## CONTENTS

INTRODUCTION

Thank you for buying the Novation Supernova / Supernova Pro Analogue Modelling Synthesiser. The module you have purchased is ideal for producing analogue style sounds which have returned to popularity in recent years. The award winning ASM (Analogue Sound Modelling) Synthesis Engine first developed by Novation for the Award winning Novation DrumStation allows the Supernova to recreate authentic analogue sounds and a lot more sounds that would not be possible on vintage analogue equipment.

In the Novation tradition the MIDI specification on the Supernova / Supernova Pro allows for real-time transmission and reception of Continuous Controller information. This means that the live "tweaking" of controls during performance, which is particularly appropriate for analogue sounds, can be recorded into a sequencer along with the notes played and the entire performance recreated on playback. Bulk dumps of individual Programs, Program Banks, Performances, Performance Banks, Arp patterns and Global data can be sent or received allowing libraries and backups to be made.

With the huge effects section available in performance mode your productions will be lifted to another level and we are confident that very quickly you Supernova / Supernova Pro will become a Creative Essential.

FRONT PANEL
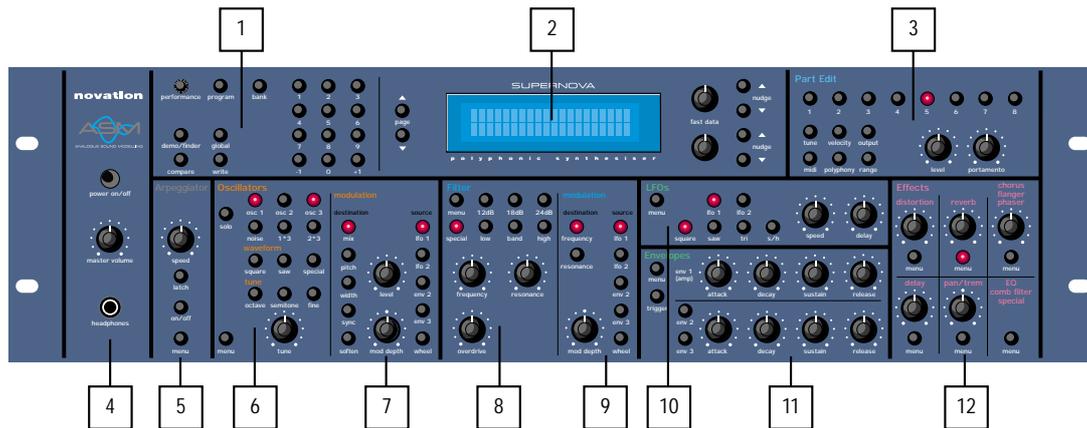
1 - Mode Section
This section contains the Performance, Program, Global, Demo / Finder, Write, Compare and Keypad buttons.

2 - Display and Data Entry Section
This section contains the two Fast Data Knobs, the Nudge and Keypad buttons.

3 - Part Edit Section
This section contains all the Knobs and buttons associated with the Parts of a Performance.
These include the Level and Portamento Knobs and all the 8 Part buttons and the associated Tune, Velocity, Output, MIDI, Polyphony and Range buttons.

4 - Master Volume Section
This section contains the Master Volume Knob, the Headphone socket and the Mains On/Off switch.

5 - Arpeggiator Section
This section contains the Speed Knob and the On/Off, and Menu buttons.

6 - Oscillator Section
This section contains all the Knobs and buttons associated with the Oscillators.
These include the Tune Knob and the solo, Osc 1, Osc 2, Osc 3, 1*2, 1*3, Noise, Special, Saw, Square, Octave, Semitone, Fine and Menu buttons.

7 - Oscillator Modulation Section
This section contains all the Knobs and buttons associated with modulation of the Oscillators.
These include the Level and Mod Depth Knobs and the Pitch, Width, Sync, Soften, Mix, LFO 1, LFO 2, Env 2, Env 3 and Wheel buttons.

8 - Filter Section
This section contains all the Knobs and buttons associated with the Filter.
These include the Frequency, Resonance and Overdrive Knobs and the Special, Menu, 12db, 18db, 24db, Low, High and Band buttons.

9 - Filter Modulation section
This section contains all the Knobs and buttons associated with modulation of the Filter.
These include the Mod Depth Knob and the Frequency, Resonance, LFO 1, LFO 2, Env 2, Env 3 and Wheel buttons.

1O - LFO Section
This section contains all the Knobs and buttons associated with the two LFOs.
These include the Speed and the Delay Knobs and the Menu, LFO 1, LFO 2, Square, Saw, Tri and S/H buttons.

11 - Envelopes Section
This section contains all the Knobs and buttons associated with the three Envelopes.
These include the two sets of Attack, Decay, Sustain and release Knobs and the Menu, Trigger, Env 2 and Env 3 buttons.

12 - Effects Section
This section contains all the Knobs and buttons associated with the five effect types.
these include the Distortion, Reverb, Chorus/Flanger/Phaser, Delay and Pan Knobs and there associated Menu buttons plus the Special button.

1 - Master Left and Right Audio Outputs.
These 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.

2 - Aux. 1 Left and Right Audio Outputs.
These 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.

3 - Aux. 2 Left and Right Audio Outputs.
These 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.

4 - Aux. 3 Left and Right Audio Outputs.
These 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 and 2 Outputs for even more flexibility in live and studio applications.

5 - MIDI IN
This connector is used to receive MIDI Data from an external device.

6 - MIDI OUT
This connector is used to transmit MIDI Data to an external device.

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

8 - IEC Mains Connector
This socket is for the supplied Mains lead. This socket accepts 110V, 220V and 240V mains supplies at 50 or 60 Hz. In other words the Supernova will work on any county's mains supply.

SETTING UP

Connect the Master left and Right Audio Outputs (and the Aux. 1, Aux. 2 and Aux. 3 Audio Outputs if required) of the Supernova to a suitable amplifier or mixing desk's stereo inputs and set the Master Volume control on the Supernova 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's mains switch is in the "OFF" position. Connect the MIDI out of your Master Keyboard or Sequencer to the MIDI IN on the Supernova. Connect the Mains supply with the supplied lead to the Mains Socket on the Supernova labelled AC Input. Connect the other end to the mains supply and switch the supply on. The display should now illuminate showing the performance or program that was selected the last time global data was written ito memory. Refer to page 33 for details on this fuction. Now switch on your amplifier and adjust the volume accordingly whilst the Sequencer is playing or you are playing the Master Keyboard.

The Master Keyboard or Sequencer will be playing the currently selected Performance or Program. To listen to all of the Factory sounds, make sure you are in the Performance or Program Mode by pressing the Performance or Program Button and use the Keypad to call up the different sounds.
For details on how to select the different Performances and a Programs and what they are refer to page 15. Sounds - Performances and Programs.
If no sound is heard, check that you are transmitting on MIDI Channel 1 as the Supernova is set-up to receive on MIDI Channel 1 at the factory.

APPLICATIONS-BASIC
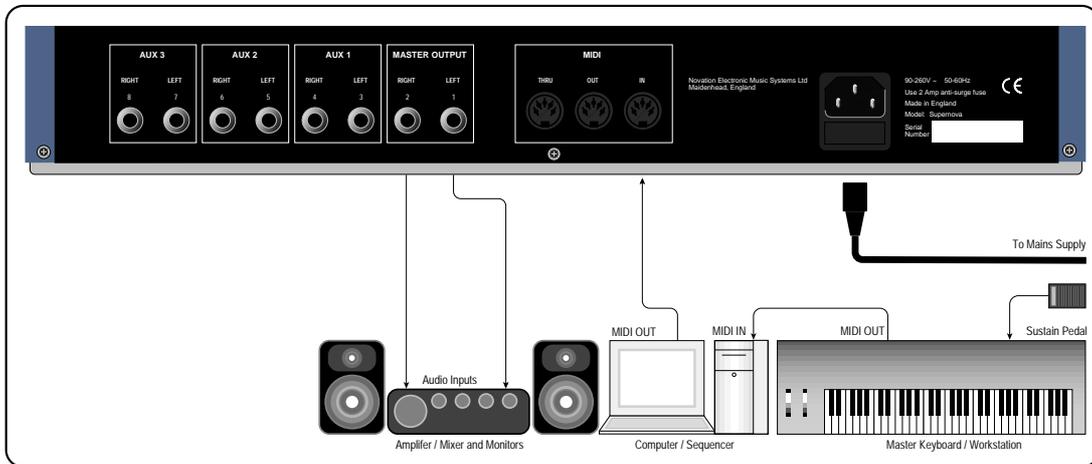
Above is a diagram of the basic way to set-up the Supernova. Normally the set-up would be as follows: If the Master Keyboard is a "Workstation" i.e. it has a synthesiser built in, turn "Local Off" or the equivalent in its MIDI set-up. (Refer to the Manufacturers Owners Manual on how to do this.) Turn 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 is set to receive on (If this is a Performance you can set the receive channels individually for each "Part" refer to page 18 for details, If this is a Program, Programs are played on the "Global MIDI Channel. Refer to page 34 for details.) playing the keyboard should play the Supernova through the Headphones / Monitors. Similarly "Tracks" in the Computer Software / Sequencer that are assigned to MIDI Channel(s) of the "Workstation" should make it produce sound. If not please refer to the Keyboard and Computer Software / Sequencer manufacturers Owners manuals for details on how to do this.

⚠️
NOTE:
This set-up does not allow the recording of knob movements on the Computer Software / Sequencer. This is because the MIDI output of the Supernova is not connected to the MIDI input of the Sequencer / Computer. To record knob movements in real-time refer to the advanced set-up on page 5.

⚠️
NOTE:
If there are additional Keyboards / Modules connected via MIDI as shown, this diagram does not include audio for the Keyboard / Module. The audio outputs of these devices must also be connected to the mixer.

To listen to the Factory Demo
Once the Supernova is connected as shown you can listen to the Factory Demonstration. To do this press the Global button (the Global button will flash) and then press the Demo/Finder button.

AUX 3   AUX 2   AUX 1   MASTER OUTPUT   MIDI

RIGHT LEFT   RIGHT LEFT   RIGHT LEFT   RIGHT LEFT   THRU OUT IN

8 7   6 5   4 3   2 1

Novation Electronic Music Systems Ltd
Maidenhead, England

90-260V ~   50-60Hz
Use 2 Amp anti-surge fuse
Made in England
Model: Supernova
Serial
Number

To Mains Supply

MIDI Merge Box   IN
OUT   IN2

MIDI OUT   MIDI IN   MIDI OUT   Sustain Pedal

Audio Inputs

Effects Processors   Mixing Console   Amplifer / Mixer and Monitors   Computer / Sequencer   Master Keyboard / Workstation

This is the advanced way to set up the Supernova. This set-up allows real-time recording of knob movements onto Computer Software / Sequencer as both the MIDI output of Supernova and the MIDI output of the keyboard are merged with an external (not supplied) MIDI Merge box.

If the Master Keyboard is a "Workstation" i.e. it has a synthesiser built in, set it to "Local Off" or the equivalent in its MIDI set-up. (Refer to the Manufacturers Owners Manual on how to do this.) 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 is set to receive on (If this is a Performance you can set the receive channels individually for each "Part" refer to page 18 for details, If this is a Program, Programs are played on the "Global MIDI Channel. Refer to page 34 for details.) playing the keyboard should play the Supernova through the Headphones / Monitors. Similarly "Tracks" in the Computer Software / Sequencer that are assigned to MIDI Channel(s) of the "Workstation" should make it produce sound. If not please refer to the Keyboard and Computer Software / Sequencer manufacturers owners manuals for details on how to do this.

As can be seen there are 4 stereo pairs of Output connected to the mixer. This allows individual sounds to be processed externally but the mixer and other outboard equipment. To direct "Parts" of a "Performance" to these separate outputs refer to page 80 for details. Additionally, Supernova 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.

Supernova 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 used by the Supernova can be found on page 87 to page 97.

ABOUT ANALOGUE SYNTHESIS

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 is perceived as sound. When dealing with musical sounds the vibrations or oscillations occur at regular intervals and are perceived as the "Pitch" or "Frequency" of a sound. The simplest musical sound is 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 loudest 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" 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.

Saw Waveform

Level / **Harmonics** (1 2 3 4 5 6 7)
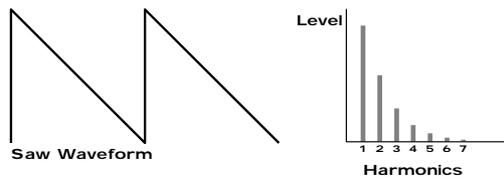
Sawtooth waves have all the harmonics of the fundamental frequency. As you can see, every harmonic has half the amplitude of the previous one. This sound is pleasing to the ear and is useful for basses, leads, and synthesising stringed instruments.

Square Waveform

Level / **Harmonics** (1 2 3 4 5 6 7)
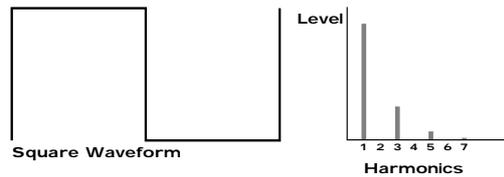
Square waves have only the odd harmonics present. These are at the same amplitudes as the odd harmonics in a saw wave. Square waves have a hollow / metallic sound to them and so are useful in creating unusual synthesiser sounds and oboe like sounds.

Noise Waveform

Level / **Harmonics** (1 2 3 4 5 6 7)
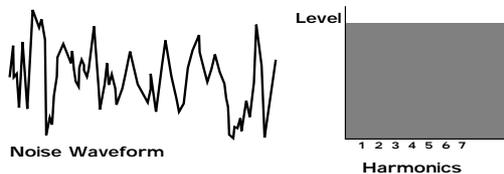
White noise has no fundamental and all harmonics are the same value. This wave can be used by itself to synthesise explosions or wind and when used in conjunction with other waveforms can be used to create the illusion of "Breath" in an instrument.

PWM (PULSE WIDTH MODULATION)

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:

Square Waveform

Pulse Waveform

Variable Width

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

Additionally there is a synthesis method called Oscillator sync. This takes two oscillators and uses 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.

Osc1(Master)

Osc1(Master)

Osc2 (Slave)

Osc2 (Slave)

Sync Waveform

Sync Waveform
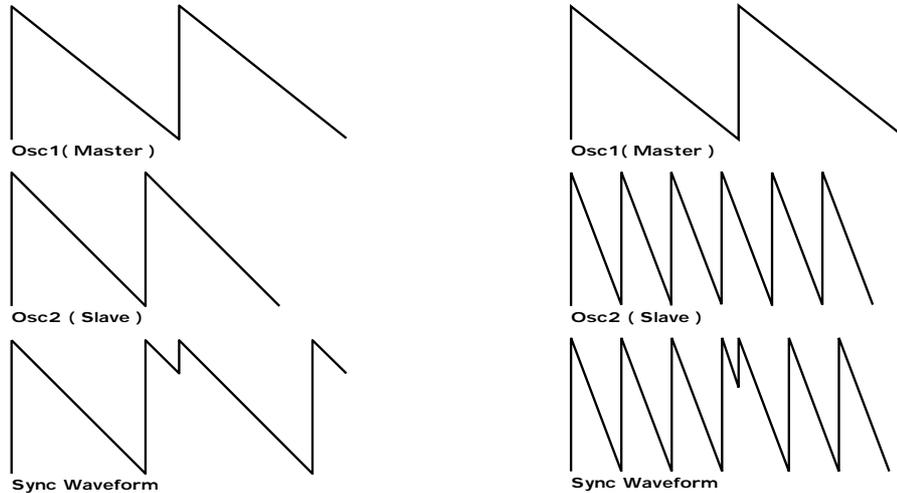
This Sync Effect creates very piercing and metallic sounds and are used a lot as lead sounds. It is worth noting that the Nova does not require 2 oscillators to create this effect. The Sync "Effect" is created by the Analogue Sound Modelling process without the need for a Sync Oscillator, there is merely a "Sync" parameter that creates the classic Sync Effect. This means that each of the 3 oscillators in one Nova "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. "Key Sync" allows the 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. As can be seen, 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.

