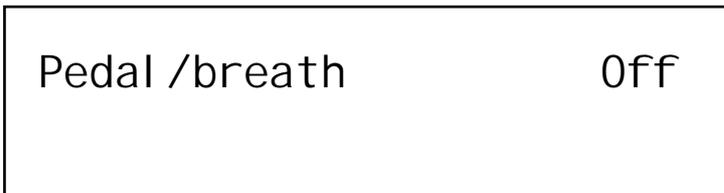


For example, if the "Pedal/breath" parameter in the Global menu was set to "MW", all data generated by the pedal would be passed on to the currently selected Program as if it were modulation wheel data (CC 1) taking into account all of the Wheel settings in the Program's modulation matrices.

Pedal operation in Performance Mode

In Performance Mode, each individual Part has its own settings which determine whether it transmits Pedal data and how the Part responds to any MIDI data generated by a Pedal (both when received directly from the pedal or played back later from a sequencer). These parameters are accessed on pages 3 & 4 in the Part edit Midi Menu.

Page 3 looks like so:



The "Pedal/breath" parameter on Page 3 of the Midi menu determines whether the Part will respond to breath/pedal MIDI messages (CC 2). These messages could be generated directly by an expression pedal connected to the "Pedal / switch 3" jack or received from a sequencer via MIDI In. When this parameter is set to "On", the breath control data which is then re-mapped according to the setting of the "Pedal/breath" parameter on page 4 of the Global menu. For example, if this parameter in the Global menu was set to "MW", all data generated by the pedal would be passed on to the Part as if it were modulation wheel data (CC 1) taking into account all of the Wheel settings in the Parts Program's modulation matrices.

Page 4 looks like so:



Page 4 in the Midi menu has a single parameter for each of the three pedal / switch jack sockets. This parameter determines whether pedal / switch MIDI data will be transmitted (and passed on to the Part). If the jack socket parameter is set to "Enabled" ("o"), then when the pedal / footswitch is moved, the appropriate MIDI data will be transmitted using the Part's own MIDI channel. This MIDI data will then be passed to the Part.

Footswitch does not appear to work when connected to the Input / sw 1 or Input / sw 2 jack sockets.

Make sure the appropriate socket is not configured for "Audio in" on page 9 of the Global Menu.

Footswitch does not appear to work when connected to the Pedal / switch 3 jack socket.

Make sure the Input / sw 3 socket is not configured for "Pedal-T" or "Pedal-R" on page 10 of the Global Menu.

Expression Pedal does not appear to work when connected to the Input / sw 3 socket.

Make sure that the Input / sw 3 socket is not configured for "Switch" or "Switch-I" on page 10 of the Global Menu.

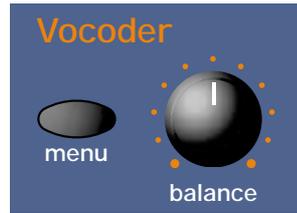
Pedal / footswitch works fine in Program Mode but does not appear to work in Performance Mode.

Make sure Part is enabled (its Polyphony setting is not set to "Off"). Make sure the jack socket is set to "Enabled" for the Part (Page 4 in the Part edit Midi Menu). Make sure the appropriate pedal / footswitch MIDI message reception for the Part is not set to "Off" (Pages 1 - 3 in the Part edit Midi Menu).

Pedal / footswitch works, but behaves in the opposite manner to the way expected.

Switch to the opposite type of pedal / footswitch configuration (Pages 9 & 10 in the Global Menu). If using a footswitch, make sure the Part is not using one of the inverted footswitch options (Pages 1 & 2 in the Part edit Midi Menu).

Oscillator 2 or 3 for the other Input.



This section contains all the knobs and buttons associated with the Vocoder.

Menu - Button



NOTE:

There is only 1 Vocoder in the Supernova II keyboard. You cannot have a Performance with several different vocoders on different Parts.

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section. In the Vocoder section, there are 4 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

Page 1 looks like so:

Sibilance level	15
Sibilance type	Hpass

The higher parameter is "Sibilance level" In this case with a value of 15.

This parameter determines the amount of sibilance there will be in the vocoded signal. Typically these are the "S" and "T" type of sounds in speech. Use the upper Data knob to adjust this parameter. If this parameter is set to 00 no, sibilance from the modulator's signal will be passed to the output of the vocoder. If this parameter is set to 15, then large amounts of sibilance from the modulator will be passed to the output of the vocoder. The range of this parameter is 00 to 15. This parameter is memorised with a Program in Program Mode or memorised with Performance in Performance Mode.



NOTE:

If there is no sibilance present in the modulator's signal, then this parameter will appear to do nothing.

The lower parameter is "Sibilance type". In this case with a value of Hpass.

This parameter determines if the vocoder uses real sibilance (filtered from the modulator signal) or artificially generates it using noise. Use the lower Data knob to adjust this parameter. In the Hpass mode, a High pass filter is used to extract the sibilance from the modulator. In the Noise mode, noise is used to artificially generate sibilance. The range of this parameter is Hpass & Noise. This parameter is memorised with a Program in Program Mode or memorised with a Performance in Performance mode.

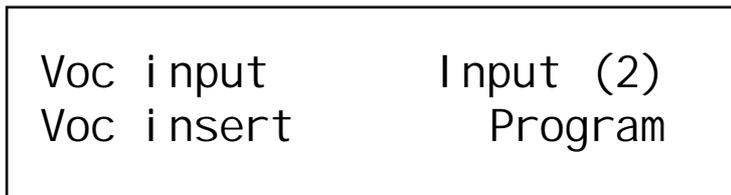


NOTE:

If the Vocoder's spectrum is frozen by using a footswitch, noise will always be used for generating sibilance while the footswitch is held down. This is because the sibilance present in the modulator signal at the moment of 'freezing' will probably disappear during

the period while the vocoder remains frozen.

Page 2 looks like so:



The higher parameter is "Voc input" In this case with a value of Input (2). This parameter determines the "Modulator" source of the vocoder. Use the upper Data knob to adjust this parameter. If this parameter is set to Input (1), the signal present on input (1) will be the modulator. If this parameter is set to Input (2), the signal present on input (2) will be the modulator. In performance mode, parts 1 to 8 can also be selected as modulators. The range of this parameter in Program Mode is Input (1) & Input (2). In Performance Mode, the range is Input (1), Input (2) & Parts 1 to 8. This parameter is memorised with a Program in Program Mode or memorised with a Performance in Performance Mode .

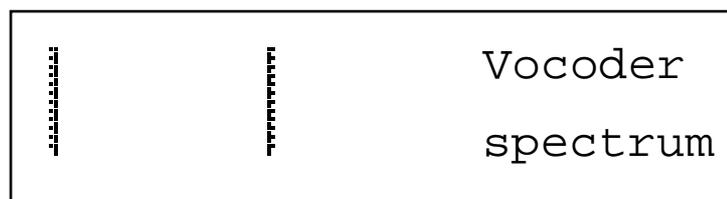
The lower parameter is "Voc insert". In this case with a value of Program. This parameter determines the "Carrier" for the vocoder. Use the lower Data knob to adjust this parameter. In Program Mode, only the currently selected program can be used as the carrier for the vocoder. This parameter shows only the Program option for clarity. In Performance mode, any of the 8 parts can be used as the carrier for the vocoder. The range of this parameter in Program Mode is Program. In Performance Mode, the range is Part 1 to Part 8. This parameter is memorised with a Program in Program Mode or memorised with a Performance in Performance Mode.

Page 3 looks like so:



The only parameter on this page is "Vocoder width" In this case with a value of 00. This parameter determines how wide the stereo output of the vocoder will be. Use the upper Data knob to adjust this parameter. If this parameter is set to 00, the output of the vocoder will be Monaural. If this parameter is set to 15, the output of the vocoder will be in full Stereo. The range of this parameter is 00 to 15. This parameter is memorised with a Program in Program Mode or memorised with a Performance in Performance Mode.

Page 4 looks like so:



The display is showing "Vocoder spectrum". On this page, the Supernova II keyboard displays the Audio spectrum of the modulator in 42 bands on the screen. This is for display purposes only and is not memorised.

Balance - Knob

This knob controls the balances between the Vocoder's Carrier, Modulator and Vocoder output signals. At a position of 000 the Program (Carrier) only will be heard. Turning the knob towards the mid position will fade this into the Vocoder's output. At the Mid position, only the Vocoder's output will be heard. This is the normal setting for most vocoder applications. Tuning the knob clockwise from the mid position fades out the Vocoder's output and fades in the Modulator's signal. At the fully clockwise position only the Modulator will be heard. The range of these parameters is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Performance in Performance Mode.



NOTE:

Setting the Vocoder balance to anything other than 000 activates the Vocoder.



NOTE:

When selecting a Performance or Program that has the Vocoder activated, "[V]" will appear after the Performance or Program name.

Setting up the Inputs for use with the Vocoder .

Set up the Input sensitivity with the "Gain" parameters on page 1 of the Inputs section Menu. There is an example Program in memory which has the vocoder function assigned to it. This is Program H124 Vocoder in 1. This Program uses the input/sw1 socket as a source for the Modulator.

Setting up a vocoder Program of your own is straightforward. Select a Program that is going to become the "Carrier" for the Vocoder. The best "Carriers" tend to be bright Pads or similar. In fact, Drum Map Program h049 "Init Program" is actually quite good for this purpose (make a copy of it by saving h049 to a new destination within a Standard Program Bank A to H - otherwise you will only be able to use one note for your vocoder - h049 is situated within a Drum Map !). In the following example, a copy of h049 "Init Program" will be the "Carrier". Select Program Mode or Performance Mode. If in Program Mode, select the copy of h049. If in Performance Mode, select the Part to be used for the vocoder, then assign the copy of h049 to that Part. Press the menu button in the Vocoder section (the button will flash). Use the page buttons to go to page 2 of this menu. The display will show:

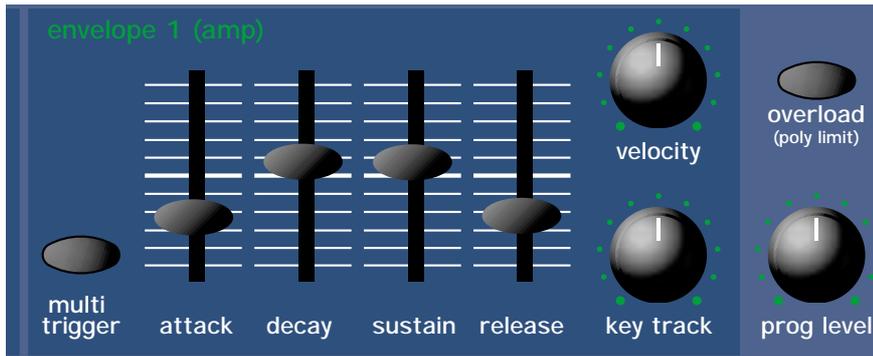
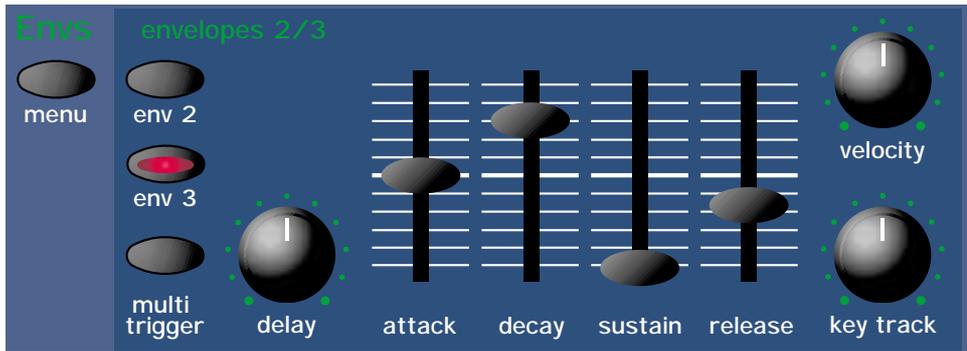
Voc i nput	I nput (2)
Voc i nsert	Program

Assign which Input to use as the "Modulator" source using the higher Data knob. In Program Mode, this will be limited to Input (1) or Input (2). In Performance Mode, the options increase to Input (1), Input (2) or Part 1 to 8. The bottom parameter determines what is going to become the "Carrier". In Program Mode, there is only one choice - the currently selected Program. In Performance Mode, the options are Part 1 to 8. (Only one Part can be assigned at once and only one Vocoder is available at once.)

Activate the vocoder by turning the Vocoder balance knob to the Mid position. The display will show :

Vocoder bal ance	064
Vocoder onl y	

Now the Vocoder should be working. All that remains is to adjust the Sibilance and width parameters to taste. Also note that the full effects section is available on the selected Part or Program as well. In addition to this, in Performance Mode, the "Effects used" parameter in the Output menu of the Part edit section allows the use of completely different effects settings from those found in the original Program. Once this is done, the Program or Performance utilising the Vocoder can be written into memory.



This section contains all the Knobs and buttons associated with the Envelopes. The Envelopes are used to shape a sound over time. Env 1 (the Amplifier Envelope) is assigned to the Amplifier and controls the Volume of the Program. It is used to decide how quickly the sound starts when you play a note as well as how it sustains and dies away. Similarly Env 2 and Env 3 can be used to create tonal changes over time by modulating the Filters Cutoff Frequency and/or Resonance in a similar fashion. These can also be used to create sweeping pitch shifts, Pulse Width Modulation, Sync and Osc Mix sweeps.

Menu - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to the Envelopes section. In the Envelope section there are 10 pages available.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Env 1	MWheel	+10
Env 1	ATouch	+10

The higher parameter is "Env 1 MWheel". In this case with a value of +10.

This parameter controls the volume of the Program using the Mod Wheel. With the higher Data knob fully anticlockwise, the Mod Wheel alters the volume of the Program and the volume drops correspondingly. With the higher Data knob fully clockwise the Mod Wheel alters the volume of the Program gets louder correspondingly. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 1 ATouch". In this case with a value of +10.

This parameter controls the volume of the Program using the Aftertouch. With the lower Data knob fully anticlockwise, when Aftertouch is applied, the volume of the Program drops correspondingly. With the lower Data knob fully clockwise, when Aftertouch is applied, the volume of the Program gets louder correspondingly. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

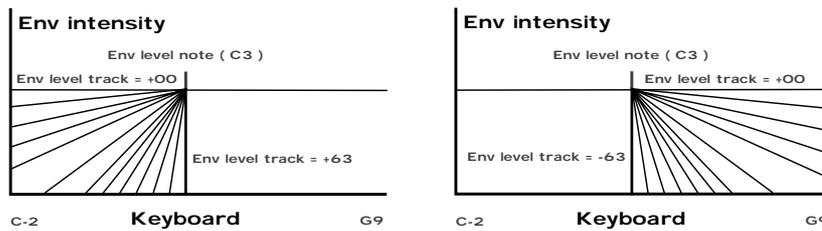
Page 2 looks like so:

```

Env 1 lev track      +00
Env 1 lev note      C3
    
```

The higher parameter is "Env 1 level track". In this case with a value of +00.

In conjunction with the "Env 1 level note" parameter below, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the higher Data knob to adjust this parameter. When this parameter is set to a +ve value, the amount of modulation applied by the envelope increases as higher notes are played on the keyboard up to the setting of the "Env level note" parameter, at which point full modulation is applied. When this parameter is set to a -ve value, the amount of modulation applied by the envelope decreases as higher notes are played on the keyboard from the setting of the "Env level note" parameter. Below are diagrams outlining the function.



On the left, an Env level note with a value of +00 produces no change in envelope level at different points along the keyboard. As +ve values are applied, the start point of the fade in moves higher up the keyboard until with a value of +64, no envelope modulation occurs at B2 and all envelope modulation occurs at C3. On the right, with -ve modulation, the reverse happens. A value of -63 similarly causes instant switch over at the Env level note value, except in the reverse polarity. The parameter is calibrated in semi-tone steps from + or - 62 to 16. With values of + or - 15, 14, 13 and 12 the parameter is calibrated at 3 semitones each. The values of + or - 11, 10, 9 and 8 are calibrated in 6 semitones each. Values of + or - 7, 6, 5 and 4 are calibrated in octaves. The remainder are equally tempered for the remainder of the range. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 1 level note". In this case with a value of C3.

In conjunction with the "Env 1 level track" parameter above, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the lower Data knob to adjust this parameter. This parameter determines the point at which the "tracking" parameter above begins or stops (see the diagram above). The range of this parameter is C-2 to G9. This parameter is memorised with a Program.

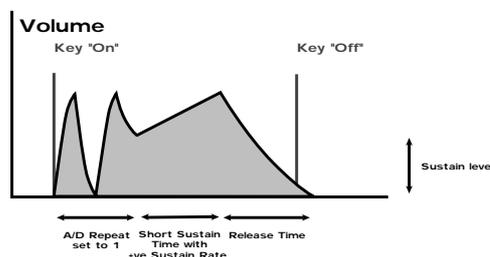
Page 3 looks like so:

```

Env 1 A-D repeat    022
    
```

The higher parameter is "Env 1 A-D repeat". In this case with a value of 022.

This parameter controls the number of times the Attack/Decay cycles of the selected envelope repeat before entering the sustain phase of the envelope. With the higher Data knob fully anticlockwise (Value Off), Envelope 1 behaves as normal, triggering only once when a key is struck. When this parameter is set to a value of 1 or more the Attack/Decay cycles are looped correspondingly. At a value of Inf, the Attack/Decay cycles loop infinitely as long as the key is held down. Below are diagrams illustrating this parameters behaviour:

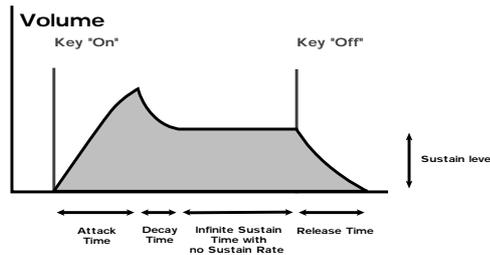


The range of this parameter is Off, 1 to 126 & Inf (Infinite). This parameter is memorised with a Program.

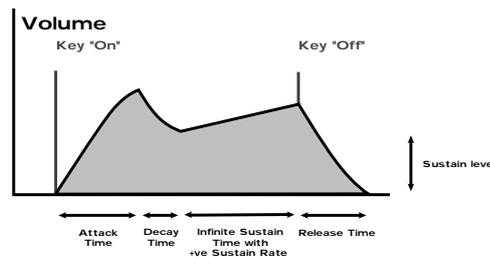
Page 4 looks like so:

Env 1 sust rate	+00
Env 1 sust time	000

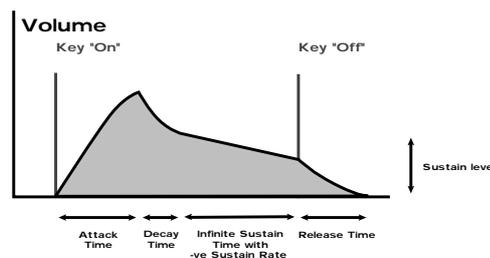
The higher parameter is "Env 1 sustain rate". In this case with a value of +00. This parameter is used to control the slope of the "Sustain" phase of the envelope. Use the higher Data knob to adjust this parameter. When this parameter is set to +00, the curve is normal. i.e. just like a normal ADSR envelope like so:



When this parameter has a +ve value, during the "Sustain" phase of the envelope the Sustain value will rise to full at a "Rate" determined by this parameter as can be seen below:



Low values like +01 will produce a very slow rise. High values will produce a quick rise to full intensity. When this parameter has a -ve value, during the "Sustain" phase of the envelope, the Sustain value will fall to zero at a "Rate" determined by this parameter as can be seen below:



Low values like -01 will produce a very slow fall. High values will produce a quick fall to zero intensity. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 1 sustain time". In this case with a value of 000. This parameter controls the length of time the "Sustain" phase of the envelope lasts. Use the lower Data knob to adjust this parameter. Fully clockwise at a value of 127, the sustain phase of the envelope behaves as any standard ADSR envelope. i.e. the sustain phase lasts until the key has been released, at which point the release phase starts. Any setting other than the 127 setting defines a finite time duration for the sustain phase. If this is shorter than the duration that the key is held down, then the release phase is started before the key is released. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Page 5 looks like so:

Env 2 lev track	+00
Env 2 lev note	C3

The higher parameter is "Env 2 level track". In this case with a value of +00.

In conjunction with the "Env 2 level note" parameter below, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the higher Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 level track parameter on menu page 2, but applies to Envelope 2. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 2 level note". In this case with a value of C3.

In conjunction with the "Env 2 level track" parameter above, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the lower Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 level note parameter on menu page 2, but applies to Envelope 2. The range of this parameter is C-2 to G9. This parameter is memorised with a Program.

Page 6 looks like so:

Env 2 delay sync	8th
------------------	-----

The only parameter on this page is "Env 2 delay sync". In this case with a value of 8th.

This parameter allows the delay time of Env 2 (usually set by using the front panel Env delay knob) to be synchronised to internal or external MIDI clock. Use the lower data knob to adjust the value of this parameter. When this parameter is set to "Off", the Env 2 delay time is not synced to internal or external clock. The front panel Env delay knob is used to set this Envelope's delay time. At all other settings, the delay time is synchronised at the appropriate resolution and the front panel Env delay knob will have no effect on the Env 2 delay time. The range of this parameter is Off, 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program.

Page 7 looks like so:

Env 2 A-D repeat	022
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The only parameter on this page is "Env 2 A-D repeat". In this case with a value of 022.

This parameter controls the number of times the Attack/Decay cycles of Env 2 repeat before entering the sustain phase of the envelope. Use the upper data knob to adjust the value of this parameter. The operation of this parameter is identical to the Env 1 A-D repeat parameter on menu page 3, but applies to Envelope 2. The range of this parameter is Off, 1 to 126 & Inf (Infinite). This parameter is memorised with a Program.

Page 8 looks like so:

Env 2 sust rate	+00
Env 2 sust time	000

The higher parameter is "Env 2 sustain rate". In this case with a value of +00. This parameter is used to control the slope of the "Sustain" phase of the envelope. Use the higher Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 sustain rate parameter on menu page 4, but applies to Envelope 2. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 2 sustain time". In this case with a value of 000. This parameter controls the length of time the "Sustain" phase of the envelope lasts. Use the lower Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 sustain time parameter on menu page 4, but applies to Envelope 2. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Page 9 looks like so:

Env 3 lev track	+00
Env 3 lev note	C3

The higher parameter is "Env 3 level track". In this case with a value of +00. In conjunction with the "Env 3 level note" parameter below, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the higher Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 level track parameter on menu page 2, but applies to Envelope 3. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 3 level note". In this case with a value of C3. In conjunction with the "Env 3 level track" parameter above, these parameters control the amount of envelope modulation in relation to the note played on the keyboard. This is particularly useful when dealing with more complex FM synthesis. Use the lower Data knob to adjust this parameter. The operation of this parameter is identical to the Env 1 level note parameter on menu page 2, but applies to Envelope 3. The range of this parameter is C-2 to G9. This parameter is memorised with a Program.

Page 10 looks like so:

Env 3 delay sync	16th
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The only parameter on this page is "Env 3 delay sync". In this case with a value of 16th. The parameter allows the delay time of Envelope 3 to be synchronised to internal or external MIDI clock. Use the lower data knob to adjust the value of this parameter. The operation of this parameter is identical to the Env 2 delay sync parameter on menu page 6, but applies to Envelope 3. The range of this parameter is Off, 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program.

Page 11 looks like so:

Env 3 A-D repeat	022
------------------	-----

The higher parameter is "Env 3 A-D repeat". In this case with a value of 022.

This parameter controls the number of times the Attack/Decay cycles of the selected envelope repeat before entering the sustain phase of the envelope. The operation of this parameter is identical to Env 1 A-D repeat parameter on menu page 3, but applies to Envelope 3. The range of this parameter is Off, 1 to 126 & Inf (Infinite). This parameter is memorised with a Program.

Page 12 looks like so:

Env 3 sust rate	+00
Env 3 sust time	000

The higher parameter is "Env 3 sustain rate". In this case with a value of +00.

This parameter is used to control the slope of the "Sustain" phase of the envelope. Use the higher Data knob to adjust this parameter. The operation of this parameter is identical to Env 1 sustain rate parameter on menu page 4, but applies to Envelope 3. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

The lower parameter is "Env 3 sustain time". In this case with a value of 000.

This parameter controls the length of time the "Sustain" phase of the envelope lasts. Use the lower Data knob to adjust this parameter. The operation of this parameter is identical to Env 1 sustain time parameter on menu page 4, but applies to Envelope 3. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

ENV 2 - Button

ENV 3 - Button

These buttons select which Envelope the knobs and buttons in the Envelopes section adjust.

Multi Trigger - Button (ENV 2/3)

Multi Trigger - Button (ENV 1)

These buttons determine how the Envelopes 1, 2 & 3 trigger. When a Multi trigger is activated (the button is lit), the triggering for the envelopes is in "Multi" mode. Any new note received will retrigger the envelope. When Multi trigger is disabled (the button is unlit), the triggering for the envelopes is in "Single" mode triggering. There must be a gap in-between received notes for the envelope to retrigger (Legato notes will not retrigger the envelope). The range of this parameter is On (Multi) or Off (Single). This parameter is memorised with a Program.

Delay - Knob (ENV 2/3)

This parameter introduces a Delay time before the selected Envelope starts when a note is struck on the keyboard. Turning this knob fully anticlockwise sets no delay. i.e. The selected Envelope will start immediately when a note is struck on the keyboard. Turning this knob clockwise will introduce an increasing amount delay before the selected Envelope starts after a note has been struck on the keyboard. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Attack - Slider (All Envelopes)

This slider sets how quickly the Envelope rises to its maximum level when a note is struck. Set to 000, this is instantaneous increasing exponentially to 20 seconds when set to 127. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Decay - Slider (All Envelopes)

This slider sets how quickly the Envelope drops off to the Sustain level once the Maximum level has been reached by the Attack time. Set to 000, this is instantaneous increasing exponentially to 20 seconds when set to 127. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Sustain - Slider (All Envelopes)

This slider sets the level at which the Envelope remains at after the Decay phase until the note is released. Set to 000, the Envelope will decay all the way to zero without being interrupted. As the slider is moved higher, the level at which the Decay is halted increases until at 127, there is no Decay at all. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



The envelope may appear to start decaying even though the note is being held according to the Sustain time parameter for the envelope.



The envelope may appear to rise or fall in the sustain phase depending on the setting of the Sustain rate parameter for the envelope.

Release - Slider (All Envelopes)

This slider sets how quickly the Envelope drops from the Sustain level to zero once the note has been released. Set to 000, this is instantaneous increasing exponentially to 20 seconds when set to 127. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Velocity - Knob (ENV 2/3)**Velocity - Knob (ENV 1)**

This parameter determines how the Velocity of the notes played on the keyboard affect the amount of modulation produced by selected Envelope. In the central position of the Velocity knob, there is no Velocity response to the amount of modulation produced by the selected Envelope. Anticlockwise of centre, there will be an increasing amount of negative modulation. i.e. The selected Envelope's amount of modulation will decrease when notes are struck harder (with more Velocity) on the keyboard. Clockwise of centre, there will be an increasing amount of positive modulation. i.e. The selected Envelope's amount of modulation will increase when notes are struck harder (with more Velocity) on the keyboard. The range of this parameter is -64 to +63. These parameters are memorised with a Program.

Tracking - Knob (ENV 2/3)**Tracking - Knob (ENV 1)**

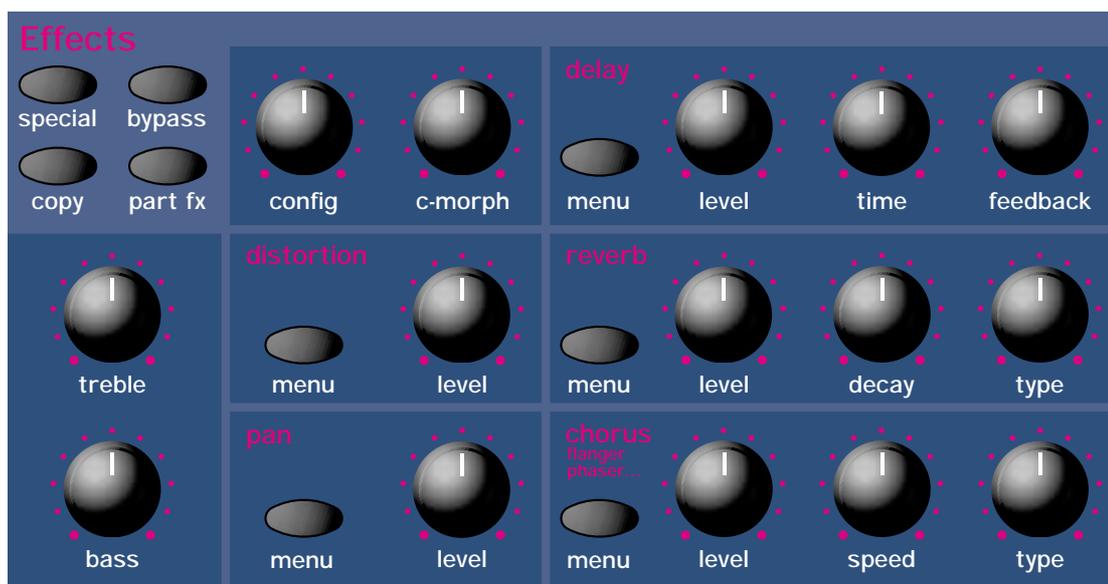
This parameter modulates the speed of the Attack, Decay and Release times of the selected Envelope, depending on the key played on the keyboard. In the central position of the Tracking knob, there is no modulation to the selected Envelope. Anticlockwise of centre, there will be an increasing amount of negative modulation. i.e. The speed of the selected Envelope's Attack, Decay and Release times become shorter below C3, and longer above C3 on the keyboard. Clockwise of centre, there will be an increasing amount of positive modulation. i.e. The speed of the selected Envelope's Attack, Decay and Release times become longer below C3, and shorter above C3 on the keyboard. The range of these parameters is -64 to +63. These parameters are memorised with a Program.

Overload / Poly Limit - Button

This button indicates if the Program level is too high and will light if the currently selected Program is Clipping (Overloading). This is handy when adjusting the Program level parameter. When pressed and held down, the button will light when the polyphony for the Supernova II keyboard is exceeded. This is handy for establishing if overvoicing is occurring. This is best done by pressing the side of the button so that the light can be clearly observed.

Prog Level - Knob (ENV 1)

This parameter determines the overall level of the currently selected program. With 3 Oscillators set at high levels, Filter overdrive set high, and with large amounts of resonance, large numbers of notes played simultaneously can overload the signal path (Just like a mixing desk). This parameter allows the "Gain" of the whole signal path to be set so that distortion does not occur. In fact, this parameter should be thought of as the "Gain" or "Trim" pot similar to that found on mixing consoles. Overload is indicated by the Clip / Poly button in the same section. The range of this parameter is 000 to 127. This parameter is memorised with a Program.



This section contains all the Knobs and buttons associated with the Effects Section.

There are 7 effects available simultaneously on each Program in the Supernova II Keyboard.

Special - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Effects section. In the Special section there are 5 pages available.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Comb frequency	069
Comb boost	+10

The higher parameter is "Comb frequency". In this case with a value of 069.

This parameter adjusts the Frequency range of the Comb Filter. Use the upper Data knob to adjust this parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

No effect will be heard when altering this parameter if the Comb Boost parameter is set to 00.

The lower parameter is "Comb boost". In this case with a value of +10.

This parameter adjusts the amount of boost to harmonics the Comb Filter provides. Use the lower Data knob to adjust this parameter. If this parameter is set to the mid position (+00), no effect will be heard. If turned Clockwise or anticlockwise from this position, boost will be applied to harmonics in the sound. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 2 looks like so:

Comb speed	020
Comb depth	064

The higher parameter is "Comb speed". In this case with a value of 020.

This parameter adjusts the speed of the Comb filter's dedicated modulation LFO. Use the upper Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Comb depth". In this case with a value of 064.

This parameter adjusts the depth of the Comb filter's LFO modulation. Use the lower Data knob to adjust this parameter. There are in fact 2 Comb filters. When this parameter is +ve, both Comb filters are modulated with the Comb LFO at the same phase. i.e. Both going up and down together. When this parameter is -ve, both Comb filters are modulated with the Comb LFO in anti phase. i.e. One going up and the other going down. The amount of modulation determines the depth of the Comb effect. The range of this parameter is -63 to +64. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 3 looks like so:

Comb spread	-20
Sync	2nd

The higher parameter is "Comb spread". In this case with a value of -20.