Normal Saw Sync Waveform

Positive Skew on a Saw Sync Wave

Negative Skew on a Saw Sync Wave
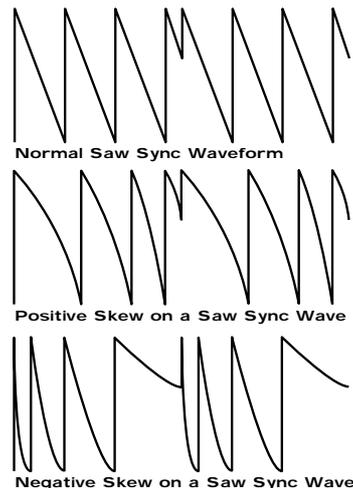
Skew also effects the standard Square and Saw waveforms. The effect is to "swash" the waveform at the end of its cycle with positive modulation and swashing the waveform at the beginning of the cycle. On a square wave, moderate amounts of this effect produce similar effects to Pulse width modulation except width modulation over 100% can be achieved allowing may cycles to be "swashed" into one

ABOUT ANALOGUE SYNTHESIS

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 Skew on standard Square and Saw waveforms. Note how the wave is swashed at one end and more than one cycle has been swashed into the original cycle.
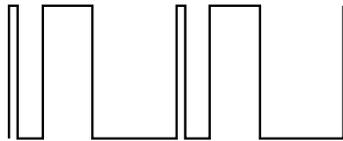
Negative Skew on a Square Wave
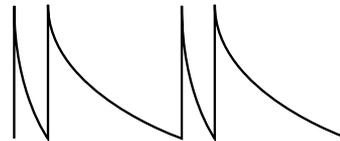
Negative Skew on a Saw Wave
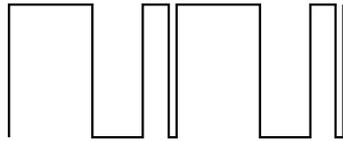
Positive Skew on a Square Wave

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 "Soften" parameter to smooth out the sharp edges of this wave form.As can be seen 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. The effect is to boost the treble content of these waves.

Sync Waveform
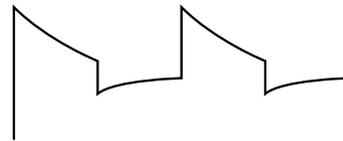
Formant Width on a Square Wave

Sync Formant Width Waveform

Formant Width on a Saw Wave

Both 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 you basic oscillator waveforms you can further modify then using a "Softening" process. This "Softening" rounds off all the "Sharp" edges of the waveform, thereby reducing its harmonic content. Below is an example of the "Soften" parameter on a Square wave.
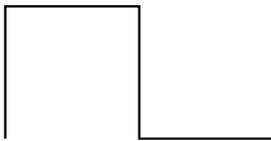
Square Waveform
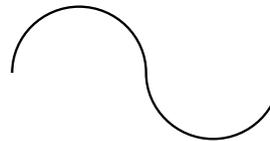
Softened Square Waveform

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

Level

Noise Waveform

1 2 3 4 5 6 7

Harmonics

Softened Noise Waveform

Level
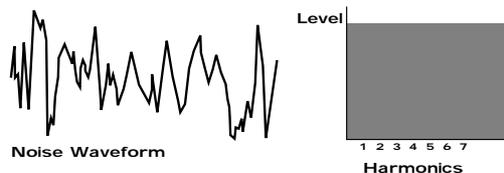
1 2 3 4 5 6 7
Harmonics
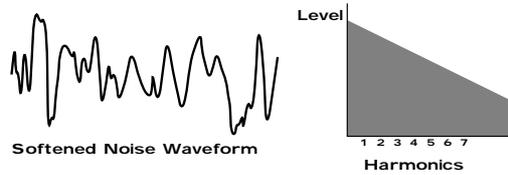
Finally there is Ring modulation. This uses two oscillators but instead of adding them together like in a mixer they are multiplied together. This is very similar to FM and produces the kind of effect shown below:

X

=

Osc1   Osc2   Ring Modulated Waveform
                                                Osc1 x Osc2
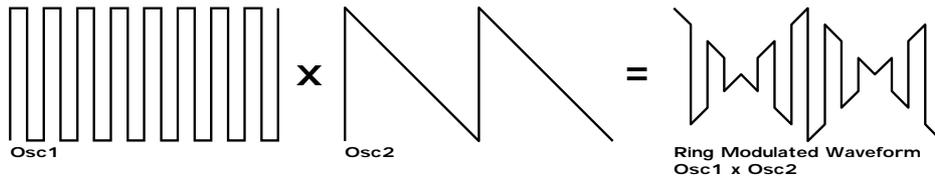
The Ring Mod effect creates metallic and bell like sounds and is used generally for lead sounds, but if used subtly can produce Electric Pianos etc and if used radically can produce unusual sound effects.

All these methods further enhance the basic Oscillator waveforms to include many more 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". Like the tone control on a stereo, the filter can alter how things sound but it cannot change the style of music being played on the record, and so 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 and you can "Mix" them together to provide more harmonically rich waveforms. Below is a diagram showing the signal path in the Nova and all the waveforms at various locations.

Signal Path Diagram

Osc 1	Osc 1 output (Sq wave Softened with +ve Skew)
Osc 2	Osc 2 output (Saw wave Synced with +ve Skew)
Osc 3	Osc 3 output (Sq wave Synced with +ve Skew & Formant width)
Noise Gen	Pink noise output

Osc 1*3 Ring Mod — Ring Mod output
Osc 2*3 Ring Mod — Ring Mod output

MIXER
Osc 1 level
Osc 1*3 level
Osc 2 level
Osc 2*3 level
Osc 3 level
Noise level

Mixer output

Filter — Filter output

Amp — Amp output

Env 2   Env 3   Env 1

LFO 1   LFO 2

As can be seen, different waveforms are being produced by different oscillators using different techniques. The Oscillators, Ring Modulators and the Noise Generator all being Mixed together and feed to the filter. The signal is then in turn fed to the Amplifier. Oscillator 1 is using a Square wave modulated by Skew and then Softened to create a sine-like wave except it has an extra bump in it. This produces a Whistle like sound. Oscillator 2 is using a Saw wave modulated by Skew and Sync producing a Harsh sound and Oscillator 3 is using a Square wave modulated by Skew and Formant width to produce a bright PWM like waveform. The 1*3 Ring modulator and the 2*3 Ring modulator are producing complex waveforms and these along with all the Oscillators and the Noise generator are fed to the Mixer.

FILTER - *tone*

There are several different types of filter. These are Low Pass Filter, High Pass Filter and Band Pass Filter.
The Low Pass Filter allows harmonics below a set frequency to pass through the filter. Hence the name Low Pass Filter.
The High Pass Filter allows harmonics above a set frequency to pass through the filter. Hence the name High Pass Filter. The 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. Below are the frequency response curves of the three types of filters.

ABOUT ANALOGUE SYNTHESIS

Volume Cutoff Frequency **Frequency**

Low Pass Filter Responce Curve

Volume Cutoff Frequency **Frequency**

High Pass Filter Responce Curve

Volume Cutoff Frequency **Frequency**
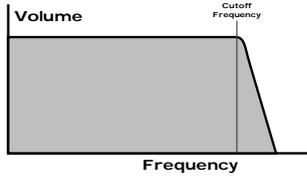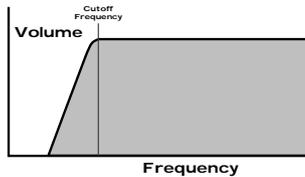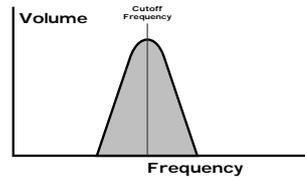
Band Pass Filter Responce Curve

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 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 you should select if you want the Cutoff Frequency to be more obvious. The slope is measured in db per Octave and below are the response curves of a Low Pass Filter with 24, 18 and 12 db per Octave slopes.

Volume Cutoff Frequency **Frequency**

24db/oct LPF Responce Curve

Volume Cutoff Frequency **Frequency**
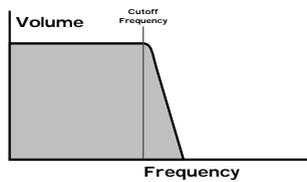
18db/oct LPF Responce Curve
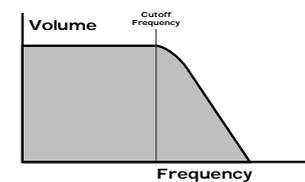
Volume Cutoff Frequency **Frequency**
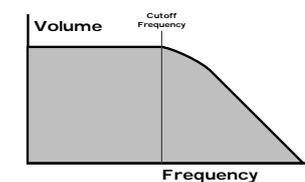
12db/oct LPF Responce Curve

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 both frequency response curves when resonance is applied in a the Filter.
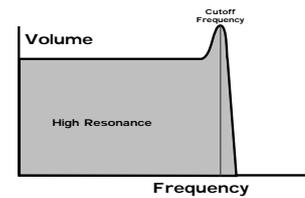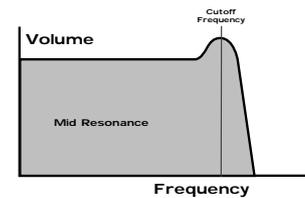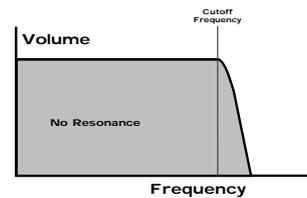
Volume Cutoff Frequency No Resonance **Frequency**

Volume Cutoff Frequency Mid Resonance **Frequency**

Volume Cutoff Frequency High Resonance **Frequency**

Low Pass Filter with Resonance Responce Curves

Volume Cutoff Frequency No Resonance **Frequency**

Volume Cutoff Frequency Mid Resonance **Frequency**

Volume Cutoff Frequency High Resonance **Frequency**

High Pass Filter with Resonance Responce Curves

Volume Cutoff Frequency No Resonance **Frequency**

Volume Cutoff Frequency Mid Resonance **Frequency**

Volume Cutoff Frequency **Frequency**
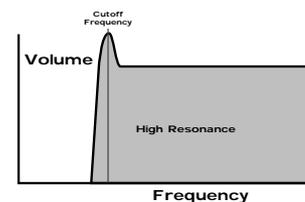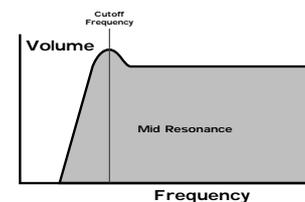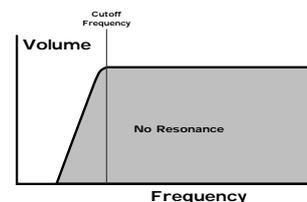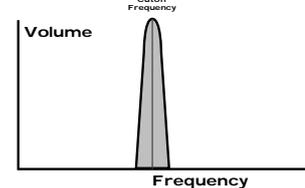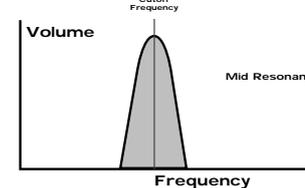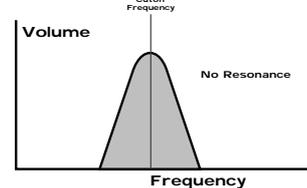
Band Pass Filter with Resonance Responce Curves

AMPLIFIER - *volume*

The last major process that makes up a sound is its "Volume". The "Volume" of sounds 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.

Volume

Key "On"   Key "Off"

Time
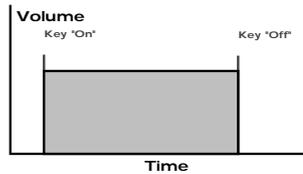
"Organ" Type Volume Responce Curve

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.

Volume

Key "On"   Key "Off"

Time
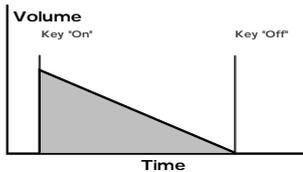
"Piano" Type Volume Responce Curve

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.

Volume

Key "On"   Key "Off"

Time
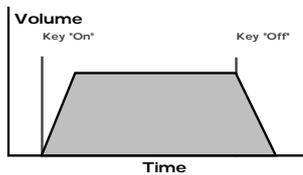
"String Section" Type Volume Responce Curve

The "String section" 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 curves are called "Envelopes" and in an Analogue synthesiser "Envelope Generators" are used to recreate them. Envelope Generators have 4 parameters which are used to adjust the shape of the envelope, see the diagram below

Volume

Key "On"   Key "Off"

Sustain level

Attack Time   Decay Time   Release Time
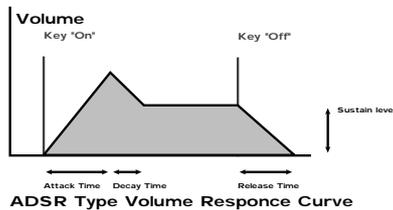
ADSR Type Volume Responce Curve

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)

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 and 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.

ABOUT ANALOGUE SYNTHESIS

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 and 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 features 3 Envelope generators and 2 LFOs (Low Frequency Oscillators) as Modulation "Sources". In addition to this Velocity, (The dynamics of your keyboard playing. i.e. ppp to fff) Aftertouch (Pressure on the keyboard while note(s) are held) and the Modulation Wheel are included in a 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. In the Supernova 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
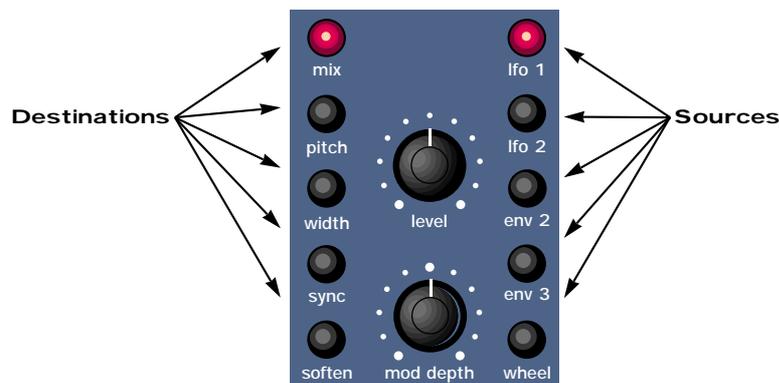
Simply by pressing the desired "Source" (the row of buttons on the right) and the desired "Destination" (the row of buttons on the left) and adjusting the "Level" or "Mod Depth" knobs allows the creation of complex modulation setups easily. On older modular Analogue Synthesisers this was done with "Patch" 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, "Soften" effect, Pulse Width Modulation & alter the Mix of all three oscillators independently plus open the Filter Cutoff Frequency, Reduce the Filter Resonance, add lots more Distortion and Delay & reduce the Chorus & Reverb, all by simply moving the Mod Wheel forward! With the Modulation Matrix relationships like this 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 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, all the sounds are generally passed through one set of effects.

In the Supernova, a block of 7 effects is part of the "Program" and can be considered to be part of the synthesis engine. These include Distortion, EQ, Reverb, Chorus/Flanger/Phaser, Delay, Panning and 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 Editing Effects section part of this manual on page 28 for details.

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. Don't worry about erasing the factory sounds in the memory. If you want, the factory sounds can be recalled. To do this refer to page 37 for details.

NOVATIONISH

A Translation of terms used throughout this manual.

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

Performance

This is the most complex type of sound Supernova can create. It is made up of 8 different sounds called Parts. These Parts can be layered or set up as splits to form the Performance. Performances are accessed by pressing the Performance button. 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.

Program

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

Voice

This is a measurement of polyphony. One voice is the equivalent of one note being played. One voice in the Supernova 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. 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 page 7 - About Analogue Synthesis.

Soften Effect

This is a parameter that controls the harmonic content of any waveform. Full Soften Effect on a waveform produces a near sine wave.
For more details refer page 8 - About Analogue Synthesis.

Analogue Sound Modelling™

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

NOTE:

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

There are two types of "Sounds" you can select in the Supernova. They are Programs and Performances.

PROGRAMS

When the Program Button is selected a single Program is recalled from memory. A Program is the most basic type of sound in the Supernova. 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 comes out of outputs 1 and 2. A Program uses the "Global MIDI Channel" to receive MIDI Data. A 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 the Supernova 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 when a Performance is selected. Because the Supernova 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 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 can run 8 Arpeggiators at once, all 8 "Parts" of a Performance have their own Arpeggiation.

Below is a simplified block diagram of a "Program" in the Supernova.
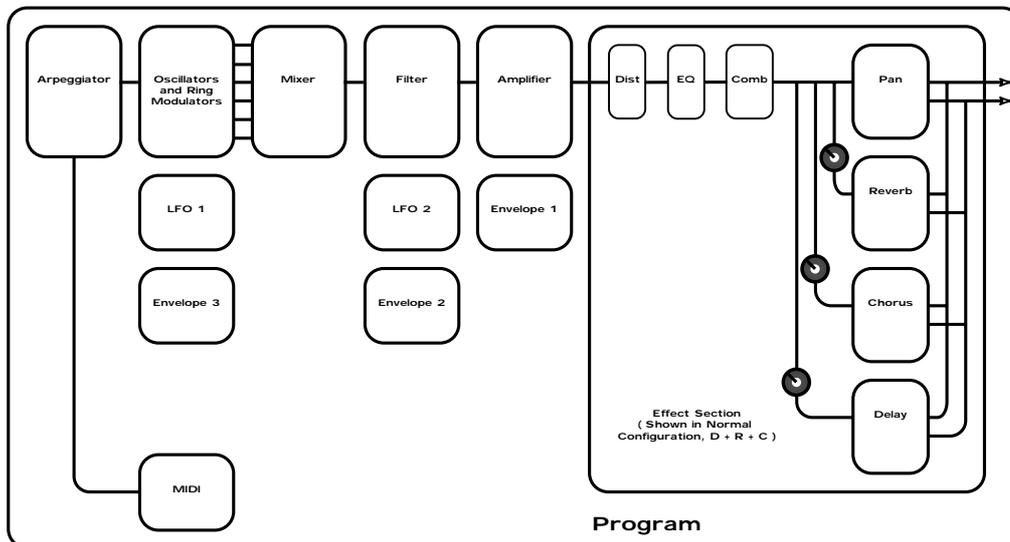
As can be seen, in a Program, incoming MIDI messages get processed by the Arpeggiator (If it is "On") and control the Oscillators. The signals produced are mixed together in the Mixer section and the resulting signal is passed on to the Filter. The signal then is passed to the Amplifier which then sends the signal into the effects section. This signal path is refected on the front panel of the Supernova 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 effect the sound produced. For a deeper understanding of the creation of sounds refer to the section "About Analogue Synthesis" on page 6 for details.

SOUNDS-PROGRAMS & PERFORMANCES

PERFORMANCES

A Performance is a more complex arrangement where several Programs can be used at once. This allows the creation of much more complex sounds that are either layered together to create a "Fatter" sound or a Split of 2 or more sounds on the keyboard. In fact a Performance consists of up to 8 "Parts". Each one of the parts can have its own Program & 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.
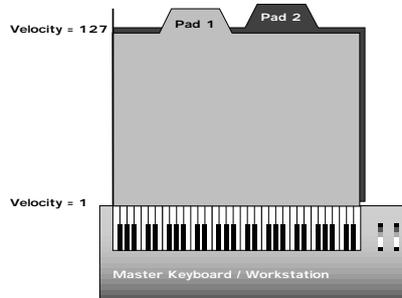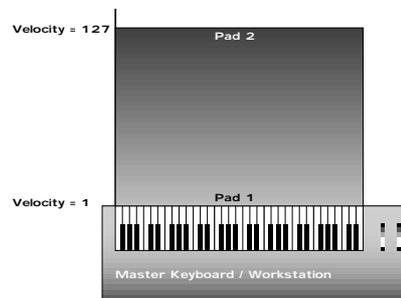
PERFORMANCE LAYER EXAMPLE

PERFORMANCE VELOCITY CROSSFADE EXAMPLE

As can be seen 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. As can be seen in the Velocity Crossfade example playing the keyboard softly will mean Pad 1 is heard, playing the keyboard hard and Pad 2 will be heard, playing the keyboard with medium feel will produce a mixture of Pad 1 and Pad 2.
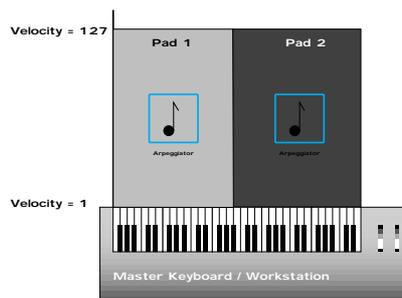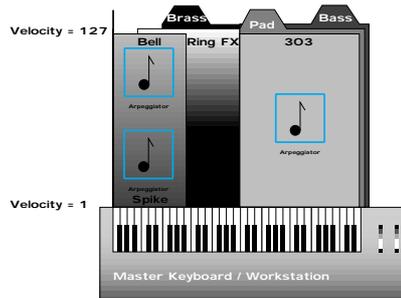
PERFORMANCE SPLIT EXAMPLE

PERFORMANCE MULTIPLE EXAMPLE

As can be seen 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 to this, it can be seen that different Arpeggiators are assigned to the Lower and Upper parts of the keyboard. Both of these can be played at the same time. As can be seen the Performance Multiple example is much more complex, a Performance can have 8 "Parts", in this case 7 have been used. The lower half of the keyboard is a 3 way layer of Programs. There is a Pad, a Bass and an Arpeggiated 303 sound. These all sound at the same time when a note is pressed within their range. A little further up the keyboard a Brass sound has been assigned and when the keyboard is struck hard a Ring mod FX is added. Further up the keyboard still there are 2 Arpeggiated sounds assigned. They are arranged in a Velocity crossfade so that playing the keyboard in this range softly produces a Spike sound with an Arpeggiation and 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 velocity.

Performance mode is also the mode in which you can use Supernova "Multitimbrally". This allows Supernova to play up to 8 different sounds simultaneously on 8 different MIDI Channels. Each "Part" of a Performance can have a separate MIDI channel setting. This is how you use the Supernova Multitimbrally.
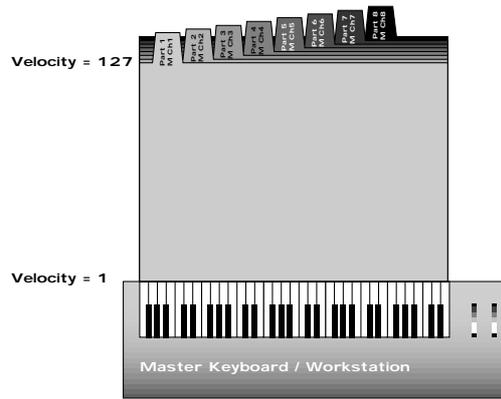
Keyboard Range

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" Ranges are set to cover the full range of the keyboard and Velocities 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 part 5 and 6 assigned to MIDI channel 5 with key ranges set for parts 5 and 6 so that a split is created and parts 7 and 8 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. 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 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 all 8 Arpeggiators.

Below is a simplified block diagram of a "Performance" in the Supernova.
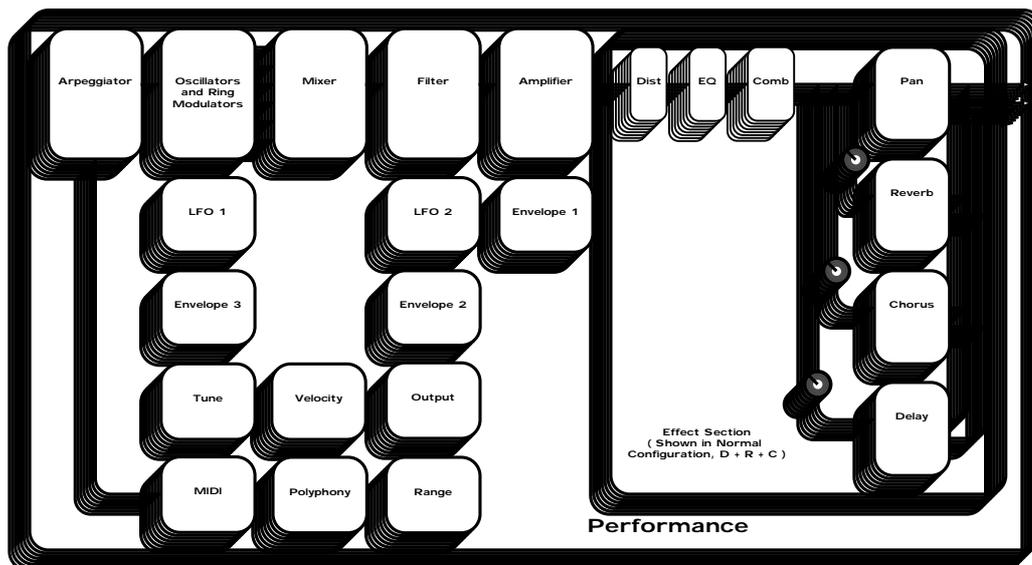
As can be seen a Performance is literally a duplication of 8 Programs, including the Effects Sections and the Arpeggiators.

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MULTITIMBRAL USE

Tips on Multitimbral setups

The Multi Mode for Supernova is "Performance" mode. To make a multitimbral setup follow this procedure.
Make sure the Supernova is in the Performance Mode by pressing the Performance Button. It will light. We suggest that you use Performance A 126 "Multi Ch 1-8" of the Performances as a starting point as this is set up specifically for Multitimbral use and is a good starting template.

To assign a Bass sound to MIDI Channel 1 for example, press the "Part 1" button and the display will change to indicate the current sound assigned to that Part. (In the Factory Programs this is Bank A Program number A000 "Sintillator") Now use the Bank & Prog buttons to select the desired sound. For example Bank A Prog Number 002 "Softena Bass". In Perf A126, Part 1 is assigned to MIDI channel 1, Part 2 is assigned to MIDI channel 2 etc. etc. (If you wish to alter the MIDI channel setting press the "MIDI" button and set the MIDI Channel to whatever channel required). You should now hear the Bass sound when MIDI channel 1 is played into the Supernova. If you wish to assign the Effects from the Program to the Part then press the "Output" button and set the parameter "Effects used" to Program.

To assign a String sound to MIDI Channel 2 for example, press the "Part 2" button and the display will change to indicate the current sound assigned to that Part. (In the Factory Programs this is Bank A Program number A000 "Sintillator") Now use the Bank & Prog buttons to select the desired sound. For example Bank A Prog Number 012 "Stringz". In Perf A126, Part 1 is assigned to MIDI channel 1, Part 2 is assigned to MIDI channel 2 etc. etc. (If you wish to alter the MIDI channel setting press the "MIDI" button and set the MIDI Channel to whatever channel required) You should now hear the String sound when MIDI channel 2 is played into the Supernova. If you wish to assign the Effects from the Program to the Part then press the "Output" button and set the parameter "Effects used" to Program.

To assign a Drum sound to MIDI Channel 3 for example, press the "Part 3" button and the display will change to indicate the current sound assigned to that Part. (In the Factory Programs this is Bank A Program number A000 "Sintillator") Now use the Bank & Prog buttons to select the desired sound. For example Bank A Prog Number 006 "Garage Kick M-Wh". In Perf A126, Part 1 is assigned to MIDI channel 1, Part 2 is assigned to MIDI channel 2, Part 3 is assigned to MIDI channel 3 etc. etc. (If you wish to alter the MIDI channel setting press the "MIDI" button and set the MIDI Channel to whatever channel required) You should now hear the Drum sound when MIDI channel 3 is played into the Supernova. If you wish to assign the Effects from the Program to the Part then press the "Output" button and set the parameter "Effects used" to Program.

The other Parts are assigned in a similar way and as can be seen 8 Parts can be used at once.
If 2 or more Parts are assigned to the same MIDI Channel all these Parts will sound at once when that MIDI channel is received by Supernova.

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 Program, 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. The Part can be optimised so that when Program changes are received on that Part the Supernova will keep the settings you have made in the Performance and ignore the 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 Parts Program effects are copied into the Part effects buffer.

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. 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 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 Part's Arpeggiator will control all 8 Arpeggiators. 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 Poly - The Polyphony parameter in the Polyphony menu is set to "Mono".
The Part is polyphonic and should be Mono - 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.

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- 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)".

SELECTING PROGRAMS & PERFORMANCES

There are a lot of sounds in Supernova and they are arranged into "Banks" of 128 sounds. In the 20 voice Supernova there are 2 Banks of 128 Performances (256 Performances in total) and 4 Banks of 128 Programs. (512 Programs in total) In the 44 voice Supernova there are 4 Banks of 128 Performances (512 Performances in total) and 8 Banks of 128 Programs. (1024 Programs in total) Pressing the Program button will activate the Program Mode and the display will show:

```
┌─────────────────────────────────┐
│  Sintillator M-Wh               │
│                                 │
│             Prog A000           │
└─────────────────────────────────┘
```

As can be seen, it is a Program because the Program button is lit and the bottom line of the display is indicating "Prog" followed by the Bank and number of the sound. The top line is displaying the name of the sound.

Pressing the Bank button and the display changes to:

```
┌─────────────────────────────────┐
│  Filtered H2O                   │
│                                 │
│             Prog B000           │
└─────────────────────────────────┘
```
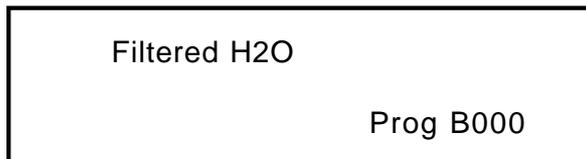
This indicates that the B Bank has been selected. If the number you wish is different to the one currently selected press three digits on the keypad to enter a number or use the +1 and -1 buttons to enter the desired value. i.e. press 1,2 and 3 and the display shows:

```
┌─────────────────────────────────┐
│  TinCanWire M-Wh                │
│                                 │
│            Prog B123            │
└─────────────────────────────────┘
```
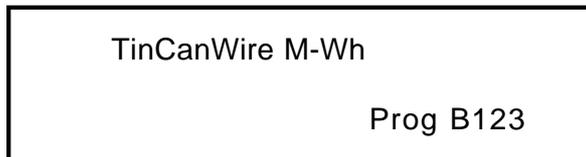
And the sound has changed.

Pressing the Bank button another 3 times will bring Supernova back to the A Bank. (on the 20 voice model, an additional 4 presses are required on the 44 voice model)

Pushing the -1 and +1 buttons on the keypad will take the Supernova back one Program or advance one Program.

Selecting Performances is done in exactly the same way.

When sounds are selected from thr 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 from the Master keyboard or 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 97 outlining all the different Bank numbers for selecting the different modes via MIDI.