There are in fact 2 comb filters. This parameter adjusts the difference in the "Comb frequency" between the two filters. When this parameter is applied, the Comb frequencies of the 2 Comb filters are different and more complex Comb filtering results. This is something similar to the "Width" parameter in the Special Filter section. Use the upper Data knob to adjust this parameter. When this parameter is set to +00, both filters are set to the same Comb frequency and they will sound like a single comb filter. With +ve settings, the Boost to both Comb filters will be whatever was set on page 1 of this menu. When -ve settings are applied, the boost to one of the Comb filters will be inverted, creating an even more noticeable stereo effect. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Sync". In this case with a value of 2nd.

This parameter allows the Comb Filter's dedicated modulation LFO to be synchronised to internal or external MIDI clock. Use the lower data knob to adjust this parameter. When this parameter is set to "Off", the dedicated LFO is not synchronised and the "Comb Speed" parameter on menu page 2 sets the desired LFO tempo. When this parameter is set to a time signature, the dedicated Comb Filter LFO will become synchronised at the appropriate rate and the "Comb Speed" parameter will no longer affect the LFO speed. The range of this parameter is Off, 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 4 looks like so:

Comb freq wheel	+10
Comb boost wheel	+10

The higher parameter is "Comb freq wheel". In this case with a value of +10.

This parameter adjusts the modulation of the Comb frequency from the Mod wheel. Use the higher Data knob to adjust this parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Comb boost wheel". In this case with a value of +10.

This parameter adjusts the modulation of the Comb boost from the Mod wheel. Use the lower Data knob to adjust this parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 5 looks like so:

Pass to effects:
Program only

The only parameter on this page is "Pass to effects:". In this case with a value of Program only.

This parameter allows the Audio Inputs to be connected into the effects. Use the Lower Fast Data knob to adjust this parameter. If this parameter is set to Program only, then only the Program will be connected to the effects chain of the Program (or Part if in Performance Mode). If this parameter is set to Audio input (1) only, then only the Audio signal from Input/sw 1 will be connected to the effects chain of the Program (or Part if in Performance Mode) and the Program's audio will be disconnected. If this parameter is set to Program & input (1) only, then both the Audio from Input/sw 1 and the Program will be connected to the effects chain of the Program (or Part if in Performance Mode). Similar values are provided for Audio Input/sw 2. The range of this parameter is Program only, Audio input (1) only, Program & input (1), Audio input (2) only, and Program & input (2). This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Effects Used" parameter.

Bypass - Button

When this button is active (lit) all effects are bypassed and only the dry sound of the synth will be heard.

This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Copy - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Effect copying function.

In the Copy Menu, there are 2 pages available. These are selected using the Page Up and Page Down buttons to the left of the display. The lower Data knob on the right of the display is used to alter the parameter's values.

Page 1 looks like so:

Copy program effects
to part effects

The only parameter on this page is "Copy program effects to part effects".

This is a copying utility that allows copying of the effects settings in the currently selected Program to the "Part Effects Buffer". To copy all the Program's effects settings to the Part effects buffer, press the Part effects button while in this mode. Selective copying is also possible - that is just one effects setting can be copied. To copy just the Delay settings, press the Delay menu button while in this mode. To copy just the Reverb settings, press the Reverb menu button while in this mode. To copy just the Chorus settings, press the Chorus menu button while in this mode. To copy just the Distortion settings, press the Distortion menu button while in this mode. To copy just the Pan settings, press the Pan menu button while in this mode. To copy just the Special settings, press the Special menu button while in this mode. The Vocoder is also an effect and can be copied from a Program to the Performance (there is only one Vocoder in Performance Mode). To copy just the Vocoder settings, press the Vocoder menu button while in this mode. This parameter is not memorised.

Page 2 looks like so:

Copy part effects to program effects

The only parameter on this page is "Copy part effects to program effects".

This is a copying utility that allows copying of the effects settings in the currently selected Part's effects buffer to the Program. To copy all the Part's effects settings to the Program, press the Part effects button while in this mode. Selective copying is also possible - that is just one Effects setting can be copied. To copy just the Delay settings, press the Delay menu button while in this mode. To copy just the Reverb settings, press the Reverb menu button while in this mode. To copy just the Chorus settings, press the Chorus menu button while in this mode. To copy just the Distortion settings, press the Distortion menu button while in this mode. To copy just the Pan settings, press the Pan menu button while in this mode. To copy just the Special settings, press the Special menu button while in this mode. The Vocoder is also an effect and can be copied from a Performance to the Program (there is only one Vocoder in Performance mode). To copy just the Vocoder settings, press the Vocoder menu button while in this mode. This parameter is not memorised.



NOTE:

It is only possible to copy effects settings in Performance Mode. It is not possible to access this menu while in Program Mode.

Part FX - Button

This button determines which effects buffer will be used by the currently selected Part. When this button is active (lit), all effects settings used by the currently selected Part are contained in the Part's effects buffer. The effects settings originally saved along with the source Program are not used. When this button is inactive (unlit), all effects settings are instead derived from the effects buffer contained within the source Program assigned to the currently selected Part. It therefore follows that this parameter determines whether the Effects to be used by the Part will instantly change when a MIDI Program Change message is received, selecting a new Part Program.

When set to "Program" (button unlit), this parameter can be useful for allowing dramatic changes in Effects when a new Program is selected. Alternatively, by setting this parameter to "Part" (button lit), this parameter can be useful for retaining the effects used on this Part when a MIDI Program Change is received (since the Part effects buffers are actually stored along with the Performance settings and so will not change when a new Part Program is selected). This parameter is memorised with the Performance.



NOTE:

The Fx copy button can only be selected when in Performance Mode. In Program Mode, the Program effects buffer is always used.

Treble - Knob

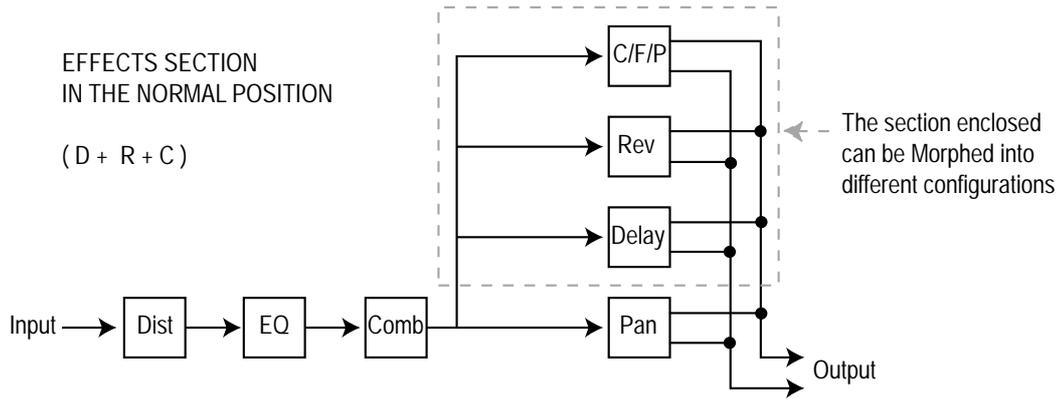
This parameter adjusts the Treble (high EQ frequencies) of the selected Program. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Bass - Knob

This parameter adjusts the Bass (low EQ frequencies) of the selected Program. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

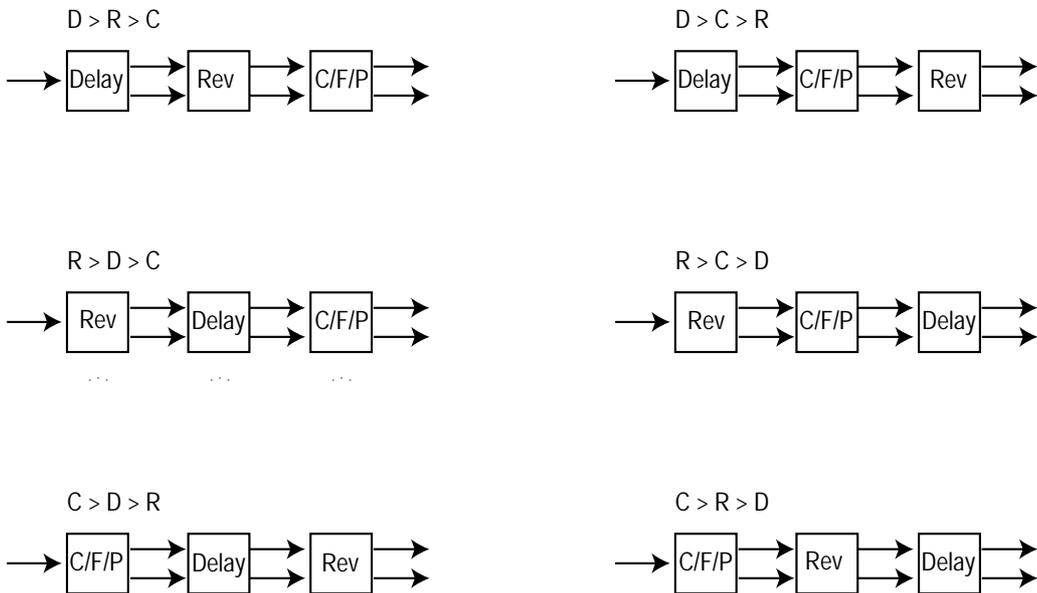
Config - Knob

This parameter changes the order/arrangement of the Delay, Reverb and Chorus/Flanger/Phaser effects. Different configurations can make the effects sound quite different. i.e. a sound that is Delayed, Reverbed and then Chorused sounds quite different to a sound that has been Chorused, Delayed and then Reverbed. There are 19 different effects configurations available on the Supernova II keyboard. Below is a diagram showing the "Normal" effects configuration.

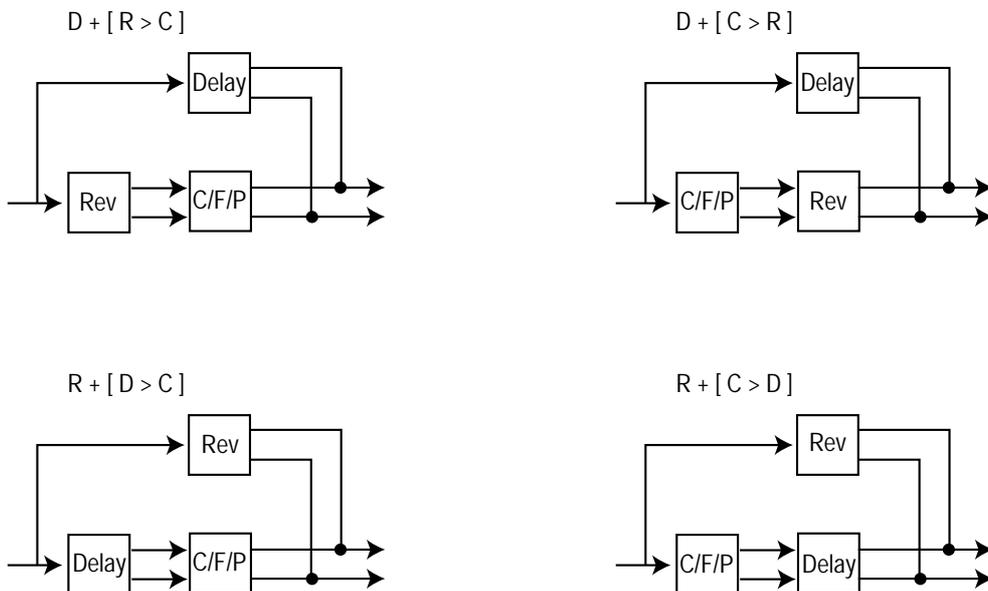


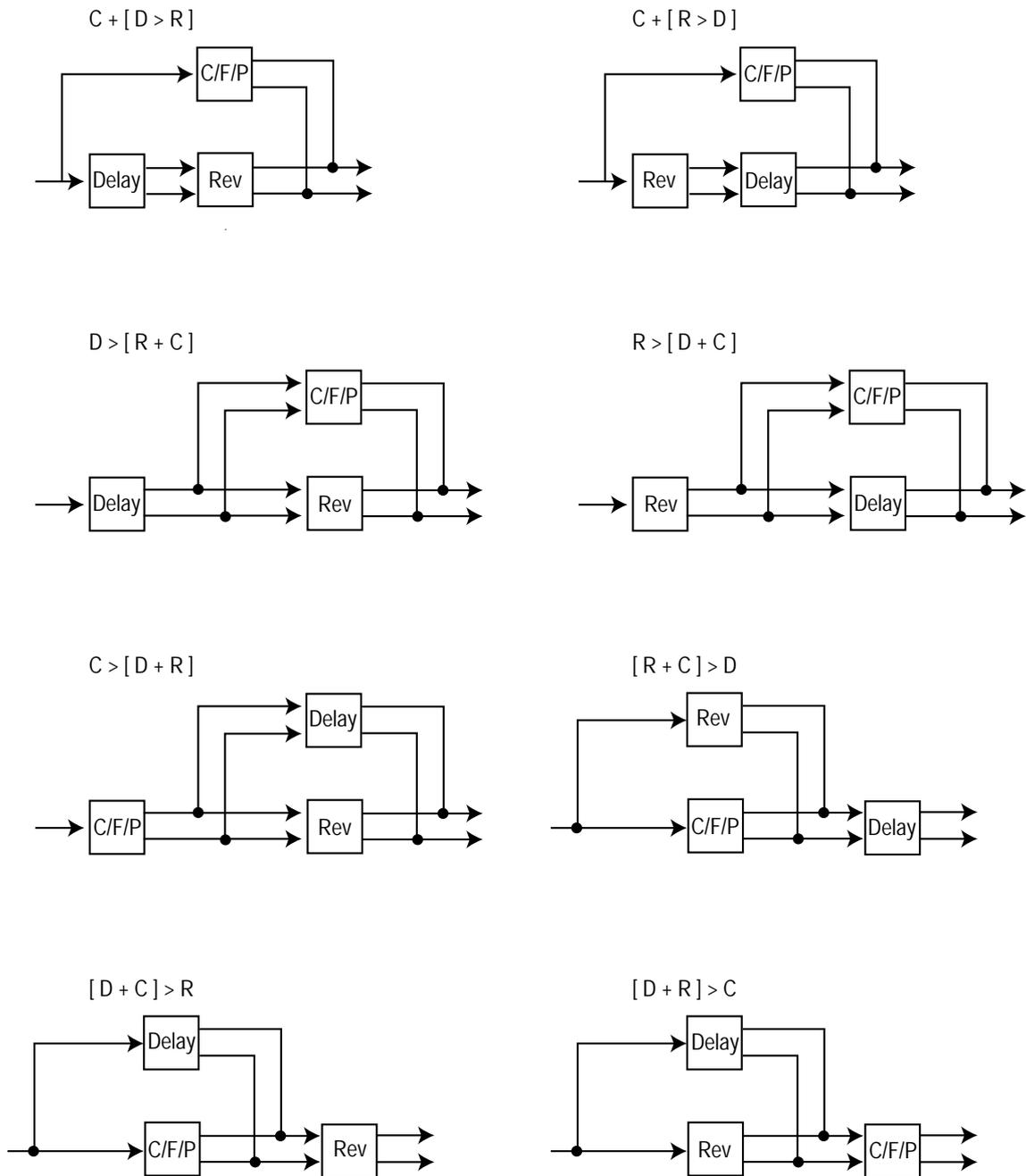
Below are diagrams showing how the different effects are connected in different configurations.

SERIES CONFIGURATIONS



SERIES/PARALELL CONFIGURATIONS





The range of this parameter is $D+R+C$, $D>R>C$, $D>C>R$, $R>D>C$, $R>C>D$, $C>D>R$, $C>R>D$, $D+[R>C]$, $D+[C>R]$, $R+[D>C]$, $R+[C>D]$, $C+[D>R]$, $C+[R>D]$, $D>[R+C]$, $R>[D+C]$, $C>[D+R]$, $[R+C]>D$, $[D+C]>R$ & $[D+R]>C$. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

To use the different configurations, the Config morph parameter should be set to 127. If this parameter is set to 000, the "Normal" configuration $D+R+C$ applies.

C Morph - Knob

This parameter morphs the effect configuration from the "Normal" $D+R+C$ configuration to any configuration selected by the Fx config parameter. If this parameter is set to the 000 position, the config is always "Normal" $D+R+C$. If this parameter is set to 127, the configuration will be the one selected by the Fx config parameter. In-between this, the configuration is somewhere between the two. This allows many interesting "Cross connections" to occur between the different effects blocks. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Distortion Level - Knob

This knob adjusts the Distortion Drive on the selected Program. Turning this knob fully anticlockwise will allow the signal to be unaffected by the Distortion. Turning this knob fully clockwise will fully implement the Distortion effect.

Menu - Button (Distortion)

When this button is pressed a series of pages is available on the display containing parameters relevant to this section. In the Distortion menu there are 2 pages available.

Page 1 looks like so:

Output level	+20
Gain compensate	+00

The higher parameter is "Output level". In this case with a value of +20.

This parameter determines the output level of the Distortion effect. Use the upper Data knob to adjust this parameter. With a setting of 000, the output is zero and as the Distortion effect is available all the time, this can "Mute" the sound. With a setting of 127, the output is maximum. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

This parameter can be used as a "Pre Effects level", and so via appropriate MIDI control messages, can be used to "Gate" the signal pre effects.

The lower parameter is "Gain compensate". In this case with a value of +00.

This parameter determines How much the Distortion level knob interacts with the Output level parameter. The purpose of this parameter is to make increases or decreases in Distortion level automatically adjust the Output level of the distortion effect, so that radical changes in volume can be "Compensated" for automatically. Use the lower Data knob to adjust this parameter. With a setting of -64, the Distortion's output level will be reduced with increases of the Distortion level parameter. With a setting of +63, the Distortion will be increased with increases of the Distortion level parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter

Page 2 looks like so:

Distortion curve	+64
Distortion wheel	+00

The higher parameter is "Distortion curve". In this case with a value of +64.

This parameter determines the characteristic of the Distortion effect. Use the upper Data knob to adjust this parameter. With a setting of +00, the normal clipping type of Distortion occurs. With +ve values, additional symmetrical effects are introduced. With -ve values, additional asymmetrical effects are introduced. The range of this parameter is -64 to +64. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Distortion wheel". In this case with a value of +00.

This parameter determines how much the Mod Wheel controls the Distortion effect. Use the lower Data knob to adjust this parameter. With a setting of -64, the Distortion will be reduced with full modulation of the Mod Wheel. With a setting of +63, the Distortion will be increased with full modulation of the Mod Wheel. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Pan Level - Knob

This knob adjusts the Pan (stereo position) of the selected Program. Turning this knob fully anticlockwise will pan the sound to the left. Fully clockwise, the sound is panned to the right. The range of this parameter is L 63 to R 63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Menu - Button (Pan)

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Pan section. In the Pan section there are 4 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

Page 1 looks like so:

Pan type	Autopan
Pan speed	040

The higher parameter is "Pan type". In this case with a value of Autopan.

This parameter determines in what way the panning effects are used. Use the upper Data knob to adjust this parameter. In the Autopan position, the Program is "Panned" automatically from Left to Right and back again. In the Tremolo position, both Left and Right are controlled in sync, creating the classic "Tremolo" effect. Another two phases are provided with the options L-R and R-L. these are similar to Autopan, but the effect is not symmetrical. The range of this parameter is Autopan, Tremolo L-R & R-L. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Pan speed". In this case with a value of 040.

This parameter determines the rate at which the Autopan and Tremolo effects run. Use the lower Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 2 looks like so:

Pan depth	080
Dry level	020

The higher parameter is "Pan depth" In this case with a value of 080.

This parameter controls the intensity of the Autopan and Tremolo effects. Use the upper Data knob to adjust this parameter. In the 000 position, there is no movement of sound in the stereo field and no change to the Program's volume (No Autopan or Tremolo effects will be heard). As the value of this parameter is increased, the Autopan and Tremolo have more and more effect. The range is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Dry level". In this case with a value of 020.

This parameter determines how much "Dry" signal is present in the mix. Use the lower Data knob to adjust this parameter. This allows "Pre" effects "Sends" arrangements to be realised. If this parameter is set to 000, then no "Dry" sound from the Program will be heard. The sound you will hear will be 100% effect signals. i.e. If the Chorus "Send" is set to 127 and the "Dry level" parameter is set to 000, you will hear only the "Chorused" signal, none of the original. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 3 looks like so:

Pan sync [6 MIDI clocks]	16th
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The only parameter on this page is "Pan sync". In this case with a value of 16th.

This parameter allows the Panning dedicated LFO to be synchronised to internal or external MIDI clock. Use the upper data knob to adjust this parameter. When this parameter is set to "Off", the dedicated LFO is not synchronised and the "Pan Speed" parameter on menu page 1 sets the desired LFO tempo. When this parameter is set to a time signature, the dedicated Panning LFO will become synchronised at the appropriate rate and the "Pan Speed" parameter will no longer affect the LFO speed. The range of this parameter is Off, 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 4 looks like so:

Pan effects	No
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The only parameter on this page is "Pan effects". In this case with a value of No.

This parameter allows the effects which normally generate stereo audio signals (Reverb, Delay & Chorus / Flanger / Phaser) to instead generate a monoaural audio output. Use the upper data knob to adjust this parameter. When this parameter is set to "No", the Reverb, Delay & Chorus / Flanger / Phaser create stereo audio output signals. This is the normal operational setting. When this parameter is set to "Yes", these effects behave monoaurally and so can be Panned completely across the stereo field. Panning hard left or hard right will therefore result in a sound being heard from only one output jack rather than an output jack pair which would normally have to be the case if any stereo effects were used in a sound. The range of this parameter is No or Yes. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Delay Level - Knob

This knob adjusts the level of the Delay effect to be assigned to the selected Program. Turning this knob fully anticlockwise will allow the signal to be unaffected by the Delay. Turning this knob fully clockwise will fully implement the Delay effect. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Delay Time - Knob

This knob determines the Delay time of this effect. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

If the Sync (Delay) parameter is set to anything but "Off", this parameter will not appear to work.

Feedback - Knob

This knob determines how much feedback there is in the Delay effect. The higher the value of this parameter, the more "Repeats" are present in the delayed signal. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Menu - Button (Delay)

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Delay section. In the Delay section there are 3 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper & lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Stereo width	010
Delay ratio	1:1

The higher parameter is "Stereo width". In this case with a value of 010. This parameter determines how wide the stereo image of the delay is. Use the upper Data knob to adjust this parameter. In the 000 position, the delay effect is monoaural. In the 127 position, the delay is fully stereo. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Delay ratio". In this case with a value of 1:1. This parameter determines the relationship of the Delay times in the Delay. In the 1:1 position, the Left and Right channel Delays are the same Delay time. In the 1:0.5 position, the Right Delay is half the time of the Left Delay. In the 0.5:1 position, the Left Delay is half the time of the Right Delay. With the Off settings, it is possible to have only one Delay heard on one side of the stereo field. The range of this parameter is 1:1, 1:0.75, 0.75:1, 1:0.66, 0.66:1, 1:0.5, 0.5:1, 1:0.33, 0.33:1, 1:0.25, 0.25:1, 1:Off & Off:1. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 2 looks like so:

Sync	16th
[6 MIDI clocks]	

The only parameter on this page is "Sync". In this case with a value of 16th. This parameter determines if the delay is synchronised to MIDI Clock, and at what resolution. Use the upper Data knob to adjust this parameter. Turning the upper Data knob fully anticlockwise selects the "Off" option which means the Delay is running on its own dedicated LFO and is not in sync with anything else. Turning the knob clockwise from this position makes the Delay sync to Internal or External MIDI Clock at various signatures ranging from 12 Bars to 32nd Triplets. On the bottom of the display, the number of MIDI clocks for the chosen setting is displayed, in this case 6 MIDI clocks. The range of this parameter is Off, 32 Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 Bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

If this parameter is set to anything but "Off", the Delay Time parameter will not work.

Page 3 looks like so:

Del ay HF damp	020
Del ay wheel	+20

The higher parameter is "Delay HF damp". In this case with a value of 20.

This parameter determines the rate at which High Frequencies decay away in repeats of the Delay. Use the higher Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Delay Wheel". In this case with a value of +20.

This parameter determines how much the Mod Wheel controls the amount of Delay effect. Use the lower Data knob to adjust this parameter. Fully anticlockwise, the Delay will be reduced with full modulation of the Mod Wheel. Fully clockwise, the Delay will be increased with full modulation of the Mod Wheel. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Reverb Level - Knob

This knob adjusts the level of the Reverb effect to be assigned to the selected Program. Turning this knob fully anticlockwise will allow the signal to be unaffected by the Reverb. Turning this knob fully clockwise will fully implement the Reverb effect. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Decay - Knob

This knob adjusts the rate at which the Reverb effect decays away. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Type - Knob

This knob determines the type of Reverb effect. There are 16 different types of reverb available in the Supernova II keyboard. Turning this knob fully anticlockwise selects Gated reverse reverb. This is a special reverb where the reverb builds to a point and then stops (as opposed to decaying away like normal reverb). Turning this knob clockwise one click selects Gated rising. Again, this is a gated type of reverb that is slightly reverse in characteristic. Turning this knob clockwise one click selects Gated gentle which is a classic gated sort of reverb. Turning this knob clockwise one click selects Gated falling which is a gated type of reverb but does decay away slightly like normal reverb. Turning this knob clockwise one click selects Dry chamber. This is the first of the normal reverb types and represents a very small room. The rest of the reverbs model rooms which gradually get bigger and bigger, the last one being Large plate 2. The range of this parameter is Gated reverse, Gated rising, Gated gentle, Gated falling, Dry chamber, Echo chamber, Small room, Big room, Medium type 1, Medium type 2, Medium plate 1, Medium plate 2, Large type 1, Large type 2, Large plate 1 & Large plate 2. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Menu - Button (Reverb)

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Reverb section. In the Reverb menu there are 2 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Early ref level	6
Reverb HF damp	020

The higher parameter is "Early ref level". In this case with a value of 6.

This parameter determines the level of early reflections present in the reverb. Use the higher Data knob to adjust this parameter. The range of this parameter is 0 to 7. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Reverb HF damp". In this case with a value of 020

This parameter determines the rate at which High Frequencies decay away in the Reverb (normally called High Frequency Damping). Use the lower Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 2 looks like so:

Reverb wheel	+20
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The higher parameter is "Reverb wheel". In this case with a value of +20

This parameter determines How much the Mod Wheel controls the amount of Reverb effect. Use the upper Data knob to adjust this parameter. Fully anticlockwise, the Reverb will be reduced with full modulation of the Mod Wheel. Fully clockwise, the Reverb will be increased with full modulation of the Mod Wheel. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Chorus/Flanger/Phaser Level - Knob

This knob adjusts the level of the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect to be assigned to the selected Program. Turning this knob fully anticlockwise will allow the signal to be unaffected by the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser, turning this knob fully clockwise will fully implement the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Speed - Knob

This knob adjusts the speed of the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser LFO. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Type - Knob

This knob adjusts the type of effect the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser will be. The range of this parameter is Phaser, Chorus/Flanger, Quad Chorus, Ensemble & Rotary Speaker. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Menu - Button (Chorus /Flanger /Phaser)

When this button is pressed, a series of pages is available on the display containing parameters relevant to the Rotary Speaker / Ensemble / Quad Chorus/ Chorus / Flanger / Phaser section.

In the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser section there are 6 pages available. These are selected using the Page Up and Page Down buttons to the left of the display. There are a maximum of 2 parameters displayed on any page. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Mod depth	032
Feedback	+00

The higher parameter is "Mod depth". In this case with a value of 032.

This parameter determines the depth of Rotary Speaker/Ensemble/Chorus/Flanger/Phaser LFO Modulation to the delay time of the selected effect. Higher values tend to sound a bit wobbly. Use the upper Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Feedback". In this case with a value of +00.

This parameter determines the amount of Feedback within the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser. Use the lower Data knob to adjust this parameter. The range of this parameter is -64 to +63. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 2 looks like so:

Sync	16th
[6 MIDI clocks]	

The only parameter on this page is "Sync". In this case with a value of 16th.

This parameter allows the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser dedicated LFO to be synchronised to internal or external MIDI clock. Use the upper data knob to adjust this parameter. When this parameter is set to "Off", the dedicated LFO is not synchronised and the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser "Speed" knob on the front panel sets the desired LFO tempo. When this parameter is set to a time signature, the dedicated Rotary Speaker/Ensemble/Chorus/Flanger/Phaser LFO will become synchronised at the appropriate rate and the front panel "Speed" parameter will no longer affect the LFO speed. On the bottom of the display, the number of MIDI clocks for the chosen setting is displayed, in this case 6 MIDI clocks. The range of this parameter is Off, 32nd Triplet, 32nd, 16th Triplet, 16th, 8th Triplet, 16th Dotted, 8th, 4th Triplet, 8th Dotted, 4th, 2nd Triplet, 4th Dotted, 2nd, 1 Bar Triplet, 2nd Dotted, 1 Bar, 2 Bar Triplet, 1 Bar Dotted, 2 Bars, 4 Bar Triplet, 3 Bars, 5 Bar Triplet, 4 Bars, 3 Bar Dotted (4.5 Bars), 7 Bar Triplet, 5 Bars, 8 Bar Triplet, 6 Bars, 7 Bars, 5 Bar Dotted (7.5 Bars), 8 Bars, 6 Bar Dotted (9 Bars), 7 Bar Dotted (10.5 bars) & 8 Bar Dotted (12 Bars). This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 3 looks like so:

Chorus delay	032
LFO wave	-20

The higher parameter is "Chorus delay". In this case with a value of 032.

This parameter determines the delay time used by the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser. Use the upper Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "LFO wave". In this case with a value of -20.

This parameter determines the shape of the dedicated LFO waveform. Use the lower Data knob to adjust this parameter. The range of this parameter is Sine, -63 to -33, Far peak, -31 to -1, Triangle, +1 to +31, Near peak, +33 to +62 & Sine. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 4 looks like so:

Speed 2	080
Inertia	032

The higher parameter is "Speed 2". In this case with a value of 080.

This parameter determines the secondary Speed of the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser. The primary speed is determined by the Speed knob on the front panel. It is possible to switch from the front panel setting to this one using the Wheel function and Wheel level parameters found on page 5 of this menu. This feature is particularly effective when using the Rotary Speaker effect, but is also applicable to all the effects on the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser block. Use the upper Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

The lower parameter is "Inertia". In this case with a value of 032.

This parameter determines rate at which the speed changes when the effect is switched from the primary speed to speed 2, and vice versa. This again is particularly effective when using the Rotary Speaker effect but is also applicable to all the effects on the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser block. Use the lower Data knob to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 5 looks like so:

Stereo width	032
--------------	-----

The single parameter on this page is "Stereo width". In this case with a value of 032.

This parameter determines how wide the stereo image is. Use the upper Data knob to adjust this parameter. With a value of 000, the effect is Monoaural. With a value of 127, the stereo image is maximum. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.

Page 6 looks like so:

Wheel mode	Threshold
Wheel level	010

The higher parameter is "Wheel mode". In this case with a value of Threshold.

This parameter determines what the Mod Wheel is assigned to do. Use the upper Data knob to adjust this parameter. When this parameter is set to FX amount, the Mod wheel will control the amount of effect if the "Wheel Level" parameter (seen below) is set to any value other than 000. When this parameter is set to Threshold, then the Mod wheel instead controls the speed of the Rotary Speaker/ Ensemble/Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect. For example, if this parameter is set to Threshold and the Wheel level parameter is set to 010 as shown, when the Mod wheel is set to any value between 000 - 009 then the Rotary Speaker/ Ensemble/Chorus/Flanger/ Phaser effect will be modulated at the Speed 1 parameter's setting. When the Mod wheel is set to any value between 010 - 127, then the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect will be modulated at the Speed 2 parameter's setting. The range of this parameter is FX amount & Threshold. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



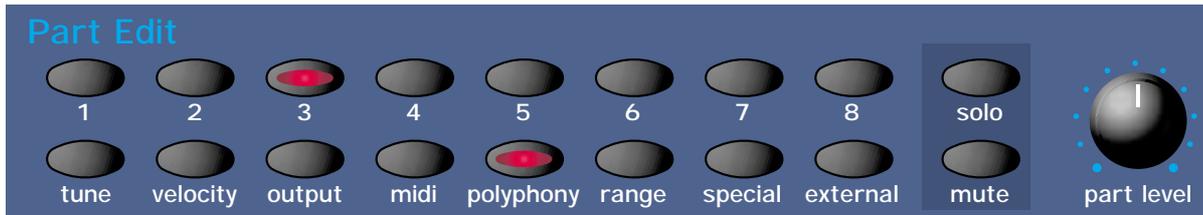
NOTE:

The value of Speed 2 can be higher than the front panel Speed, so that as the threshold is passed the effect will "Speed up", but also the reverse can apply - the Speed 2 can be lower than the front panel Speed so that as the threshold is passed, the effect will "Slow down".

The lower parameter is "Wheel level". In this case with a value of 010.

This parameter determines how much the Mod Wheel controls the amount of Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect or the Threshold at which the speed of the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect is switched over (depending on the value of the "Wheel mode" parameter above). Use the lower Data knob to adjust this parameter. When the "Wheel mode" parameter (seen above) is set to FX amount, setting this parameter to -ve values means the Rotary Speaker / Ensemble / Chorus/Flanger / Phaser effect will be reduced with full modulation of the Mod Wheel. Setting this parameter to +ve values means the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect will be increased with full modulation of the Mod Wheel.

The range of this parameter when the Wheel mode parameter (seen above) is set to FX amount is -64 to +63. When the "Wheel mode" parameter (seen above) is set to Threshold, setting this parameter to a value of 010 ensures that when the Mod wheel is set to any value between 000 - 009, then the Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effect will be modulated at the front panel Speed setting. When the Mod wheel is set to any value between 010 - 127, then the Rotary Speaker / Ensemble / Chorus / Flanger / Phaser effect will be modulated at the Speed 2 parameter's setting. The range of this parameter when the Wheel mode parameter above is set to Threshold is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



This section contains all the Knobs and buttons associated with the Part Edit Section.

- Part 1 - Button
- Part 2 - Button
- Part 3 - Button
- Part 4 - Button
- Part 5 - Button
- Part 6 - Button
- Part 7 - Button
- Part 8 - Button



NOTE:

These buttons select "Parts" in Performance Mode. In Program Mode they can be used to Audition the currently selected Program. Simply press the Part buttons and a note will play as for as long as the button is held down. Part 1 button plays C1, Part 2 button plays F1, Part 3 button plays C2, Part 4 button plays F2, Part 5 button plays C3, Part 6 button plays F3, Part 7 button plays C4 and Part 8 button plays F4. Additionally in Program Mode, these buttons light to display the sequence of steps of an Arpeggiator pattern (If the Arpeggiator is on and playing).

These buttons select which Part of a Performance is going to be edited. Pressing any Part button will assign all the front panel to the Program assigned to the newly-selected Part. To assign a different Program to this Part, use the Bank and Prog Up & Down buttons to select a new Program. Moving any knob will bring up the Parameter name on the display in the normal way. To return to the display showing the Part's assigned Program, simply press the appropriate Part button again. Any modifications to the Program made in this mode will have to be written into the Program. See writing Performances into memory on page 41 for details.



NOTE:

Part button selection can be transmitted and recorded as controller data to a sequencer and then played back into the Supernova II keyboard.

Tune - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to the Tuning section. In the Tuning Menu there are 2 pages available in Performance Mode and a single page available in Program Mode. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values

Page 1 (in Performance Mode) looks like so:

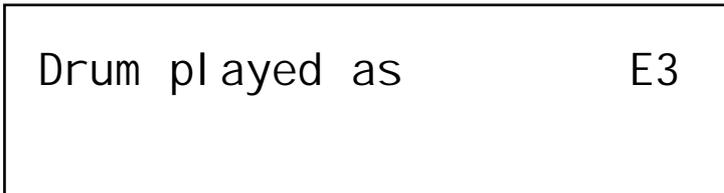
Part semi tone	+07
Part detune	+25

The higher parameter is "Part semitone". In this case with a value of +07. This parameter Transposes the Part by the number of semitones selected using the upper Data knob. The range of this parameter is -24 to +24 semitones. This parameter is memorised with the Performance.

The lower parameter is "Part detune". In this case with a value of +25.

This parameter Detunes the Part by the amount selected using the lower Data knob. The range of this parameter is -64 to +63 cents. This parameter is memorised with the Performance.

Page 2 (in Performance Mode) or Page 1 (in Program Mode) looks like so:



The single parameter on this page is "Drum played as". In this case with a value of E3.

This parameter determines the note the Program will be pitched at when it is located within a Drum Map. This is not the note on the keyboard that the Drum Program is triggered from, (this depends on the Program's location within the Drum Map bank and is not assignable) but it is the pitch the Program will be sounded at. This parameter can be set with the higher Data knob or directly using the keyboard. To do this, simply play the desired note on the keyboard while holding down the Page up button when this display is showing. The appropriate note value will automatically be inserted for the currently selected Program. The range of this parameter is C-2 to G8. This parameter is memorised with a Program.



NOTE:

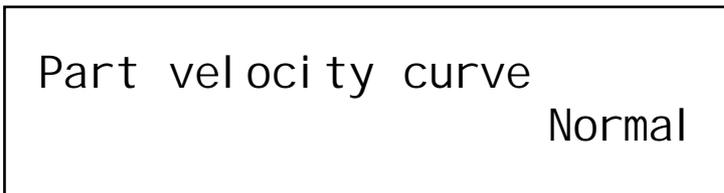
This parameter only takes effect when the Program is situated within a Drum Map.

Velocity - Button

This button only works in Performance Mode.

This button assigns which Velocity curve is assigned to the currently selected Part. When this button is pressed the display shows parameters relevant to this section.

When this button is pressed the display shows:



The single parameter on this page is "Part velocity curve". In this case with a value of Normal.

This parameter determines the velocity response of the currently selected Part. Values are selected using the lower Data knob. In the "Normal" position, the Program plays in a normal velocity sensitive way (if the Envelope Velocity parameters for the selected Program have been set to any positive value). In the "Inverse" position, the response is inverse to the normal velocity curve. i.e. Louder sounds are produced by playing softly rather than hard (if the Envelope Velocity parameters for the selected Program have been set to any positive value). These two curves are ideal for creating velocity Cross fades between to different parts for Organ type sounds. The Cross Fade - Low and Cross Fade - High options are similar, but provide a "Normal" overall response when used together in two different Parts. The remaining options provide "Normal" velocity curve response "Up to" or "From" specific Velocity values. This enables "Velocity Switch" arrangements to be easily made by setting up appropriate curve on two Parts. i.e. To Value 100 on one Part and From Value 101 on another. The range of this parameter is Normal, Inverse, Cross fade - High, Cross Fade - Low, To Value 60, From Value 61, To Value 70, From Value 71, To Value 80, From Value 81, To Value 90, From Value 91, To Value 100, From Value 101, To Value 110 & From Value 111. This parameter is memorised with the Performance.

Output - Button

This button only works in Performance Mode.

This button assigns which pair of audio Outputs the currently selected Part will use. Also, this button can be used to specify whether the Part is using the Program effects buffer (stored with the Program data) of the Part effects buffer (stored with the Performance data).

There are a maximum of 2 parameters displayed. One for each line on the display. The upper & lower Data knobs on the right of the display are used to alter these parameter's values

When this button is pressed the display shows:

Part outputs	1 & 2
Effects used	Part

The higher parameter is "Part outputs". In this case with a value of 1 & 2.

This parameter determines which pair of outputs the currently selected Part will be output from. Use the upper Data knob to adjust this parameter. It is possible to have each individual Part go to an individual output (Monoaural). To do this, set Parts 1 and 2 to use outputs 1 & 2. Then pan Part 1 hard to the Left (output 1) and Part 2 (output 2) hard to the Right with the panpot. Similarly, set Parts 3 and 4 to go to outputs 3 & 4, then pan Part 3 to the Left (output 3) and Part 4 (output 4) to the Right with the panpot. Set Parts 5 and 6 to go to outputs 5 & 6, then pan Part 5 to the Left (output 5) and Part 6 (output 6) to the Right with the panpot. Finally, set Parts 7 and 8 to go to outputs 7 & 8, then pan Part 7 to the Left (output 7) and Part 8 (output 8) to the Right with the panpot. The range of this parameter is 1 & 2, 3 & 4, 5 & 6, 7 & 8. This parameter is memorised with the Performance.



NOTE:

If the Delay, Reverb or Rotary Speaker/Ensemble/Chorus/Flanger/Phaser effects are used they will produce stereo signals over an output pair. To isolate a sound to a single mono output, it is necessary to either make sure the send levels of these effects are set to 000, or make sure that the "Pan effects" parameter on page 4 of the Panning menu is set to "Yes".

The lower parameter is "Effects used". In this case with a value of "Part".

This parameter is used to specify whether the currently selected Part uses and edits the Program's effects settings (stored with the Program data) or the Part effects settings (stored with the Performance data). Use the lower data knob to adjust this parameter. If set to "Part", the Part effects buffer is used. If set to "Program", the Program's effects buffer is used. The range of this parameter is Part & Program. This parameter is memorised with a Performance.



NOTE:

This parameter replicates the function of the Part Fx button found on the front panel in the Effects section.

MIDI - Button

This button only works in Performance Mode or within the Global Menu (for Sysex Dump initiation).

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section.

In the MIDI menu there are 5 pages available. These are selected using the Page Up and Page Down buttons to the left of the display.

There are a maximum of 2 parameters displayed. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.



NOTE:

If you are currently on the Sysex transmission page of the Global Menu, pressing this button will initiate a sysex dump.

Page 1 looks like so:

Sus/sw2	Enabl e
MIDI channel	Gl obal

The higher parameter is "Sus/sw2". In this case with a value of Enable.

This parameter determines how the currently selected Part will respond to incoming MIDI/Sustain pedal data (Controller 64). This parameter is adjusted using the upper Data knob. If this parameter is set to "Enable", the Envelopes are held at their sustain phases if a MIDI Sustain pedal message of "On" is received (this is similar to the Damper pedal on a Piano). The Sustain pedal message can also be set to do perform other functions. If this parameter is set to "Arp Latch", the Arp latch function will be switched on when a Sustain pedal message of "On" is received and switched "Off" when a pedal "off" is received. Similarly, if this parameter is set to "Arp Mute" or "Part Mute" the respective mute function will be controlled in the same way. The "Program + 1" and "Program - 1" settings allow the Part's Program number to increase or decrease accordingly when a Sustain pedal message of "On" is received. Similarly, the "Pattern + 1" and "Pattern - 1" options increase or decrease the Arp pattern number being used by the Part. When this parameter is set to "Voc freeze", when a Sustain pedal "On" message is received the Vocoder's frequency spectrum is instantly frozen (great for creating sustaining vocodered vowel type sounds). When a Sustain pedal "Off" message is received, the Vocoder's spectrum is 'un-frozen' and the Vocoder resumes normal operation.

Some manufacturers have different polarity Sustain pedals which can make this parameter behave in the reverse manner intended. Inverse parameters have been added, partly as an option to help overcome this. Additionally, when layering two Parts together, it is often effective to have one Part with a 'normal' Sustain operation and another with an 'Inverse' Sustain operation. This effectively makes the Sustain operation 'switch' from one Part to the other when used. As an example, consider using the Part Mute option. When the Sustain pedal is pressed, it would be possible to have one Part muted while the other Part is sounding (un-muted). As soon as the pedal is released, the reverse would happen and the other Part would be heard instead.

Additionally, it is often useful when layering 2 or more Parts to have one Part's Sustain option enabled and the other(s) disabled, so an "Off" option is available. The range of this parameter is Enable, Arp Latch, Arp Mute, Part Mute, Enable (I), Arp Latch (I), Arp Mute (I), Part Mute (I), Program + 1, Program - 1, Pattern + 1, Pattern - 1, Voc freeze & Off. This parameter is memorised with the Performance.

The lower parameter is "MIDI channel". In this case with a value of Global.

This parameter selects the MIDI Channel the Part will use to receive and transmit MIDI Data. Use the lower Data knob to adjust this parameter. If this parameter is set to "Global", the Part will play on whatever channel is set as the "Global Midi channel" on page 1 of the Global Menu. If this parameter is set to "Omni" the Part will play (receive) on any MIDI channel, but will always transmit using the Global MIDI channel. The range of this parameter is 1 to 16 Omni & Global. This parameter is memorised with the Performance.



NOTE:

The MIDI channel for the Part can be set via MIDI by holding down the page down button and while holding it down, playing a note into the Supernova II keyboard (via the MIDI In socket) on the desired channel. It is not possible to set the Part's MIDI channel to Omni or Global using this method.

Page 2 looks like so:

Sw1	Off
Sw3	Off

These parameters determine how the currently selected Part will respond to the type of MIDI controller data which is generated when footswitches 1 or 3 are pressed. This MIDI controller data could arrive either by a sequencer or be directly generated by the footswitches (provided the relevant footswitch is enabled for this Part, see page 4 of the MIDI Menu). Use the upper Data knob to adjust Switch 1 and the lower Data knob to adjust Switch 3. A similar range of options are provided as for the Sustain pedal on menu page 1. The range of each parameter is Off, Sustain, Arp latch, Arp mute, Part mute, Sustain (I), Arp latch (I) Arp mute (I), Part mute (I), Program + 1, Program - 1, Pattern + 1, Pattern - 1 & Voc freeze. These parameters are memorised with a Performance.



NOTE:

The "Sw3" parameter on this page only applies to the type of MIDI controller data generated when Footswitch 3 is configured to "Switch" or "Switch-I" on page 9 of the Global Menu.

Page 3 looks like so:

Pedal /breath	Off
---------------	-----

The single parameter on this page is "Pedal / breath". In this case with a value of "Off".

This parameter determines whether the currently selected Part will respond to the type of MIDI controller data which is generated when footswitch 3 is pressed when it is acting in "Pedal" mode (it is configured to "Pedal-R" or "Pedal-T" on page 10 of the Global Menu). This MIDI controller data could arrive either by a sequencer or be directly generated by footswitch 3 (provided footswitch 3 is enabled for this Part on page 4 of the MIDI Menu).

When footswitch 3 is configured for use as a pedal (rather than a footswitch), it generates data using controller CC002 (also known as breath control). This in turn can be internally re-mapped to any other controller or aftertouch, pitch bend etc. by altering the "Pedal/breath" re-mapping parameter on page 4 of the Global Menu. Therefore, many types of dynamic modulation are possible using the pedal - volume, filter cutoff frequency etc. The range of this parameter is Off & On. This parameter is memorised with a Performance.

Page 4 looks like so:

123	Swi tch 1
..	Di sabl ed

These parameters determine if each switch/pedal will be used for the currently selected Part or not. *Note that this parameter simply sets whether any connected switches / pedal physically connected to the Supernova II Keyboard will be used with (and transmitted for) the currently selected Part - not how the Part actually responds to the MIDI messages generated by the switches / pedal.*

Turning the higher fast data knob selects the Switch/pedal to be edited. The Display shows the selected Switch on the top right of the display and its status is indicated on the bottom left of the display, in this case "2". The range of this parameter is Switch 1, Switch 2 & Pedal/switch 3. The lower parameter sets the status. Use the lower Data knob to adjust this parameter's value. For each switch, "." equals Disabled and "o" equals Enabled. When set to Disabled, Footswitch/pedal operation will have no affect on the Part, plus no MIDI for the Footswitch is transmitted for this Part. When set to Enabled, Footswitch operation potentially affects the Part, plus the appropriate MIDI information is transmitted for the Footswitch/pedal on this Part using the Part's MIDI channel. This parameter is memorised with a Performance.



NOTE:

In order for a footswitch/pedal to affect the currently selected Part, it is also necessary to ensure that the relevant switch / pedal options on pages 1 - 3 of this menu are set correctly. Otherwise, although the correct raw MIDI information will be transmitted from MIDI Out when the switch / pedal is used, the Part will not respond correctly to it.

Page 5 looks like so:

Prog change fil t	Off
Control ler fil t	Off

The higher parameter is "Prog change fil t". In this case with a value of Off.

This parameter determines how the selected Part will respond to incoming Program Change messages. This parameter is adjusted using the upper Data knob. If this parameter is set to "On", the Part will ignore any Program Change messages sent on the Part's MIDI channel. If this parameter is set to "Off" the Part will recognise any Program Change messages sent on the Part's MIDI channel. The range of this parameter is On & Off. This parameter is memorised with the Performance.

**NOTE:**

If the Global Program Change filter on page 13 of the Global menu is set to Disabled, then no Program Change messages will be recognised, regardless of this parameter's setting.

**NOTE:**

If the Program Change filter on page 13 of the Global Menu is set to On, it also filters out Bank select messages. (CC00 & CC32)

The lower parameter is "Controller filt". In this case with a value of Off.

This parameter determines how the selected Part will respond to incoming Controller messages. This parameter is adjusted using the lower Data knob. If this parameter is set to "On", the Part will ignore any Controller messages sent on the Part's MIDI channel. If this parameter is set to "Off", the Part will recognise any Controller messages sent on the Part's MIDI channel. The range of this parameter is On & Off. This parameter is memorised with the Performance.

**NOTE:**

If the Global Control Change filter on page 12 of the Global menu is set to Disabled, then no Control Change messages will be recognised regardless of this parameters setting.

**NOTE:**

The Control Change filter does not filter Bank select messages (CC00 & CC32). These can be filtered using the Program Change filter if required.

Polyphony - Button

This button works either in Performance Mode or Program Mode.

This button alters the Polyphony of the currently selected Program or Part. When this button is pressed, the display shows parameters relevant to this section.

When this button is pressed in Performance Mode, the display shows:

Part polyphony	Poly
----------------	------

The single parameter on this page is "Part polyphony". In this case with a value of Poly.

This parameter assigns how much polyphony is assigned to the selected Part and is adjusted using the upper Data knob. If this is set to Off (Performance mode only) the Part is disabled. No sound will come from this Part and it will not respond to MIDI. or the Supernova II's keyboard if the Part is currently selected. If this parameter is set to Mono, only one voice is ever assigned to the Part (Monophonic operation). If this is set to Poly, voices are dynamically allocated to the Part. All voices will be dynamically shared by the Parts. If this parameter is set to Prog, the Polyphony setting of the currently selected Program (as set and used in Program Mode) for the currently selected Part is mirrored by the Part. i.e. If a Monophonic Program was selected in the Part then the Part's polyphony would automatically be Monophonic. If a Polyphonic sound was selected then the polyphony used for the Part would automatically change to Polyphonic.

In Program mode, the display is different. It shows "Program Mode" on the top line of the display and "Polyphony" on the bottom line.

When this button is pressed in Program Mode, the display shows:

Program mode	
polyphony	Mono

When in Program Mode, the display is different but the function is the same. Use the lower Data knob to adjust this parameter. The range of this parameter in the Performance Mode is Off, Poly, Mono & Prog. In Program Mode, the range is Poly & Mono. This parameter is memorised with Programs in Program Mode & Performances in Performance Mode.

Range - Button

This button only works in Performance mode.

This button alters the Key Range of the currently selected Part. In other words, the area on the keyboard where this Part will respond to notes played. When this button is pressed, the display shows parameters relevant to this section. There are a maximum of 2 parameters displayed. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

When this button is pressed the display shows:

Highest note	C8
Lowest note	C0

The higher parameter is "Highest note". In this case with a value of C8.

This parameter selects the Highest note the currently selected Part will play on and is adjusted using the upper Data knob. The range of this parameter is C-2 to G8 . This parameter is memorised with the Performance.

The lower parameter is "Lowest note". In this case with a value of C0.

This parameter selects the Lowest note the currently selected Part will play on and is adjusted using the lower Data knob. The range of this parameter is C-2 to G8 . This parameter is memorised with the Performance.



NOTE:

If the Lowest note is set higher than the Highest note, a reverse window can be created. For example:

If Part Highest note is set to C2 and the Part lowest note is set to C3, the sound appears on the keyboard from C0 to C2 and from C3 to C8. There is a "Hole" in the middle of the keyboard where the Part will not play.



NOTE:

The Range for the Part can be set via the keyboard by holding down the Page up (for the Highest note) or Page down (for the Lowest note) buttons and while holding down, playing a note on the Supernova II keyboard at the desired split point. You can set both parameters to the same value simultaneously by holding down both page buttons and playing a note on the keyboard.

Special - Button

This button only works in Performance Mode.

This button contains parameters that will possibly be developed in future OS upgrades. When this button is pressed, the display shows parameters relevant to this section. There are a maximum of 2 parameters displayed. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

Arp bank & pattern used	Part
----------------------------	------

The single parameter on this page is "Arp bank & pattern used". In this case with a value of Part.

This parameter determines if the Arpeggiator Pattern stored with the currently selected Part's Program is used or is overridden.

This can be useful if you want to assign a different pattern to that set in the Program (as would be used in Program Mode) and means that it is not necessary to make a copy of the same Program simply with a different Arpeggiator Pattern assigned. Use the higher Data knob to adjust this parameter. The range of this parameter is Part & Program. This parameter is memorised with a Performance.



When this parameter is altered, the Pattern Bank and Pattern number parameters on page 1 of the Arpeggiator menu will display the Pattern Bank and Pattern number stored in the Program when this parameter is set to Program, or the Pattern Bank and Pattern number stored in the Performance when this parameter is set to Part.

The Multi Mode for the Supernova II keyboard is "Performance" Mode. To make a multitimbral setup, follow this procedure.

Press the Global Button and select page 1 in the Global Menu.



Set the Global MIDI Channel to 16.

Make sure the Supernova II keyboard is in Performance Mode by pressing the Performance Button. It will light.

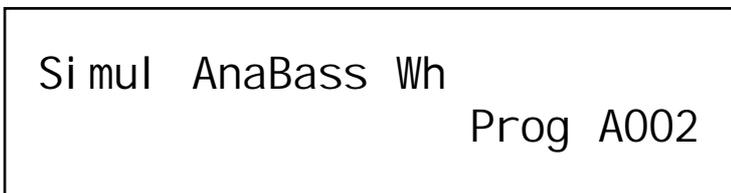
Select Performance A 126 "Multi Ch 1-6" of the Performances as a starting point. This is set up specifically for Multitimbral use and is a good starting template. In this Performance, Part 1 is assigned to MIDI channel 1, Part 2 is assigned to MIDI channel 2 etc. Hence its name "Multi Ch 1-8". (If you wish to alter a Part's MIDI channel settings, press the "MIDI" button and set the MIDI Channel to whatever channel required, but make sure it is not the same as the MIDI channel setting as the Global MIDI channel)



To assign a Bass sound to MIDI Channel 1 for example, press the "Part 1" button. The display will change to indicate the current sound assigned to that Part (In the Factory Programs, this is Bank A Program number A000 "Uni*Syn").



Now use the Bank and keypad buttons to select the desired sound. For example, Bank A Prog Number 002 "Simul AnaBass Wh".

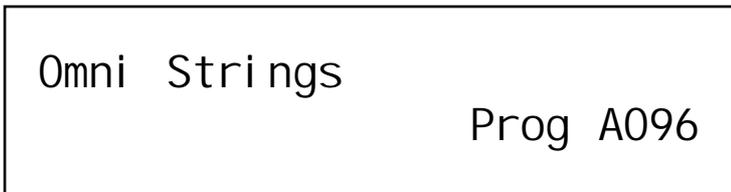


You should now hear the Bass sound when MIDI channel 1 is played into the Supernova II keyboard.

To assign a String sound to MIDI Channel 2 for example, press the "Part 2" button. The display will change to indicate the current sound assigned to that Part (In the Factory Performance A126, this Part is again Bank A Program number A000 "Uni*Syn").



Now use the Bank and keypad buttons to select the desired sound. For example Bank A Prog Number 096 "Omni Strings".



You should now hear the String sound when MIDI channel 2 is played into the Supernova II keyboard.

The other Parts are assigned in a similar way. Up to 8 Parts can be used at once.



If 2 or more Parts are assigned to the same MIDI Channel over the same note range, all these Parts will sound at once when that MIDI channel is received by the Supernova II keyboard.

**NOTE:**

Some parameters of a Program in a "Part" of a Performance are over-rideable without having to alter the original Program's settings. These include the "Level" of the Part, the Arpeggiator "Speed" the "Arpeggiator On/Off" and *all* the Effects parameters if the Effects used parameter in the Parts Output menu is set to "Part". This allows the creation of completely different effects settings on a individual Part without effecting the source Program's settings.

**NOTE:**

The Part can be optimised so that when Program changes are received on that Part, the Supernova II keyboard will keep the effects settings you have made in the Performance and ignore the effects settings of the newly selected Program. This is done by setting the Effects used parameter in the "Output Menu" to "Part". Alternatively, the whole of the effects can change when a Program change message is received by a Part by setting this parameter to "Program". Pressing the "Copy" button in the effects section activates a Copy mode where the Part's Program effects can be copied into the Part effects buffer and vice versa.

**NOTE:**

Only one Performance is available at any time. It is not possible to create a Multi type setup with multiple Performances.

**NOTE:**

When a Program change message is received on the **Global MIDI channel** it will change the selected Program or Performance. Program Change messages received on the Global MIDI channel always place the Supernova II Keyboard into Program Mode if the Program Change message selected a Program, or Performance Mode if the Program Change message selected a Performance. ***It is for this reason that the Global MIDI channel should be set to a channel value not used by any Performance Parts if Part Programs are to be selected with Program Change messages.***

If a Program change is received on a Part MIDI Channel that is not the Global one it will change the assigned Program for that Part. When it does so, the effects settings stored in the Program will be loaded into the Parts Effects section if the "Effects used" parameter in the Output menu is set to "Program". If this parameter is set to "Performance", the Program will change but the effects settings for that Part will not be altered. Additionally the Arpeggiator Parameters from the Program will be loaded into the Part's Arpeggiator.

**NOTE:**

WHEN A PROGRAM CHANGE / BANK MESSAGE SELECTING A PROGRAM IS RECEIVED ON THE GLOBAL MIDI CHANNEL, THIS WILL ALWAYS RESULT IN THE PROGRAM BEING SELECTED IN PROGRAM MODE.

SIMILARLY, PERFORMANCES CAN ONLY BE SELECTED BY PROGRAM CHANGE MESSAGES RECEIVED ON THE GLOBAL MIDI CHANNEL.

**NOTE:**

There is only one Arpeggiator Speed control in a Performance. Adjusting the speed of any Part's Arpeggiator will control the tempo of all 8 Arpeggiators.

**NOTE:**

If you create your own Performance from editing existing Performances other than the Factory Init Performances, parameters may have been set in individual Parts so that in a multi setup. Strange things may happen. Here's the check list:

Velocity behaves strangely on one Part - The Velocity Curve parameter in the Velocity menu is *not* set to "Normal".

The Part is Monophonic and should be Polyphonic - The Polyphony parameter in the Polyphony menu is set to "Mono".

The Part is Polyphonic and should be Monophonic - The Polyphony parameter in the Polyphony menu is set to "Poly".

The Part is Muted / No response at all - If the Part light flashes steadily, even with no MIDI input, the Part is Muted.

The Part is Muted / No response at all - Does the Part light flash when MIDI is sent?

- Yes - The Assigned outputs may be different to the ones connected, check the setting of the Outputs menu for the offending Part.

- No - The MIDI Channel for the Part is set to the incorrect channel in the MIDI menu.

- No - Polyphony parameter in the Polyphony menu is set to "Off". Parts are disabled when the Polyphony is set to Off.

The Part is in a different key to the others - The Part Semitone parameter in the Tune menu is *not* set to "0"

The Part is out of tune with the others - The Part Detune parameter in the Tune menu is *not* set to "0"

The sustain pedal behaves in reverse on the assigned Part - The Polarity of the pedal is set incorrectly, set the Sustain parameter in MIDI menu to "Enable" or "Enable (I)" so that the desired effect is produced.

The Sustain pedal does not work on the assigned Part - The Sustain parameter in the MIDI menu is *not* set to "Enable" or "Enable (I)".

Using the Supernova II Keyboard in Program Mode is pretty straightforward. Only one type of sound is being played at any one time and all MIDI information is always transmitted and received using the Global MIDI channel. However, to use the Supernova II Keyboard to its full potential, Performance Mode must be used. In this mode, each of the 8 Parts may be used independently, each possibly responding and transmitting using its own MIDI channel. When using the Supernova II Keyboard with a sequencer, it is important that the full MIDI implications of using Performance Mode should be understood.

There is a template Performance assigned within the Supernova II Keyboard - Performance A126 "Multi Ch 1 - 8" which has been setup specially for multitimbral use. This Performance has Part 1 set up to respond to MIDI channel 1, Part 2 to respond to MIDI channel 2 and so on up to Part 8 which has been set up to respond to MIDI channel 8. Performance A126 is recommended as a starting point when you start to configure and store your own customised multitimbral Performances.

Normally, when using a sequencer, both the MIDI In and MIDI Out connections of the Supernova II Keyboard would be connected to the sequencer. Most sequencers record MIDI information onto separate 'tracks', each of which is set by the sequencer to use its own dedicated MIDI channel. **Whenever a sequencer receives MIDI information (for example, from the Supernova II Keyboard), it will convert the MIDI channel information present in the message to the currently selected sequencer track's channel and immediately re-send the 're-channelised' message out of the sequencer's MIDI Out port.**

Therefore, this means that at any one time, the exact track currently selected by the sequencer determines which connected instrument will immediately respond to any information received by the sequencer. If the wrong sequencer track is selected, the MIDI channel contained in the message re-transmitted by the sequencer will probably be wrong, resulting in a unintended change to another Part or instrument in the MIDI system. Care must be taken to avoid this.

Whenever a Part is edited, played or modified using the Supernova II Keyboard's front panel controls, the appropriate MIDI information is transmitted from the Supernova II Keyboard, into the sequencer, using the Part's assigned MIDI channel. If the MIDI information is fed into a sequencer, fed out again by the sequencer (with the right sequencer track selected) back into the Supernova II Keyboard's MIDI In port, it will be realised that a 'doubling up' of MIDI information will occur. This is what is commonly known as a 'MIDI loop'. For each note played or control altered on the front panel, the Supernova II Keyboard will respond once as the note or control is used *and again when the MIDI message is immediately passed back by the sequencer.*

To overcome this problem, there is an option called Local Control, found in the Global Menu. When Local Control is turned Off, the Supernova II's keyboard and front panel controls are disconnected from the synthesizer engine. They still transmit the appropriate MIDI information but have no direct control over the Supernova II. The Supernova II will only respond when the MIDI information arrives back to the Supernova II Keyboard's MIDI In port (via the sequencer) on the correct MIDI channel. Turning Local Control Off will also allow the Supernova II to play or control other instruments in the MIDI system (provided the appropriate sequencer track is selected) without the Supernova II sounding as well. However, be aware of the MIDI implications of turning off Local Control.

Having Local Control turned Off when not connected to a sequencer is a common cause of users mistakenly assuming that their Supernova II Keyboard is faulty. **Remember, when Local Control is turned Off, the Supernova II Keyboard will not respond directly to its own front panel or keyboard AT ALL.** The Supernova II will only respond when the MIDI information arrives back (on the correct MIDI channel) to the Supernova II's MIDI In port. If the Supernova II Keyboard ever seems to not respond to its front panel controls or keyboard, chances are that Local control is turned Off and the MIDI information is not arriving back correctly.

It is possible to set the Supernova II Keyboard to power up with Local Control set to Off and Performance A126 already selected (the default patch is set when the Global data is written to memory). To do this, follow these steps when the Supernova II is NOT connected to a sequencer :

- 1) Select Performance A126 from the front panel of the Supernova II Keyboard.
- 2) Enter the Global Menu by pressing the Global button.
- 3) Find the Global MIDI channel page. Set this to a channel greater than 8 (channel 9 is used in the following examples).
- 4) Find the page displaying Memory Protect and Local Control.
- 5) Turn Memory Protect Off. Turn Local Control Off.
- 6) Press the 'Write' button to save the Global settings. The screen will show "Save global setup with Memory Protect Off?". Here you can change the default Memory Protect status if you wish. Use the lower data knob to select between 'On' & 'Off'. Once the Memory Protect setting is set as required, pressing the Write button once more saves the Global Parameters.
- 7) Turn Off the Supernova II Keyboard. When it is turned back on, notice that Performance A126 is immediately selected and the Global MIDI channel, Local Control and Memory Protect are set as required.
- 8) Connect the Supernova II Keyboard's MIDI In & MIDI Out to the sequencer.

For full control of the Supernova II Keyboard in Local Control Off mode, 9 sequencer tracks are required. These consist of 8 tracks for Parts 1 - 8 respectively and a 9th sequencer track set to use the Global MIDI channel (in this example, MIDI channel 9). Each of the 8 Part tracks should be set to MIDI channels 1 - 8 respectively. Now when MIDI information is sent from the Supernova II Keyboard to the sequencer, the sequencer will re-route the information back according to the currently selected (highlighted) track.



To select a Program in Program Mode, or a new Performance, always make sure the Global track is highlighted as shown before selecting the new setting on the Supernova II Keyboard's front panel. Certain parameters (such as Master Volume for example) are normally transmitted from the Supernova II Keyboard on the Global MIDI channel. However, with OS 2.0, these parameters can be received on any Part's MIDI channel, providing the Part is active (ie it does not have its Polyphony setting set to 'Off').



To play or edit the first Part in a multi-timbral Performance, select (highlight) the sequencer track corresponding to Part 1. Now select Part 1 on the Supernova II's front panel and change the Program assigned to Part 1 as you wish. The MIDI information transmitted by Part 1 is being re-routed back to the Supernova II Keyboard's MIDI channel for Part 1 (MIDI channel 1).