EDITING & WRITING ARPEGGIO PATTERNS

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 a Arpeggio pattern that 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 Arp On/Off button. Now assign a "User" pattern to the arpeggiator with the "Pattern Bank" Parameter in page 2 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 master keyboard and single notes are played from that chord sequentially at a speed determined by the "Speed" knob and Polyphonic, 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 2 of the Arpeggiator Menu button pages. Select a pattern between 000 and 063 (these are Monophonic) and 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 5 of the Arpeggiator Menu button pages. Go to the Global Mode by pressing the Global Button. Go to page 7 and switch the Memory Protect parameter to Off. Go to page 15 and 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, 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 16th's 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 "Pattern Steps" parameter 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:


```
C   E   G   A#
(1) (2) (3) (4)
```
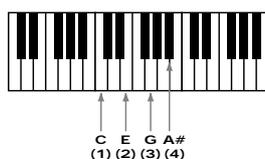
As can be seen there are 4 notes being played C, E, G and A# creating a C 7 Chord. Supernova scans the keyboard and "labels" each of the played notes with a note number, starting with the lowest (if the "Fill in" parameter is set to "Off-Up" or "On-Up") . In this case C = 1, E = 2, G = 3 and A# = 4. If a D was played instead of the E the numbering would be as follows C = 1, D = 2, G = 3 and A# = 4. If a D was played instead of the C the numbering would be as follows D = 1, E = 2, G = 3 and A# = 4. It is important to understand this relationship to understand the next step.

As you remember there are 8 steps in the assigned pattern. You can edit each step individually by selecting the step you wish to edit with the "Step" parameter on Page 9 and altering the "Note" number assigned to that step on page 10 with the "Note" parameter. (Note that a "Gate time" of "Norm" must be assigned to the currently selected step on page 9 for the "Note" parameter on page 10 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. As can be seen 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 not sound. 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.

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

⚠️
NOTE:

In Monophonic patterns there is a limit of 12 different note values that 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 64 steps available it can be seen that there are many things possible. There are 2 other parameters associated with programming Monophonic patterns. On page 16 of Global you can assign velocity values for each of the steps and on page 15 of Global 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 Time" parameter in page 6 of the Arpeggiator Menu applies. When the "Gate" parameter is set to "Tie" the note is "Tied" to the note in the previous 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 and finally when the "Gate" parameter is set to "Glide" the Portamento is engaged when the selected step switches to the next step and 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.

Patterns do not have to be entered in step time. Patterns can be entered in via a MIDI keyboard Note & Velocity settings for each step can be easily entered and using a sustain pedal also allows gate characteristics to be entered. Refer to the "Arp pattern editing" Parameter on page 39 for details.

⚠ NOTE:

The Constant pitch parameter does not apply to Monophonic patterns and in this mode will do nothing if set to On or Off.

Polyphonic patterns

To make a Polyphonic pattern select a "User" pattern on page 2 of the Arpeggiator Menu button pages Select a pattern between 064 and 127 (these are Polyphonic) and make a note of the pattern number you have selected. Polyphonic patterns differ in the sense that all the notes played sound at once. Initially this can be thought of as a kind of "Gater". Instead is 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. Here is an example, the notes being played are shown below:

C   E   G   A#
(1) (2) (3) (4)
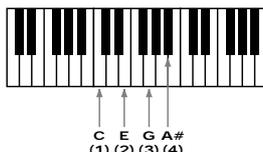
As can be seen this is a C7 chord. Below is an example Polyphonic Pattern, again of 8 steps in length:

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.

As can be seen, negative as well as positive values can be entered into the "Note" parameter in polyphonic patterns. Again when you consider that there are 64 steps available in a pattern there are many things possible. Like the Monophonic patterns, there are 2 other parameters associated with programming Polyphonic patterns. They perform the same functions in Polyphonic patterns or Monophonic patterns. On page 16 of Global you can assign velocity values for each of the steps and on page 15 of Global 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 Time" parameter in page 6 of the Arpeggiator Menu applies. When the "Gate" parameter is set to "Tie" the note is "Tied" to the note in the previous 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 and finally when the "Gate" parameter is set to "Glide" the Portamento is engaged when the selected step switches to the next step and then the Portamento is switched off. This is great for creating those TB303 type patterns with slides.

⚠ NOTE:

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. 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, in other words it is not possible to have arpeggiators running on different clock speeds, if you wish the arpeggiators to run at differing speeds set the "Sync" parameter in the Arpeggiators to differing values.

EDITING & WRITING PROGRAMS

Editing Programs is easy on the Supernova as virtually all the controls needed to create a sound are on the front panel.
First make sure that Supernova 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 in a "Menu"). The display shows the first rotary to be adjusted, of course many rotary controls can be adjusted at once but the display only shows the last.

Writing Programs into Memory

⚠️
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 can be recalled from ROM see page 37 for details

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

```
Write Prog A000 to A000 ?

Sintillator M-Wh
```

As can be seen, the top line of the display shows the current Program location and the Programs destination. The bottom line displays the Programs name, in this case Sintillator M-Wh.

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

```
Write Prog A000 to B000 ?

Filtered H20
```

As can be seen Bank B has now been selected. A further 3 digit entry is required to determine the location of the sound within this Bank if different from the current selection. Press 1,2 & 3 on the keypad and the display shows:

```
Write Prog A000 to B123

TinCanWire  M-Wh
```

As can be seen 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 and the display shows:

```
    Name Prog B002

    'TinCanWire  M-Wh            '
```

The name of the Program can be altered when in this mode. As can be seen in the display the first character of the Programs name has a cursor under it. Using the higher Fast Data knob or nudge buttons you can scroll through the character set for that character. Using the lower Fast Data knob or nudge buttons you can move the cursor horizontally.

⚠ NOTE:

Pressing the Page Up button while in this mode inserts a space at the cursor position and pressing Page Down while in this mode deletes the character to the right of the cursor.

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

```
    Category -        Hard Lead

    Write to store
```

As can be seen, the Supernova is asking confirmation that you wish to write over the destination Program, replacing it with the newly edited sound. Also 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 Fast Data knob or nudge buttons. There are 20 categories. Refer to page 32 for details on the categories.
To complete the operation, press the Write button to confirm and the display shows:

```
    Program B123

    Saved!
```

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

```
    TinCanWire  M-Wh

                  Prog B123
```

⚠ NOTE:

At any stage during the write procedure pressing the Program button will exit the write procedure and return the Display to showing the Program name and location.

⚠ NOTE:

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

EDITING & WRITING PERFORMANCES

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

```
Blaster Master

              Perf A000
```
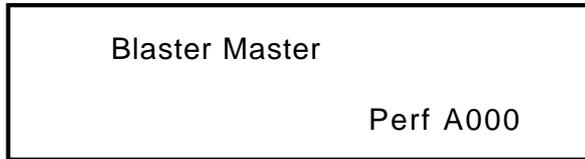
Performances are made up of 8 Parts. The next thing to do is select the "Part" of the Performance you wish to edit. To do this press the appropriate Part button in the Part edit section. In the above example pressing Part 1 button the display will show:

```
DigiTrowserCough

              Prog A030
```

The display is showing the Program currently assigned to the selected Part. Any Program from any one of the Program Banks 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 Part of the Performance.

When in this mode, pressing the Tune, Velocity, Output, MIDI, Polyphony and Range 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 it 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 and the display will show:

```
Sustain          Enable

Midi channel     Global
```

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

```
Sustain          Disable

MIDI Channel         8
```

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

```
Blaster Master!

              Perf A000
```
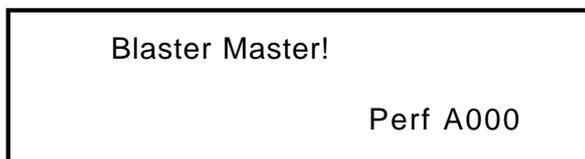
Alternatively, pressing the flashing Part button will return the display to the Performance (If no part button had been selected) or the display will show the Program assigned to the currently selected part. (If a Part button had been selected)

For details on the parameters in the "Tune", "Velocity", "Output", "MIDI", "Polyphony", and "Range" menus. For details refer to the "Part Edit Section" of this manual on page 79.

⚠️
NOTE:

Pressing any of the Part buttons when in Performance mode not only makes the display show the 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 and NRPNs on 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.

⚠️
NOTE:

At any stage during editing a Performance, pressing the Performance button will exit the "Part" display and return the Display 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 during live performance in a Multitimbral Performance. This is done by simply pressing the assigned (lit) part button again and the part button will flash indicating that it is muted. The display will change to:

```
DigiTrowserCough

(Muted)          Prog A030
```
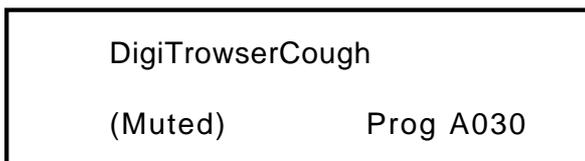
As can be seen, the part is Muted. Pressing the part button again and the part will become active again, the part button will stop flashing and remain lit and the display will change to:

```
DigiTrowserCough

Part un-muted
```
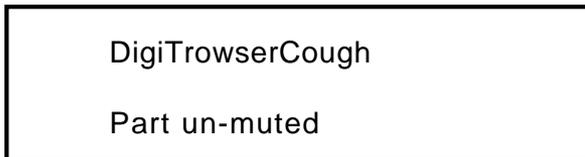
As can be seen, the part is now re-activated. The display remains like this for a few moments and then returns to:

```
DigiTrowserCough

                 Prog A030
```

⚠️
NOTE:

To assign no Program to a Part (Off) press 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 and you cannot assign different Performances to different MIDI channels and expect to get Multiple Performances.

EDITING & WRITING 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, Program, Number and name. To return to the Performance Bank, Number and Name press the Performance button.

Writing Performances into Memory

⚠️ **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 can be recalled from ROM see page NN for details

Once a Performance has been created, you can store the Performance in any of the 256 Performances in the 20 voice model or 512 Performances in the 44 voice model. To do so press the Write button. The display shows:

```
Write Perf A000 to A000 ?

Blaster Master!
```

As can be seen, the top line of the display shows the current Performance location and the Performance's destination. The bottom line displays the Performance's name, in this case Blaster Master!

While in this mode, it is possible to change the destination of the new sound using the Bank and Keypad buttons. For example, pressing 001 on the keypad in the above example and the display will show:

```
Write Perf A000 to A001 ?

Pad on Spec
```

As can be seen, 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 and the display shows:

```
Name Perf A001

'Blaster Master!                    '
```

The name of the Performance can be altered when in this mode. As can be seen in the display the first character of the Performances name has a cursor under it. Using the higher Fast Data knob and nudge buttons you can scroll through the character set for that character. Using the lower Fast Data knob and nudge buttons or nudge buttons you can move the cursor horizontally.

⚠️ **NOTE:**

Pressing the Page Up button while in this mode inserts a space at the cursor position and pressing Page Down while in this mode deletes the character to the right of the cursor.

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

```
Update progs ?        No

Write to continue
```

As can be seen the Supernova 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 Supernova 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 Performance only is written into memory. 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. 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 Parts Effects used parameter in the Output menu is set to Part) can be selectively saved one by one. Supernova asks for confirmation to save each Part individually, showing the Part number and the Program number. Individual Parts can be left unsaved (Skipped) by turning the lower Fast Data knob and nudge buttons while in this mode.

⚠️
NOTE:

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 the Compare mode is active.

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

```
Performance A001

Saved!
```

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

⚠️
NOTE:

At any stage during the write procedure pressing the Performance button will exit the write procedure and return the Display to showing the Performance name and location.

EFFECTS OVERVIEW

Supernova'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 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 Chorus or a Flanger or a Phaser), Delay and 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.

Saw Waveform

Distorted Saw Waveform

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, as can be seen, the maximum level that comes out of the distortion effect is relatively constant so there is a definite compression effect 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.

EQ.

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 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.

Comb Filter Frequency Responce at a low "Freqency" setting

Comb Filter Frequency Responce at a high "Freqency" setting
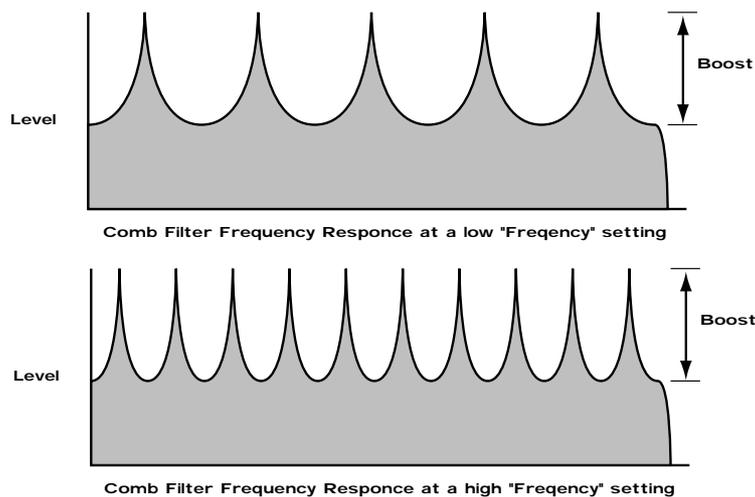
As can be seen there are many peaks and they look like a "comb" hence the name Comb Filter. There are two parameters associated with this effect. Comb frequency controls the "frequencies" at which the peaks occur and Comb boost controls how high the peaks are. The effect is to alter the timbre of the 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.
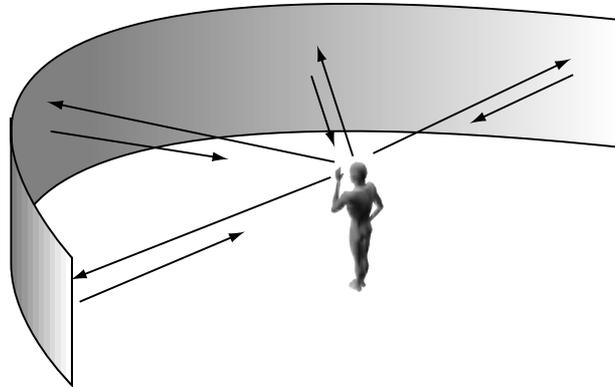
When the Reverb button is pressed, the knob in the effect section controls how much Reverb there is. Anticlockwise there is little effect This can be thought of as being very close to the sound source within the hall. Fully clockwise there is lots and this can be thought of as being at the other end 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 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 so as a sound "bounces" around the hall , giving you your Reverb effect. With each bounce the sound looses 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 Quad Chorus or a Chorus / Flanger or a Phaser.

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 a 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 and 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.

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 effect's LFO produces. Again large amounts of modulation from this parameter will produce a more noticeable effect. Generally moderate amounts are used but you will find that bass sounds benefit with 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 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 uses. The distance from the walls determines the delay time and as can be seen 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".
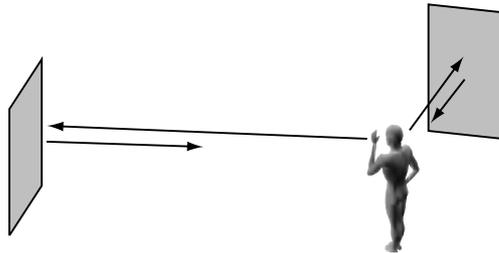
Delay Time. This parameter controls the amount of time it takes for the delayed signal to be heard after the original signal. In the example given above this is the same effect as the distance you are from the wall. A large distance produces a long delay and a short distance produces a short delay. In the Supernova, 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 looses 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.

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 0, both delays appear in the middle of the stereo field. (Mono) 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 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) 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.

Speed determines the speed of the Autopan and Tremolo effects.

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.

MASTER VOLUME SECTION

Power On/Off - Switch

This switch turns the mains power supply in the Supernova on and off.

⚠️ **NOTE:**

Edited and newly created Programs and Performances will be lost if the Supernova is switched off. Be sure to save edited Programs and Performances to memory before switching Supernova off. Refer to page 24 and 26 for details of writing Programs and Performances into memory.

Volume - Knob

This knob adjusts the overall output of the Supernova on the Left & 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, 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 Level knob in the Part Edit Section.