NOTE:

Make it a general rule of thumb to always select the appropriate track in the sequencer **Before** selecting the Part on the Supernova II Keyboard's front panel.



Similarly, to play or edit Part 3, first select (highlight) the sequencer track corresponding to Part 3 and then select Part 3 on the Supernova II Keyboard's front panel. Part 3 can now be edited, played or assigned its own Program using the Supernova II's front panel controls. The MIDI information transmitted by Part 3 is being re-routed back to the Supernova II Keyboard's MIDI channel for Part 3 (MIDI channel 3).

This procedure can be followed until all 8 Parts in the Performance have been assigned Programs and edited as required.

Once the Performance has been set up as required, the modified Performance can now be written into a memory location. There are four steps to writing a Performance. These are :

- 1) Select a destination.
- 2) Choose a Performance name.
- 3) Decide if any altered Programs are to be over-written (in the Program bank memories).
- 4) Commit to the settings.



It is important that the Global MIDI Channel track is highlighted throughout the whole write procedure. Highlighting a track other than the Global MIDI Channel track may result in the Performance not being saved correctly.

The first press of the Write button brings up the display

Write A126 to A126 ?
Multi Ch 1-8

The destination memory for the ammended Performance can be changed here using the Bank buttons, the keypad buttons or upper data knob. For example, this could be set to

Write A126 to C001 ?
Destination name

Pressing the Write button again sets the destination memory. The display now shows :

Name Perf C001
Multi Ch 1-8

The name of the Performance can now be altered by using the upper and lower data knobs. When Write is pressed again, the display asks :

Update Progs ? No
Write to continue

If any Program parameters have been altered while setting up the Performance (Filter frequency, Program level, Envelope settings etc.), these edits can be written into the Program memory banks. The confirmation parameter here can be set to "No", "Yes" or "Each" by using the upper data knob. If "No" is selected and the Write button is pressed, any edits made to the Program parameters will not be saved when the Performance is saved. If "Yes" is selected when the Write button is pressed, the modified Programs will over-write the original versions at the original Program bank memories. If "Each" is selected when the Write button is pressed, each modified Program can be written to a different Program memory location to avoid over-writing the original version of the Program.



NOTE:

It is important to realise the significance of this stage in the Performance saving procedure, since when saved, Performances do not contain a copy of the Program settings for each Part. When a Performance is initially selected, the Program data for each Part is always fetched in turn from the appropriate Program bank memories.

In the example above, if when the Performance was saved, Program D000 GR-300 Solo was assigned to Part 1 of the Performance with the Filter frequency altered and Program C000 Distlead was assigned to Part 5 and had an Envelope setting altered, these changed Programs can be written as follows :

Update Progs ? Each
Write to continue

Pressing the Write button will show :

(Part 1) to D000
GR-300 Solo

In exactly the same way as the destination memory of the Performance was defined, the Program destination for the edited D000 Synced Formant can be specified using the Bank buttons, the upper data knob or the keypad buttons. For example if location E000 was selected (in this example containing the "Sintillator M-Wh" Program), the display would change to :

(Part 1) to E000
Sintillator M-Wh

Another press of the Write button would allow the edited Program name to be changed :

Name Prog E000
' GR-300 Solo '

This could be changed to "Merry Xmas" for example by using both data knobs as before. This would show :

Name Prog E000
' Merry Xmas '

A further press of the Write button would then allow the category for this edited sound to be changed. This may be advantageous if any radical editing had taken place. The categories allow the Finder function to search quickly for different types of sounds. The screen will show :

Category - Pad
Write to store

Once a category has been chosen and the Write button pressed again, the next edited sound (if any) will be displayed :

(Part 5) To C000
Distlead

This can be written in exactly the same way as shown for Part 1. When there are no more edited Programs to be considered, the display will show :

Performance C000
Saved!

If any edited Programs are not to be saved, they can be skipped by turning the lower data knob at the first display of the Program writing routine. For example, if the last Part (5) was not to be written to memory, it could be skipped by turning the lower data knob when the display showed :

(Part 5) To C000
Distlead

If (as in this case) there are no more edited Programs to consider, the screen will show :

Performance C000
Saved!

External - Button

This button only works in Performance Mode.

This button allows access to all the parameters that deal with the Master keyboard functions of the Supernova II keyboard. This button works slightly differently from the others in the Part Edit section. Its operation is similar to a shift function on a qwerty keyboard. When this button is used in conjunction with the other menu buttons in the Part Edit section, different pages appear that contain parameters relating to the Master Keyboard functions. i.e. When the External and MIDI buttons are lit, the display shows all the External MIDI pages. When this button is lit and another of the Part Edit sections menu buttons is pressed, the display shows parameters relevant to the External Part section. There are a maximum of 2 parameters displayed. One for each line on the display. The upper and lower Data knobs on the right of the display are used to alter these parameter's values.

A brief outline of the Master Keyboard Functions .

In Performance Mode, there are always 8 internal parts available via MIDI in the Supernova II keyboard. There are also up to 8 different external MIDI devices (referred to as "External Parts") which can also be controlled via MIDI. The keyboard can control external modules exclusively, internal Parts exclusively or both simultaneously. Master keyboard functions cannot be used in Program Mode.

At all times, all 8 internal Parts may be controlled via MIDI. If the External button in Part Edit section is not lit, the keyboard will play the currently selected internal Part(s) plus any external Part(s) which have their External Part MIDI channel parameter set to anything but Off. In this case, the keyboard will always transmit note messages corresponding to the currently selected internal Part's MIDI channel setting. If the External button in the Part edit section is lit, The keyboard will not play any internal Parts (internal Parts can still be played via MIDI on the appropriate MIDI channels). In this case, the keyboard will transmit using the external Part(s) MIDI channel if the External Part's MIDI channel parameter set to anything but "Off". In summary :

Transmit Internal Part data only	External button unlit. Appropriate Internal Part selected. All External Parts have MIDI channel set to Off.
Transmit External Parts data only	External button lit. External Parts used have MIDI channels set accordingly.
Transmit Internal & External Part data	External button unlit. Appropriate Internal Part selected. External Parts used have MIDI channels set accordingly.

Note that when transmitting External Part data, it is not necessary to select the relevant Part button in the Part Edit Section first, as would normally be the case when transmitting Internal Part data. It is entirely possible for all 8 External Parts to be transmitting simultaneously, each using a separate MIDI channel. For each External Part, it is the status of the Part's MIDI channel parameter which determines whether the External Part will transmit data. If this parameter is set to "Off", the External Part is disabled.

If the External button in the Part edit section is lit, the Part edit buttons flash to indicate which External Parts are transmitting MIDI data rather than indicating which internal Parts are being triggered. The status of the external button is saved with a Performance.

The following functions for each External "Part" (External MIDI channel) can be controlled using the Supernova II keyboard's Master Keyboard functions.

External Semitone Transposition - Accessed using the External and Tune Buttons.

(used for playing external modules in a different key)

External Velocity Zone - Accessed using the External and Velocity Buttons.

(used for playing external modules within a specific velocity window, this could be thought of as an external velocity switch)

External Note Velocity Enable/Disable - Accessed using the External, Page Up and Velocity Buttons.

External Velocity Fixed Value - Accessed using the External, Page Up and Velocity Buttons.

External Part On/Off - Accessed using the External and MIDI Buttons.

External MIDI Channel - Accessed using the External and MIDI Buttons.

External Program Change Message Enable/Disable - Accessed using the External and MIDI Buttons.

External Program Change Message - Accessed using the External and MIDI Buttons.

External Bank Change Message Enable/Disable - Accessed using the External and MIDI Buttons.

External Bank Change Message MSB & LSB - Accessed using the External and MIDI Buttons.

External Mod wheel Enable/Disable - Accessed using the External and MIDI Buttons.

External Mod wheel Controller Assignment - Accessed using the External and MIDI Buttons.

External Pitch Bend wheel Enable/Disable - Accessed using the External and MIDI Buttons.

External Aftertouch Enable/Disable - Accessed using the External and MIDI Buttons.

External Volume Enable/Disable - Accessed using the External and MIDI Buttons.

External Volume - Accessed using the External and MIDI Buttons.

External Sustain Pedal Enable/Disable - Accessed using the External and MIDI Buttons.

External Note transmit Enable/Disable - Accessed using the External and MIDI Buttons.

(Full MIDI control of up to 8 independent external MIDI modules/keyboards)

External MIDI Data Stream - Accessed using the External and MIDI Buttons.

(Fully definable MIDI byte stream - up to 12 bytes long for each External Part)

External Song Select - Accessed using the External and MIDI Buttons.

External Key window - Accessed using the External and Range Buttons.

(used for playing external modules within a specific key window, this could be thought of as an external split point)

External - Button and Tune - Button (both lit)

When these buttons are pressed the display shows:

Ext part semi tone transpose	+00
---------------------------------	-----

The single parameter on this page is "External part semitone transpose". In this case with a value of +00. This parameter determines the possible transposition (or not) of the MIDI note data being transmitted by the selected External "Part". This parameter is adjusted using the lower Data knob. If this parameter is set to +00 as shown, the note data transmitted for the selected external part will be exactly the same as the notes played on the keyboard. A setting of +07 will result in the MIDI note data for the selected external Part being transposed up 7 seven semitones. Similarly, negative values result in negative transpositions of transmitted note data. The range of this parameter is -60 to +60 semitones. This parameter is memorised with the Performance.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for any External MIDI data to be transmitted.

External - Button and Velocity - Button (both lit)

Page 1 looks like so:

Ext velocity max	127
Ext velocity min	001

The higher parameter is "External velocity max". In this case with a value of 127. This parameter in conjunction with the "External velocity min" parameter determines the velocity range of the MIDI note on data being transmitted by the selected external "Part". This parameter is adjusted using the higher Data knob. This parameter determines the highest keyboard velocity at which any MIDI note data will be transmitted on the selected External Part. The range of this parameter is 001 to 127. This parameter is memorised with the Performance.

The lower parameter is "External velocity min". In this case with a value of 001. This parameter in conjunction with the "External velocity max" parameter determines the velocity range of the MIDI note on data being transmitted by the selected external "Part". This parameter is adjusted using the lower Data knob. This parameter determines the lowest keyboard velocity at which any MIDI note data will be transmitted on the selected External Part. The range of this parameter is 001 to 127. This parameter is memorised with the Performance.



NOTE:

It is not possible to set the Velocity max below the Velocity min value or Velocity min above the Velocity max value.



NOTE:

These parameters can be set by playing the keyboard. Pressing and holding down the Page up button when playing a note sets the Velocity max value according to velocity of the played note. Pressing and holding down the Page down button when playing a note sets the Velocity mix value according to the played note. Both parameters can be set in this way simultaneously.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected external Part, for any External MIDI data to be transmitted.

Page 2 looks like so:

Tx ext	velocity	Yes
Default	velocity	127



NOTE:

Since on menu page 1, both Page buttons are used for entering parameters by playing the Supernova II's keyboard, **this menu page is not accessed from menu page 1 in the normal way by simply pressing the Page Up button**. To access this page from menu page 1, Hold down the Page Up button and press the flashing Velocity button in the Part Edit section.

The higher parameter is "Tx ext velocity". In this case with a value of "Yes".

This parameter determines if the note data transmitted by the External Part uses the velocity information supplied by the Supernova II's keyboard, or a fixed default velocity value. Use the upper data knob to adjust this parameter. If this parameter is set to "Yes", then the velocity from playing the Supernova II's keyboard is used. If this parameter is set to "No", then notes are always sent using a fixed velocity value defined by the "Default velocity" parameter (see below). This feature can be useful when controlling sampler or drum machine sounds, where velocity values are often critical. The range of this parameter is Yes & No. This parameter is memorised with the Performance.

The lower parameter is "Default velocity". In this case with a value of 127.

This parameter determines the velocity value which will be used when transmitting notes for the selected External Part when the "Tx ext velocity" parameter (see above) is set to "No". Use the lower data knob to adjust this parameter. The range of this parameter is 001 to 127. This parameter is memorised with the Performance.

External - Button and MIDI - Button (both lit)

Page 1 looks like so:

Ext part	MIDI ch	Off
----------	---------	-----

The single parameter on this page is "External part MIDI channel". In this case with a value of Off.

This parameter determines if the External Part MIDI functions are enabled or not. If not set to "Off", it also sets the MIDI channel of the data being transmitted by the selected External "Part". This parameter is adjusted using the higher Data knob. If this parameter is set to Off as shown, no MIDI data will be transmitted for this External Part. If however, any MIDI channel is assigned to the selected External Part, then the Master keyboard functions are always activated for that Part. The range of this parameter is Off, 1 to 16. This parameter is memorised with the Performance.



NOTE:

This parameter has to be set to any MIDI channel (not set to Off) for any External MIDI data for the selected External Part to be transmitted.

Page 2 looks like so:

PBMWAVSN	Prog change
._ . . 0 . . .	Tx ? No

The higher parameter is "PBMWAVSN". In this case with a value of Prog change.

These parameters determine if the currently selected External Part will transmit various different types of MIDI data. Use the upper Data knob to select the type of data to be transmitted. The range of this parameter is Prog change, Bank change, Mod wheel, Pitch bend, Aftertouch, Volume, Sustain & Kbd notes. The current selection is indicated on the top right of the display. On the bottom row of the display an "." or a "o" indicates if the current selected option is transmitted or not. Confirmation for the currently selected option is also displayed on the bottom right of the display as Yes or No. This parameter is memorised with the Performance.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected External Part, for any MIDI data to be transmitted.

Page 3 looks like so:

Ext bank MSB	000
Ext bank LSB	000

The higher parameter is "External bank MSB". In this case with a value of 000.

The lower parameter is "External bank LSB". In this case with a value of 000.

These parameters in conjunction with the "PBMWAVSN" parameter on page 2 of this menu determine the External MIDI Bank messages to be sent for the currently selected external part when the current Performance is selected. MSB refers to CC0. LSB refers to CC32. The range of these parameters is 000 to 127. This parameter is memorised with the Performance.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected External Part, for any External MIDI data to be transmitted.

Page 4 looks like so:

Ext program no.	000
Ext volume level	127

The higher parameter is "External program number". In this case with a value of 000.

This parameter in conjunction with the "PBMWAVSN" parameter on page 2 of this menu determines the External MIDI program change message to be sent for the currently selected external part when the current Performance is initially selected. The range of this parameter is 000 to 127. This parameter is memorised with the Performance.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected external Part, for any External MIDI data to be transmitted.

The lower parameter is "External volume level". In this case with a value of 127.

This parameter in conjunction with the "PBMWAVSN" parameter on page 2 of this menu determines the External MIDI volume (CC7) to be sent for the currently selected external part when the current Performance is initially selected. The range of this parameter is 000 to 127. This parameter is memorised with the Performance.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected external Part, for any External MIDI data to be transmitted.

Page 5 looks like so:

Mod wheel Tx	CC001
[Modulation wheel]	

The only parameter on this page is "Mod wheel Tx". In this case with a value of CC001. This parameter in conjunction with the "PBMWAVSN" parameter on page 2 of this menu determines the MIDI Controller message to be sent for the currently selected External Part when the Mod wheel is moved. This allows the Mod wheel to transmit any Controller externally, not just normal Mod wheel messages (CC001). When defining the controller to be transmitted by the Modulation wheel for External Parts, the display shows on the bottom line the function of certain standardised controllers that are common to Novation and external MIDI equipment, in this example Modulation wheel is displayed. The range of this parameter is CC000 to CC127. This parameter is memorised with the Performance.



NOTE:

To transmit normal Mod wheel messages make sure this parameter is set to CC001.



NOTE:

The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected external Part, for any External MIDI data to be transmitted.

Page 6 looks like so:

Tx song select ?	Yes
Song no.	001

The higher parameter is "TX song select?". In this case with a value of Yes. This parameter determines if the Supernova II keyboard transmits a MIDI song select message when a new Performance is initially selected. Use the higher Data knob to adjust this parameter. When this parameter is set to Yes, the Song number specified in the "Song no." parameter below is transmitted when the current Performance is initially selected. If this parameter is set to No, then no Song number message is transmitted. The range of this parameter is Yes & No. This parameter is memorised with the Performance.



NOTE:

The MIDI Song select message this parameter can generate is not MIDI channelised, so the setting of the External Part's MIDI channel parameter is irrelevant. Because of this, unlike the other External Part parameters, the Song Select cannot be defined differently for each External Part. There is only one External Song Select available per Performance.

The lower parameter is "Song no.". In this case with a value of 001. If the TX song select ? parameter above is set to Yes, then the Song number specified here will be sent as a Song select message when the current Performance is initially selected. The range of this parameter is 000 to 127. This parameter is memorised with the Performance.

Page 7 looks like so:

Send MIDI stream	
No of bytes	010

The only parameter on this page is "Send MIDI stream No of bytes". In this case with a value of 10.

This parameter determines the number of bytes contained in a user-defined stream of MIDI information to be sent for this External Part when the current Performance is initially selected. Data streams can be up to 12 bytes long per External Part. Use the lower data knob to adjust the value of this parameter. If this parameter is set to 00, no MIDI data stream will be sent. Any other value determines the number of bytes to be sent. These are defined on menu page 8. The range of this parameter is 00 to 12. This parameter is memorised with the Performance.

Page 9 looks like so:

MIDI Stream byte	01
[Note Off]	8D

The higher parameter is "MIDI Stream byte". In this case with a value of 01. This parameter determines the position within the External Part's MIDI Data stream to be edited. Use the higher data knob to adjust this parameter. Any position in the 12 byte long Data stream can be selected. The range of this parameter is 1 to 12. This parameter is memorised with the Performance.

The lower parameter is the byte value of the currently selected Data stream position. In this case with a value of 8D. This parameter makes it possible to define any value in the bytes of the user-defined MIDI Data stream. At the bottom left of the display is shown the MIDI message type (in this case "Note Off") according to the currently defined value at this position. Use the lower data knob to alter the value of this parameter. The values are displayed in a hexadecimal format (00 to FF) as this is often convenient when defining MIDI data. This parameter is memorised with the Performance.



NOTE:

If the Page Up button is pressed while this menu page is displayed, the bottom line of the display will change to display the byte value in a normal decimal notation (000 to 255). Also, the MIDI channel encoded in the current byte value is shown (if applicable) at the bottom left of the display. For example, if the page was initially shown as above, while the Page Up button was pressed, the display would change to :

MIDI Stream byte	01
[MIDI ch 14]	141

Both data knobs can still be used to alter parameters while the Page Up button is held down.



NOTE:

It is up to the user to ensure that what has been defined is sensible and legitimate MIDI data. It should be realised that any string of MIDI byte values can be defined - even if it constitutes plain nonsense ! MIDI Data streams should therefore only be defined and used by persons with a sound understanding of how MIDI works. Otherwise, sending improper MIDI Data streams could possibly have strange and unpredictable consequences upon any MIDI devices in the network.



NOTE:

MIDI channel information embedded in status bytes of the MIDI Data Stream will not be re-channelised according the External Part's MIDI channel. All MIDI channel information in the MIDI data stream will transmitted 'as is'. The MIDI device(s) addressed by the MIDI Data Stream will therefore be determined by the MIDI channel data contained within the Stream's status bytes rather than the External Part's MIDI channel setting.



NOTE:

MIDI Data Streams will only be transmitted if the External Part's MIDI channel is not set to "Off" (the exact MIDI channel specified for the External Part is irrelevant as far as MIDI Data Streams are concerned) and the "Send MIDI stream no of bytes" parameter set on menu page 8 is not set to 0.



It is not possible to have MIDI messages spanning across two or more MIDI Data Streams in different External Parts. For example, it would not be possible to define a long System Exclusive message starting in External Part 1 and continuing in External Part 2. Each External Part's MIDI Data Stream may hold multiple MIDI messages (Running Status is allowed except for the first message in the Data Stream), but each MIDI message must be complete.



When a Performance containing External Part MIDI data is selected, the order in which the various types of External Part MIDI data, immediately transmitted is as follows :

Song Select Message (if "Tx song select" is set to "Yes")

Then for each External Part (provided its "MIDI channel" setting is not set to "Off") :

Bank Select (CC000 & CC032) Messages (if "Bank select Tx ?" is set to "Yes". The MSB byte CC000 is sent first)

Program Change Message (if "Program Change Tx ?" is set to "Yes")

Volume (CC007) Message (if "Volume Tx ?" is set to "Yes")

MIDI Data Stream Bytes (if "Send MIDI stream No of bytes" is not set to 0)

External - Button and Range - Button (both lit)

When these buttons are pressed, the display shows:

Ext highest note	G8
Ext lowest note	C-2

The higher parameter is "External highest note". In this case with a value of G8.

This parameter in conjunction with the "External lowest note" parameter determines the keyboard range of the MIDI note data being transmitted by the selected External Part. This parameter is adjusted using the higher Data knob. This parameter determines the highest key at which any MIDI note data will be transmitted on the selected External Part. The range of this parameter is C-2 to G8. This parameter is memorised with the Performance.



The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected External Part, for any External MIDI data to be transmitted.

The lower parameter is "External lowest note". In this case with a value of C-2.

This parameter in conjunction with the "External highest note" parameter determines the keyboard range of the MIDI note data being transmitted by the selected External Part. This parameter is adjusted using the lower Data knob. This parameter determines the lowest key at which any MIDI note data will be transmitted on the selected External Part. The range of this parameter is C-2 to G8. This parameter is memorised with the Performance.



The External Part MIDI ch parameter (in the External and MIDI buttons menu) has to be set to any MIDI channel (not set to Off) for the selected external Part, for any External MIDI data to be transmitted.



If the Lowest note is set higher than the Highest note, a reverse window can be created. For example:

If Part Highest note is set to C2 and the Part lowest note is set to C3, the sound appears on the keyboard from C0 to C2 and from C3 to C8. There is a "Hole" in the middle of the keyboard where the Part will not play.



The Range for the External Part can be set via the keyboard by holding down the Page up (for the Highest note) or Page down (for the Lowest note) buttons and while holding down, playing a note on the Supernova II keyboard at the desired split point. You can set both parameters to the same value simultaneously by holding down both page buttons and playing a note on the keyboard.

No Power .

Power Supply not connected properly. If applicable, check fuse in mains plug.

No Sound .

Check the "Volume" knob is not set at zero.

Check that the correct MIDI receive Channel is selected.

Check that all mixer parameters are not set to zero.

Check that a Volume MIDI Message of zero is not being transmitted to the Supernova II keyboard.

Check that the Filter Frequency knob or Sustain and Decay knobs of Env1 are not set to zero.

Check that Local On/Off in Global Mode is not set to Off.

Check Arp Mute is not active (lit).

Check Part Polyphony (if in Performance Mode) is not set to Off.

Check Pass to Effects parameter in Dist/EQ/Config menu is not set to Input 1 or 2, but Program.

Check that the Arpeggio notes to: parameter in Arp Menu is not set to MIDI only.

Check Part levels (if in Performance Mode) are not set to 0.

Check sequencer is running if an Arpeggiator is being used and the MIDI clock parameter in the Global Menu is set to Ext.

LFOs , Delay , Panning , Comb Filter , Chorus , Envelope Delay &/or Arpeggiator do not sync to MIDI Clock .

Check the Clock parameter in the Global Menu is set to Ext (refer page 49). If this is set to external, check the Supernova II keyboard is synced by varying the tempo of the Sequencer. If the Supernova II keyboard speeds up or slows down accordingly, Supernova II keyboard is synced to MIDI Clock. However it is possible to synchronise the LFOs, Delay and Arpeggiator to many different time signatures. This can lead to a situation where the Supernova II keyboard may be synced but synchronised at a strange time signature. Check the synchronisation parameters. For details, refer on page 97 for the LFOs, page 128 for the Delay, pge 127 for the Panning, page 120 for the Comb Filter, page 131 for the Chorus, page 115 for the Envelope Delay and page 66 for the Arpeggiator details.

LFOs , Delay , Panning , Comb Filter , Chorus , Envelope Delay and/or Arpeggiator is stuck/stopped/does not work.

This is probably because the LFOs, Delay, Panning, Comb Filter, Chorus, Envelope Delay and/or Arpeggiator are set to sync to External MIDI Clock. To check this, see if the Clock parameter in the Global Menu is set to Ext (refer page 49). If it is set to External, then setting this parameter to Internal or Auto will restore the operation of the LFOs, Delay and / or Arpeggiator. If you wish these to be synced to MIDI Clock, leave this parameter in External or Auto and confirm that the sequencer is actually sending MIDI Clock. A lot of software sequencers default to NOT transmitting MIDI Clock. Also, most sequencers do not transmit MIDI clock unless they are actually playing or recording. If the LFO / Delay / Arp is stuck / not functioning when you have the Clock parameter in the Global Mode is set to Ext, the sequencer is not sending MIDI Clock. There is no other reason.

Cannot record knob movements on the sequencer .

Some sequencers / software feature a "filter" for filtering out unwanted data. Controllers is usually an option. This data must not be filtered out by the sequencer. Consult the sequencer / software's owners manual for details. Make sure that the Supernova II Keyboard is set to transmit controller data from within page 14 of the Global Menu. See pages 54 & 55 for details.

Cannot change Banks via MIDI .

Bank changes are different from program changes and actually consist of two MIDI messages. For this reason, some sequencers / software have a "Bank Box" or similar in an attempt to simplify things. However, sometimes on early versions of software this function may not be available. If this is the case and your sequencer does not have a "Bank Box" or similar, you will have to enter in the data manually in a "List Edit" or similar function within the sequencer. You will have to enter a controller with specific values and then a program change message, all with the right values and in the right order and on the right MIDI channels. If the message you send does not change the bank on the Supernova II keyboard then you are probably not sending the right messages and values. Consult your sequencer / software owners manual for details.

Bank change messages are structured as follows. They must be sent as shown and in the correct order. A Program Bank "A" message is as follows: enter a controller 32 message with a value of 5 followed by a Program Change message with the value of the program you want. i.e. for program 6 enter 7 (this is because the numbering of memories within the Supernova's banks start at 000 rather than 001). A Program Bank "B" message is as follows: enter a controller 32 with a value of 6 followed by a Program Change message with the value of the program you want. Alternatively, simply select the desired Performance / Program from the Supernova II keyboard's front panel while recording into a sequencer. Make sure the MIDI output of the Supernova II keyboard is connected to the MIDI input of your sequencer / computer either directly or via a merge box.



There is a Table of Bank messages recognised by the Supernova II keyboard on page 166.

Supernova II keyboard does not respond to Program Change /Bank Select messages .

Check that the Incoming Program change parameter in the Global Menu is set to Enabled and/or the Prog change fill parameter (if in Performance Mode) in the MIDI menu of the Part edit section is not On.

Supernova II keyboard does not respond to Controller messages .

Check that the Incoming control change parameter in the Global Menu is set to Enabled and/or the Controller fill parameter (if in Performance Mode) in MIDI menu of the Part edit section is not On.

The knobs and buttons do not alter the sound / do anything.

Check that the Local On/Off parameter in Global mode is not set to Off. When Local Control is set to Off, MIDI messages transmitted by the Supernova II keyboard have to be routed back in to the Supernova II Keyboard's MIDI In socket (usually via a sequencer) to have any effect.

Cannot receive Sysex dumps (Progs-Perfs)

Check that Memory Protect is set to Off and Sysex reception is set to Normal (RX as sent). If you are sending C or D Bank Perfs or E,F,G or H Bank Progs from a Supernova II keyboard to a standard Nova II keyboard, then these sounds will not go into the Nova II keyboard as corresponding banks do not exist in the Nova II keyboard. You can however specify All Progs to bank A, B, C or D and All Perfs to bank A or B on the Nova II Keyboard to get around this.

The Supernova II keyboard switches itself from Performance Mode to Program Mode.

This is because the MIDI out and MIDI in of the Supernova II keyboard are connected to a sequencer which is remapping Bank/Program messages (generated by changing Program/Bank on a Part) to a channel corresponding to the Global channel of the Supernova II keyboard. The solution is to Filter out Bank messages in the Sequencer, or disconnect the MIDI out of the Supernova II keyboard, or disable the "Thru" function on the sequencer, or to change the Global channel of the Supernova II keyboard to one not being used in the sequencer.

When editing a Part in Performance Mode, other parts are being edited as well.

This is because the MIDI out and MIDI in of the Supernova II keyboard is connected to a sequencer which is remapping controller messages (generated by editing parameters on a Part) to a channel corresponding to the channel of the other affected Part. The solution is to switch the local control parameter in the Global Menu to Off. This means all edits will be carried out via the MIDI chain rather than directly. The sequencer will dictate which part is being edited by the MIDI channel setting on the track. The alternatives are not very friendly - they are to filter out controller messages in the Sequencer, or disconnect the MIDI out of the Supernova II keyboard, or disable the "Thru" function on the sequencer. These approaches may well be necessary if you have deliberately configured several Parts in a Performance to receive on the same MIDI channel.

When using a sequencer to play back drums, occasionally dropouts occur .

When using Drum Banks with a sequencer, it is possible that "note dropouts" can occur, especially when repetitive notes are used (Such as snare rolls). This is because some sequencers occasionally get the note on/off messages out of sequence. This is not a problem with the Supernova II keyboard but with the sequencer.

This is a typical example of what happens. When a snare roll of say 16th notes with a gate time of 16ths is programmed into a sequencer, the expected MIDI output would be as follows:

Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note off, etc.

What actually happens occasionally is this:

Note on - (gap of 1 16th) - Note off, Note on - (gap of 1 16th) - Note on, Note off - (gap of 1 16th) - Note off, etc.

This happens presumably because the Note off and the Next note on events happen (as far as the internal timing of the sequencer is concerned) at the same time. Most of the time, the sequencer will output them in the right order but occasionally it will get it wrong, resulting in a note dropping out. The solution is to make the Gate time (Note length) of the notes less than the distance between the notes. For example, in the above situation where the notes are 16ths apart, make the gate time of the notes less than a 16th. i.e. 32nd. This forces the sequencer to output the Note on and off messages correctly.

When using Multitimbrally, strange things occur.

If you create your own from existing Performances other than the Factory Init Performances, parameters may have been set in individual Parts so that in a multi setup strange things may happen. Here's the check list:

Velocity behaves strangely on one Part - The Velocity Curve parameter in the Velocity menu is *not* set to "Normal".
 The Part is Monophonic and should be Polyphonic - The Polyphony parameter in the Polyphony menu is set to "Mono".
 The Part is Polyphonic and should be Monophonic - The Polyphony parameter in the Polyphony menu is set to "Poly".
 The Part is Muted / No response at all - If the Part light flashes steadily, even with no MIDI input, the Part is Muted.
 The Part is Muted / No response at all - Does the Part light flash when MIDI is sent?

- Yes - The Assigned outputs may be different to the ones connected, check the setting of the Outputs menu for the offending Part.
- No - The MIDI Channel for the Part is set to the incorrect channel in the MIDI menu.
- No - Polyphony parameter in the Polyphony menu is set to "Off".

The Part is in a different key to the others - The Part Semitone parameter in the Tune menu is *not* set to "0"

The Part is in a out of tune with the others - The Part Detune parameter in the Tune menu is *not* set to "0"

The sustain pedal behaves in reverse on the assigned Part - The Polarity of the pedal is set incorrectly, set the Sustain parameter in MIDI menu to "Enable" or "Enable (I)" so that the desired effect is produced.

The Sustain pedal does not work on the assigned Part - The Sustain parameter in the MIDI menu is *not* set to "Enable" or "Enable (i)".

Footswitch does not appear to work when connected to the Input / sw 1 or Input / sw 2 jack sockets.

Make sure the Input / sw 2 socket is not configured for "Audio in" on page 9 of the Global Menu.

Footswitch does not appear to work when connected to the Pedal / switch 3 jack socket.

Make sure the Input / sw 3 socket is not configured for "Pedal-T" or "Pedal-R" on page 10 of the Global Menu.

Expression Pedal does not appear to work when connected to the Input / sw 3 socket.

Make sure that the Input / sw 3 socket is not configured for "Switch" or "Switch-I" on page 10 of the Global Menu.

Pedal / footswitch works fine in Program Mode but does not appear to work in Performance Mode.

Make sure Part is enabled (its Polyphony setting is not set to "Off"). Make sure the jack socket is set to "Enabled" for the Part (Page 4 in the Part edit Midi menu). Make sure the appropriate pedal / footswitch MIDI message reception for the Part is not set to "Off" (Pages 1 - 3 in the Part edit Midi menu).

Pedal / footswitch works, but behaves in the opposite manner to the way expected.

Switch to the opposite type of pedal / footswitch configuration (Pages 9 & 10 in the Global Menu). If using a footswitch, make sure the Part is not using one of the inverted footswitch options (Pages 1 & 2 in the Part edit Midi Menu).

It does not seem possible to Restore the factory Programs in banks E, F, G or H.

Only Programs from Program banks A, B, C & D can be restored. Programs in banks E, F, G & H cannot be restored from ROM but are available as .mid files free on our web site.

It does not seem possible to Restore the factory Drum Programs in Drum banks e, f, g or h.

Only Drum Programs from Drum banks a, b, c & d can be restored. Drum Programs in banks e, f, g & h cannot be restored from ROM.

It does not seem possible to Restore the factory Performances in banks C & D.

Only Performances from Performance banks A & B can be restored. Performances in banks C & D cannot be restored from ROM.

It does not seem possible to Restore the factory Arpeggiator Patterns in banks User (V) & User (W).

Only Arpeggiator Patterns from Arpeggiator banks Mono, Poly & User (U) can be restored. Arpeggiator Patterns from Arpeggiator banks User (V) & User (W) cannot be restored from ROM.

New sound banks are available on our Web site (<http://www.novationmusic.com> or <http://www.novationusa.com>) and are free to download. This is actually very similar to upgrading the OS in your Supernova II keyboard.

- 1 - Connect the MIDI out of the sequencer to the MIDI in of the Supernova II keyboard.
- 2 - Turn the Memory Protect OFF (in page 7 of the Global Menu) and make sure your Supernova II keyboard is set to global channel 1 (page 1 of the Global Menu).
- 3 - Load the Total.mid file into your sequencer.
- 4 - Play the sequence (The display will show the status of incoming messages).



If you experience problems with this file, it is probably due to similar problems that can occur when updating the OS. Please Refer to page 163 "Problems that can occur when updating an OS".

On our Web Site (<http://www.novationmusic.com> or <http://www.novationusa.com>) the latest Operating System Software is available free to download. Please follow the instructions below for details on how to upgrade you Supernova II keyboard's Operating System.

- 1 - BACK UP YOUR DATA.
Make a backup of your data to computer. By this I mean everything. Use the "Total data" setting in the Sysex transmission parameter in Global Mode. Normally, the OS update procedure should not affect the sounds and settings stored in the Supernova II memories. However, should an event such as a mains power failure occur during the OS update process, it is possible that the memory contents will become corrupted.
- 2 - VERIFY YOUR BACKUP.
Change the name of one of the sounds and write the change in. Then reload your sounds from YOUR BACKUP that you have just made. If the name has changed back to what it was when you made the backup, chances are the backup is OK.
- 3 - SWITCH THE SUPERNOVA II KEYBOARD OFF.
- 4 - CONNECT MIDI OUT OF THE SEQUENCER TO MIDI IN ON THE SUPERNOVA II KEYBOARD.
- 5 - LOAD THE SNVnn.mid FILE INTO YOUR SEQUENCER.
- 6 - HOLD DOWN PART BUTTON 8 & SWITCH THE SUPERNOVA II KEYBOARD ON WHILE STILL HOLDING IT DOWN.

The display should show:

Waiting for midi O/S

- 7 - PLAY THE SEQUENCER.

If everything is OK you'll get a display like so indicating the amount of file received.

Receiving OS 2.nn
progress... 10%

Once the file has reached 100% the display will show:

OK - updating flash
progress... 10%

The Supernova II keyboard is now updating the OS in Flash Memory.



NOTE:

Under no circumstances switch off the Supernova II keyboard while this procedure is happening. Doing so may result in very erratic behaviour and may lead to the Supernova II keyboard needing to be sent back for service!

Once the Flash has been loaded the Supernova II keyboard will automatically reboot as normal running the new OS.

While we have taken every precaution in designing the OS to be upgraded trouble free, sometimes problems can occur. This is not solely down to us but in almost all cases rests with the sequencer/hardware used to perform the upgrade.

If an error occurs during the upgrade process the display will show:

Packet error!!
Switch off and re-try

This is an indication that an error has occurred in the download process that does not make any sense to the Supernova II keyboard.



This is not caused by the Supernova II keyboard but by the transmitting device. If the possibility of faulty MIDI cables have been eliminated, the problem must be caused by the software or the hardware used to transmit the OS to the Supernova II keyboard. Do what the message says, switch the Supernova II keyboard off and re-try.

If the problem re-occurs, then please look below.

PCs

In these devices there often seems to be a compound problem with hardware and software. Some applications will work with some MIDI interfaces and not with others. Some interfaces appear to have problems correctly handling System Exclusive data.

Solution 1 is try another sequencer / application.

Solution 2 is try another MIDI interface.

Solution 3 is try another sequencer / application with a different MIDI interface.

Cubase works most of the time depending on the version and interface.

Cakewalk works sometimes depending on the version and interface.

Logic works most of the time depending on the version and interface.

Media Player works sometimes depending on the version and interface.

Freeloder works most of the time depending on the version and interface.

Some USB MIDI interfaces do seem to have problems handling this data. Please contact the manufacturer to get the latest Drivers / Operating systems for the interfaces. At the time of writing, no USB interface known can reliably do this.

If none of this works...Try a different computer. Feel free to ask the sequencer manufacturer why large sysex files as .mid files are incompatible with their application (.mid files are meant to be an international standard).

Macintosh

Mac's often seem to be relatively trouble free. Some problems have been experienced with older ones though. The same solutions apply.

Solution 1 is try another sequencer/application.

Solution 2 is try another MIDI interface.

Solution 3 is try another sequencer / application with a different MIDI interface.

Some USB MIDI interfaces do seem to have problems handling this data. Please contact the manufacturer to get the latest Drivers / Operating systems for the interfaces. At the time of writing, no USB interface known can reliably do this.

If none of this works...Try a different computer. However this is rarely necessary.

ATARI

Never had a problem ever, an 8meg 16 bit machine has been found to be extremely reliable.

AMIGA

Bars and Pipes Pro works, but it could be down to the interface.

WORKSTATIONS

Workstations such as KORG's Trinity/X-series/O1w and ROLAND Workstations do not to our knowledge at this stage support sysex in .mid files. They have Utility modes which can load sysex files but not in the Midi File format.

Basically this means the files downloadable from our site are not compatible with your workstation. You will have to use a computer to upgrade your unit with this file.



NOTE:

When using multi-port interfaces, for some strange reason, some sequencer applications are known to only support sending Sysex messages from Port number 1. When loading in an OS or any other type of Sysex data, if the data appears to be completely ignored by the Supernova II Keyboard, try connecting the Supernova II Keyboard to port 1.

Synthesis System	Analogue Sound Modelling.
Polyphony	24 Voice (expandable) for the standard Supernova II Keyboard or Rack. 36 Voice (expandable) for the Supernova II Pro Keyboard or Rack. 48 Voice for the Supernova II ProX Keyboard or Rack.
Sound Sources per Voice	3 Oscillators, (this can be increased up to 6 Oscillators when the special waveform Double Saw is used with no loss of polyphony (2 Ring Modulators and a Noise Generator still available).
FM capabilities	8 different FM routings are possible with the full power of the Mod Matrix capable of modulating each of the three FM nodes.
Modulation Matrix	Comprehensive Modulation Matrix with 130 possible routings.
Multitimbral capacity	8 part Multitimbral.
Filter	12, 18 and 24 dB per octave Resonant filter configurable in Low Pass, High Pass and Band Pass modes, plus 9 "Special" dual type filters with modulatable frequency separation. All filters also feature an overdrive control capable of subtle "Saturation" effects to dirty Overdrive. Filter Bypass mode allows Noise to be independently Filtered and is ideal for the creation of Drum sounds.
LFOs	2 LFOs capable of oscillating at Audio rates. Syncable to MIDI Clock and Slewable with LFO Delay assignable to Fade in or Fade out characteristics.
Envelopes	3 Envelopes. 1 x ADSR and 2 x D(Delay)ADSR types. All have loopable AD stages and Sustain time and Sustain Rate features. ADR Tracking and Level Tracking are also provided for each Envelope. Delay of Envelopes 2 & 3 syncable to MIDI clock.
Program Effects	Distortion, Comb Filter, EQ, Reverb, Chorus/Flanger/Phaser/Ensemble/Rotary Speaker, Delay and Panning effects for each Program.
Total number of Effects	57 Effects available simultaneously - 7 Effects for each of the 8 Parts of a Performance or Program, Plus 1 Global 42 Band Vocoder. Yes, you can have a different Reverb on each part, a different Delay on each part, a different Chorus etc.
Vocoder	42 Band Vocoder with Sibilance modes and Spectrum Analyser.
Effects Configurations	18 different Effects Configurations available on each Part of a performance or Program. Realtime Morphing between Effects Configurations is also possible.
Number of Outputs	8 assignable polyphonic outputs with high quality DACs for each output.
Number of Inputs	2 assignable Inputs with high quality ADCs.
Number of Programs	1024 Programs in 8 banks. (pre-programmed with Factory sounds)
Number of Drum Programs	400. (392 Drum sound Programs and 8 Drum effects Programs)
Number of Drum Maps	8 Drum Maps of 50 Programs each. (5 of which are pre-programmed with Factory sounds)
Number of Performances	512 Performances in 4 banks, (pre-programmed with Factory sounds)
Number of Favourites	128 Favourites in 1 bank.
Master Keyboard Functions	8 Part Master Keyboard functions with programmable Volume, Program, Bank, Transposition, Velocity, keyboard windows and assignable MIDI data stream per Part.
Arpeggiator	Built in Arpeggiator with 128 Preset Polyphonic, 128 Preset Monophonic and 192 User Programmable Polyphonic and 192 User Programmable Monophonic Patterns with 8 Arpeggiators available simultaneously in Performance Mode.
Control	All knobs, switches and Parameters transmit MIDI Controllers and NRPNs.
Operating System	Flash upgradeable operating system via MIDI. Free as a MIDI file on our Web Site.
Power Requirement	Multi Voltage built in power supply. 90V to 260V, 50 or 60 Hz. 40 Watts.
MIDI	In/Out/Thru.
Keyboard	5 octave semi weighted velocity sensitive action with channel aftertouch.
Dimensions	Keyboard version - Width 1018mm. Depth 330mm. Max height including knobs 112mm. Rack version -3U Rackmount. Width 483 mm. Depth Including Knobs 222mm. Height 133mm.
Weight	Keyboard version - 10kg Rack version - 5kg.

SUPERNOVA II SERIES EXPANSION BOARDS SPECIFICATION
(For standard 24 voice version and Supernova II Pro Keyboard or Rack version only)

12 VOICE EXPANSION BOARD. (For standard Supernova II models & Supernova II Pro Keyboard or Rack only)

Additional Voices 12 Voices This can be fitted to the Supernova II Keyboard or Rack. There is no point in adding this to the Supernova II Pro Keyboard or Rack as the 12 voice expander card is already fitted.

24 VOICE EXPANSION BOARD. (For standard Supernova II models & Supernova II Pro Keyboard or Rack only)

Additional Voices 24 Voices This can be fitted to the Supernova II & Supernova II Pro Keyboard or Rack. If fitted to the Supernova II Pro Keyboard or Rack, the 12 voice expander card must be discarded and this one installed in its place. Once installed, the polyphony will be 48 voices.

Specification subject to change without prior notice.

Release dates and specifications of improved Operating Systems is up to the discretion of Novation EMS Ltd.

The following MIDI bank select messages values are used by the Supernova II keyboard whenever a new playing mode (Performance Modes or Program Mode) is selected or a new Program is assigned to a Part.



NOTE:

These messages are expressed as the LSB of the MIDI bank message (CC32 data values) only, as the MSB MIDI bank message (CC0 data values) are not required to select a new bank.



NOTE:

When a new Mode is selected on the front panel, only the LSB bank message is transmitted, followed immediately by a Program Change message.

Bank LSB value	Bank	Comments
0	Favourites	
1	Perf bank A	(Selects Performance Mode. Sent & recognised ONLY on the Global MIDI channel)
2	Perf bank B	(Selects Performance Mode. Sent & recognised ONLY on the Global MIDI channel)
3	Perf bank C	(Selects Performance Mode. Sent & recognised ONLY on the Global MIDI channel)
4	Perf Bank D	(Selects Performance Mode. Sent & recognised ONLY on the Global MIDI channel)
5	Prog bank A	(when received on the Global MIDI channel, selects Program Mode)
6	Prog bank B	(when received on the Global MIDI channel, selects Program Mode)
7	Prog bank C	(when received on the Global MIDI channel, selects Program Mode)
8	Prog bank D	(when received on the Global MIDI channel, selects Program Mode)
9	Prog bank E	(when received on the Global MIDI channel, selects Program Mode)
10	Prog bank F	(when received on the Global MIDI channel, selects Program Mode)
11	Prog bank G	(when received on the Global MIDI channel, selects Program Mode)
12	Prog bank H	(when received on the Global MIDI channel, selects Program Mode)
13	Arp bank Mono	
14	Arp bank Poly	
15	Arp bank User U	
16	Arp bank User V	
17	Arp bank User W	
18	Drum Map a	(when received on the Global MIDI channel, selects Program Mode)
19	Drum Map b	(when received on the Global MIDI channel, selects Program Mode)
20	Drum Map c	(when received on the Global MIDI channel, selects Program Mode)
21	Drum Map d	(when received on the Global MIDI channel, selects Program Mode)
22	Drum Map e	(when received on the Global MIDI channel, selects Program Mode)
23	Drum Map f	(when received on the Global MIDI channel, selects Program Mode)
24	Drum Map g	(when received on the Global MIDI channel, selects Program Mode)
25	Drum Map h	(when received on the Global MIDI channel, selects Program Mode)



NOTE:

When selecting sounds from a sequencer, it is important that the bank select LSB message (CC32) is followed immediately by a Program Change message selecting the desired location within the newly selected bank.

Bank select MSB messages (CC0) can be omitted. If they ARE sent, it is recommended that they are always sent with a data value of zero. When bank select MSB messages are used, it is not important whether they are sent before or after the LSB message, as long as the Program Change message follows immediately after the MSB & LSB Bank select messages.

0 – Bank Select MSB (Not used)	64 – Sustain / Arp Latch
1 – Modulation Wheel	65 – Arp Latch
2 – Breath Controller	66 – Osc 1 Pitch Env 3
3 – Arp Pattern Select	67 – Osc 2 Pitch Env 3
4 – Ring Modulator 2 * 3 Mix Level	68 – Osc 3 Pitch Env 3
5 – Portamento Time	69 – Osc 1 Width LFO 2
6 – Data Entry	70 – Osc 2 Width LFO 2
7 – Part / Program Volume	71 – Osc 3 Width LFO 2
8 – Effects Config Morph Amount	72 – Filter Res Env 2
9 – Arp Speed (Internal Clock Rate) [*]	73 – Filter Res LFO 1
10 – Pan	74 – Env 3 Delay
11 – Osc 1 Fine Tune	75 – Env 3 Attack
12 – Osc 3 Fine Tune	76 – Env 3 Decay
13 – Osc 1 Soften	77 – Env 3 Sustain
14 – Osc 2 Soften	78 – Env 3 Release
15 – Osc 3 Soften	79 – Env 3 Velocity
16 – LFO 1 Speed	80 – LFO 1 Speed Env 3
17 – LFO 1 Delay	81 – LFO 2 Speed Env 3
18 – LFO 2 Speed	82 – LFO 1 Offset
19 – LFO 2 Delay	83 – LFO 2 Offset
20 – Osc 1 Pitch Env 2	84 – Reverb Mod Wheel Depth
21 – Osc 1 Pitch LFO 1	85 – Filter Res Env 3
22 – Osc 1 Pulse Width	86 – Filter Res LFO 2
23 – Osc 2 Fine Tune	87 – Chorus Speed
24 – Noise Soften	88 – Chorus Mod Depth
25 – Osc 2 Pitch Env 2	89 – Chorus Feedback
26 – Osc 2 Pitch LFO 1	90 – Distortion Level
27 – Osc 2 Pulse Width	91 – Reverb Send Level
28 – Osc 1 Mix Level	92 – Delay Send Level
29 – Osc 2 Mix Level	93 – Chorus Send Level
30 – Noise Mix Level	94 – Chorus Mod Wheel Depth
31 – Ring Modulator 1 * 3 Mix Level	95 – Reverb Decay
32 – Bank Select LSB	96 – Reverb HF Damp
33 – Osc 3 Mix Level	97 – Master Volume Level [*]
34 – Filter Tracking	98 – NRPN Select LSB
35 – Filter Freq LFO 2	99 – NRPN Select MSB
36 – Osc 1 Mix Env 2	100 – Reverb Type / Early Ref Level [**]
37 – Osc 2 Mix Env 2	101 – Delay Time
38 – Osc 3 Mix Env 2	102 – Delay Feedback
39 – Noise Mix Env 2	103 – Delay HF Damp
40 – Osc 3 Pitch Env 2	104 – Filter Overdrive
41 – Osc 3 Pitch LFO 1	105 – Filter Cutoff Freq
42 – Osc 3 Pulse Width	106 – Filter Resonance
43 – Osc 1 Width Env 2	107 – Filter Freq Env 2
44 – Osc 2 Width Env 2	108 – Env 1 Attack
45 – Osc 3 Width Env 2	109 – Env 1 Decay
46 – Osc 1 Width LFO 1	110 – Env 1 Sustain
47 – Osc 2 Width LFO 1	111 – Env 1 Release
48 – Osc 3 Width LFO 1	112 – Env 1 Velocity
49 – Osc 1 Sync	113 – Env 2 Delay
50 – Osc 2 Sync	114 – Env 2 Attack
51 – Osc 3 Sync	115 – Env 2 Decay
52 – Osc 1 Sync Env 2	116 – Env 2 Sustain
53 – Osc 2 Sync Env 2	117 – Env 2 Release
54 – Osc 3 Sync Env 2	118 – Env 2 Velocity
55 – Osc 1 Sync LFO 1	119 – Delay Mod Wheel Depth
56 – Osc 2 Sync LFO 1	120 – All Sound Off
57 – Osc 3 Sync LFO 1	121 – Reset Controllers
58 – Distortion Mod Wheel Depth	122 – Local Control [*]
59 – Filter Freq Env 3	123 – All Notes Off
60 – Filter Freq LFO 1	124 – All Notes Off
61 – Osc 1 Soften Env 2	125 – All Notes Off
62 – Osc 2 Soften Env 2	126 – All Notes Off
63 – Osc 3 Soften Env 2	127 – All Notes Off

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
0	0	0	0	Multi purpose packed NRPN	
1	1	1	0	Multi purpose packed NRPN	
2	2	2	0	Osc 1 Mod knob LFO 2 pitch	
3	3	3	0	Osc 1 Mod knob Wh pitch	
4	4	4	0	Osc 1 Mod knob Env 3 width	
5	5	5	0	Osc 1 Mod knob Wh width	
6	6	6	0	Osc 1 Mod knob Env 3 sync	
7	7	7	0	Osc 1 Mod knob LFO 2 sync	
8	8	8	0	Osc 1 Mod knob Wh sync	
9	9	9	0	Osc 1 Mod knob Env 3 hardness	
10	A	10	0	Osc 1 Mod knob LFO 1 hardness	
11	B	11	0	Osc 1 Mod knob LFO 2 hardness	
12	C	12	0	Osc 1 Mod knob Wh hardness	
13	D	13	0	Osc 1 Mod knob Env 3 mix	
14	E	14	0	Osc 1 Mod knob LFO 1 mix	
15	F	15	0	Osc 1 Mod knob LFO 2 mix	
16	10	16	0	Osc 1 Mod knob Wh mix	
17	11	17	0	Osc 1 Man knob pitch	
18	12	18	0	Osc 2 Mod knob LFO 2 pitch	
19	13	19	0	Osc 2 Mod knob Wh pitch	
20	14	20	0	Osc 2 Mod knob Env 3 width	
21	15	21	0	Osc 2 Mod knob Wh width	
22	16	22	0	Osc 2 Mod knob Env 3 sync	
23	17	23	0	Osc 2 Mod knob LFO 2 sync	
24	18	24	0	Osc 2 Mod knob Wh sync	
25	19	25	0	Osc 2 Mod knob Env 3 hardness	
26	1A	26	0	Osc 2 Mod knob LFO 1 hardness	
27	1B	27	0	Osc 2 Mod knob LFO 2 hardness	
28	1C	28	0	Osc 2 Mod knob Wh hardness	
29	1D	29	0	Osc 2 Mod knob Env 3 mix	
30	1E	30	0	Osc 2 Mod knob LFO 1 mix	
31	1F	31	0	Osc 2 Mod knob LFO 2 mix	
32	20	32	0	Osc 2 Mod knob Wh mix	
33	21	33	0	Osc 2 Man knob pitch	
34	22	34	0	Osc 3 Mod knob LFO 2 pitch	
35	23	35	0	Osc 3 Mod knob Wh pitch	
36	24	36	0	Osc 3 Mod knob Env 3 width	
37	25	37	0	Osc 3 Mod knob Wh width	
38	26	38	0	Osc 3 Mod knob Env3 sync	
39	27	39	0	Osc 3 Mod knob LFO 2 sync	
40	28	40	0	Osc 3 Mod knob Wh sync	
41	29	41	0	Osc 3 Mod knob Env 3 hardness	
42	2A	42	0	Osc 3 Mod knob LFO 1 hardness	
43	2B	43	0	Osc 3 Mod knob LFO 2 hardness	
44	2C	44	0	Osc 3 Mod knob Wh hardness	
45	2D	45	0	Osc 3 Mod knob Env 3 mix	
46	2E	46	0	Osc 3 Mod knob LFO 1 mix	
47	2F	47	0	Osc 3 Mod knob LFO 2 mix	
48	30	48	0	Osc 3 Mod knob Wh mix	
49	31	49	0	Osc 3 Man knob pitch	
50	32	50	0	1*3 Mod knob Env 2 mix	
51	33	51	0	1*3 Mod knob Env 3 mix	
52	34	52	0	1*3 Mod knob LFO 1 mix	
53	35	53	0	1*3 Mod knob LFO 2 mix	
54	36	54	0	1*3 Mod knob Wh mix	
55	37	55	0	2*3 Mod knob Env 2 mix	
56	38	56	0	2*3 Mod knob Env 3 mix	
57	39	57	0	2*3 Mod knob LFO 1 mix	
58	3A	58	0	2*3 Mod knob LFO 2 mix	
59	3B	59	0	2*3 Mod knob Wh mix	
60	3C	60	0	Noise Mod knob Env 2 hardness	
61	3D	61	0	Noise Mod knob Env 3 hardness	
62	3E	62	0	Noise Mod knob LFO 1 hardness	
63	3F	63	0	Noise Mod knob LFO 2 hardness	

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
64	40	64	0	Noise Mod knob Wh hardness	
65	41	65	0	Noise Mod knob Env 3 mix	
66	42	66	0	Noise Mod knob LFO 1 mix	
67	43	67	0	Noise Mod knob LFO 2 mix	
68	44	68	0	Noise Mod knob Wh mix	
69	45	69	0	Osc 1 Wh LFO 1 intensity	
70	46	70	0	Osc 2 Wh LFO 1 intensity	
71	47	71	0	Osc 3 Wh LFO 1 intensity	
72	48	72	0	Osc 1 Aftertouch LFO 1 intensity	
73	49	73	0	Osc 2 Aftertouch LFO 1 intensity	
74	4A	74	0	Osc 3 Aftertouch LFO 1 intensity	
75	4B	75	0	Osc 1 Sync formant width	
76	4C	76	0	Osc 2 Sync formant width	
77	4D	77	0	Osc 3 Sync formant width	
78	4E	78	0	Osc 1 Key sync	
79	4F	79	0	Osc 2 Key sync	
80	50	80	0	Osc 3 Key sync	
81	51	81	0	Osc 1 Sync skew	
82	52	82	0	Osc 2 Sync skew	
83	53	83	0	Osc 3 Sync skew	
84	54	84	0	Multi purpose packed NRPN	
85	55	85	0	LFO 1 Speed Aftertouch depth	
86	56	86	0	LFO 2 Speed Aftertouch depth	
87	57	87	0	Filter Mod knob Wh frequency	
88	58	88	0	Filter Mod knob Wh resonance	
89	59	89	0	Filter frequency Wh LFO 2 intensity	
90	5A	90	0	Filter resonance Wh LFO 2 intensity	
91	5B	91	0	Filter frequency Aftertouch LFO 2 intensity	
92	5C	92	0	Filter resonance Aftertouch LFO 2 intensity	
93	5D	93	0	Filter Aftertouch frequency	
94	5E	94	0	Filter Aftertouch resonance	
95	5F	95	0	Comb filter frequency	
96	60	96	0	Comb filter boost	
97	61	97	0	Effects dry level	
98	62	98	0	Panning speed	
99	63	99	0	Panning depth	
100	64	100	0	Multi purpose packed NRPN	
101	65	101	0	Delay width	
102	66	102	0	Vocoder balance [*]	
103	67	103	0	LFO 1 speed Wh depth	
104	68	104	0	LFO 2 speed Wh depth	
105	69	105	0	Env 1 Wh	
106	6A	106	0	Env 1 Aftertouch	
107	6B	107	0	EQ treble	
108	6C	108	0	EQ bass	
109	6D	109	0	Multi purpose packed NRPN	
110	6E	110	0	Multi purpose packed NRPN	
111	6F	111	0	Part semitone detune	
112	70	112	0	Part cents detune	
113	71	113	0	Multi purpose packed NRPN	
114	72	114	0	Part range highest note	
115	73	115	0	Part range lowest note	
116	74	116	0	Global master tune [*]	
117	75	117	0	Breath / Pedal CC02 remap option [*]	
118	76	118	0	Arp realtime transpose channel [*]	
119	77	119	0	Arp realtime transpose ref note [*]	
120	78	120	0	Favourites map edit location [*]	
121	79	121	0	Favourites map program number [*]	
122	7A	122	0	User pattern number edit select [*]	
123	7B	123	0	User pattern edit step [*]	
124	7C	124	0	User pattern edit note value [*]	
125	7D	125	0	User pattern edit velocity value [*]	
126	7E	126	0	User pattern edit no. of steps [*]	
127	7F	127	0	Filter Q normalise	

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
120	0078	120	0	Favourites map edit location	[*]
376	0178	120	1	LFO 1 soften amount	
632	0278	120	2	LFO 2 soften amount	
888	0378	120	3	Program level (in Performance Mode)	
1144	0478	120	4	Arp trans zone lowest note	[*]
1400	0578	120	5	Arp trans zone highest note	[*]
1656	0678	120	6	Unison detune	
1912	0778	120	7	FM on / off options for each button	
2168	0878	120	8	Env 1 key tracking	
2424	0978	120	9	Env 2 key tracking	
2680	0A78	120	10	Env 3 key tracking	
2936	0B78	120	11	Effects bypass	
3192	0C78	120	12	Arp trans zone active	[*]
3448	0D78	120	13	Special filter width	
3704	0E78	120	14	VCO drift	
3960	0F78	120	15	Not Currently Used	
4216	1078	120	16	External Part 1 semitone transpose	[*]
4472	1178	120	17	External Part 2 semitone transpose	[*]
4728	1278	120	18	External Part 3 semitone transpose	[*]
4984	1378	120	19	External Part 4 semitone transpose	[*]
5240	1478	120	20	External Part 5 semitone transpose	[*]
5496	1578	120	21	External Part 6 semitone transpose	[*]
5752	1678	120	22	External Part 7 semitone transpose	[*]
6008	1778	120	23	External Part 8 semitone transpose	[*]
6264	1878	120	24	External Part 1 velocity lowest value	[*]
6520	1978	120	25	External Part 2 velocity lowest value	[*]
6776	1A78	120	26	External Part 3 velocity lowest value	[*]
7032	1B78	120	27	External Part 4 velocity lowest value	[*]
7288	1C78	120	28	External Part 5 velocity lowest value	[*]
7544	1D78	120	29	External Part 6 velocity lowest value	[*]
7800	1E78	120	30	External Part 7 velocity lowest value	[*]
8056	1F78	120	31	External Part 8 velocity lowest value	[*]
8312	2078	120	32	External Part 1 velocity highest value	[*]
8568	2178	120	33	External Part 2 velocity highest value	[*]
8824	2278	120	34	External Part 3 velocity highest value	[*]
9080	2378	120	35	External Part 4 velocity highest value	[*]
9336	2478	120	36	External Part 5 velocity highest value	[*]
9592	2578	120	37	External Part 6 velocity highest value	[*]
9848	2678	120	38	External Part 7 velocity highest value	[*]
10104	2778	120	39	External Part 8 velocity highest value	[*]
10360	2878	120	40	External Part 1 channel	[*]
10616	2978	120	41	External Part 2 channel	[*]
10872	2A78	120	42	External Part 3 channel	[*]
11128	2B78	120	43	External Part 4 channel	[*]
11384	2C78	120	44	External Part 5 channel	[*]
11640	2D78	120	45	External Part 6 channel	[*]
11896	2E78	120	46	External Part 7 channel	[*]
12152	2F78	120	47	External Part 8 channel	[*]
12408	3078	120	48	External Part 1 range highest note	[*]
12664	3178	120	49	External Part 2 range highest note	[*]
12920	3278	120	50	External Part 3 range highest note	[*]
13176	3378	120	51	External Part 4 range highest note	[*]
13432	3478	120	52	External Part 5 range highest note	[*]
13688	3578	120	53	External Part 6 range highest note	[*]
13944	3678	120	54	External Part 7 range highest note	[*]
14200	3778	120	55	External Part 8 range highest note	[*]
14456	3878	120	56	External Part 1 range lowest note	[*]
14712	3978	120	57	External Part 2 range lowest note	[*]
14968	3A78	120	58	External Part 3 range lowest note	[*]
15224	3B78	120	59	External Part 4 range lowest note	[*]
15480	3C78	120	60	External Part 5 range lowest note	[*]
15736	3D78	120	61	External Part 6 range lowest note	[*]
15992	3E78	120	62	External Part 7 range lowest note	[*]
16248	3F78	120	63	External Part 8 range lowest note	[*]

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
16504	4078	120	64	External Part 1 MIDI Tx options	[*]
16760	4178	120	65	External Part 2 MIDI Tx options	[*]
17016	4278	120	66	External Part 3 MIDI Tx options	[*]
17272	4378	120	67	External Part 4 MIDI Tx options	[*]
17528	4478	120	68	External Part 5 MIDI Tx options	[*]
17784	4578	120	69	External Part 6 MIDI Tx options	[*]
18040	4678	120	70	External Part 7 MIDI Tx options	[*]
18296	4778	120	71	External Part 8 MIDI Tx options	[*]
18552	4878	120	72	External Part 1 Program no.	[*]
18808	4978	120	73	External Part 2 Program no.	[*]
19064	4A78	120	74	External Part 3 Program no.	[*]
19320	4B78	120	75	External Part 4 Program no.	[*]
19576	4C78	120	76	External Part 5 Program no.	[*]
19832	4D78	120	77	External Part 6 Program no.	[*]
20088	4E78	120	78	External Part 7 Program no.	[*]
20344	4F78	120	79	External Part 8 Program no.	[*]
20600	5078	120	80	External Part 1 Bank LSB	[*]
20856	5178	120	81	External Part 2 Bank LSB	[*]
21112	5278	120	82	External Part 3 Bank LSB	[*]
21368	5378	120	83	External Part 4 Bank LSB	[*]
21624	5478	120	84	External Part 5 Bank LSB	[*]
21880	5578	120	85	External Part 6 Bank LSB	[*]
22136	5678	120	86	External Part 7 Bank LSB	[*]
22392	5778	120	87	External Part 8 Bank LSB	[*]
22648	5878	120	88	External Part 1 Bank MSB	[*]
22904	5978	120	89	External Part 2 Bank MSB	[*]
23160	5A78	120	90	External Part 3 Bank MSB	[*]
23416	5B78	120	91	External Part 4 Bank MSB	[*]
23672	5C78	120	92	External Part 5 Bank MSB	[*]
23928	5D78	120	93	External Part 6 Bank MSB	[*]
24184	5E78	120	94	External Part 7 Bank MSB	[*]
24440	5F78	120	95	External Part 8 Bank MSB	[*]
24696	6078	120	96	External Part 1 volume	[*]
24952	6178	120	97	External Part 2 volume	[*]
25208	6278	120	98	External Part 3 volume	[*]
25464	6378	120	99	External Part 4 volume	[*]
25720	6478	120	100	External Part 5 volume	[*]
25976	6578	120	101	External Part 6 volume	[*]
26232	6678	120	102	External Part 7 volume	[*]
26488	6778	120	103	External Part 8 volume	[*]
26744	6878	120	104	External Part 1 Wheel assignment	[*]
27000	6978	120	105	External Part 2 Wheel assignment	[*]
27256	6A78	120	106	External Part 3 Wheel assignment	[*]
27512	6B78	120	107	External Part 4 Wheel assignment	[*]
27768	6C78	120	108	External Part 5 Wheel assignment	[*]
28024	6D78	120	109	External Part 6 Wheel assignment	[*]
28280	6E78	120	110	External Part 7 Wheel assignment	[*]
28536	6F78	120	111	External Part 8 Wheel assignment	[*]
28792	7078	120	112	Distortion output level	
29048	7178	120	113	Arp trans zone area semitone detune	[*]
29304	7278	120	114	LFO 1 fade mode	
29560	7378	120	115	LFO 2 fade mode	
29816	7478	120	116	Audio input 1 gain level	[*]
30072	7578	120	117	Audio input 2 gain level	[*]
30328	7678	120	118	Env 1 AD repeat	
30584	7778	120	119	Env 2 AD repeat	
30840	7878	120	120	Env 3 AD repeat	
31096	7978	120	121	Env 1 sustain time	
31352	7A78	120	122	Env 2 sustain time	
31608	7B78	120	123	Env 3 sustain time	
31864	7C78	120	124	Comb filter frequency Wh	
32120	7D78	120	125	Extra Sysex Rx options	[*]
32376	7E78	120	126	Extra Sysex Tx options	[*]
32632	7F78	120	127	Not Currently Used	