Headphones - Socket

Use this 1/4 inch Jack Socket to monitor the Left and Right output of the Supernova via headphones. This output will drive any type of headphones.

MASTER VOLUME SECTION / KEYPAD & MODE SECTION

⚠️ **NOTE:**

The Supernova's headphone amplifier will deliver a louder signal if low impedance headhones are used. i.e. 8 ohms impedance. Be aware that the sound pressure level obtainable with low impedance headphones could damage hearing.

KEYPAD & MODE SECTION
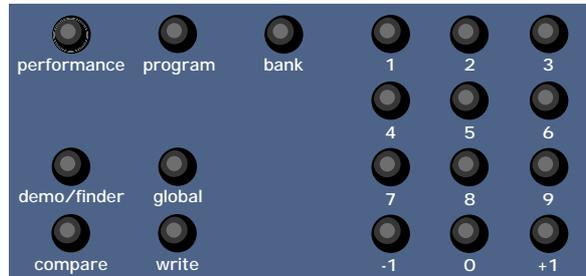
This is where you select the various operating modes of the Supernova, initiate the Demo/Finder function, Write and Compare Performances and Programs.

Compare - Button

This button is used to activate the Compare function. When editing a Program, it is often convenient to monitor the original 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), 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 it's 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 is selected, the Program and/or Performance buttons will flash indicating that the sound currently being produced by the Supernova is the original still stored in memory.

Demo/Finder - Button

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

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

Each Performance and Program in Supernova has a "Category" assigned to it. The Finder uses categories to find similar sounds. To use the Finder, press the Demo / Finder button and a small sequence will play. There are 20 different sequences, one for each of the cate-

gories. The Demos will play once then stop. To hear the demo again press the Demo/Finder button again. The display shows:

```
┌─────────────────────────────────────────┐
│                                           │
│     Category -              SFX           │
│                                           │
│     A000  Sintillator M-Wh                │
│                                           │
└─────────────────────────────────────────┘
```
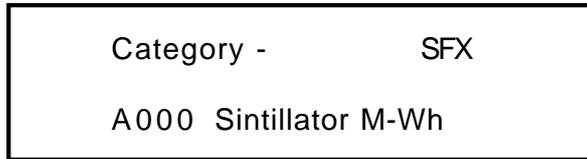
As can be seen the higher parameter is "Category". In this case with a value of SFX.
This parameter determines which category of sound you wish to find. Use the higher Fast Data knob and nudge buttons to adjust the value of this parameter. The range of this parameter is Bass, Hard Bass, Soft Lead, Hard Lead, Porta Lead, Arpeggio, Motion, Bell, Pad, Strings, Keyboard, SFX, Drums, Pianos, Organ and User 1 to User 5.
As can be seen the Lower parameter is a Program in the selected category. In this case with a value of A000 Sintillator M-Wh.
Use the lower nudge buttons to select the sounds.

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

Compare - Button

This button is used to activate the Compare function. When editing a Program, it is often convenient to monitor the original 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), 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 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 is the original still stored in memory.

Global - Button

The Global Mode has all the parameters that affect the "Global" operation of Supernova. This mode 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 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 Mode there are 16 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

KEYPAD & MODE SECTION

Page 1 looks like so:

```
Master tune              +00

Global MIDI chan          1
```

As can be seen the higher parameter is "Master tune". In this case with a value of +00.
This parameter determines Global tuning of Supernova. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is -64 to +63 cents. This parameter is memorised as Global.

⚠️ **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.

As can be seen 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. This Channel is used when in Program Mode and for transmission and reception of Sysex data. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 1 to 16.
This parameter is memorised as Global.

⚠️ **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:

```
Sysex transmission -

       Single program
```

As can be seen the higher parameter is "Sysex transmission". In this case with a value of Single Program.
This parameter selects the type of data to be dumped via MIDI. Use the lower Fast Data knob to adjust this parameter. Whatever value is set on the lower line of the display is transmitted when the MIDI button is pressed in the Part edit section. 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, Total data, Total data 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 if the expansion card is fitted) 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 if the expansion card is fitted) Performance bank A, Performance bank B, (Performance bank C & Performance bank D if the expansion card is fitted) Prog bank A request, Prog bank B request, Prog bank C request, Prog bank D request, (Prog bank E request, Prog bank F request, Prog bank G request, Prog bank H request if the expansion card is fitted) Performance bank A request, Performance banl B request & (Performance bank C request, Performance bank D request if the expansion card is fitted) This parameter is memorised as Global.

⚠️ **NOTE:**

The Supernova 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:

```
┌─────────────────────────────────────────┐
│                                          │
│     Sysex Reception -                    │
│                                          │
│     Normal (Rx as sent)                  │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "Sysex Reception". In this case with a value of Normal (Rx as sent).
This parameter determines if incoming Sysex data will be received and if it is a bank dump, which bank it will be written in. Use the lower Fast Data knob to adjust this parameter. If this parameter is set to "Normal (Rx as sent) the system exclusive is enabled and any incoming bank dumps will be stored in the same location as they were sent. 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. (This can be useful when recieving a dump from an expanded Supernova with extra Program / Performance banks to an unexpaned Supernova) If this parameter is set to "Disabled" no sysex messages will be recognised. 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 if the expansion card is fitted) All perfs to bank A, All perfs to bank B & (All perfs to bank C, All perfs to bank D if the expansion card is fitted) This parameter is memorised as Global.

⚠️
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:

```
┌─────────────────────────────────────────┐
│                                          │
│     MIDI clock            Int            │
│                                          │
│     Breath control        Off            │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "MIDI clock". In this case with a value of Int.
This parameter determines If the Supernova is syncing to Internal or External MIDI Clock. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is On and Off. This parameter is memorised as Global.

⚠️
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.

As can be seen the lower parameter is "Breath control". In this case with a value of Off.
This parameter determines if the Supernova re-maps incoming Breath Control MIDI data (CC no 2) into Mod wheel data (CC no 1), Aftertouch data or any controller from 3 to 119 and Pitchbend data . Use the Lower Fast Data knob and nudge buttons to adjust this parameter. This allows incoming Breath Control data to manipulate most of Supernova's key parameters directly. The range of this parameter is Off, MW, A/T, CC3 to 119, Bend, Bend+, Bend-, NRPN75 to NRPN77, NRPN95 & NRPN96. This parameter is memorised as Global.

⚠️
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            │
│                                          │
└─────────────────────────────────────────┘
```

KEYPAD & MODE SECTION

As can be seen 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 Supernova. Use the higher Fast Data knob and nudge buttons to adjust this parameter. If this is set to Absolute then the destination (the parameter assigned with the "Breath control" parameter on Page 6 of global mode) 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. If the destination was Cutoff Frequency and the currently assigned programs Cutoff Frequency was assigned to a level of 64, in Absolute mode when a breath control message with a value of 1 was received the Cutoff Frequency would change to 1. 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+ & Mod-. This parameter is memorised as Global.

⚠️ 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.

As can be seen the lower parameter is "Breath sensing". In this case with a value of Norm.

This parameter determines how sensitive Supernova 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 Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is -5 to -1, Norm & +1 to +5. This parameter is memorised as Global.

Page 6 looks like so:

```
┌─────────────────────────────────┐
│  Arp trans chan          2      │
│                                 │
│  Arp trans ref           C3     │
└─────────────────────────────────┘
```

As can be seen the higher parameter is "Arp trans chan". In this case with a value of 2.

This parameter determines which MIDI channel the Arpeggiator uses to perform the Arpeggiator Realtime Transpose function. Use the higher Fast Data knob and nudge buttons to adjust this parameter. If this is set to 2 and if a Program or Performance is set up to play on MIDI Channel 1 and the Realtime Transpose parameter in the Arp Menu is set to "On" then you can transpose the whole arpeggiation by playing a note on the "Realtime Transpose Channel" in this case channel 2. The amount of transposition depends on the note value set in the "Arp Reference Note" Parameter relative to the note on received on the Transpose channel. The range of this parameter is Off, 1 to 16.

⚠️ 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.

As can be seen the lower parameter is "Arp trans ref". In this case with a value of C3.

This parameter determines the reference note as described above for the Arpeggiator Realtime Transpose function. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is C-2 to G8.

⚠️ 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       │
└─────────────────────────────────┘
```

As can be seen 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 alteration to the sound. This is the best way to use the Supernova with a sequencer as all the Channel re - mapping features in sequencers can be taken fully advantage of. This parameter is memorised as Global.

⚠ **NOTE:**

If there is no MIDI feedback loop connected at all (a sequencer with MIDI out of the Supernova connected to MIDI in on the sequencer and MIDI out of the sequencer connected to MIDI in on the Supernova for example) and local control is set to off, the knobs and buttons on the front panel will appear to do nothing although changing parameters values may be displayed on the display.

⚠ **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 Parts current mute status.

As can be seen 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 Fast Data knob and nudge buttons to adjust this parameter. In the "On" position, Programs, Performances, Patterns or Global Data cannot be written into memory. In the "Off" position, Programs, Performances, Patterns or Global Data can be written into memory. This parameter is memorised as Global.

Page 8 looks like so:

```
Restore from ROM:


                One program
```

⚠ **NOTE:**
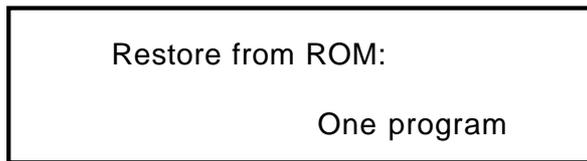
Pressing the Write button while this page is displayed starts the Restore procedure.

As can be seen the parameter is "Restore from ROM:". In this case with a value of One program.

This parameter allows the factory Programs, Performances and Global data and Arp Pattern data to be restored to the Factory settings. Use the lower Fast Data knob and nudge buttons to adjust this parameter. Whatever selection is made with the lower Fast Data knob and nudge buttons 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 Supernova asks for confirmation which is set with the lower Fast Data knob and nudge buttons, if you set this to "Yes" and press the "Write" button again all the factory setting will be restored. If however "One prog" was selected Supernova asks which Program you want to restore, which is selected using the lower Fast Data knob and nudge buttons, and then pressing the "Write" button again Supernova asks for the location (Program bank and number) that you wish to store the program in. The range of this parameter is One prog, One perf, One patt, All progs, All perfs, All patts, Prg Ch table, Globals, All data, Prog bank A, Prog bank B, Prog bank C, Prog bank D, Perf bank A & Perf bank B.

Page 9 looks like so:

```
Vel sensing          Hard


```
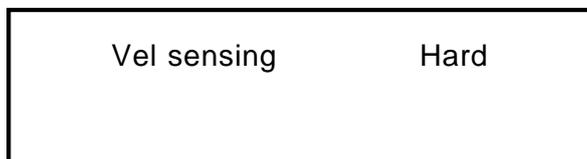
As can be seen the parameter is "Vel sensing". In this case with a value of Hard.

This parameter alters the velocity curve of the Supernova. Use the higher Fast Data knob and nudge buttons to adjust this parameter. This is global and applies to all 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 as Global.

KEYPAD & MODE SECTION

Page 10 looks like so:

```
┌─────────────────────────────────────┐
│                                     │
│   Incoming control                  │
│                                     │
│   change            Enabled         │
│                                     │
└─────────────────────────────────────┘
```

As can be seen the parameter is "Incoming control change". In this case with a value of Enabled.
This parameter determines if the Supernova responds to incoming MIDI controller messages or not. Use the higher Fast Data knob and nudge buttons to adjust this parameter. This filter is global and applies to all modes. The range of this parameter is Enabled & Disabled. This parameter is memorised as Global.

⚠️
NOTE:

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

Page 11 looks like so:

```
┌─────────────────────────────────────┐
│                                     │
│   Incoming program                  │
│                                     │
│   change            Enabled         │
│                                     │
└─────────────────────────────────────┘
```

As can be seen the parameter is "Incoming program change". In this case with a value of Enabled.
This parameter determines if the Supernova responds to incoming MIDI program change messages or not. Use the higher Fast Data knob and nudge buttons 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 and Program Change messages to a different Bank. Refer page 97 for details on the Bank messages received by Supernova. When this parameter is set to Program map any Program Change messages will always refer to the Program map table 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 modes. The range of this parameter is Enabled, Program map & Disabled. This parameter is memorised as Global.

⚠️
NOTE:

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

Page 12 looks like so:

```
┌─────────────────────────────────────┐
│                                     │
│   Program change         002        │
│                                     │
│   Selects          Perf A010        │
│                                     │
└─────────────────────────────────────┘
```

The Supernova features a "Program map" that allows 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 Program Map is user programmable and is Memorised as Global. To select the Program Map send a Bank Message of 0 (Controller 32 with a value of 0). When this Bank is selected any incoming Program Changes conform to the sequence in the Program Map.

As can be seen the higher parameter is "Prog change". In this case with a value of 002.
This parameter shows which Part of the Performance Map will be displayed / Edited. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The Performance Map allows incoming MIDI Program Change Messages to call up any sound in the Supernova. 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 as Global.

⚠ NOTE:

The Program map can be made active at all times by setting the "Incoming program change" parameter on page 12 of the Global mode to "Program map".

⚠ NOTE:

When the Supernova is switched on, "the Program Change Table" is automatically active. This means that if any Program/Part receives a Program Change Message via MIDI IN, it will reference the Performance Map until that particular Program/Part receives a valid Bank Select Message (Controller 32). This allows Master Keyboards 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 "Map" is assigned to MIDI Bank 0(Controller 32 with a value of 0). If this message is received the Supernova will switch from normal operation to the Performance Map. Any Program changes received after that will be re-mapped according to the Performance Map. This can be disabled by sending another MIDI Bank Message calling up either one of the Program or Performance Banks. See page 97 for details on the Bank Messages received by Supernova.

⚠ NOTE:

To write any changes to the performance 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.

As can be seen the lower parameter is "Selects". In this case with a value of Perf A010.
This parameter shows which sound is assigned to the selected Program Message set in the parameter above. Use the lower Fast Data knob and nudge buttons and the Bank button to adjust this parameter. In this case the sound assigned is Performance A010. Pressing the Bank button while in this mode allows the selection of any of the Performance or Program Banks. Using the lower Fast Data knob and nudge buttons allows any sound from the selected Bank to be set. The range of this parameter is Curr, Prog A, Prog B, Perf A, Arp M, Arp P & Arp U. This parameter is memorised as Global.

Page 13 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Arp pattern editing                │
│                                      │
│   via MIDI              Off          │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the parameter is "Arp pattern editing via MIDI". In this case with a value of Off.
This parameter determines if the Arpeggiator pattern data can be entered via a MIDI 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 16 & 17 of the Global mode. If this parameter is set to On, Notes & Velocity can be entered directly from a MIDI Keyboard. To do this set this parameter to On, then select a Pattern and select the number of steps in the pattern required in page 15 of Global mode. Now go to page 16 of global mode and check that the pattern is on step 1. While in page 16 pressing a note on the Keyboard will enter the note value and velocity value directly into the pattern. The note off 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. Similarly, 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 as Global.

⚠ NOTE:

When Arp pattern editing via MIDI is activated, Note/Sustain data can be entered on any channel.

KEYPAD & MODE SECTION

Page 14 looks like so:

```
User pattern        000

No of steps          32
```

As can be seen the higher parameter is "User Pattern". In this case with a value of 000.
This parameter determines which of the User Patterns for the Arpeggiator is to be edited with the following pages. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 000 to 127. This parameter is memorised as Global.

⚠️ **NOTE:**

User Patterns 000 to 63 are User Monophonic Patterns and 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.

As can be seen 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 Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 01 to 64. This parameter is memorised as Pattern data.

Page 15 looks like so:

```
Note 01    :   Step      01

Vel. 127   :   Gate   Norm
```

As can be seen the higher parameter is "Step". In this case with a value of 01.
This parameter determines the step to be edited. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 01 to 64 but depends on the value set in the "No of Steps" parameter above. This parameter is memorised as Global.

⚠️ **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.

As can be seen the lower parameter is "Gate". In this case with a value of Norm.
This parameter determines the gate time of the currently selected step. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. In the Normal position the gate equals one step unless the following step is a tie. In the Tie position the notes are tied together. In the Rest position the note is silent. in the Glide position the Portamento effect is engaged as it does in Autoglide. The range of this parameter is Norm, Tie, Rest, Glide. Refer to page 20 for details on programming user patterns. This parameter is memorised as Pattern data.

Page 16 looks like so:

```
Step 01    :   Note      01

Gate Norm  :   Vel.     127
```

As can be seen the higher parameter is "Note". In this case with a value of 01.
This parameter determines the note assigned to the currently selected step set in the "Step" parameter on page 6. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 01 to 12 for the User Monophonic patterns (000 to 063) and -36 to +36 for the User Polyphonic patterns (064 to 127) This parameter is memorised as Pattern data.

⚠️
NOTE:

Page 16 of the Global mode 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.

As can be seen the lower parameter is "Vel.". In this case with a value of 127.
This parameter determines the Velocity of the note to be played at the currently selected step. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 1 to 127. This parameter is memorised as Pattern data.

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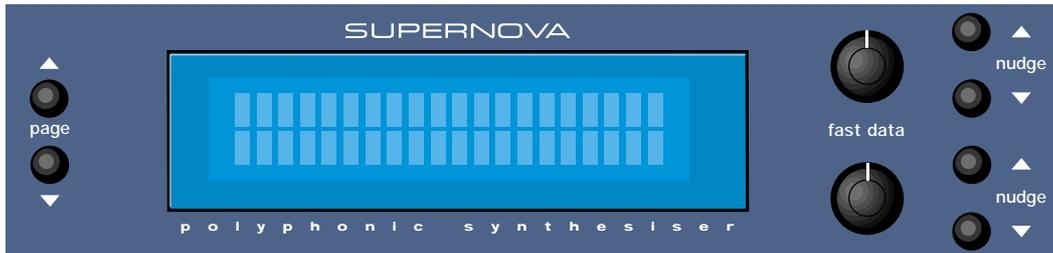
The display shows the currently selected Performance or Program Name, Bank & Number. When editing Knobs on the front panel, the relevant parameter name and value is displayed.

Fast Data - Knobs
Nudge - Buttons

When editing parameters in Menus, the higher "Fast Data" Knob on the right of the display is used to edit the higher parameter's value. Fine increments of the higher parameter's value can be implemented using the higher set of "Nudge" up and down buttons also to the right of the display. Similarly the lower parameter's value can be edited in the same way using the lower "Fast Data" and "Nudge" buttons.

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.

ARPEGGIATOR SECTION

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

ARPEGGIATOR SECTION

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 LFOs are synchronised to Internal MIDI Clock, this control sets the speed of the Internal MIDI Clock and the LFOs and / or Delay will be synchronised with the Arpeggiator at whatever time signature has been selected in the LFOs and / or Delay.

On/Off - Button
.
This buttons 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 and 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 Master Keyboard. When this is "Off" (unlit) the Arpeggiator will only sweep through its patterns when you hold down notes on the Master Keyboard. If you are not playing any notes on the Master 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 Master 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 and Off. This parameter is memorised with a Program.

⚠️ NOTE:

This parameter can be controlled via MIDI in the Performance mode. To do so connect a Sustain Pedal to the Master Keyboard. The Supernova can read MIDI sustain information as Arpeggiator latch On / Off, so depressing the sustain pedal will switch the Arpeggiator Latch "On" and releasing the sustain pedal will switch it "Off". For this to work properly the Master Keyboard should be transmitting on the same MIDI channel as Supernova is set to receive on and 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 Master Keyboard. If this is the case, set the Sustain parameter in the MIDI button menu for the selected part to Arp latch (I). 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.

Menu - Button

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section.
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 "Fast Data" Knobs on the right of the display are used to alter these parameters values.

Page 1 looks like so:

```
┌─────────────────────────────────┐
│                                 │
│   Mute status      Sounding     │
│                                 │
│   Key reset           Off       │
│                                 │
└─────────────────────────────────┘
```

As can be seen the higher parameter is "Mute status". In this case with a value of Sounding.
This parameter determines if the Arpeggiator is heard in the currently selected Program. Use the higher Fast Data knob and Nudge buttons to adjust the value of this parameter. In the "Sounding" position the Arpeggiator is on and the sound can be heard, in the "Muted" position the Arpeggiator is running but the sound can no longer be heard. The range of this parameter is Sounding & Muted. This parameter is memorised with a Program.

As can be seen the lower parameter is "Key reset". In this case with a value of Off.
This parameter controls the way the Arpeggiator resets itself when new notes are played on the Master Keyboard. Use the lower Fast Data knob and nudge buttons to adjust the value. In the "Off" position the cycle of the Arpeggiator is not interrupted when new notes are played on the Master Keyboard, the Arpeggiator simply changes the notes being played to the new ones. In the "On" position the cycle of the

Arpeggiator is reset to the start of its patterns when new notes are played on the Master Keyboard. In this condition if the Quantise parameter on page 3 of the Arp menu is set to "Off" it behaves like triggering a loop in a sequencer. If the Quantise parameter is set to modes 1 or 3, the reset will occur at the start of the next step. If the Quantise 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 and Off. This parameter is memorised with a Program.

Page 2 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Pattern bank           Mono        │
│                                      │
│   Pattern no.            120         │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Pattern bank". In this case with a value of Mono.
This parameter determines type of Pattern the Arpeggiator will use. Use the Higher Fast Data knob and nudge buttons to adjust the value. The "Mono" Bank is 128 preset patterns that are Monophonic, (a single note is played at any one time) The "Poly" Bank is 128 preset patterns that are Polyphonic,(all the notes played on the Maser Keyboard are played at once and transposed) the "User" Bank is 128 patterns that are user programmable in the Global Mode. Patterns 000 to 063 in this bank are Monophonic and 064 to 127 are Polyphonic. The range of this parameter is Mono, Poly, & User. This parameter is memorised with a Program.

As can be seen the lower parameter is "Pattern no.". In this case with a value of 120.
This parameter determines which pattern in the bank specified by the parameter above is used by the Arpeggiator. Use the lower Fast Data knob and nudge buttons to adjust the value The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Page 3 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Latch type          Constant       │
│                                      │
│   Quantise            Mode1          │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Latch type". In this case with a value of Constant.
This parameter determines how the "Latch" function behaves. Use the higher Fast Data knob and nudge buttons to adjust the value. In the "Constant" position, when the "Latch" is "On", the Arpeggiator remembers what notes you last played. i.e. If you play a C triad and then release the keys on the Master 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.

As can be seen the lower parameter is "Quantise". In this case with a value of Mode1.
This parameter determines if the Arpeggiation played is quantised to the Arp Sync parameters time signature or not. Use the lower Fast Data knob and nudge buttons 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 MIDI Clock is being used. The Arpeggiator reads MIDI Start/Continue Messages. The pattern will start when one of these messages is received, but will not make any sound. When the keyboard played in this condition, the Arpeggiator will play the correct step in the pattern, not start from the beginning of the pattern. Below is a table showing the different options:

ARPEGGIATOR SECTION

MODE

	Off	Mode1	Mode2	Mode3	Mode4
Mono Pattern with Internal Clock	---	---	---	---	Off
Mono Pattern with External Clock	---	Quantised	Intelligent Quantised	Quantised Pattern locked to sequencer	Intelligent Quantised Pattern locked to sequencer
Poly Pattern with internal Clock	---	---	Intelligent Quantised	---	Intelligent Quantised
Poly Pattern with External Clock	---	Quantised	Intelligent Quantised	Quantised Pattern locked to sequencer	Intelligent Quantised Pattern locked to sequencer

If the entry is --- no correction is made. The range of this parameter is Off, Mode1, Mode2, Mode3 & Mode4. This parameter is memorised with a Program.

⚠️
NOTE:

This parameter also affects how the Key reset parameter on page 1 of the Arp menu behaves. Refer page 42 for details.

Page 4 looks like so:

```
Velocity          Played

Octave range        2
```

As can be seen 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 higher Fast Data knob and nudge buttons to adjust the value . If this parameter is set to "Played" then the velocities of the notes played 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.

As can be seen the lower parameter is "Octave range". In this case with a value of 2.
This parameter determines the number of octaves the Arpegiator will sweep through. Use the lower Fast Data knob and nudge buttons to adjust the value The range of this parameter is 1, 2, 3 and 4 octaves. This parameter is memorised with a Program.

Page 5 looks like so:

```
Fill in          On -Played

Sync               16th
```

As can be seen the higher parameter is "Fill-in", in this case with a value of On - Played.
This parameter applies only to MONOPHONIC patterns, it has no affect on polyphonic patterns. Use the higher Fast Data knob and nudge buttons to adjust the value. In fact, this parameter can be thought of as two different parameters combined. The first Part (always "On" or "Off") determines how the Arpeggiator behaves when you play more or less notes than the Arpeggiator pattern was written to cope with.

When this Part of the 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 never sounded. When this Part of the 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 while a mono arpeggiation is running. The second Part of the parameter ("Up", "Down" or "Played") determines which note ordering system is used for the monophonic pattern. When set to "Up", note 1 in the pattern data will refer to the lowest note played, 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, 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, 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 !

The most musical setting for this parameter are any of the "On" options. The range of this parameter is Off - Up, On - Up, Off - Down, On - Down, Off - Played & On - Played. This parameter is memorised with a Program.

As can be seen the Lower parameter is "Sync". In this case with a value of 16ths
This parameter determines the time signature at which the Arpeggiator runs from the Internal or External MIDI Clock.
Use the lower Fast Data knob and nudge buttons to adjust the value of this parameter. 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:

```
┌─────────────────────────────────────┐
│                                      │
│   Real time trans        Off         │
│                                      │
│   Gate time            75%           │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Real time trans". In this case with a value of Off.
This parameter determines if the Realtime Transpose function is On or Off. Use the higher Fast Data knob and nudge buttons to adjust the value . If this parameter is set to "On" then any notes received on the "Realtime Transpose Channel" (Set in the Global Mode) will Transpose the Arpeggiator's output by the number of semitones difference between the note played on the "Realtime Transpose Channel" and the note assigned in the "Arp Reference Note". (Set in the Global Mode) Basically if this is "On" then you can transpose the whole arpeggiation by playing a note on the "Realtime Transpose Channel". The amount of transposition depends on the note value set in th "Arp Reference Note" Parameter. The amount of transposition being the difference in semitones between the Arp reference note and the note played on the realtime transpose channel. Both the "Realtime Transpose Channel" & the "Arp Reference Note" Parameters can be found in the Global Mode. Another Great live performance feature. Set Arp Latch to "On" and away you go! The range of this parameter is On & Off. This parameter is memorised with a Program.

As can be seen the Lower parameter is "Gate time". In this case with a value of 75%
This parameter determines the gate time of each note the arpeggiator plays. Use the lower Fast Data knob and nudge buttons to adjust the value of this parameter. Small values of Gate time produce a "Staccato" effect and large values produce a "Legato" effect to the Arpeggiation. The range of this parameter is 25%, 50%, 75% & 99%. This parameter is memorised with a Program.

Page 7 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Arpeggio notes to:                 │
│                                      │
│              Program & MIDI          │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the parameter is "Arpeggio notes to:". In this case with a value of Program & MIDI.
This parameter determines if the Arpeggiation is sent to the Supernova's sound engine, MIDI output or both. Use the lower Fast Data knob and nudge buttons 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 is played by the Arpeggiation. If this parameter is set to Program & MIDI then the Supernova 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 when the Arpeggiator is played but the Arpeggiator is output via MIDI. The range of this parameter is Program Only, Program & MIDI & MIDI Only. This parameter is memorised with a Program.

⚠ NOTE:

ARPEGGIATOR SECTION

In program mode, the MIDI channel used for Arp transmission is the Global channel. In Performance mode, the part's MIDI channel is used. If the part's MIDI channel is set to Global or Omni, the Global channel is used.

Page 8 looks like so:

Constant pitch	Off
Output ranging	Off

As can be seen 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 constant 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 higher Fast Data knob and nudge buttons 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.

⚠ NOTE:

When Constant Pitch is activated, the Arp Poly pattern behaves monophonically, 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.

As can be seen 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 and 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. Previous OS Versions always behaved as if Output Ranging was set to 'On'. Use the lower Fast Data knob and nudge buttons 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.

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

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

All these buttons "select" which oscillator is going to be manipulated by the other parameters in this section. Osc 1 button selects Oscillator 1, Osc 2 button selects Oscillator 2, Osc 3 button selects Oscillator 3, Noise button selects the Noise Generator, 1*3 button selects the output of the Ring Modulator between Oscillators 1 and 3 & the 2*3 button selects the output of the Ring Modulator between Oscillators 2 and 3. For example, to adjust the "Octave" setting of Oscillator 1 press the "Osc 1" button, (it will light up indicating it is selected) and then press the "Octave" button within the Tune Part of this section. Adjusting the "Tune" knob will now change the octave setting of Oscillator 1. 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 appropriate Program or Performance button.

⚠️ **NOTE:**

Only one Oscillator or one of the Ring Modulators 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" 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 the currently selected sound source will be soloed. When the solo button is active (lit) the display will momentarily indicate that the selected sound source has been soloed. To return to normal operation press the solo button again. (unlit)

Copy - Button

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

OSCILLATOR SECTION

```
┌─────────────────────────────────────────┐
│                                           │
│     Copy oscillator 1                     │
│                                           │
│     to?                                   │
│                                           │
└─────────────────────────────────────────┘
```

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:

```
┌─────────────────────────────────────────┐
│                                           │
│     Oscillator 1 copied                   │
│                                           │
│     to oscillator 2                       │
│                                           │
└─────────────────────────────────────────┘
```

⚠ 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 menu of oscillator waveforms for the oscillator selected with the Osc 1, 2, and 3 buttons. To adjust the waveform of oscillator 1 press "Osc 1" button and select the waveform required. The selected waveform will light. The Saw button selects a Sawtooth waveform, the Sq button selects a Square waveform and the Special button selects Audio input 1 and Audio input 2. New additional waveforms to be available here with future software upgrades. This parameter is memorised with a Program.

⚠ NOTE:

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

Octave   -   Button
Semitone   -   Button
Fine   -   Button
Tune   -   Knob

The three buttons determine if the Tune knob edits the Octave setting, Semitone transposition or fine tuning of the selected Oscillator.
If the Octave button is selected, the Tune knob will shift the selected oscillator up 2 octaves when turned fully clockwise and down 2 octaves when turned fully anticlockwise.
If the Semitone button is selected, the Tune knob will shift the selected oscillator up 12 semitones when turned fully clockwise and down 12 semitones when turned fully anticlockwise.
If the Fine button is selected, the Tune knob will shift the selected oscillator up 63 cents when turned fully clockwise and down 64 cents when turned fully anticlockwise. These parameters are memorised with a Program.

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 semitones. This parameter is memorised with Programs.

Oscillator Modulation Matrix

This is an extremely powerful feature of the Supernova. These controls affect the modulation of the selected oscillator. 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 "Soften" setting of Oscillator 1 press the "Osc 1" button (it will light up indicating it is selected) and then press the "Soften" button within the modulation section to define the modulation destination. Now adjusting the Level knob will change the Soften setting of Oscillator 1.

Similarly to adjust the level of envelope 3 modulation of the "Soften" setting of Oscillator 1, press the "Osc 1" button (it will light up indicating it is selected) and then press the "Soften" 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 Soften 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 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.

⚠️ **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. i.e. 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.

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OSCILLATOR SECTION

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 and 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 on the Master Keyboard on the keyboard are transposed one octave apart. In the "Mid" position notes played one octave aPart on the Master Keyboard are transposed 1/2 an octave aPart and fully anticlockwise notes played one octave aPart on the Master 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.

⚠
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".

OSCILLATOR SECTION

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.

⚠ NOTE:

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.

⚠ 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".

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.

⚠ 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
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.

⚠ 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
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 anti-clockwise 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 anti-clockwise 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 and 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.

OSCILLATOR SECTION

⚠️ **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 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.

⚠️ **NOTE:**

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.

⚠️ **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
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.

⚠️ **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
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".

Soften -   Button
Level   -   Knob

This combination controls the Soften Effect on the selected Oscillator & noise waveforms. Turning the Level Knob fully clockwise introduces the Soften effect fully to the selected Oscillator and fully anticlockwise there is no Softening 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".

Soften   -   Button
Mod Depth -   Knob
LFO 1   -   Button

This combination controls the modulation of the Soften effect of the selected Oscillator by LFO 1. Turning the Mod Depth Knob fully clockwise introduces Soften from LFO 1 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Soften 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".

Soften   -   Button
Mod Depth -   Knob
LFO 2   -   Button

This combination controls the modulation of the Soften Effect on the selected Oscillator by LFO 2. Turning the Mod Depth Knob fully clockwise introduces Soften Effect from LFO 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Soften 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".

Soften   -   Button
Mod Depth -   Knob
ENV 2   -   Button

This combination controls the modulation of the Soften Effect on the selected Oscillator by ENV 2. Turning the Mod Depth Knob fully clockwise introduces Soften Effect from ENV 2 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Soften 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".

Soften   -   Button
Mod Depth -   Knob
ENV 3   -   Button

This combination controls the modulation of the Soften Effect on the selected Oscillator by ENV 3. Turning the Mod Depth Knob fully clockwise introduces Soften Effect from ENV 3 to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Soften 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.

OSCILLATOR SECTION

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".

Soften - Button
Mod Depth - Knob
Wheel - Button

This combination controls the modulation of the Soften Effect on on the selected Oscillator by the Mod Wheel. Turning the Mod Depth Knob fully clockwise introduces Soften Effect from the Mod Wheel to the selected Oscillator in a *Positive* direction. Turning the Mod Depth Knob fully anticlockwise introduces Soften 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".

Menu - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Oscillator 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
MWheel LFO 1 amt        +10

ATouch LFO 1 amt        +10
```

As can be seen the higher parameter is "MWheel LFO1 amt". In this case with a value of +10.
This parameter determines how the Mod Wheel on the Master Keyboard affects the amount of LFO1 modulation on the selected Oscillator. Use the higher Fast Data knob and nudge buttons 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 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.

As can be seen the lower parameter is "AT LFO1 amt". In this case with a value of +10.
This parameter determines how the Aftertouch on the Master Keyboard affects the amount of LFO1 modulation on the selected Oscillator. Use the lower Fast Data knob and nudge buttons 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 LFO1 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       +10

Sync skew          +10
```

As can be seen the higher parameter is "Formant width". In this case with a value of +10.
This parameter determines how much Formant Width is applied to the selected Oscillator. Use the higher Fast Data knob and nudge buttons 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.

As can be seen 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 selected Oscillator. Use the lower Fast Data knob and nudge buttons 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      +10

Pitch bend range +10
```

As can be seen the higher parameter is "Sync key follow". In this case with a value of +10.
This parameter determines how the "Virtual" Sync oscillator is transposed across the keyboard for the selected Oscillator. Use the higher Fast Data knob and nudge buttons 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.

As can be seen the lower parameter is "Pitch bend range". In this case with a value of +10.
This parameter determines how the Pitch Bend Wheel on the Master Keyboard affects the pitch of the oscillators. Use the lower Fast Data knob and nudge buttons 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.

FILTER SECTION
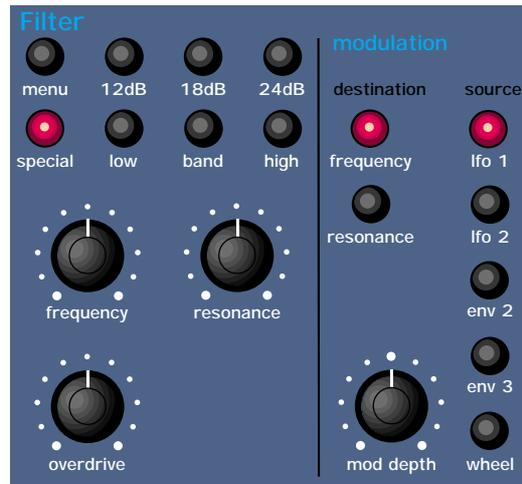
This section contains all the knobs and buttons associated with the Filter

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

These buttons select the slope of the cutoff curve of the Filter. Only one can be selected at once. 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.

Special - Button
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 what parts of the sound the different Filters allow through the Filter.
The Special button selects new Filter Types to be released with future software upgrades.
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.

Frequency - Knob

This knob controls the "Cutoff Frequency" of the Filter. Fully Clockwise and the Filters Cutoff frequency is set to the highest position, generally this produces a very trebly sound. Fully anticlockwise and the Filters Cutoff frequency is set to the lowest position, generally producing 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 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 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 Filters Cutoff Frequency, such as 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 and give 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. Fully clockwise and full drive will be applied. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Filter Modulation Matrix

This is an extremely powerful feature of the Supernova. These controls affect the modulation of the Filter. The Buttons 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 Mod Depth Knob. This can be either positive modulation (Turning the Mod Depth Knob Clockwise) or negative modulation. (Turning the Mod Depth Knob Anticlockwise)

For example to adjust the level of Envelope 2 modulation of the the "Freq" setting of the Filter press the "Frequency" button to define the modulation destination, it will light up indicating it is selected. Press the Env 2 button to define the modulation source. Now adjusting the "Mod depth" knob clockwise 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.

⚠️ **NOTE:**

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.

⚠️ **NOTE:**

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

FILTER SECTION

Frequency	-	**Button**
Mod Depth	-	**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. In 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	-	**Button**
Mod Depth	-	**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. In 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	-	**Button**
Mod Depth	-	**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. In 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	-	**Button**
Mod Depth	-	**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. In 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	-	**Button**
Mod Depth	-	**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. In 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	-	**Button**
Mod Depth	-	**Knob**
LFO 1	-	**Button**

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by LFO 1. In 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.

Resonance	-	**Button**
Mod Depth	-	**Knob**
LFO 2	-	**Button**

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by LFO 2. In 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.

Resonance	-	**Button**
Mod Depth	-	**Knob**
ENV 2	-	**Button**

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by ENV 2. In 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.

Resonance   -   Button
Mod Depth   -   Knob
ENV 3   -   Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by ENV 3. In 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.

Resonance   -   Button
Mod Depth   -   Knob
Wheel   -   Button

This combination controls the amount of change to the Resonance (Initially set by the Resonance knob) by the Mod Wheel. In 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.

Menu -   Button

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Filter section there are 4 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
  Filter tracking      063

  Q norm amount           000
```

As can be seen the higher parameter is "Filter tracking". In this case with a value of 063
This parameter controls the amount of change to the Filter Cutoff Frequency (initially set by the Frequency knob.) by the pitch of the note being played. Placing the higher Fast Data knob and nudge buttons fully anticlockwise means that playing notes at different pitches will have no effect on the Cutoff Frequency of the Filter. 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.

As can be seen the lower parameter is "Q norm amount". In this case with a value of 000
This parameter determines how the Resonance of the Filter behaves. Use the lower Fast Data knob and nudge buttons to adjust this parameter. 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 form 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.

Page 2 looks like so:

```
  Fq MWh LFO2 amt       +63

  Res MWh LFO2 amt      +63
```

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FILTER SECTION

As can be seen the higher parameter is "Fq MWh LFO2 amt". In this case with a value of +63.

This parameter determines how the Modulation Wheel on the Master Keyboard affects the amount of Modulation of the Cutoff Frequency of the Filter from LFO 2. This produces a Wah Wah type of effect. In the central position of the higher Fast Data knob and nudge buttons there is no change to the Filter Cutoff Frequency when the Master Keyboard's Modulation Wheel 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 Master Keyboard's Modulation Wheel is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly opened by LFO 2 when the Master Keyboard's Modulation Wheel is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

As can be seen the lower parameter is "Res MWh LFO2 amt". In this case with a value of +63.

This parameter determines how the Modulation Wheel on the Master Keyboard affects the amount of Modulation of the Resonance of the Filter from LFO 2. In the central position of the lower Fast Data knob and nudge buttons there is no change to the Filter Resonance when the Master Keyboard's Modulation Wheel is engaged. Anticlockwise of centre there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant by LFO 2 when the Master Keyboard's Modulation Wheel is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly made more Resonant by LFO 2 when the Master Keyboard's Modulation Wheel 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 LFO2 amt        +63

Res AT LFO2 amt       +63
```

As can be seen the higher parameter is "Fq AT LFO2 amt". In this case with a value of +63.

This parameter determines how the Aftertouch on the Master Keyboard affects the amount of Modulation of the Cut-off frequency of the Filter from LFO 2. This produces the Growl effect. In the central position of the higher Fast Data knob and nudge buttons there is no change to the Filter Cutoff Frequency when the Master Keyboard's 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 Master Keyboard's Aftertouch is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly opened by LFO 2 when the Master Keyboard's Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

As can be seen the lower parameter is "Res AT LFO2 amt". In this case with a value of +63.

This parameter determines how the Aftertouch on the Master Keyboard affects the amount of Modulation of the Resonance of the Filter from LFO 2. In the central position of the lower Fast Data knob and nudge buttons there is no change to the Filter Resonance when the Master Keyboard's Aftertouch is engaged. Anticlockwise of centre there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant by LFO 2 when the Master Keyboard's Aftertouch is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly made more Resonant by LFO 2 when the Master Keyboard's Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 4 looks like so:

```
Fq AT amt             +63

Res AT amt            +63
```

As can be seen the higher parameter is "Fq AT amt". In this case with a value of +63.

This parameter determines how the Aftertouch on the Master Keyboard affects the amount of Modulation of the Cut-off frequency of the Filter. In the central position of the higher Fast Data knob and nudge buttons there is no change to the Filter Cutoff Frequency when the Master Keyboard's Aftertouch is engaged. Anticlockwise of centre there will be an increasing amount of Negative modulation. i.e. The Filter will be closed more when the Master Keyboard's Aftertouch is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly opened when the Master Keyboard's Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

As can be seen the lower parameter is "Res AT amt". In this case with a value of +63.

This parameter determines how the Aftertouch on the Master Keyboard affects the amount of Modulation of the Resonance of the Filter. In the central position of the lower Fast Data knob and nudge buttons there is no change to the Filter Resonance when the Master Keyboard's Aftertouch is engaged. Anticlockwise of centre there will be an increasing amount of Negative modulation. i.e. The Filter will be made less Resonant when the Master Keyboard's Aftertouch is engaged. Clockwise of centre the modulation is Positive. i.e. The Filter will be increasingly made more Resonant when the Master Keyboard's Aftertouch is engaged. The range of this parameter is -64 to +63. This parameter is memorised with a Program
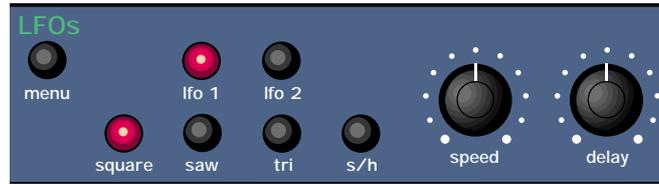
This section contains all the Knobs and buttons associated with the LFOs. The LFOs (Low Frequency Oscillators) produce regular electronic variation which are normally too low a frequency to be heard when converted into audio vibrations. However when used to modify various elements of the sound they can be used to create regular changes in pitch (Vibrato) or Pulse width and Filter Modulation. (these create tonal changes in the waveforms) for example.

LFO 1 -   Button
Filter   -   Button
Speed -   Knob
Delay   -   Knob

The LFO 1 and LFO 2 buttons select which LFO the Speed and Delay knobs are going to adjust. To adjust LFO 1 press the LFO 1 button. To adjust the LFO 2 press the LFO 2 button.

With the LFO 1 button selected and lit, the Speed knob controls the rate at which LFO 1 oscillates. Turning the Speed knob fully anticlockwise sets the LFO running at its slowest speed (which is actually stopped) and turning the Speed knob fully clockwise sets the LFO running at its highest speed. (Which can be KHz)

With the LFO 1 button selected and lit, the Delay knob controls how long after the note is struck before LFO 1 begins to take effect. If the knob is fully anticlockwise LFO 1 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 if present as the note is struck, can make the note sound out of tune. Turning the Delay Knob slightly clockwise, LFO 1 will not be introduced until after the note is struck, thereby removing the problem.

⚠ **NOTE:**

If you have problems getting LFO 1 to take effect, make sure the delay knob is not set fully clockwise.

With the LFO 2 button selected and lit, the Speed knob controls the rate at which LFO 2 oscillates. Turning the Speed knob fully anticlockwise sets the LFO running at its slowest speed (which is actually stopped) and turning the Speed knob fully clockwise sets the LFO running at its highest speed. (Which can be KHz)

With the LFO 2 button selected and lit the Delay knob controls how long after the note is struck before LFO 2 begins to take effect. If the knob is fully anticlockwise LFO 2 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 if present as the note is struck, can make the note sound out of tune. Turning the Delay Knob slightly clockwise, LFO 2 will not be introduced until after the note is struck, thereby removing the problem.

⚠ **NOTE:**

If you have problems getting LFO 2 to take effect, make sure the delay knob is not set fully clockwise.

Square   -   Button
Saw   -   Button
Tri   -   Button
S/H   -   Button

These Buttons select which waveform the selected LFO has.

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 and subtle amount)

LFOS SECTION

or "Siren" effects (if used at slow speeds and large amount) or FM type effects. (if used at high speed and subtle amount) 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) and 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) and changes instantly from one level to another. This is useful for Trill and Computer Game effects.

The S/H button selects the Sample and 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 Filter section on page 58 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 a series of pages is available on the display containing parameters relevant to this section.
In the LFO section there are 4 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Offset amount          020         │
│                                      │
│   Env 3 speed mod      +63           │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Offset amount". In this case with a value of 020.
This parameter allows the LFO to have a DC shift applied to the LFO waveform. This allows the creation of realistic Stringed instrument Vibrato effects in making it possible to create vibrato that is only up for example. Turning the higher Fast Data knob and nudge buttons full Anticlockwise there is no effect on the normal operation of the selected LFO. Tuning the higher Fast Data knob and nudge buttons clockwise of this position introduces an increasing amount of offset applied to the LFO waveform until at fully clockwise the LFO waveform is only in the upwards direction. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

As can be seen the lower parameter is "Env 3 speed mod". In this case with a value of +63.
This parameter determines how the Envelope 3 effects the speed of the selected LFO. In the central position of the lower Fast Data knob and nudge buttons 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          │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "MWheel speed mod". In this case with a value of +10.
This parameter determines how the Master Keyboard's Modulation Wheel effects the speed of the selected LFO. If this parameter is set to 0 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 Master Keyboard's 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 Master Keyboard's 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.