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
122	007A	122	0	User pattern number edit select	[*]
378	017A	122	1	Env 1 level track	
634	027A	122	2	Env 2 level track	
890	037A	122	3	Env 3 level track	
1146	047A	122	4	Env 1 sustain rate	
1402	057A	122	5	Env 2 sustain rate	
1658	067A	122	6	Env 3 sustain rate	
1914	077A	122	7	Env 1 level note	
2170	087A	122	8	Env 2 level note	
2426	097A	122	9	Env 3 level note	
2682	0A7A	122	10	Drum map detune	
2938	0B7A	122	11	OSCs start phase	
3194	0C7A	122	12	Part Arp Bank & Pattern used	
3450	0D7A	122	13	Extra Favourites Bank options	[*]
3706	0E7A	122	14	Extra chorus types	
3962	0F7A	122	15	Audio / Switch 1 Jack assignment	[*]
4218	107A	122	16	Audio / Switch 2 Jack assignment	[*]
4474	117A	122	17	Filter overdrive curve	
4730	127A	122	18	Filter OSCs bypass	
4986	137A	122	19	Distortion gain compensation	
5242	147A	122	20	Distortion curve	
5498	157A	122	21	Chorus delay	
5754	167A	122	22	Chorus LFO wave	
6010	177A	122	23	Chorus speed 2	
6266	187A	122	24	Chorus inertia	
6522	197A	122	25	Chorus stereo width	
6778	1A7A	122	26	Chorus Wheel mode	
7034	1B7A	122	27	Comb filter speed	
7290	1C7A	122	28	Comb filter depth	
7546	1D7A	122	29	Comb filter spread	
7802	1E7A	122	30	Comb filter boost Wh	
8058	1F7A	122	31	Part footswitch 1 MIDI Rx option	
8314	207A	122	32	Part footswitch 3 MIDI Rx option	
8570	217A	122	33	Part pedal / breath MIDI Rx option	
8826	227A	122	34	Part footswitches & pedal enable / disable	
9082	237A	122	35	Footswitch 1 data	
9338	247A	122	36	Footswitch 3 data	
9594	257A	122	37	Performance Ext Song select enable	[*]
9850	267A	122	38	Performance Ext song select song	[*]
10106	277A	122	39	Sysex transmission delay	[*]
10362	287A	122	40	Temporary display duration	[*]
10618	297A	122	41	User Arp pattern edit bank	[*]
10874	2A7A	122	42	Arp output MIDI channel	
11130	2B7A	122	43	Extra Arp user pattern bank select	
11386	2C7A	122	44	Global Aftertouch Tx option	[*]
11642	2D7A	122	45	Global key velocity Tx option	[*]
11898	2E7A	122	46	Global Arp kbd note Tx option	[*]
12154	2F7A	122	47	Extra Delay ratio options	
12410	307A	122	48	Arp gate time	
12666	317A	122	49	Currently Not Used	
12922	327A	122	50	Currently Not Used	
13178	337A	122	51	Currently Not Used	
13434	347A	122	52	Currently Not Used	
13690	357A	122	53	Currently Not Used	
13946	367A	122	54	Currently Not Used	
14202	377A	122	55	Currently Not Used	
14458	387A	122	56	Currently Not Used	
14714	397A	122	57	Currently Not Used	
14970	3A7A	122	58	Currently Not Used	
15226	3B7A	122	59	Currently Not Used	
15482	3C7A	122	60	Currently Not Used	
15738	3D7A	122	61	Currently Not Used	
15994	3E7A	122	62	Currently Not Used	
16250	3F7A	122	63	Currently Not Used	

NRPN	Hexadecimal	LSB	MSB	Description	[*] = Always transmitted on the Global MIDI channel
16506	407A	122	64	External Part 1 velocity Tx option	[*]
16762	417A	122	65	External Part 2 velocity Tx option	[*]
17018	427A	122	66	External Part 3 velocity Tx option	[*]
17274	437A	122	67	External Part 4 velocity Tx option	[*]
17530	447A	122	68	External Part 5 velocity Tx option	[*]
17786	457A	122	69	External Part 6 velocity Tx option	[*]
18042	467A	122	70	External Part 7 velocity Tx option	[*]
18298	477A	122	71	External Part 8 velocity Tx option	[*]
18554	487A	122	72	External Part 1 default velocity	[*]
18810	497A	122	73	External Part 2 default velocity	[*]
19066	4A7A	122	74	External Part 3 default velocity	[*]
19322	4B7A	122	75	External Part 4 default velocity	[*]
19578	4C7A	122	76	External Part 5 default velocity	[*]
19834	4D7A	122	77	External Part 6 default velocity	[*]
20090	4E7A	122	78	External Part 7 default velocity	[*]
20346	4F7A	122	79	External Part 8 default velocity	[*]
20602	507A	122	80	External Part 1 MIDI data stream size	[*]
20858	517A	122	81	External Part 2 MIDI data stream size	[*]
21114	527A	122	82	External Part 3 MIDI data stream size	[*]
21370	537A	122	83	External Part 4 MIDI data stream size	[*]
21626	547A	122	84	External Part 5 MIDI data stream size	[*]
21882	557A	122	85	External Part 6 MIDI data stream size	[*]
22138	567A	122	86	External Part 7 MIDI data stream size	[*]
22394	577A	122	87	External Part 8 MIDI data stream size	[*]
22650	587A	122	88	External Part 1 MIDI stream edit position	[*]
22906	597A	122	89	External Part 2 MIDI stream edit position	[*]
23162	5A7A	122	90	External Part 3 MIDI stream edit position	[*]
23418	5B7A	122	91	External Part 4 MIDI stream edit position	[*]
23674	5C7A	122	92	External Part 5 MIDI stream edit position	[*]
23930	5D7A	122	93	External Part 6 MIDI stream edit position	[*]
24186	5E7A	122	94	External Part 7 MIDI stream edit position	[*]
24442	5F7A	122	95	External Part 8 MIDI stream edit position	[*]
24698	607A	122	96	External Part 1 MIDI stream value 00-7F	[*]
24954	617A	122	97	External Part 2 MIDI stream value 00-7F	[*]
25210	627A	122	98	External Part 3 MIDI stream value 00-7F	[*]
25466	637A	122	99	External Part 4 MIDI stream value 00-7F	[*]
25722	647A	122	100	External Part 5 MIDI stream value 00-7F	[*]
25978	657A	122	101	External Part 6 MIDI stream value 00-7F	[*]
26234	667A	122	102	External Part 7 MIDI stream value 00-7F	[*]
26490	677A	122	103	External Part 8 MIDI stream value 00-7F	[*]
26746	687A	122	104	External Part 1 MIDI stream value 80-FF	[*]
27002	697A	122	105	External Part 2 MIDI stream value 80-FF	[*]
27258	6A7A	122	106	External Part 3 MIDI stream value 80-FF	[*]
27514	6B7A	122	107	External Part 4 MIDI stream value 80-FF	[*]
27770	6C7A	122	108	External Part 5 MIDI stream value 80-FF	[*]
28026	6D7A	122	109	External Part 6 MIDI stream value 80-FF	[*]
28282	6E7A	122	110	External Part 7 MIDI stream value 80-FF	[*]
28538	6F7A	122	111	External Part 8 MIDI stream value 80-FF	[*]
28794	707A	122	112	LFO 1 delay mode	
29050	717A	122	113	LFO 2 delay mode	
29306	727A	122	114	Not Currently Used	
29562	737A	122	115	Not Currently Used	
29818	747A	122	116	Not Currently Used	
30074	757A	122	117	Not Currently Used	
30330	767A	122	118	Not Currently Used	
30586	777A	122	119	Not Currently Used	
30842	787A	122	120	Not Currently Used	
31098	797A	122	121	Not Currently Used	
31354	7A7A	122	122	Not Currently Used	
31610	7B7A	122	123	Not Currently Used	
31866	7C7A	122	124	Not Currently Used	
32122	7D7A	122	125	Not Currently Used	
32378	7E7A	122	126	Not Currently Used	
32634	7F7A	122	127	Not Currently Used	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Osc 1 square wave	64	Osc 1 semitone tune +7	
1	Osc 1 saw wave	65	Osc 1 semitone tune +8	
2	Osc 1 Audio input 1 wave	66	Osc 1 semitone tune +9	
3	Osc 1 Audio input 2 wave	67	Osc 1 semitone tune +10	
4	Osc 1 double saw wave	68	Osc 1 semitone tune +11	
5	Not Currently Used	69	Osc 1 semitone tune +12	
6	Not Currently Used	70	Osc 2 semitone tune -12	
7	Not Currently Used	71	Osc 2 semitone tune -11	
8	Not Currently Used	72	Osc 2 semitone tune -10	
9	Not Currently Used	73	Osc 2 semitone tune -9	
10	Osc 2 square wave	74	Osc 2 semitone tune -8	
11	Osc 2 saw wave	75	Osc 2 semitone tune -7	
12	Osc 2 Audio input 1 wave	76	Osc 2 semitone tune -6	
13	Osc 2 Audio input 2 wave	77	Osc 2 semitone tune -5	
14	Osc 2 double saw wave	78	Osc 2 semitone tune -4	
15	Not Currently Used	79	Osc 2 semitone tune -3	
16	Not Currently Used	80	Osc 2 semitone tune -2	
17	Not Currently Used	81	Osc 2 semitone tune -1	
18	Not Currently Used	82	Osc 2 semitone tune 0	
19	Not Currently Used	83	Osc 2 semitone tune +1	
20	Osc 3 square wave	84	Osc 2 semitone tune +2	
21	Osc 3 saw wave	85	Osc 2 semitone tune +3	
22	Osc 3 Audio input 1 wave	86	Osc 2 semitone tune +4	
23	Osc 3 Audio input 2 wave	87	Osc 2 semitone tune +5	
24	Osc 3 double saw wave	88	Osc 2 semitone tune +6	
25	Not Currently Used	89	Osc 2 semitone tune +7	
26	Not Currently Used	90	Osc 2 semitone tune +8	
27	Not Currently Used	91	Osc 2 semitone tune +9	
28	Not Currently Used	92	Osc 2 semitone tune +10	
29	Not Currently Used	93	Osc 2 semitone tune +11	
30	Osc 1 octave -2	94	Osc 2 semitone tune +12	
31	Osc 1 octave -1	95	Osc 3 semitone tune -12	
32	Osc 1 octave 0	96	Osc 3 semitone tune -11	
33	Osc 1 octave +1	97	Osc 3 semitone tune -10	
34	Osc 1 octave +2	98	Osc 3 semitone tune -9	
35	Osc 2 octave -2	99	Osc 3 semitone tune -8	
36	Osc 2 octave -1	100	Osc 3 semitone tune -7	
37	Osc 2 octave 0	101	Osc 3 semitone tune -6	
38	Osc 2 octave +1	102	Osc 3 semitone tune -5	
39	Osc 2 octave +2	103	Osc 3 semitone tune -4	
40	Osc 3 octave -2	104	Osc 3 semitone tune -3	
41	Osc 3 octave -1	105	Osc 3 semitone tune -2	
42	Osc 3 octave 0	106	Osc 3 semitone tune -1	
43	Osc 3 octave +1	107	Osc 3 semitone tune 0	
44	Osc 3 octave +2	108	Osc 3 semitone tune +1	
45	Osc 1 semitone tune -12	109	Osc 3 semitone tune +2	
46	Osc 1 semitone tune -11	110	Osc 3 semitone tune +3	
47	Osc 1 semitone tune -10	111	Osc 3 semitone tune +4	
48	Osc 1 semitone tune -9	112	Osc 3 semitone tune +5	
49	Osc 1 semitone tune -8	113	Osc 3 semitone tune +6	
50	Osc 1 semitone tune -7	114	Osc 3 semitone tune +7	
51	Osc 1 semitone tune -6	115	Osc 3 semitone tune +8	
52	Osc 1 semitone tune -5	116	Osc 3 semitone tune +9	
53	Osc 1 semitone tune -4	117	Osc 3 semitone tune +10	
54	Osc 1 semitone tune -3	118	Osc 3 semitone tune +11	
55	Osc 1 semitone tune -2	119	Osc 3 semitone tune +12	
56	Osc 1 semitone tune -1	120	Portamento type : Portamento	
57	Osc 1 semitone tune 0	121	Portamento type : Glissando	
58	Osc 1 semitone tune +1	122	Portamento glide : Linear	
59	Osc 1 semitone tune +2	123	Portamento glide : Exponential	
60	Osc 1 semitone tune +3	124	LFO 1 delay trigger : Multi	
61	Osc 1 semitone tune +4	125	LFO 1 delay trigger : Single	
62	Osc 1 semitone tune +5	126	LFO 2 delay trigger : Multi	
63	Osc 1 semitone tune +6	127	LFO 2 delay trigger : Single	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Filter 12db slope	64	Breath sensing : Norm [*]	
1	Filter 18db slope	65	Breath sensing : +1 [*]	
2	Filter 24db slope	66	Breath sensing : +2 [*]	
3	Filter LPF type	67	Breath sensing : +3 [*]	
4	Filter BPF type	68	Breath sensing : +4 [*]	
5	Filter HPF type	69	Breath sensing : +5 [*]	
6	Filter Res LPF type	70	Arp constant pitch Off	
7	Filter Res BPF type	71	Arp constant pitch On	
8	Filter Res HPF type	72	Arpeggiator On	
9	Filter Notch type	73	Arpeggiator Off	
10	Filter LPF+LPF type	74	Arp keysync On	
11	Filter BPF+BPF type	75	Arp keysync Off	
12	Filter HPF+HPF type	76	Arp pattern bank : Mono	
13	Filter LPF+BPF type	77	Arp pattern bank : Poly	
14	Filter BPF+HPF type	78	Arp pattern bank : User(U)	
15	Not Currently Used	79	Arp latch type : Constant	
16	LFO 1 square wave	80	Arp latch type : Pattern	
17	LFO 1 saw wave	81	Arp quantize : Off	
18	LFO 1 triangle wave	82	Arp quantize : Mode 1	
19	LFO 1 s/h wave	83	Arp quantize : Mode 2	
20	LFO 2 square wave	84	Arp quantize : Mode 3	
21	LFO 2 saw wave	85	Arp quantize : Mode 4	
22	LFO 2 triangle wave	86	Arp velocity : Played	
23	LFO 2 s/h wave	87	Arp velocity : Full	
24	LFO 1 triggering : Freewheel	88	Arp velocity : Half	
25	LFO 1 triggering : Keysync	89	Arp velocity : Programmed	
26	LFO 2 triggering : Freewheel	90	Arp mute Off	
27	LFO 2 triggering : Keysync	91	Arp mute On	
28	LFO 1 range : Slow	92	Arp realtime transpose On	
29	LFO 1 range : Normal	93	Arp realtime transpose Off	
30	LFO 1 range : Fast	94	Arp edit gate : Norm	
31	LFO 2 range : Slow	95	Arp edit gate : Tie	
32	LFO 2 range : Normal	96	Arp edit gate : Rest	
33	LFO 2 range : Fast	97	Arp edit gate : Glide	
34	Envs triggering : Multi, Multi, Multi	98	Part outputs : 1 & 2	
35	Envs triggering : Multi, Multi, Sing	99	Part outputs : 3 & 4	
36	Envs triggering : Multi, Sing, Multi	100	Part outputs : 5 & 6	
37	Envs triggering : Multi, Sing, Sing	101	Part outputs : 7 & 8	
38	Envs triggering : Sing, Multi, Multi	102	Arp output : Program only	
39	Envs triggering : Sing, Multi, Sing	103	Arp output : Program & MIDI	
40	Envs triggering : Sing, Sing, Multi	104	Arp output : MIDI only	
41	Envs triggering : Sing, Sing, Sing	105	MIDI clock : Internal [*]	
42	Glide type : Normal glide	106	MIDI clock : External [*]	
43	Glide type : Auto glide	107	Favourites edit : Current bank [*]	
44	Glide type : 2 semitones down	108	Favourites edit : Perf bank A [*]	
45	Glide type : 2 semitones up	109	Favourites edit : Perf bank B [*]	
46	Glide type : 5 semitones down	110	Favourites edit : Prog bank A [*]	
47	Glide type : 5 semitones up	111	Favourites edit : Prog bank B [*]	
48	Glide type : 7 semitones down	112	Favourites edit : Prog bank C [*]	
49	Glide type : 7 semitones up	113	Favourites edit : Prog bank D [*]	
50	Glide type : 12 semitones down	114	Favourites edit : Perf bank C [*]	
51	Glide type : 12 semitones up	115	Favourites edit : Perf bank D [*]	
52	Chorus type : Quad chorus	116	Favourites edit : Prog bank E [*]	
53	Chorus type : Chorus / flanger	117	Favourites edit : Prog bank F [*]	
54	Chorus type : Phaser	118	Favourites edit : Prog bank G [*]	
55	Pan type : Autopan	119	Favourites edit : Prog bank H [*]	
56	Pan type : Tremolo	120	Memory protect On [*]	
57	Pan type : L - R	121	Memory protect Off [*]	
58	Pan type : R - L	122	Arp fill-in/note ordering : Off - Up	
59	Breath sensing : -5 [*]	123	Arp fill-in/note ordering : On - Up	
60	Breath sensing : -4 [*]	124	Arp fill-in/note ordering : Off - Down	
61	Breath sensing : -3 [*]	125	Arp fill-in/note ordering : On - Down	
62	Breath sensing : -2 [*]	126	Arp fill-in/note ordering : Off - Played	
63	Breath sensing : -1 [*]	127	Arp fill-in/note ordering : On - Played	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Osc 1 pitch bend range -12	64	Osc 3 pitch bend range +2	
1	Osc 1 pitch bend range -11	65	Osc 3 pitch bend range +3	
2	Osc 1 pitch bend range -10	66	Osc 3 pitch bend range +4	
3	Osc 1 pitch bend range -9	67	Osc 3 pitch bend range +5	
4	Osc 1 pitch bend range -8	68	Osc 3 pitch bend range +6	
5	Osc 1 pitch bend range -7	69	Osc 3 pitch bend range +7	
6	Osc 1 pitch bend range -6	70	Osc 3 pitch bend range +8	
7	Osc 1 pitch bend range -5	71	Osc 3 pitch bend range +9	
8	Osc 1 pitch bend range -4	72	Osc 3 pitch bend range +10	
9	Osc 1 pitch bend range -3	73	Osc 3 pitch bend range +11	
10	Osc 1 pitch bend range -2	74	Osc 3 pitch bend range +12	
11	Osc 1 pitch bend range -1	75	Part effects used : Program	
12	Osc 1 pitch bend range 0	76	Part effects used : Part	
13	Osc 1 pitch bend range +1	77	Part Sustain Rx option : Enable	
14	Osc 1 pitch bend range +2	78	Part Sustain Rx option : Arp latch	
15	Osc 1 pitch bend range +3	79	Part Sustain Rx option : Arp mute	
16	Osc 1 pitch bend range +4	80	Part Sustain Rx option : Enable (I)	
17	Osc 1 pitch bend range +5	81	Part Sustain Rx option : Arp latch (I)	
18	Osc 1 pitch bend range +6	82	Part Sustain Rx option : Arp mute (I)	
19	Osc 1 pitch bend range +7	83	Part Sustain Rx option : Off	
20	Osc 1 pitch bend range +8	84	Osc trigger mode : Percussive	
21	Osc 1 pitch bend range +9	85	Osc trigger mode : Ensemble	
22	Osc 1 pitch bend range +10	86	Poly mode : Mode 1	
23	Osc 1 pitch bend range +11	87	Poly mode : Mode 2	
24	Osc 1 pitch bend range +12	88	Sysex Tx : Single Program [*]	
25	Osc 2 pitch bend range -12	89	Sysex Tx : All Programs [*]	
26	Osc 2 pitch bend range -11	90	Sysex Tx : Single Prog request [*]	
27	Osc 2 pitch bend range -10	91	Sysex Tx : All Progs request [*]	
28	Osc 2 pitch bend range -9	92	Sysex Tx : Single Performance [*]	
29	Osc 2 pitch bend range -8	93	Sysex Tx : All Performances [*]	
30	Osc 2 pitch bend range -7	94	Sysex Tx : Single Perf request [*]	
31	Osc 2 pitch bend range -6	95	Sysex Tx : All Perfs request [*]	
32	Osc 2 pitch bend range -5	96	Sysex Tx : Single Arp pattern [*]	
33	Osc 2 pitch bend range -4	97	Sysex Tx : All Arp patterns [*]	
34	Osc 2 pitch bend range -3	98	Sysex Tx : Single Arp patt request [*]	
35	Osc 2 pitch bend range -2	99	Sysex Tx : All Arp patts request [*]	
36	Osc 2 pitch bend range -1	100	Sysex Tx : Global parameters [*]	
37	Osc 2 pitch bend range 0	101	Sysex Tx : Global parameters req [*]	
38	Osc 2 pitch bend range +1	102	Sysex Tx : Total data [*]	
39	Osc 2 pitch bend range +2	103	Sysex Tx : Total data request [*]	
40	Osc 2 pitch bend range +3	104	Sysex Tx : Prog bank A [*]	
41	Osc 2 pitch bend range +4	105	Sysex Tx : Prog bank B [*]	
42	Osc 2 pitch bend range +5	106	Sysex Tx : Prog bank C [*]	
43	Osc 2 pitch bend range +6	107	Sysex Tx : Prog bank D [*]	
44	Osc 2 pitch bend range +7	108	Sysex Tx : Prog bank A request [*]	
45	Osc 2 pitch bend range +8	109	Sysex Tx : Prog bank B request [*]	
46	Osc 2 pitch bend range +9	110	Sysex Tx : Prog bank C request [*]	
47	Osc 2 pitch bend range +10	111	Sysex Tx : Prog bank D request [*]	
48	Osc 2 pitch bend range +11	112	Sysex Tx : Perf bank A [*]	
49	Osc 2 pitch bend range + 12	113	Sysex Tx : Perf bank B [*]	
50	Osc 3 pitch bend range -12	114	Sysex Tx : Perf bank A request [*]	
51	Osc 3 pitch bend range -11	115	Sysex Tx : Perf bank B request [*]	
52	Osc 3 pitch bend range -10	116	Sysex Tx : Prog bank E [*]	
53	Osc 3 pitch bend range -9	117	Sysex Tx : Prog bank F [*]	
54	Osc 3 pitch bend range -8	118	Sysex Tx : Prog bank G [*]	
55	Osc 3 pitch bend range -7	119	Sysex Tx : Prog bank H [*]	
56	Osc 3 pitch bend range -6	120	Sysex Tx : Prog bank E request [*]	
57	Osc 3 pitch bend range -5	121	Sysex Tx : Prog bank F request [*]	
58	Osc 3 pitch bend range -4	122	Sysex Tx : Prog bank G request [*]	
59	Osc 3 pitch bend range -3	123	Sysex Tx : Prog bank H request [*]	
60	Osc 3 pitch bend range -2	124	Sysex Tx : Perf bank C [*]	
61	Osc 3 pitch bend range -1	125	Sysex Tx : Perf bank D [*]	
62	Osc 3 pitch bend range 0	126	Sysex Tx : Perf bank C request [*]	
63	Osc 3 pitch bend range +1	127	Sysex Tx : Perf bank D request [*]	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Delay sync : Off	64	Reserved	
1	Delay sync : 32nd triplet	65	Reserved	
2	Delay sync : 32nd	66	Reserved	
3	Delay sync : 16th triplet	67	Reserved	
4	Delay sync : 16th	68	Reserved	
5	Delay sync : 8th triplet	69	Reserved	
6	Delay sync : 16th dotted	70	Reserved	
7	Delay sync : 8th	71	Reserved	
8	Delay sync : 4th triplet	72	Reserved	
9	Delay sync : 8th dotted	73	Reserved	
10	Delay sync : 4th	74	Reserved	
11	Delay sync : 2nd triplet	75	Reserved	
12	Delay sync : 4th dotted	76	Reserved	
13	Delay sync : 2nd	77	Reserved	
14	Delay sync : 1 bar triplet	78	Reserved	
15	Delay sync : 2nd dotted	79	Constant gate Off	
16	Delay sync : 1 bar	80	Constant gate On	
17	Delay sync : 2 bar triplet	81	Unison Off	
18	Delay sync : 1 bar dotted	82	Unison On	
19	Delay sync : 2 bars	83	Unison : 2 voice	
20	Delay sync : 4 bar triplet	84	Unison : 3 voice	
21	Delay sync : 3 bars	85	Unison : 4 voice	
22	Delay sync : 5 bar triplet	86	Unison : 5 voice	
23	Delay sync : 4 bars	87	Unison : 6 voice	
24	Delay sync : 3 bar dotted	88	Unison : 7 voice	
25	Delay sync : 7 bar triplet	89	Unison : 8 voice	
26	Delay sync : 5 bars	90	Knob mode : Normal [*]	
27	Delay sync : 8 bar triplet	91	Knob mode : Pickup [*]	
28	Delay sync : 6 bars	92	Reserved	
29	Delay sync : 7 bars	93	Reserved	
30	Delay sync : 5 bar dotted	94	Finder demos On [*]	
31	Delay sync : 8 bars	95	Finder demos Off [*]	
32	Delay sync : 6 bar dotted	96	Global program change Tx : On [*]	
33	Delay sync : 7 bar dotted	97	Global program change Tx : Off [*]	
34	Delay sync : 8 bar dotted	98	Global controllers Tx : On [*]	
35	Global velocity sensing : Hard [*]	99	Global controllers Tx : Off [*]	
36	Global velocity sensing : Soft [*]	100	Pan Effects : No	
37	Reserved	101	Pan Effects : Yes	
38	Reserved	102	Reserved	
39	Reserved	103	Reserved	
40	Reserved	104	Reserved	
41	Reserved	105	Reserved	
42	Reserved	106	Reserved	
43	Reserved	107	Reserved	
44	Reserved	108	Reserved	
45	Reserved	109	Reserved	
46	Reserved	110	Delay ratio 1 : Off	
47	Reserved	111	Delay ratio Off : 1	
48	Reserved	112	Reserved	
49	Reserved	113	Reserved	
50	Reserved	114	MIDI clock : Auto [*]	
51	Reserved	115	Drum one shot : Off	
52	Reserved	116	Drum one shot : On	
53	Reserved	117	Not Currently Used	
54	Reserved	118	Not Currently Used	
55	Reserved	119	Not Currently Used	
56	Reserved	120	Not Currently Used	
57	Reserved	121	Not Currently Used	
58	Reserved	122	Not Currently Used	
59	Reserved	123	Not Currently Used	
60	Reserved	124	Not Currently Used	
61	Reserved	125	Not Currently Used	
62	Reserved	126	Not Currently Used	
63	Reserved	127	Not Currently Used	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Reserved	64	Part MIDI channel : Omni	
1	Arp octave range : 1	65	Part MIDI channel : Global	
2	Arp octave range : 2	66	Sysex Rx : Disabled [*]	
3	Arp octave range : 3	67	Sysex Rx : Normal (Rx as sent) [*]	
4	Arp octave range : 4	68	Sysex Rx : All Progs to bank A [*]	
5	Reserved	69	Sysex Rx : All Progs to bank B [*]	
6	Reserved	70	Sysex Rx : All Progs to bank C [*]	
7	Reserved	71	Sysex Rx : All Progs to bank D [*]	
8	Reserved	72	Sysex Rx : All Perfs to bank A [*]	
9	Reserved	73	Sysex Rx : All Perfs to bank B [*]	
10	Reserved	74	Sysex Rx : All Progs to bank E [*]	
11	Reserved	75	Sysex Rx : All Progs to bank F [*]	
12	Reserved	76	Sysex Rx : All Progs to bank G [*]	
13	Reserved	77	Sysex Rx : All Progs to bank H [*]	
14	Reserved	78	Sysex Rx : All Perfs to bank C [*]	
15	Reserved	79	Sysex Rx : All Perfs to bank D [*]	
16	Reserved	80	Part velocity curve : Normal	
17	Reserved	81	Part velocity curve : Inverse	
18	Reserved	82	Part velocity curve : Cross fade - high	
19	Reserved	83	Part velocity curve : Cross fade - low	
20	Reserved	84	Part velocity curve : To value 60	
21	Reserved	85	Part velocity curve : From value 61	
22	Reserved	86	Part velocity curve : To value 70	
23	Reserved	87	Part velocity curve : From value 71	
24	Reserved	88	Part velocity curve : To value 80	
25	Reserved	89	Part velocity curve : From value 81	
26	Reserved	90	Part velocity curve : To value 90	
27	Reserved	91	Part velocity curve : From value 91	
28	Reserved	92	Part velocity curve : To value 100	
29	Reserved	93	Part velocity curve : From value 101	
30	Reserved	94	Part velocity curve : To value 110	
31	Reserved	95	Part velocity curve : From value 111	
32	Global MIDI channel : 1 [*]	96	Delay ratio : 1:1	
33	Global MIDI channel : 2 [*]	97	Delay ratio : 1:0.75	
34	Global MIDI channel : 3 [*]	98	Delay ratio : 0.75:1	
35	Global MIDI channel : 4 [*]	99	Delay ratio : 1:0.66	
36	Global MIDI channel : 5 [*]	100	Delay ratio : 0.66:1	
37	Global MIDI channel : 6 [*]	101	Delay ratio : 1:0.5	
38	Global MIDI channel : 7 [*]	102	Delay ratio : 0.5:1	
39	Global MIDI channel : 8 [*]	103	Delay ratio : 1:0.33	
40	Global MIDI channel : 9 [*]	104	Delay ratio : 0.33:1	
41	Global MIDI channel : 10 [*]	105	Delay ratio : 1:0.25	
42	Global MIDI channel : 11 [*]	106	Delay ratio : 0.25:1	
43	Global MIDI channel : 12 [*]	107	Reserved	
44	Global MIDI channel : 13 [*]	108	Reserved	
45	Global MIDI channel : 14 [*]	109	Reserved	
46	Global MIDI channel : 15 [*]	110	Reserved	
47	Global MIDI channel : 16 [*]	111	Reserved	
48	Part MIDI channel : 1	112	Reserved	
49	Part MIDI channel : 2	113	Reserved	
50	Part MIDI channel : 3	114	Reserved	
51	Part MIDI channel : 4	115	Reserved	
52	Part MIDI channel : 5	116	Reserved	
53	Part MIDI channel : 6	117	Reserved	
54	Part MIDI channel : 7	118	Reserved	
55	Part MIDI channel : 8	119	Reserved	
56	Part MIDI channel : 9	120	Reserved	
57	Part MIDI channel : 10	121	Reserved	
58	Part MIDI channel : 11	122	Reserved	
59	Part MIDI channel : 12	123	Reserved	
60	Part MIDI channel : 13	124	Reserved	
61	Part MIDI channel : 14	125	Reserved	
62	Part MIDI channel : 15	126	Reserved	
63	Part MIDI channel : 16	127	Reserved	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Arp sync : 32nd triplet	64	LFO 1 sync : 3 bar dotted	
1	Arp sync : 32nd	65	LFO 1 sync : 7 bar triplet	
2	Arp sync : 16th triplet	66	LFO 1 sync : 5 bars	
3	Arp sync : 16th	67	LFO 1 sync : 8 bar triplet	
4	Arp sync : 8th triplet	68	LFO 1 sync : 6 bars	
5	Arp sync : 16th dotted	69	LFO 1 sync : 7 bars	
6	Arp sync : 8th	70	LFO 1 sync : 5 bar dotted	
7	Arp sync : 4th triplet	71	LFO 1 sync : 8 bars	
8	Arp sync : 8th dotted	72	LFO 1 sync : 6 bar dotted	
9	Arp sync : 4th	73	LFO 1 sync : 7 bar dotted	
10	Arp sync : 2nd triplet	74	LFO 1 sync : 8 bar dotted	
11	Arp sync : 4th dotted	75	Global Rx controllers : Enabled [*]	
12	Arp sync : 2nd	76	Part prog change filter Off	
13	Arp sync : 1 bar triplet	77	Part prog change filter On	
14	Arp sync : 2nd dotted	78	Arp output ranging On	
15	Arp sync : 1 bar	79	Arp output ranging Off	
16	Arp sync : 2 bar triplet	80	LFO 2 sync : Off	
17	Arp sync : 1 bar dotted	81	LFO 2 sync : 32nd triplet	
18	Arp sync : 2 bars	82	LFO 2 sync : 32nd	
19	Arp sync : 4 bar triplet	83	LFO 2 sync : 16th triplet	
20	Arp sync : 3 bars	84	LFO 2 sync : 16th	
21	Arp sync : 5 bar triplet	85	LFO 2 sync : 8th triplet	
22	Arp sync : 4 bars	86	LFO 2 sync : 16th dotted	
23	Arp sync : 3 bar dotted	87	LFO 2 sync : 8th	
24	Arp sync : 7 bar triplet	88	LFO 2 sync : 4th triplet	
25	Arp sync : 5 bars	89	LFO 2 sync : 8th dotted	
26	Arp sync : 8 bar triplet	90	LFO 2 sync : 4th	
27	Arp sync : 6 bars	91	LFO 2 sync : 2nd triplet	
28	Arp sync : 7 bars	92	LFO 2 sync : 4th dotted	
29	Arp sync : 5 bar dotted	93	LFO 2 sync : 2nd	
30	Arp sync : 8 bars	94	LFO 2 sync : 1 bar triplet	
31	Arp sync : 6 bar dotted	95	LFO 2 sync : 2nd dotted	
32	Arp sync : 7 bar dotted	96	LFO 2 sync : 1 bar	
33	Arp sync : 8 bar dotted	97	LFO 2 sync : 2 bar triplet	
34	Global Rx prog ch : Enabled [*]	98	LFO 2 sync : 1 bar dotted	
35	Global Rx prog ch : Faves [*]	99	LFO 2 sync : 2 bars	
36	Global Rx prog ch : Disabled [*]	100	LFO 2 sync : 4 bar triplet	
37	Faves edit bank : Arp Mono [*]	101	LFO 2 sync : 3 bars	
38	Faves edit bank : Arp Poly [*]	102	LFO 2 sync : 5 bar triplet	
39	Faves edit bank : Arp User(U) [*]	103	LFO 2 sync : 4 bars	
40	LFO 1 sync : Off	104	LFO 2 sync : 3 bar dotted	
41	LFO 1 sync : 32nd triplet	105	LFO 2 sync : 7 bar triplet	
42	LFO 1 sync : 32nd	106	LFO 2 sync : 5 bars	
43	LFO 1 sync : 16th triplet	107	LFO 2 sync : 8 bar triplet	
44	LFO 1 sync : 16th	108	LFO 2 sync : 6 bars	
45	LFO 1 sync : 8th triplet	109	LFO 2 sync : 7 bars	
46	LFO 1 sync : 16th dotted	110	LFO 2 sync : 5 bar dotted	
47	LFO 1 sync : 8th	111	LFO 2 sync : 8 bars	
48	LFO 1 sync : 4th triplet	112	LFO 2 sync : 6 bar dotted	
49	LFO 1 sync : 8th dotted	113	LFO 2 sync : 7 bar dotted	
50	LFO 1 sync : 4th	114	LFO 2 sync : 8 bar dotted	
51	LFO 1 sync : 2nd triplet	115	Global Rx controllers : Disabled [*]	
52	LFO 1 sync : 4th dotted	116	Part controller filter Off	
53	LFO 1 sync : 2nd	117	Part controller filter On	
54	LFO 1 sync : 1 bar triplet	118	Part pedal / breath Off	
55	LFO 1 sync : 2nd dotted	119	Part pedal / breath On	
56	LFO 1 sync : 1 bar	120	Reserved	
57	LFO 1 sync : 2 bar triplet	121	Reserved	
58	LFO 1 sync : 1 bar dotted	122	Reserved	
59	LFO 1 sync : 2 bars	123	Reserved	
60	LFO 1 sync : 4 bar triplet	124	Reserved	
61	LFO 1 sync : 3 bars	125	Reserved	
62	LFO 1 sync : 5 bar triplet	126	Part Sustain Rx option : Part mute	
63	LFO 1 sync : 4 bars	127	Part Sustain Rx option : Part mute (l)	

Data	Description	Data	Description	[*] = Always transmitted on the Global MIDI channel
0	Part polyphony : Off	64	Part 2 mute On [*]	
1	Part/Program polyphony : Mono	65	Part 3 mute On [*]	
2	Part/Program polyphony : Poly	66	Part 4 mute On [*]	
3	Part polyphony : Prog	67	Part 5 mute On [*]	
4	Reserved	68	Part 6 mute On [*]	
5	Reserved	69	Part 7 mute On [*]	
6	Reserved	70	Part 8 mute On [*]	
7	Reserved	71	Pass to effects : Program only	
8	Reserved	72	Pass to effects : Audio input (1) only	
9	Reserved	73	Pass to effects : Program & input (1)	
10	Reserved	74	Pass to effects : Audio input (2) only	
11	Reserved	75	Pass to effects : Program & input (2)	
12	Pedal / sw3 : Pedal-R [*]	76	Select Part 1 [*]	
13	Pedal / sw3 : Pedal-T [*]	77	Select Part 2 [*]	
14	Pedal / sw3 : Switch [*]	78	Select Part 3 [*]	
15	Pedal / sw3 : Switch-I [*]	79	Select Part 4 [*]	
16	Voc sibilance type : Hpass [*]	80	Select Part 5 [*]	
17	Voc sibilance type : Noise [*]	81	Select Part 6 [*]	
18	Vocoder input : Audio input (1) [*]	82	Select Part 7 [*]	
19	Vocoder input : Audio input (3) [*]	83	Select Part 8 [*]	
20	Vocoder input : Part 1 [*]	84	Arp patt edit via kbd : Off [*]	
21	Vocoder input : Part 2 [*]	85	Arp patt edit via kbd : On [*]	
22	Vocoder input : Part 3 [*]	86	Arp patt edit via kbd : Note only [*]	
23	Vocoder input : Part 4 [*]	87	Arp patt edit via kbd : Vel only [*]	
24	Vocoder input : Part 5 [*]	88	Arp patt edit via kbd : Gate only [*]	
25	Vocoder input : Part 6 [*]	89	Breath mode : Absolute [*]	
26	Vocoder input : Part 7 [*]	90	Breath mode : Mod + [*]	
27	Vocoder input : Part 8 [*]	91	Breath mode : Mod - [*]	
28	Vocoder insert : Part 1 [*]	92	Reserved	
29	Vocoder insert : Part 2 [*]	93	Reserved	
30	Vocoder insert : Part 3 [*]	94	Reserved	
31	Vocoder insert : Part 4 [*]	95	Reserved	
32	Vocoder insert : Part 5 [*]	96	Vocoder sibilance level 0 [*]	
33	Vocoder insert : Part 6 [*]	97	Vocoder sibilance level 1 [*]	
34	Vocoder insert : Part 7 [*]	98	Vocoder sibilance level 2 [*]	
35	Vocoder insert : Part 8 [*]	99	Vocoder sibilance level 3 [*]	
36	Effects config : D + R + C	100	Vocoder sibilance level 4 [*]	
37	Effects config : D > R > C	101	Vocoder sibilance level 5 [*]	
38	Effects config : D > C > R	102	Vocoder sibilance level 6 [*]	
39	Effects config : R > D > C	103	Vocoder sibilance level 7 [*]	
40	Effects config : R > C > D	104	Vocoder sibilance level 8 [*]	
41	Effects config : C > D > R	105	Vocoder sibilance level 9 [*]	
42	Effects config : C > R > D	106	Vocoder sibilance level 10 [*]	
43	Effects config : D + [R > C]	107	Vocoder sibilance level 11 [*]	
44	Effects config : D + [C > R]	108	Vocoder sibilance level 12 [*]	
45	Effects config : R + [D > C]	109	Vocoder sibilance level 13 [*]	
46	Effects config : R + [C > D]	110	Vocoder sibilance level 14 [*]	
47	Effects config : C + [D > R]	111	Vocoder sibilance level 15 [*]	
48	Effects config : C + [R > D]	112	Vocoder width 0 [*]	
49	Effects config : D > [R + C]	113	Vocoder width 1 [*]	
50	Effects config : R > [D + C]	114	Vocoder width 2 [*]	
51	Effects config : C > [D + R]	115	Vocoder width 3 [*]	
52	Effects config : [R + C] > D	116	Vocoder width 4 [*]	
53	Effects config : [D + C] > R	117	Vocoder width 5 [*]	
54	Effects config : [D + R] > C	118	Vocoder width 6 [*]	
55	Part 1 mute Off [*]	119	Vocoder width 7 [*]	
56	Part 2 mute Off [*]	120	Vocoder width 8 [*]	
57	Part 3 mute Off [*]	121	Vocoder width 9 [*]	
58	Part 4 mute Off [*]	122	Vocoder width 10 [*]	
59	Part 5 mute Off [*]	123	Vocoder width 11 [*]	
60	Part 6 mute Off [*]	124	Vocoder width 12 [*]	
61	Part 7 mute Off [*]	125	Vocoder width 13 [*]	
62	Part 8 mute Off [*]	126	Vocoder width 14 [*]	
63	Part 1 mute On [*]	127	Vocoder width 15 [*]	

Function		Transmitted	Recognised	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	Memorised
Mode	Default Messages Altered	X *****	3 X	
Note Number	True Voice	0-127 *****	0-127 0-127	
Velocity	Note On Note Off	0 9n V=1-127 X	0 9n V=1-127 X	
Aftertouch	Key Channel	X 0	0 0	Key Aftertouch recognised but treated as Channel Aftertouch.
Pitch Bender		0	0 0-12 Semitones	
Control Change		1-119 (See Controller Map)	1-119 (See Controller Map)	CC 0 ignored CC 2 re-mappable
Program Change		0 0-127	0 0-127	TX/RX is dependent on the status of the various Program Change filters in Global & Perf
System Exclusive		0	0	Voice & User Pattern Parameters, Write & Dump requests
System Common	Song Select	0	X	Only as part of the Master Keyboard functions
System Clock	Real Time	X	0	Start, Stop, Continue & Clock
Aux Messages	Local Off All notes Off Active Sense Reset Control All Sound Off	0 X X X X	0 0 X 0 0	
Mode1:	Omni On, Poly	Mode2:	Omni On, Mono	
Mode3:	Omni Off, Poly	Mode4:	Omni Off, Poly	
Version 2.0	Date: 30/11/00	0 = Yes	X = No	

0	Uni*Syn	64	SyncDriven
1	Its temporate	65	LUSH PAD
2	Simul AnaBass Wh	66	Boot Bass
3	1 Note Chord	67	I'
4	Drew's FM Ep	68	Needle Pulse M-Wh
5	Bootsie Lead	69	Echoed Strings
6	Circulation	70	Sollie strings 1
7	Filter Arp	71	Fatties Diet
8	Toyotsu Chu	72	SN Pro Sync M-Wh
9	Iced Razor Bass	73	Hartkern M-Wh
10	First Solo	74	MiniCorg Lead
11	Lush Sweep Pad	75	FM Piano/Guitar
12	Triple Bass	76	FM Jazz Two
13	You Need A Sign	77	VeeTwo How Big?
14	R 'n' B Harp	78	Velocity Mutes
15	FireFly	79	Pad 4 Landing
16	He's the Boss Vel	80	Obie Paddiviv
17	Pik Pinched M-Wh	81	1 Note Rave
18	Soft Voices	82	Sequenced Voke
19	VeeTwo So Much	83	Chord Organ
20	The Vocoder Strg	84	CS-80 Gliss
21	New World Pluck	85	Glassdrips
22	Bee 30303 Fist	86	Steplinger
23	Deep House Chord	87	Zinky
24	Hoover Sync	88	Rounder Bass
25	Soo R&B Cryo Mwh	89	Soft Whelmorph
26	Hz Mod Sequence **	90	Marimbalike
27	Quantum Phaser	91	Homey Waplead
28	Mad on Her Bass	92	DX Jazz Guitar
29	Birdy	93	Drugged Monkeys
30	Squarerogram	94	Thwip Bass
31	Big Arco Strg	95	Ripped Up
32	Old 80's Bass	96	Omni Strings
33	Trance Sequence	97	Distored Unison
34	Unison Chord	98	Velco Melodie
35	S-X Vangelis	99	Rusty Rhodes
36	VelocityArp	100	MK-80 Bass
37	Phas Padark	101	Wezzler
38	Soft Satan	102	Syn Sync Da Sync
39	Filmskore	103	Fake Harmonica
40	Six Section Mw	104	Shape Shifter
41	Pocket stylophone	105	Dist Grind
42	FM Bass	106	Attack bells
43	TD Sequencer	107	True Grit
44	Peeoow Vel Pad	108	Staccator String
45	A/T Purple Bee	109	Retro ARP Sweep
46	Disty Gritty	110	Tremelo Pad
47	Fat MegaBass M-Wh	111	Space Dust
48	Lava Module	112	Fat Daddy
49	Seq 30303 Dist	113	Hard PWM 2
50	Clik Bass Meant!	114	Big Sync Lead
51	Lets get Digital	115	Toblorone
52	Lets Wheel Em In	116	Percussive SQ
53	Dry Chamber Strg	117	ScienceTracks
54	Swirley Gig	118	TranceOmania
55	Sub Da Sub Bass	119	Ring Drops
56	Slayer Saw	120	Fat Beat Lead
57	Square Pulse	121	Dark Strings
58	Tremed Wurli	122	Funk Lead MWh
59	Electric gary	123	Juno 2000
60	Nasty Bassy	124	SH101 + SUM NOIZ
61	Gat Lead MW + AT	125	Resonatic
62	Bubabuble M-Wh	126	Prodigy Lead
63	SlowPadEMInt Mwh	127	FilterTrigger

0	Z-Plane VeloPick	64	Mr Element Bass
1	FM EP	65	JP8000 ARP II
2	Mr Touchfreak	66	Jupiter Pad 001
3	Da Der !	67	Log Bass
4	Detuner	68	Aleinoiz3
5	Mean Bass	69	NovaSine Lead
6	Trance Lead	70	Oxy Echo o o
7	Dance Resonance	71	SH-2 Bass
8	Buzz Bass	72	ModWheel Bass
9	Cykokinetic M-Wh	73	Saw-thumb B-L
10	Hades' Vox M-Wh	74	ELK > hpf
11	A Hypey Feeling	75	Kitchen Sync
12	HC BassBP*	76	Ghostwalk
13	Probeocop	77	Synchronicity2
14	Trance 3	78	Spatials
15	Trance5	79	Tingle high EP
16	Handel Harpsi	80	Pulsering Bass
17	Sub/Metals	81	In Sync M-Wh
18	WHL inverts LFO	82	Sync EP ****
19	Tingle EP	83	Notre Dame
20	A Syncy Feeling	84	Purple Phase
21	Delicate Arp	85	Mr Element 2
22	Polysikz Strings	86	Little Ben
23	FM Flute AT&Mw	87	Jazzier Organ
24	Psy1	88	Mad Moon
25	MusicBox	89	String Shot
26	Chord Lead M-Wh	90	U-no60 Squirebas
27	ItsKindaPhasedWh	91	Black Spin
28	Electric Insect	92	Jan Hammer Lead
29	FM Glockenspiel	93	Lead Solo
30	FM Sweep	94	Mono Distorta
31	Chatter Arp M-Wh	95	Wave Sequencing
32	Notch bass Lead	96	Trance Arp
33	Klank	97	Funky Rez Bass
34	Factory Ruin	98	Electroid Lead
35	Industry Horns	99	Boost Bass
36	wAcked !	100	Pluck Arp
37	Wh1 Bass	101	Portavox
38	Band HiStrings	102	Tremolo Pad
39	Squire Bass 2	103	Techno Synth
40	Gossiprogram	104	Velo 303
41	1469	105	Its Not OK
42	Fin Arp Pad 1	106	Velo 303 Dist
43	Fin FM synth 4	107	Full Organ
44	PolyNova 6	108	Techno crat
45	Arp Pad	109	RainPicks
46	Short 'n' Sweep	110	Sonar (C3) M-Wh
47	FMpt Voices	111	DX Bass 1
48	Big JP Strings	112	Waterphones
49	Alienoiz	113	Pulse Clav M-Wh
50	Arkana	114	Perckie Saw M-Wh
51	Armageddon Pad 2	115	Comatose
52	Deep Lord Solo	116	Velo Trance
53	Down HC	117	Nadia M-Wh
54	GOA BassBP	118	Sqweege M-Wh
55	Big Obie Stab	119	FM Velo Chimes
56	PsyGrund	120	Xfade HPF
57	Smooth but 'airy	121	Leader
58	OBXA Strings	122	D'you know Pick
59	Alienoiz 2	123	Snotty Nose
60	Watermark Bass	124	Random Arp
61	Sync Sweep M-Wh	125	Liquinova M-Wh
62	Gldye Landing 8	126	FM Clav
63	Heavenly II	127	Obie Extravert

0	DistLead	64	DigiMorph
1	FilterBass M-Wh	65	Rubber Bass
2	Whiteout	66	Velo Synckomp
3	Electo Koto M-Wh	67	Bubbling Cauldrn
4	Utopian Sweep	68	WheelChange Pad
5	Zumph	69	Square Pinhead
6	Dutch M-Wh	70	Digital Razors
7	Glider	71	Demolition Man
8	Heavenly Slide	72	Eno's Slo Mini
9	Sync Lead M-Wh	73	Big PWM Pad
10	Pulsering Bass	74	Digital Gas
11	Film Pad	75	Rhythm Ick
12	TripletTwista-M-Wh	76	Mondo Bass
13	Simplest Bass	77	Nova Laugh
14	Sawtooth Seq.	78	Propeller Fans
15	Gritty Program	79	Angels PWM
16	Separating Sweep	80	FM ResoBPLoad
17	Pinchi Pick M-Wh	81	Jan Hammer
18	DontSurrender-Wh	82	Hard PW3
19	Pick Bass M-Wh	83	Splendid
20	Sync it M-Wh	84	Dirty FM Sequ..
21	Dance Bass	85	Smacky Bass
22	FM Marimba	86	Dirty Square
23	Trance6 M-Wh	87	Lets Get Nuts
24	Growla BP303M-Wh	88	Next Century
25	BowedMetal M-Wh	89	Milleniasweep
26	Communicator	90	Japanese Melo
27	Gusset Pad M-Wh	91	Teck Reflect
28	Kraft M-Wh	92	Obie Lead Sync
29	Lush	93	Old Arp Strings
30	3'0'Trance 1	94	Coorgan oscillate
31	Iridium	95	Tranceikal M-Wh
32	Fin Mono Arp 1	96	Mallet 1
33	3'0'Trance 2	97	Dunder BL
34	Trance Bass M-Wh	98	Goodie BD
35	Alienoiz 3	99	Fin Basic Pad 2
36	Wheel Outt Lead	100	Fin Bass 1
37	Spit Komp USA	101	Fin FM Bass 1
38	Organic 1	102	Fin FM Bass 2
39	CZ Chirper	103	Fin FM Bass 3
40	Muffphuzz Bass	104	Fin FM Bass 4
41	Rabbit Lead	105	Fin FM keys 1 mv
42	Windshield	106	Fin FM Novae 1
43	Velo Elka	107	Fin FM synth 3
44	Phunkee	108	Acoustic Bass
45	LoDownm Metal	109	Formant Saw Pad
46	Doot Dreams	110	Movement M-Wh
47	Jupiter Saws	111	BounceBass M-Wh
48	MouseOnMarsLead	112	Tunerpad5th
49	Bandpass Bubbles	113	Fin Mono Lead 1
50	Tunnel Lead	114	Manometer
51	Manfred Mann's	115	Deep Lord
52	Nova MiniLead	116	Echoed Strings
53	Massed Multisyn	117	HC Bass
54	Modu-Mess	118	...missing Sabine
55	Delicate	119	Nitro Arp Plus
56	Semi-Bass	120	Psy2
57	Akoustic Pick	121	Strillan Light
58	Wyatt's Drone	122	Utopian Sweep
59	Synth High	123	Big Strings
60	Morsed Code	124	Dolphina
61	Wheelmorf Porgan	125	CS Brass
62	Syncsynth Brass	126	Filtered Moog Bass
63	HipHop Lead	127	Fizz Filter

0	GR-300 solo	64	Pipe Delay
1	Heavenly	65	Flutey Lead
2	MC-202 Bass	66	Soul Bass
3	NovaSineSaw Lead	67	Techno City
4	RolySilk Strings ***	68	Fast Arp
5	Smooth Lead	69	Analogue Times
6	SOAR^1	70	House Bass
7	PS Strings 7th ***	71	Chill Out Pad
8	Nitro Arp	72	Sound Of Wah
9	Se-aM Bass 2	73	Sync Arp
10	Nasty Bass	74	Dance Pad
11	Sass Pick	75	Slow Strings
12	Glasspoint Arp	76	Electronic Arp
13	Magnetic Square	77	Drama Synth
14	Vibe Thang	78	Classic Analogue
15	Viss bass	79	The Wheel Arpist
16	Soft Lead	80	Touch Pad
17	Slug Man	81	Jam Bass
18	Bassik	82	Synthoclav
19	Ober Talk Arp	83	7TH Heaven
20	Very Schultzey	84	Bass Synthetics
21	Resonant Stab	85	Fat FM Bass
22	Pluck Knows M-Wh	86	Synchronizer Arp
23	Spookie S'n'H	87	Cool Arp Seq
24	Europa Lead	88	Pick Delay
25	SilverGlide	89	Hard Arp
26	Science Lab	90	Pro Bass
27	Round House Bass	91	Sequence Arp
28	Poms Bass 4	92	Soundscape
29	Synched Swimin	93	Upset @ Holgers
30	Velo Bass	94	80's Bass
31	Axels Saw	95	D50 Dreams
32	Poms bass 5	96	String Machine
33	Simple Sq Bass	97	Tri Chord Wheels
34	Polar Pop	98	Jarre Arp
35	Transcontinental	99	Drum'n'Bass Pad
36	Big Synth Lead	100	Neuroglider
37	Weird Strings	101	Bace
38	Juno Strings	102	TB Vac>scene
39	Fretless Bass	103	Gated Pad
40	Massive Strings	104	Phased EP
41	Funky Bassmaster	105	Trance-Atlantic
42	Vince's Dream	106	Digital Klang!
43	Outer Space	107	Drubex SQ
44	Rotary Organ	108	Softena
45	Wobble Synth	109	Jupiter Slapper
46	Motion Pad	110	Garage Organ Bass
47	Harmony Pad	111	Sass Pick
48	Numanesque	112	U-no Sub
49	Electric Lead	113	Its OK as it is
50	Hard Sync Lead	114	Velo Spitz
51	Fat Osc Bass	115	Plated analogue
52	Hollow Bass	116	Digi Lead M-Wh
53	Percsynth Echoes	117	Ring>Vince
54	Electromagnetic	118	FM Tube
55	1 Osc Shimmer	119	Syncronicity
56	Monster Phat	120	Whirly
57	Electronica	121	PurrFlange
58	Mellow Bass	122	Poppy
59	Atmospheric Bass	123	Airy Fairy
60	Mr Pick	124	Synth Moutharp
61	Wire Lead	125	Tubus
62	Digital Chase	126	Drum 'n' Bass 1
63	Paris Pad	127	Pad Sweep

0	Sintillator M-Wh	64	Pulsebass
1	Skewed Arp	65	Synth Scratch
2	Softena Bass M-Wh	66	Staccato Filter
3	Pianova	67	Vienna Bender
4	Simple Sync	68	Piki
5	Its not OK	69	Rez Square M-Wh
6	Psy2	70	DetuneBass M-Wh
7	PS_ Strings 7th	71	Randevous 2 harp
8	T-chu Wave	72	Brillo Pad M-Wh
9	Hard Sub Bass	73	Arpy 30Dist
10	Pluck Knows M-Wh	74	Hard Bass
11	SyncHeathHazard	75	Prelude
12	Stringz 2	76	Arp Fingers
13	Garage Organ	77	Sweep 12 dB
14	Synthi Harp M-Wh	78	Strillan M-Wh
15	Square Basics	79	Spectrum
16	Synus M-Wh	80	Synced Formant 1
17	PunchiPick M-Wh	81	Velo Sync M-Wh
18	Sparkx	82	Burbler
19	Morph Brass M-Wh	83	InVinceable M-Wh
20	Flathead Bass	84	2 Osc Pad
21	U-no polysynth 1	85	Down Osc
22	MW BPF	86	Ana Organ
23	Perc Organ Bass1	87	Sinker M-Wh
24	FM Pickled on...	88	No FM Huh?
25	Slynkie Slide	89	Meo303 M-Wh
26	Nova Railway M-Wh	90	Click Bass M-Wh
27	Vorsprung...M-Wh	91	Coke Filter M-Wh
28	Crystal Shimmer MWh	92	Sup Jup Horn M-Wh
29	Pad 4 Landing	93	Clockworks M-Wh
30	DigiTrouserCough	94	SimpleEnvVeloArp
31	Anafuzzy logik	95	Metal Knoll
32	Spectra Pad	96	Your Pad or Mine
33	Drum 'n' Bass 2	97	Xtal Drop
34	SlapBass1	98	S-ash Tray M-Wh
35	HC Bass M-Wh	99	Uplifting M-Wh
36	Downloading	100	Subbass M-Wh
37	Deadly Sync M-Wh	101	Clix Organ M-Wh
38	Echoed Maj 3rd	102	Swidge M-Wheel
39	Naked	103	Slide Brass M-Wh
40	U-no Bass1	104	Syncapation
41	EP	105	Soft Brit Sound?
42	Ambient Line	106	Flange Pad
43	Pot Cover	107	X mod Bass
44	No Moralies M-Wh	108	Collision M-Wh
45	Highly Strung	109	Obie Jumpin
46	Westerly Lead	110	Novebella
47	Filth 5th	111	Pianola M-Wh
48	Clock Clang	112	E-Dreamsynk
49	Skwisha 2 M-Wh	113	Poms Bass3
50	Jungle sine	114	Just Cant Get It
51	303 Groover 1 M-Wh	115	Bubble Arp
52	Distillia	116	Given Bass M-Wh
53	Pot Cover	117	Virtual Panpipe
54	TeaSub Bass	118	Glider 2 Pad M-Wh
55	Bright EP	119	Hard Nosed
56	Brass	120	Ahh Voices 2
57	Eleventh HourPad	121	Piano Pad M-Wh
58	SuperStrings1	122	Raver Pad M-Wh
59	FM Strat Program	123	Roundhouse Bass
60	All The Rave	124	Pick 'n' Mix
61	Voxi Organ M-Wh	125	Rain Piz
62	Velochord	126	Mechatron Arp
63	Cheesy Spice	127	Poms Bass2

0	Filtered H2O	64	SuperBassSt'n 1
1	SuperBassSt'n 19	65	Synth Backslip
2	Width Bass M-Wh	66	Staccato Square
3	Wheel 303	67	DualFiltStringWh
4	Lonely Olive	68	EEW
5	Drum'n'BassBass	69	Perci Blip M-Wh
6	LFO madness	70	Simple Bass 2
7	Giggin EP	71	AggressivShuffle
8	U-no Brass	72	Digi Slappa!
9	Screaming Raver	73	Harmonic Dist303
10	DistortOrgan	74	Hardbasssweep
11	Bigger 1	75	Obie String Pad
12	The 70's Bass	76	Scammy Chord
13	Chime Pad	77	Sweep 24dB
14	Lead Gat	78	Ahh-Yeah M-Wh
15	HolidayLeadBass	79	DualFiltPWMingWh
16	Sine-us	80	Winge Forum M-Wh
17	Bottie End	81	VeloReso
18	StaccatoString	82	PVC Pipe/Tom M-Wh
19	Obie Brass	83	Rhythm Sweep
20	Flatter Head M-Wh	84	Pollox pad
21	Synthi Trumpet	85	Self Osc
22	Vector Pad	86	Organ 1
23	Organ Perc Bass2	87	Syncker
24	Don't Pick!	88	Psy1
25	Stab	89	Trance2 M-Wh
26	Fuller Organ	90	Perckie Sq M-Wh
27	Juice Bass	91	Xpander 2000
28	Orbit Pad M-Wh	92	SupJup BrassM-Wh
29	Devolution M-Wh	93	Throbba M-Wh
30	Modebas M-Wh	94	Wineglass
31	Syn Section M-Wh	95	HiRage Kick M-Wh
32	Spectrux Pad M-Wh	96	Phillharmonic
33	Filter Sweep KHz	97	Obie Tootle
34	SlapBass2	98	Wheelreso
35	Hard House	99	Slow Sweepa
36	Choral Pad M-Wh	100	2 Osc & M-Wh Sub
37	Messy Sync M-Wh	101	Boogie Lead
38	Old'n'Rickety	102	Radar>Comms
39	Dist FM Sync Pro	103	Rio Mod Wheel
40	U-no Bass2	104	FM Bell Lead
41	Tine1 Program	105	MultiHigh Hat
42	Dreamy Arp	106	Emerald
43	Ringglass	107	Wart Bass
44	Handbagin Bass	108	Rubber Filter M-Wh
45	Stringie Thingie	109	Sync Brass Pad
46	Lead 1	110	Tinkerbell
47	Worry free Pad	111	BP Barker
48	Talker	112	EuphoricNag M-Wh
49	Garage Swelch	113	FM Bass 1
50	Single Sub Wheel	114	Needle Pick M-Wh
51	303 Groover 2 M-Wh	115	Electro Wire
52	PWM Crunchie	116	POT LID
53	Staccato	117	Low Transmitter
54	Simple Bass	118	Synth Ensemble
55	Super Nova Tramp	119	Organ Draw M-Wh
56	Brassic	120	Pad
57	Upstairs@Holgers	121	Unison DaDaaDaa
58	SuperStrings2	122	SyncSaturation
59	A To B PB-Wh	123	Tin Can Wire M-Wh
60	Attacka M-Wh	124	Clickie Pickie
61	SoloAnaTrumpet	125	Chirpy Novae
62	Explosion	126	Simple Arp M-Wh
63	ModW Surprise	127	Click Organ

0	ComeToDance M-Wh	64	Clickity Klav
1	Smooth Strings	65	Drewz Pad
2	Nasty Bass	66	Britesaw 5ths
3	Vector Synth	67	Lo Nova Bass
4	Synced Swimin	68	Wispy Comp
5	Basse	69	After The Heat
6	Sanxion Filtered	70	Gumdrop Factory
7	D'you know Sq	71	Filter Churny
8	In Sync M-Wh	72	FM Powercomp
9	Synced M-Wh Muck	73	Devo Bass
10	PolyNova1	74	Zwaztika Girlz
11	Jubrassic	75	Drawbar Change
12	Lucked Out M-Wh	76	Pizzacato housey
13	Poms Bass4	77	Talking Keys
14	U-no polysynth 2	78	Ultra Deep
15	Pulse 5th M-Wh	79	Synq Seq
16	SyncBass	80	Sq Sync Sweep
17	Fathead	81	Fin FM Brass 1
18	PolyNova 5	82	Syncro
19	Arp Sync M-Wh	83	Uptopian Sweep
20	AfterTouchie Wh	84	Sweet Strings
21	Eclipse	85	Electric Hell
22	Clavi	86	Fifth Lead
23	U-know Bleep Wh	87	SOAR^3
24	Mallet	88	Bass3
25	Obie Wurlie	89	7th Machine 2
26	ThunderFloorBass	90	Weird Echoes
27	SlapBass3	91	Mech bass
28	Bass4	92	Simple Sweep
29	ElectroStratGat	93	Pulse Click Bass
30	Inverse Square	94	Deep Bass
31	Our Friend PWM	95	Raw Analogue
32	Trans Euro Exprs	96	Analogue Strings
33	Americana	97	Atmospherica
34	PsyGrund	98	Ambient Chords
35	Staccato Pulse	99	Love Strings
36	Jazz Guitar	100	TB303 S & H
37	Nics Diver M-Wh	101	R2D2 Synthesis
38	Simpler Bass	102	Saw Bass
39	Sink Slide	103	Squelch Bass
40	Squeeze 1	104	Portasynth Lead
41	Ring Release	105	Reso Bass
42	Kasio Komp	106	Psycho Film Pad
43	Showroom Dummies	107	Invader Fx
44	Soft Insectaside	108	Echo Release Pad
45	Jazz Chord	109	Plasma
46	Alias Bombdown	110	Reverse Noise
47	Harmonic Rize	111	Electroid Arp
48	Bell Shift	112	Raversiren
49	FM Klickomp	113	Lead or Bass
50	Computer Keybrd	114	5th Lead
51	Praying Mantis	115	7th Stak
52	Mello RockOrgan	116	Zing Leak
53	Pulse Clav	117	Sass!
54	Cheezy Organ	118	Swishi
55	Dribble Synk	119	TB Poly Arp
56	Massed Sawz	120	Whistle
57	PileDriver	121	Wabblers
58	Isham Prophet	122	SoftStrings
59	Grit Steps	123	Deep Lord
60	Afrikanai	124	Force Field
61	Muzzle Fuzz	125	Science lab
62	Worm Sign	126	Die Roboter
63	Razor Wheel	127	Trance4 M-Wh

0	BP 303 2	64	909 Snare 2
1	VeloQuack	65	Garage Kick M-Wh
2	Ballsy Anal-Log!	66	808 Snare 2
3	Synth Sektor FX	67	Open High Hat 1
4	TecknoTecknoM-Wh	68	Closed High Hat 1
5	Grunge Pick M-Wh	69	Harder Kick M-Wh
6	Strings Ens	70	808 Snare 1
7	BP 303 M-Wh	71	808 Clap 3
8	VeloUniSync	72	FX Kick M-Wh
9	Reso Bass	73	909 Kick
10	Max Bass	74	808 OHH
11	Hard Cheese M-Wh	75	808 CHH
12	In-Your-Ear M-Wh	76	909 Clap
13	Strings'R'Talkin	77	909 Snare 1
14	NeedleBleep M-Wh	78	Little Seq Arp
15	Synced	79	Synth Cymbals
16	Dat D'n'BassM-Wh	80	CowBell
17	Soft Pad	81	LFO Dancer
18	Tranceypants	82	Dance Fx
19	BP Organ	83	Weird Drum
20	Plug'n'Sync	84	Space Snare Drum
21	Sqaurx M-Wh	85	Another World Fx
22	Tottie Arp	86	Indian Drums
23	Funk WahWah M-Wh	87	Wobble Laser
24	Polynova 3	88	Metal Percussion
25	Phase Strings	89	Delay Hi Hat
26	Low Bass	90	Congas
27	Drum'n'Bass 3	91	Click Arp
28	Trance7 M-Wh	92	Dance Percussion
29	Clean'n'Clear	93	Wet Pick Arp
30	Aggrosweeper	94	Alarm Fx
31	Evolution	95	Brass Stab
32	BasikBass	96	Modern Pad
33	Dark Talker	97	Polysynth Bass
34	Trance1 M-Wh	98	Café Noise
35	Bottie Bass	99	Kooler Shaker
36	Bldldldl...	100	909 BR Kick 2
37	Electric Gtr Mw	101	SDeeS Snare
38	Tap Percussion	102	909 Kick 3
39	Poly Fantasy	103	909 Kick 1
40	Synth Drum	104	Garage Snare 3
41	Hard Jam	105	Garage Snare 2
42	Distioclav	106	Garage Snare 1
43	Digi Bass	107	909 Kick M-Wh
44	Computer Data	108	Noisy High Tom
45	Melody Sequence	109	Noisy Mid Tom
46	Electroid Lead	110	Noisy Low Tom
47	Cosmic 7th	111	Electro Snare
48	Plasma	112	909 noz snare
49	Ping Lead	113	Metal Toms
50	Tremolo Voices	114	808 Kick
51	Boost Bass	115	808 Clap
52	Happy Lead	116	809 Kick 1
53	Bella	117	909 Snare 3
54	Haunting Lead	118	Novashare
55	Brass Section	119	Synthi Clap
56	FMpt Xylo Lo	120	Snare Shot
57	FMpt Xylo Hi	121	NovaSnare 2
58	Orgpt KlikLo Dry	122	Kickers
59	Orgpt DX Lo Dry	123	DOUBLE SAW INIT
60	Orgpt DX Hi Dry	124	Vocoder In 1
61	FMpt RhodeDt Wfx	125	Input/sw1Program
62	FMpt RhodeBd Wfx	126	FM Init Program
63	FMpt RhodeTn Wfx	127	2 Osc Init M-Wh

- 0 909 Kick 2
- 1 Rim Shot
- 2 808 Snare 2
- 3 808 Clap
- 4 909 Snare
- 5 Electro Low Tom 1
- 6 Closed High Hat 1
- 7 Electro Low Tom 2
- 8 Closed High Hat 2
- 9 Electro Mid Tom
- 10 Open High Hat 1
- 11 Electro Hi Tom 1
- 12 Electro Hi Tom 2
- 13 Crash Cymbal 1
- 14 Crash Cymbal 3
- 15 Crash Cymbal 4
- 16 909 Clap
- 17 909 Low Tom 1
- 18 808 Closed HiHat
- 19 909 Low Tom 2
- 20 808 Cowbell
- 21 909 Mid Tom
- 22 808 Open HiHat
- 23 909 Hi Tom 1
- 24 909 Hi Tom 2
- 25 808 Kick Click L
- 26 808 Low Conga
- 27 Noisy Kick
- 28 808 Mid Conga
- 29 808 Hi Conga
- 30 Snova2 Kick5
- 31 808 Low Tom
- 32 Snova2 Kick4
- 33 808 Mid Tom
- 34 808 Maracas
- 35 808 Hi Tom
- 36 808 Kick Click
- 37 Dodger Rodger
- 38 Noisy Kick 1
- 39 808 Clave
- 40 FM Block
- 41 Bottle
- 42 Simple Low Conga
- 43 Simple Mid Conga
- 44 Simple Hi Conga
- 45 Snova Kick5
- 46 Snova2 Kick4
- 47 Snova2 Kick3
- 48 Snova2 Kick2
- 49 General kit 1 FX

0	909 Kick 2
1	Rim Shot
2	808 Snare 2
3	808 Clap
4	909 Snare2
5	Electro Tom 5
6	Closed High Hat 3
7	Electro Tom 4
8	Closed High Hat 4
9	Electro Tom 3
10	Open High Hat 2
11	Electro Tom 2
12	Electro Tom 1
13	Crash Cymbal 1
14	Crash Cymbal 2
15	Ride Cymbal
16	Clap 3
17	Disco Tom 5
18	808 Closed HiHat
19	Disco Tom 4
20	808 Cowbell 2
21	Disco Tom 3
22	808 Open HiHat
23	Disco Tom 2
24	Disco Tom 1
25	808 Kick Click L
26	808 Low Conga
27	808 Snare
28	808 Mid Conga
29	808 Hi Conga
30	Snova2 Kick1
31	Garage Snare 4
32	Breakdown Kick
33	Velo Spitz
34	Maracas 2
35	Electro Guiro
36	Synth Scratch
37	Sonar
38	Synth Backslip
39	808 Clave 2
40	Wah 4
41	Wah 3
42	MultiHigh Hat
43	Wah 2
44	Hi Hat (Closed)
45	Wah 1
46	Hi Hat (Open)
47	909 Kick + Click
48	808 Kick No Clk
49	General kit 2 FX

- 0 Res FX 1
- 1 Wip 1
- 2 Res FX 2
- 3 Force Field 2
- 4 Res FX 3
- 5 Res FX 4
- 6 Vindaloo Noise
- 7 Spit U Like M-Wh
- 8 RainPicks
- 9 Spit U Like2M-Wh
- 10 Infiltrator SFX
- 11 Burbler
- 12 Down Osc
- 13 Rain Piz
- 14 Filter Sweep KHz
- 15 Ringglass
- 16 Explosion
- 17 Liquinova M-Wh
- 18 Self Osc
- 19 Radar>Comms
- 20 Whiteout
- 21 Low Transmitter
- 22 RaverSiren
- 23 Ring>Vince
- 24 Wabbler
- 25 Tubus
- 26 Force Field
- 27 Sience Lab
- 28 Downloading
- 29 LFO Madness
- 30 Res FX 10
- 31 Res FX 11
- 32 Noise Sweep
- 33 Velo Spitz M-Wh
- 34 Noise Sweep 1
- 35 Noise Sweep 3
- 36 Noise Sweep 4
- 37 Noise Sweep 5
- 38 REZ1
- 39 REZ2
- 40 REZ3
- 41 Noise Sweep 6
- 42 CHIRP 1
- 43 CHIRP 2
- 44 CHIRP 3
- 45 CHIRP 4
- 46 CHIRP 5
- 47 CHIRP 6
- 48 CHIRP 7
- 49 SFX Kit FX

-
- 0 FM 808 Clap
 - 1 Rim Shot 2
 - 2 909 Snare 2
 - 3 808 Clap 3
 - 4 808 Snare 3
 - 5 Tom1
 - 6 808 CHH
 - 7 Tom2
 - 8 808 CHH2
 - 9 Tom3
 - 10 808 OHH
 - 11 Tom4
 - 12 Tom5
 - 13 Crash Symbal 2
 - 14 Noise Shot
 - 15 Ride 2
 - 16 China Symbal
 - 17 Nova Crash
 - 18 Rev High Hat 1
 - 19 Noise Sweep
 - 20 FM Cowbell
 - 21 Lo Timbale/SN
 - 22 Rev High Hat 2
 - 23 Hi Timbale/SN
 - 24 High Conga 4
 - 25 High Conga 3
 - 26 High Conga 2
 - 27 High Conga 1
 - 28 Low Conga 1
 - 29 Low Conga 2
 - 30 Low Conga 3
 - 31 FM GarageSnare 1
 - 32 FM GarageSnare 2
 - 33 Timpani
 - 34 Timpani
 - 35 Timpani
 - 36 Timpani
 - 37 Timpani
 - 38 Timpani
 - 39 Timpani
 - 40 Timpani
 - 41 Timpani
 - 42 Timpani
 - 43 Timpani
 - 44 Timpani
 - 45 Triangle 2
 - 46 Triange 1
 - 47 FM 909 Kick 1
 - 48 FM 909 Kick 2
 - 49 FM Kit FX

0	909 Kick + Click
1	808 Kick Click L
2	808 Snare 2
3	808 Clap
4	909 Snare 2
5	909 Snare 2
6	Closed High Hat3
7	909 Snare 2
8	Closed High Hat4
9	909 Kick 2
10	Closed High Hat4
11	Open High Hat 2
12	Open High Hat 2
13	808 Kick Click L
14	Noise Shot
15	Ride 2
16	Explosion
17	Nova Crash 2
18	Closed High Hat3
19	Closed High Hat3
20	Closed High Hat4
21	Closed High Hat4
22	Closed High Hat4
23	Closed High Hat4
24	Hi Conga 4
25	Hi Conga 3
26	Hi Conga 2
27	Hi conga 1
28	Low Conga 1
29	Low Conga 2
30	Low Conga 3
31	FM GarageSnare1
32	FM GarageSnare2
33	Maracas 2
34	Noise Sweep 1
35	Maracas 2
36	808 Cow Bell 2
37	Init Program
38	808 Low Conga
39	808 Clave 2
40	808 Mid Conga
41	808 Hi Conga
42	Hi Hat (Closed)
43	Init Program
44	Hi Hat (Open)
45	Triangle 2
46	Triangle 1
47	909 Kick + Click
48	Init Program
49	Init Program

0	Blaster Master	64	Juicy Gaff
1	Pad On Spec	65	Agro Pad
2	Tek Terror	66	Ambi Bambi
3	Liquid Goo	67	Solaris
4	Layered Pianos	68	Perci Organ
5	SuperStabber	69	Brass+Lead
6	Popsickle	70	TooPad
7	Sintillated Worry	71	Chime On
8	Cool Pad	72	Choccie
9	The Pizzicato	73	PaddiWhack
10	Klavikle	74	OrchStrings
11	Ravers in 7th	75	Liquid Sweep
12	Donna Supernova!	76	Classic Combo
13	AbsoluteMassive	77	Multimode BPF
14	The Glide	78	Annialator
15	Skwelchi 7th	79	Masterbasse
16	Electric Aaagh	80	Swept
17	Hypersynus	81	Analogue Bleep!
18	Ambient Nation	82	Synced Clavinux
19	Brass Section	83	Tinkler
20	HardToTheKore!	84	The Three Arps
21	Pink Phycosis	85	Synced Twice
22	Fatty	86	I Feel Funky
23	Naked String	87	A Bunch Obiewan
24	TwinOvaHead303's	88	Staccato Square
25	Puff Pipe	89	Worry Free
26	Deep Stringz	90	Ambient Groover
27	SupSupSupJup	91	Twin Organ
28	Pionus	92	Lead & Pad
29	Worry Free	93	2ForkinRavers
30	Conetik	94	Synth Strings
31	Layered Spectra	95	Agro Pad
32	Novestra	96	Psy Pad (Rename "The Trick")
33	Forkin Expensive	97	7th Heaven
34	EP & Stringz	98	3rd & 7th
35	String + PluckLead	99	Perky Synth Pad
36	Good Ole 80's	100	MooZ At 72ooz..
37	Filming in Space	101	Staccato Saw
38	AttackVelo-Chord	102	Blip & Co
39	Probe	103	Trouser Fat
40	3rd Party Padk	104	Invert Filta Pad
41	Two Big Ones	105	Perci Fellow
42	Trance Nation	106	Flutter Pad
43	Morph Wave	107	Liquid Sweep
44	Syht Section	108	JammyLoop
45	LiquidNarcotic	109	When U Wanna...
46	Piano+Pading	110	Chimez
47	1 Finger LSO	111	Layered Sweeps
48	Teci	112	TinCanDiffusion
49	Fantasm	113	Brass Section 2
50	Tingly & Drugged	114	Endless Arps
51	Sync's 'R' US!	115	Atmospherics
52	Layered Pianos 2	116	Super Unisyn 2
53	SuperFat	117	Twin Organ 2
54	Sqwelchie	118	Get Off Yer Ass!
55	Heaven Organ Pad	119	The Pizzacato 2
56	Super Unison	120	Padnus
57	Space Pad	121	Layered Neuro
58	PiciGater Pad	122	The Strings
59	Multimode BPF	123	Init Velo Xfade
60	2 Nasties	124	Init VeloSw V110
61	Lead & H20	125	Init Split at C3
62	Minor Evil	126	Multi Ch 1-8
63	Botty & Sparkx	127	Init Perf

0	Energy Rusher!	64	Pianas Pad
1	SQ Law	65	SuperObiewan 2
2	Enormous 5th	66	Syncathetic
3	SuperUtopian	67	3 Slappa Bass
4	Plastic Crackpot	68	A Pile of Perf
5	FM Rhodes 3PtWfx	69	AtmosSpace
6	Can Basher!	70	SuperHard
7	The Dark Horse	71	SuperSaturated
8	News & Weather	72	Slow'n'Slippery
9	SuperGlider	73	Picked Gat/Harp
10	On Your Face	74	Arty Farty
11	SuperMorph Brass	75	Slow Pad
12	Euphorik Trancer	76	NetherUltraPulse
13	Ole Genes	77	SuperNeuro
14	Crystal SQ	78	Tranzlator
15	SuperSpectra	79	Stereo HardHouse
16	SuperDutch	80	Sync Knife
17	SuperT-chu	81	5th Padie
18	The Profecy!	82	Cimmie Pad
19	HyperSpace	83	Click Organ
20	WavS'tion	84	Crankie Says
21	Supa PolyNova 1	85	Supa Sync Bass
22	Supa Piana	86	Plucky Tchu
23	SuperObiewan	87	Comp 1
24	Dub'n'Basic!	88	BuzzyBrass
25	FM Xylophone	89	SlightlyDirtyOrg
26	Cave Trippy	90	Glided Arps
27	No FX Strings	91	Supa Sync Lead
28	SuperSynthi Harp	92	Phatt&Wiffy
29	SuperJubrassic	93	SuperHealth Haz
30	Con-figed Arps	94	Master Psy
31	SuperGlider 2	95	Synk Hit
32	Evolution	96	Bouncy Castle
33	SuperLucky	97	SuperEclipse
34	Tink	98	Don't Be Pickie
35	SuperPhattie	99	SuperBrillo
36	Minor Event	100	Strangely
37	Supa D'u Know	101	SuperSimple Sync
38	Transwave	102	Hard'n'Fast
39	Big Bast**d	103	SuperSyncapation
40	2 Giggers	104	Elect Guitar
41	SuperPulse 5th	105	Mellow Man
42	Petiz'R'Us!	106	Percy
43	Sq Chorrале	107	Super Attacka
44	DX E Organ	108	Towel Fetish
45	SuperExtravert	109	SuperNics
46	SuperPunch Pick	110	Metaloid
47	SuperBrass	111	SuperSync Pad
48	Cruiser!	112	SuperRickety Syn
49	Spit Bass	113	SuperSyncer
50	Supa PolyNova 5	114	Trippy 9/8
51	SuperStringz	115	SuperTouchie 2
52	SuperPianopad	116	SuperWesterly
53	SuperStrillan	117	SuperBarker
54	Dirty Arps	118	SuperSlapper
55	Wet Sintillation	119	Irradiated Blast
56	Elles Bells	120	Init Perf PartFX
57	SuperBrassik	121	MultCh1-8 PartFX
58	SuperTouchie 1	122	MultCh9-16PartFX
59	SuperSyn Trumpet	123	InitNorm/InvVelo
60	Dub'n'Basser!	124	Init VeloSw V100
61	PluckinNoseHair	125	Init Split at C2
62	Multi Bleep	126	Multi Ch 9-16
63	SuperChoral	127	Demo

0	UP	64	3/3 Up Slightly Accented
1	DOWN	65	3/3 Dn Accented
2	UP & DOWN1	66	3/3 Dn Slightly Accented
3	UP & DOWN2	67	3/3 Up/Dn Accented
4	PLAYED	68	3/3 Up/Dn Slightly Accented
5	WALKINGUP	69	9/8 Pattern Accented
6	WALKINGDOWN	70	9/8 Pattern Slightly Accented
7	WALKINGPLAYED	71	Walking Up2 Accented
8	RANDOM1	72	Walking Up2 Slightly Accented
9	RANDOM2	73	Walking Dn2 Accented
10	RANDOM3	74	Walking Up2 Slightly Accented
11	TB1	75	Walk Up/Dn2 Accented
12	TB2	76	Walk Up/Dn2 Slightly Accented
13	TB3	77	Walk Dn/Up2 Accented
14	TB4	78	Walk Dn/Up2 Slightly Accented
15	TB5	79	Walk3 Up Accented
16	TB6	80	Walk3 Up Slightly Accented
17	TB7	81	Walk3 Dn Accented
18	TB8	82	Walk3 Dn Slightly Accented
19	TRANCE1	83	House 1 Accented
20	TRANCE2	84	House 1 Slightly Accented
21	TB9	85	Walk Accented
22	TB10 UP	86	Walk Slightly Accented
23	TB11 DN	87	MUSO 2 Accented
24	TB12 UP/DN	88	MUSO 2 Slightly Accented
25	TRANCE BASS1	89	Shuffle Accented
26	TRANCE BASS2	90	Shuffle Slightly Accented
27	TB13	91	80's 2 Accented
28	TB14	92	80's 2 Slightly Accented
29	TB15	93	80's 3 Accented
30	TB16	94	80's 3 Slightly Accented
31	TB17	95	C52's Accented
32	TB18	96	C52's Slightly Accented
33	80'S 1	97	C52's Variation Accented
34	TB GLIDE1	98	C52's Variation Slightly Accented
35	TB19	99	Walking up 1 Accented
36	TB GLIDE2	100	Walking up 1 Slightly Accented
37	TB GLIDE3	101	Walking Dn 1 Accented
38	TB20	102	Walking Dn 1 Slightly Accented
39	Muso 1 Accented	103	Walking Up/Dn Accented
40	Muso 1 Slightly Accented	104	Walking Up/Dn Slightly Accented
41	Trill Dn Accented	105	Walking Dn/Up Accented
42	Trill Dn Slightly Accented	106	Walking Dn/Up Slightly Accented
43	Trill Up Accented	107	Techno Accented
44	Trill Up Slightly Accented	108	Techno Slightly Accented
45	Trill Dn/Up Accented	109	Techno Accented
46	Trill Dn/Up Slightly Accented	110	Techno Slightly Accented
47	Trill Up/Dn Accented	111	UPUPUPDN
48	Trill Up/Dn Slightly Accented	112	UPUPDNUP
49	Rave 1 Accented	113	UPDNUPUP
50	Rave 1 Slightly Accented	114	DNUPUPUP
51	Rave 2 Accented	115	DNDNUPUP
52	Rave 2 Slightly Accented	116	DNDNDNUP
53	Shimmie Accented	117	DNDNUPDN
54	Shimmie Slightly Accented	118	DNUPDNNDN
55	Running Up Accented	119	UPDNNDNDN
56	Running Up Slightly Accented	120	UPDNNDNUP
57	Running Dn Accented	121	DNUPUPDN
58	Running Dn Slightly Accented	122	HARM UP1
59	R'ning Up/Dn Accented	123	HARM UP2
60	R'ning Up/Dn Slightly Accented	124	HARM UP3
61	R'ning Dn/Up Accented	125	HARM DN 1
62	R'ning Dn/Up Slightly Accented	126	HARM DN2
63	3/3 Up Accented	127	HARM DN3

0	Bass Trance 1	64	BASS5
1	303 Trance 1	65	BASS6
2	303 Trance 1v1	66	BASS7
3	303 Trance 2	67	BASS8
4	Bass Trance 2	68	BASS9
5	303 Trance 3	69	BASS10
6	303 Trance 3v1	70	BASS11
7	303 Trance 4	71	BASS12
8	303 Trance 4v1	72	BASS13
9	303 Trance 5	73	BASS14
10	UP DN Variation	74	BASS15
11	303 Trance 6	75	BASS16
12	Minor UP DN	76	BASS17
13	Bleep 1	77	BASS18
14	Bleep 2	78	BASS19
15	Bleep 3	79	BASS20
16	Bleep 4	80	TECHNO1
17	Bleep 4v1	81	TECHNO2
18	Bleep 5	82	TECHNO3
19	Bleep 6	83	TECHNO4
20	UP DN Runner	84	TECHNO5
21	Bleep 7	85	TECHNO6
22	Bleep 8	86	TECHNO7
23	Bleep 9	87	TECHNO8
24	303 Trance 7	88	TECHNO9
25	Bleep 10	89	TECHNO10
26	Bleep 11	90	TECHNO11
27	Bleep 12	91	TECHNO12
28	303 Trance 8	92	TECHNO13
29	303 Trance 9	93	TECHNO14
30	303 Trance 10	94	TECHNO15
31	Bleep 13	95	TECHNO 16
32	303 Trance 11	96	TECHNO 17
33	Bleep 14	97	TECHNO 18
34	303 Trance 12	98	D-D-DAA
35	303 Trance 12v1	99	D-D-DAA2
36	303 Trance 12v2	100	DADADADA
37	303 Trance 12v3	101	DADADA2
38	Bass Trance 3	102	OHH
39	Bass Trance 4	103	CHH
40	NAG1	104	BD
41	NAG2	105	Bass lick
42	NAG3	106	Octave Pulse
43	NAG4	107	Kinetik 10
44	NAG5	108	Kinetik 11
45	NAG6	109	Kinetik 12
46	NAG7	110	Kinetik 13
47	NAG8	111	Kinetik 14
48	NAG9	112	Kinetik 15
49	DNDNDNUP	113	Kinetik 16
50	DNDNUPDN	114	Kinetik 17
51	DNDNUPDN2	115	Kinetik 18
52	DNDNUPUP	116	Kinetik 19
53	DNUPDNDN	117	Kinetik 20
54	DNUPUPUP	118	Kinetik 21
55	UPDNDNDN	119	Kinetik 22
56	UPDNUPUP	120	Kinetik 23
57	UPUPDNDN	121	Kinetik 24
58	UPUPDNUP	122	Kinetik 25
59	UPUPUPDN	123	Kinetik 26
60	BASS1	124	Kinetik 27
61	BASS2	125	Kinetik 28
62	BASS3	126	Kinetik 29
63	BASS4	127	Kinetik 30

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The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of an uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The Exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

- 1 Read all the instructions before using the product.
- 2 Do not use this product near water . For example, near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool or the like.
- 3 This product should only be used with a cart or stand that is recommended by the manufacturer.
- 4 This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
- 5 this product should be located so that its location or position does not interfere with its proper ventilation.
- 6 The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
- 7 The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
- 8 The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
- 9 Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 10 The product should be serviced by qualified service personnel when:
 - A The power supply cord or the plug has been damaged.
 - B Object s have fallen onto or liquid has been spilled into the product.
 - C The product has been exposed to rain.
 - D The product does not appear to operate normally.
 - E The product has been dropped or the enclosure damaged.
- 11 Do not attempt to service the product beyond that described in the user - maintenance instructions. All other servicing should be referred to qualified service personnel.

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This product is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER :

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or servicemen if you are in any doubt as to whether the product is properly grounded. Do not modify the plug provided with is product - if it will not fit the outlet, have a proper plug installed by a qualified electrician.

FCC Information (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as indicated in the instructions contained in this Manual, meets FCC requirements. Modifications not expressly approved by Novation may void your authority, granted by the FCC, to use the product.
2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorisation to use this product in the USA.
- 3 NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilise power outlets that are on different branch (Circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/re orient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorised to distribute this type of product.

The statements above apply ONLY to products distributed in the USA.

CANADA

The digital section of this apparatus does not exceed the "Class B" limits for radio noise emissions from digital apparatus set out in the radio interference regulation of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques dépassant les limites applicables aux appareils numeriques de la "Classe B" prescrites dans le reglement sur le brouillage radioelectrique edicte par le Ministere Des Communications du Canada.

This only applies to products distributed in Canada.

Ceci ne s'applique qu'aux produits distribues dans Canada.



CE mark for European Harmonised Standards

CE mark which is attached to our company's products of AC mains operated apparatus until December 31, 1996 means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

A CE mark which is attached after January 1, 1997 means it conforms to EMC Directive (89/336/EEC), CE mark Directive (93/68/EEC) and Low Voltage Directive (73/23/EEC).

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Specifications subject to change:

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Oscillator Menu

MWheel LFO 1 amt	+10
ATouch LFO 1 amt	+10

Formant width	010
Sync skew	+10

Sync key follow	010
Pitch bend range	+10

Copy Button

Copy oscillator 1 to ?	
------------------------	--

Special Button

Special waveform	Double saw
------------------	------------

Tune knob

Octave	0
Semi tone	+1

Voice Control Menu

Porta type	Glissando
Porta mode	Exp

Poly mode	Mode 1
Osc mode	Percussive

Glide type	Normal glide
------------	--------------

Unison	Off
Unison mode	2 voice

Unison detune	008
VCO drift	064

Osc start phase	000
Drum one-shot	Off

Filter Menu

Fq Mwh LF02 amt	+63
Res Mwh LF02 amt	+63

Fq AT LF02 amt	+63
Res AT LF02 amt	+63

Fq AT amt	+63
Res AT amt	+63

Overdrive curve	-64
Oscs filt bypass	Off

Special type	
Filter width	000

Special Button

Filter type	Res LPF
Filter width	000

LFO Menu

LFO slew amount	000
Env 3 speed mod	+63

MWh speed mod	+10
AT speed mod	+10

Sync	16th
[6 MIDI clocks]	

LFO Delay mode	Fade
LFO Delay fade	In

LFO delay sync	16th
----------------	------

Delay trigger	Multi
Triggering	Keysync

Envelope Menu

Env 1 MWheel	+10
Env 1 ATouch	+10

Env 1 lev track	+00
Env 1 lev note	C3

Env 1 A-D repeat	022
------------------	-----

Env 1 sust rate	+00
Env 1 sust time	000

Env 2 lev track	+00
Env 2 lev note	C3

Env 2 delay sync	Off
------------------	-----

Env 2 A-D repeat	022
------------------	-----

Env 2 sust rate	+00
Env 2 sust time	000

Env 3 lev track	+00
Env 3 lev note	C3

Env 3 delay sync	Off
------------------	-----

Env 3 A-D repeat	022
------------------	-----

Env 3 sust rate	+00
Env 3 sust time	000

Inputs Menu

	Gain 1 +00
	Gain 2 +00

Vocoder Menu

Sibilance level	15
Sibilance type	Hpass

Voc input	Input (2)
Voc insert	Program

Vocoder width	00
---------------	----

	Vocoder spectrum
--	------------------

Effects Menus

Delay Menu

Stereo width	010
Delay ratio	1:1

Sync	16th
[6 MIDI clocks]	

Delay HF damp	020
Delay wheel	+20

Reverb Menu

Early ref level	6
Reverb HF damp	020

Reverb wheel	+20
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Chorus Menu

Mod depth	032
Feedback	+00

Sync	Off
[No MIDI clocks]	

Chorus delay	032
LFO wave	-20

Speed 2	080
Inertia	032

Stereo width	032
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Wheel mode	Threshold
Wheel level	010

Distortion Menu

Output level	+20
Gain compensate	+00

Distortion curve	+64
Distortion wheel	+00

Pan Menu

Pan type	Autopan
Pan speed	040

Pan depth	080
Dry level	020

Sync	Off
[No MIDI clocks]	

Pan effects	No
-------------	----

Special Menu

Comb frequency	069
Comb boost	+10

Comb speed	020
Comb depth	+00

Comb spread	-20
Sync	Off

Comb freq wheel	+10
Comb boost wheel	+10

Pass to effects :	
	Program only

Part Edit Section

Tune Menu
(Performance)

Part semi tone	+07
Part detune	+25

Tune Menu
(Program / Performance)

Drum played as	E3
----------------	----

Tune Menu
(When the Arp Menu is active)

Kbd arp transpose	
zone detune	+12

Velocity Menu

Part velocity curve	Normal
---------------------	--------

Output Menu

Part outputs	1 & 2
Effects used	Program

MIDI Menu

Sus/sw2	Enable
MIDI channel	Global

Sw1	Off
Sw3	Off

Pedal/breath	Off
--------------	-----

123	Switch 1
q . .	Disabled

Prog change filt	Off
Controller filt	Off

Poly Menu
(Performance)

Part polyphony	Poly
----------------	------

Poly Menu
(Program)

Program Mode	
polyphony	Mono

Range Menu
(Performance)

Highest note	C8
Lowest note	C0

Range Menu
(When the Arp Menu is active)

Kbd t-zone hi	C2
Kbd t-zone lo	C1

Special Menu

Arp bank & pattern	
used from	Part

Part Edit Section
Master Keyboard
Functions

Tune + External Menu

Ext part semi tone	
transpose	+00

Velocity + External Menu

Ext velocity max	127
Ext velocity min	127

Tx ext velocity	Yes
Default velocity	127

MIDI + External Menu

Ext part MIDI ch	Off
------------------	-----

PBMWAVSN	Prog change
q	Tx ? Yes

Ext bank MSB	000
Ext bank LSB	000

Ext program no.	000
Ext volume level	127

Mod wheel Tx	CC001
[Modulation Wheel]	

Tx song select ?	Yes
Song no.	001

Send MIDI stream	
No of bytes	00

MIDI stream byte	01
[Data]	00

Range + External Menu

Ext highest note	G8
Ext lowest note	C-2

Arp Menu

Pattern Bank	Mono
Pattern no.	120

Latch type	Constant
Quantize	Mode 1

Velocity	Played
----------	--------

Fill in	On
Note ordering	Played

Sync	4th
[6 MIDI clocks]	

Arpeggio notes to:	
Program & MIDI	

Output MIDI ch	Input
Real time trans	On

Constant pitch	Off
Output ranging	Off

Tune Menu (Part Edit)

(When the Arp Menu is active)

Kbd arp transpose	
zone detune	+12

Range Menu (Part Edit)

(When the Arp Menu is active)

Kbd t-zone hi	C2
Kbd t-zone lo	C1

Utilities

Oscillator section

Copy Button

Copy oscillator 1 to ?

Effects section

Copy Button

Copy program effects to part effects

Copy part effects to program effects

Arp Pattern Utilities

(Global Menu)

Delete step at pattern step	16
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Insert rest at pattern step	16
-----------------------------	----

Rotate pattern by :	-15
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Global Menu

Master tune	+00
Global MIDI chan	1

Sysex transmission -	
Single program	

Sysex reception -	
Normal (RX as sent)	

MIDI clock	Int
Pedal/breath	Off

Breath mode	Absolute
Breath sensing	Norm

Arp trans chan	Kbd
Arp trans ref	C3

Local control	On
Memory protect	Off

Restore from ROM :	
One program	

Input/sw 1	Audio in
Input/sw 2	Audio in

Pedal/sw 3	Pedal -R
Finder demos	Off

Vel sensing	Hard
Knob mode	Pickup

Incoming control change	Enabled
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Incoming program change	Enabled
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PCAVN	Program change
q...	Tx ? Yes

Sysex Tx delay	070ms
Temp disp time	100

Program change	002
Selects	Perf A010

Arp pattern editing via kbd	Off
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User pattern	U000
No of steps	32

Step	Note	Vel.	Gate
01	01	127	Norm

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