As can be seen the lower parameter is "AT speed mod". In this case with a value of +10.
This parameter determines how the Master Keyboard's Aftertouch effects the speed of the selected LFO. If this parameter is set to 0 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 Master Keyboard's 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 Master Keyboard's 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               │
│                                        │
│   LFO range         Slow               │
│                                        │
└──────────────────────────────────────┘
```

As can be seen the higher parameter is "Sync". In this case with a value of 16th.
This parameter determines where the selected LFO get their Clock. Turning the higher Fast Data knob and nudge buttons fully anticlockwise selects the "Off" option which means the selected LFO is running on its own 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. 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.

As can be seen the lower parameter is "LFO range". In this case with a value of Slow.
The LFOs in Supernova are capable of reaching Audio frequencies. This allows the creation of unique sounds currently unavailable on any other equipment. However this means that the Speed knob has to cover a frequency range of 0 (Stopped) to several KHz. Turning the higher Fast Data knob and nudge buttons anticlockwise will set the Range parameter to "Slow". In this mode the Speed knob of the selected LFO will have a Range that goes from stopped to moderate speeds. Turning the higher Fast Data knob and nudge buttons to the mid position will set the Range parameter to "Norm". In this mode the Speed knob of the selected LFO will have a Range equivalent to that found on a normal synthesiser. Turning the knob clockwise will set this parameter to "Fast". In this mode the full range of speed will be available on the selected LFO). The range of this parameter is Slow, Norm & Fast. This parameter is memorised with a Program.

Page 4 looks like so:

```
┌──────────────────────────────────────┐
│                                        │
│   Triggering         Keysync           │
│                                        │
│   Delay trigger      Multi             │
│                                        │
└──────────────────────────────────────┘
```

As can be seen the higher parameter is "Triggering". In this case with a value of Keysync.
This parameter determines how the selected LFO are triggered. Turning the higher Fast Data knob and nudge buttons anticlockwise selects the "Freewheel" option which 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 higher Fast Data knob and nudge buttons clockwise selects the "Keysynced" option which 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. This is the most useful setting for use with Sequencers and the Arpeggiator. The range of this parameter is Freewheel and Keysynced. This parameter is memorised with a Program.

As can be seen the lower parameter is "Delay trigger". In this case with a value of Multi.
This parameter determines how the "Delay" parameter is triggered on the selected LFO. Turning the lower Fast Data knob and nudge buttons anticlockwise selects the "Multi" option which means the LFO Delay Time is reset to the start value every time any key is pressed. Turning the lower Fast Data knob and nudge buttons clockwise selects the "Single" option which 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 and Single. This parameter is memorised with a program.
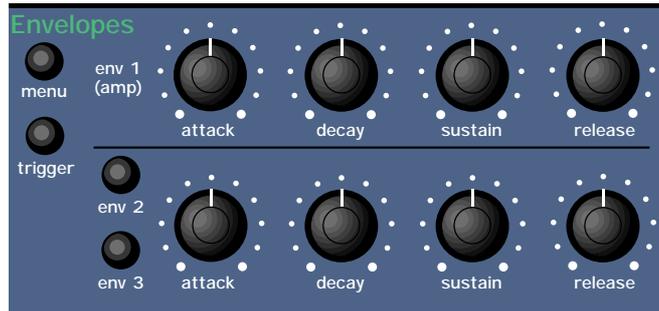
ENVELOPES SECTION

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 and how it sustains and dies away. Similarly Env 2 and Env 3 can be used to create tonal changes over tome by modulating the Filter's Cutoff Frequency and/or Resonance in a similar fashion or can be used to create sweeping pitch shifts, Pulse Width Modulation, Sync & Osc Mix sweeps.

ENV 2 - Button
ENV 3 - Button

These buttons select which Envelope the lower set of Envelope knobs is going to adjust.
Attack - Knob

This knob sets how quickly the Envelope rises to its maximum level when a note is struck. Fully anticlockwise, this is instantaneous increasing exponentially to 20 seconds fully clockwise. To shorten Attack times turn this knob anticlockwise and to lengthen Attack times turn this knob clockwise. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Decay - Knob

This knob sets how quickly the Envelope drops off to the Sustain level once the Maximum level has been reached by the Attack time. Fully anticlockwise this is instantaneous increasing exponentially to 20 second fully clockwise. To shorten Decay times turn this knob anticlockwise and to lengthen Decay times turn this knob clockwise. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Sustain - Knob

This knob sets the level at which the Envelope remains at after the Decay phase until the note is released. Fully anticlockwise the Envelope will decay all the way to zero without being interrupted. As the knob is moved clockwise, the level at which the Decay is halted increases until full clockwise there is no Decay at all. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Release - Knob

This knob sets how quickly the Envelope drops from the Sustain level to zero once the note has been released. Fully anticlockwise this is instantaneous increasing exponentially to 20 seconds fully clockwise. To shorten Release times turn this knob anticlockwise and to lengthen Release times turn this knob clockwise. The range of this parameter is 000 to 127. This parameter is memorised with a Program.

Menu - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Envelope section there are 4 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
Env 1 velocity        +63
```

As can be seen the higher parameter is "Env1 velocity". In this case with a value of +63.
This parameter determines how the Velocity of the notes played on the Master Keyboard affect the amount of modulation produced by Envelope 1. In the central position of the higher Fast Data knob and nudge buttons there is no volume velocity response to the sound. Anticlockwise of centre there will be an increasing amount of negative modulation. i.e. The volume of the sound will decrease as notes are struck harder (with more Velocity) on the Master Keyboard. Clockwise of centre there will be an increasing amount of positive modulation. i.e. The volume of the sound will increase as notes are struck harder (with more Velocity) on the Master Keyboard. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

Page 2 looks like so:

```
Env 2 velocity        +63

Env 2 delay           010
```

As can be seen the higher parameter is "Env 2 velocity". In this case with a value of +63.
This parameter determines how the Velocity of the notes played on the Master Keyboard affect the amount of modulation produced by Envelope 2. In the central position of the higher Fast Data knob and nudge buttons there is no change to Envelope 2 amount of modulation. Anticlockwise of centre there will be an increasing amount of negative modulation. i.e. Envelope 2 amount of modulation will decrease when notes are struck harder (with more Velocity) on the Master Keyboard. Clockwise of centre there will be an increasing amount of positive modulation. i.e. Envelope 2 amount of modulation will increase when notes are struck harder (with more Velocity) on the Master Keyboard. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

As can be seen the lower parameter is "Env 2 delay". In this case with a value of 010.
This parameter introduces a Delay time before Envelope 2 starts when a note is struck on the Master keyboard. With the lower Fast Data knob and nudge buttons full anticlockwise there no delay. i.e. Envelope 2 will start immediately when a note is struck on the Master Keyboard. turning this knob clockwise will introduce an increasing amount delay before Envelope 2 starts. after a note has been received from the Master keyboard. The range of this parameter is Off, 1 to 127. This parameter is memorised with a Program.

Page 3 looks like so:

```
Env 3 velocity        +63

Env 3 delay           010
```

As can be seen the higher parameter is "Env 3 velocity". In this case with a value of +63.
This parameter determines how the Velocity of the notes played on the Master Keyboard affect the amount of modulation produced by Envelope 3. In the central position of the higher Fast Data knob and nudge buttons there is no change to Envelope 3 amount of modulation. Anticlockwise of centre there will be an increasing amount of negative modulation. i.e. Envelope 3 amount of modulation will decrease when notes are struck harder (with more Velocity) on the Master Keyboard. Clockwise of centre there will be an increasing amount of positive modulation. i.e. Envelope 3 amount of modulation will increase when notes are struck harder (with more Velocity) on the Master Keyboard. The range of this parameter is -64 to +63. This parameter is memorised with a Program.

As can be seen the lower parameter is "Env 3 delay". In this case with a value of 010.
This parameter introduces a Delay time before Envelope 3 start when a note is struck on the Master keyboard. With the lower Fast Data knob and nudge buttons full anticlockwise there no delay. i.e. Envelope 3 will start immediately when a note is struck on the Master Keyboard. turning this knob clockwise will introduce an increasing amount delay before Envelope 3 starts. after a note has been received from the Master keyboard. The range of this parameter is Off, 1 to 127 . This parameter is memorised with a Program.

ENVELOPES SECTION

Page 4 looks like so:

```
┌──────────────────────────────────────┐
│                                        │
│   Env 1 MWheel        +10              │
│                                        │
│   Env 1 ATouch          +10            │
│                                        │
└──────────────────────────────────────┘
```

As can be seen the lower parameter is "Env 1 MWheel". In this case with a value of +10.
This parameter controls the volume of the Program using the Master Keyboard's Mod Wheel. With the lower Fast Data knob and nudge buttons fully anticlockwise when the Mod Wheel on the master keyboard is applied the volume of the Program drops correspondingly. With the lower Fast Data knob and nudge buttons fully clockwise when the Mod Wheel on the master keyboard 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.

As can be seen the higher parameter is "Env 1 ATouch". In this case with a value of +10.
This parameter controls the volume of the Program using the Master Keyboard's Aftertouch. With the higher Fast Data knob and nudge buttons fully anticlockwise when the Aftertouch on the master keyboard is applied the volume of the Program drops correspondingly. With the higher Fast Data knob and nudge buttons fully clockwise when the Aftertouch on the master keyboard 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.

Trigger - Button

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Trigger Menu there are 4 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
┌──────────────────────────────────────┐
│                                        │
│   Envelope triggering                  │
│                                        │
│   1:Mult 2:Mult 3:Mult                 │
│                                        │
└──────────────────────────────────────┘
```

As can be seen the parameter is "Envelope triggering". In this case with a value of 1:Mult 2:Mult 3:Mult.
This parameter determines how the Envelopes trigger. Turning the lower Fast Data knob and nudge buttons selects the various triggering options. All three Envelopes are displayed on the lower Part of the display. All are currently set to "Multi" Triggering. When "Mult" (Multi) is selected for any envelope any new note received will retrigger the envelope. When "Sing" (Single) is selected 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 1:Mult 2:Mult 3:Mult, 1:Mult 2:Mult 3:Sing, 1:Mult 2:Sing 3:Mult, 1:Mult 2:Sing 3:Sing, 1:Sing 2:Mult 3:Mult, 1:Sing 2:Mult 3:Sing, 1:Sing 2:Sing 3:Mult and 1:Sing 2:Sing 3:Sing, .This parameter is memorised with a Program.

Page 2 looks like so:

```
┌──────────────────────────────────────┐
│                                        │
│   Porta type    Glissando              │
│                                        │
│   Porta mode           Exp             │
│                                        │
└──────────────────────────────────────┘
```

As can be seen 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 higher Fast Data knob and nudge buttons 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.

As can be seen the lower parameter is "Porta mode". In this case with a value of Exp.

This parameter determines if the glide of the Portamento effect is Linear or Exponential. Use the lower Fast Data knob and nudge buttons to adjust the value of this parameter. Some synthesisers like the TB303* have an Exponential curve which gives them a "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 3 looks like so:

```
Poly mode        Mode 1

Osc mode         Percussive
```
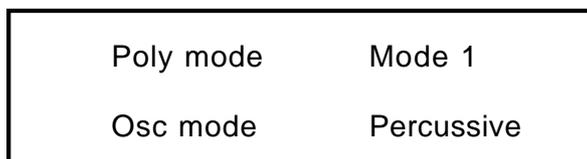
As can be seen the higher parameter is "Poly mode". In this case with a value of Mode 1.

This parameter determines If new voices are used when the same note is played. Use the higher Fast Data knob and nudge buttons 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 and Mode 2. This parameter is memorised with a Program.

As can be seen the lower parameter is "Osc mode". In this case with a value of Percussive.

This parameter determines if the Oscillators are reset on note on or not. Use the lower Fast Data knob and nudge buttons to adjust the value of this parameter. In the "Percussive" position the Oscillators are reset on 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.

Page 4 looks like so:

```
Glide type

                 Normal Glide
```
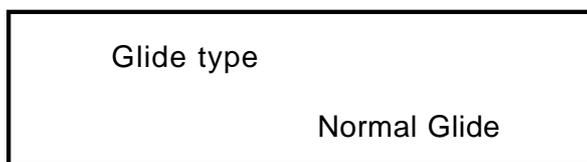
As can be seen the lower parameter is "Glide type". In this case with a value of Normal Glide.

This parameter determines how the Portamento is controlled. Turning the lower Fast Data knob and nudge buttons 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 a 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 in different Envelopes.

EFFECTS SECTION

This section contains all the Knobs and buttons associated with the Effects Section.

There are 7 effects available on each Program in the Supernova.

Distortion - 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 section there is 1 page available.

Page 1 looks like so:

```
Distortion wheel      +63
```
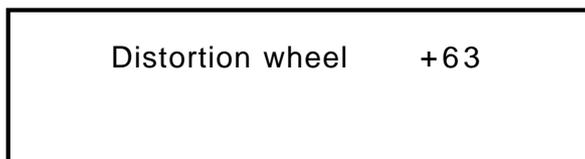
As can be seen the higher parameter is "Distortion wheel". In this case with a value of +63.
This parameter determines How much the Mod Wheel controls the Distortion effect. Use the higher Fast Data knob to adjust this parameter. Fully anticlockwise the tone of the Distortion will be reduced with full modulation of the Mod Wheel, fully clockwise 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 "Effects Used" parameter.

Reverb - 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 "Effects Used" parameter.

Menu - Button (Reverb)

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section.
In the Reverb 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
Type       Gated reverse

Early ref level        6
```

As can be seen the higher parameter is "Type". In this case with a value of Gated reverse.
This parameter determines the type Reverb effect. Use the higher Fast Data knob and nudge buttons to adjust this parameter. There are 16 different types of reverb available in the Supernova. Turning the higher Fast Data knob and nudge buttons 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 the Fast Data knob and nudge buttons clockwise one click selects Gated rising, Again this is a gated type of reverb that is slightly reverse in characteristic. Turning the Fast Data knob and nudge buttons clockwise one click selects Gated gentle which is a classic gated sort of reverb. Turning the Fast Data knob and nudge buttons clockwise one click selects Gated falling which is a gated type of reverb but does decay away slightly like normal reverb.Turning the Fast Data knob and nudge buttons 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 that 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 "Effects Used" parameter.

As can be seen the lower parameter is "Early ref level". In this case with a value of 6.
This parameter determines the level of early reflections in the reverb. Use the Lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 2 looks like so:

```
Reverb decay      099

HF damp           020
```

As can be seen the higher parameter is "Reverb decay". In this case with a value of 099.
This parameter determines the rate at which the Reverb effect decays away. Use the Higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

As can be seen the lower parameter is "HF damp". In this case with a value of 020
This parameter determines the rate at which High Frequencies decay away in the Reverb and is called High Frequency Damping. Use the Lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 3 looks like so:

```
Reverb wheel      +50
```

EFFECTS SECTION

As can be seen the higher parameter is "Reverb wheel". In this case with a value of +50

This parameter determines How much the Mod Wheel controls the amount of Reverb effect. Use the higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Chorus/Flanger/Phaser - Knob

This knob adjusts the level of the Chorus/Flanger/Phaser effect to be assigned to the selected Program. Turning this knob fully anticlock-wise will allow the signal to be unaffected by the Chorus/Flanger/Phaser, turning this knob fully clockwise will fully implement the 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 "Effects Used" parameter.

Menu - Button (Chorus/Flanger/Phaser)

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Chorus/Flanger/Phaser 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Type          Quad Chorus          │
│                                      │
│   Speed                   1 0        │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Type". In this case with a value of Quad Chorus.
This parameter determines the type of effect the Chorus/Flanger/Phaser will be. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is Quad Chorus, Chorus/Flanger & Phaser. 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.

As can be seen the lower parameter is "Speed". In this case with a value of 10.
This parameter determines the speed of the Chorus/Flanger/Phaser LFO. Use the lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 2 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│   Mod depth               0 3 2      │
│                                      │
│   Feedback                + 0 0      │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Mod depth". In this case with a value of 032.
This parameter determines the depth of Chorus/Flanger/Phaser LFO Modulation to the delay time of the Chorus. Higher values tend to sound a bit wobbly. Use the higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

As can be seen the lower parameter is "Feedback". In this case with a value of 00.
This parameter determines the amount of Feedback within the Chorus/Flanger/Phaser. Use the lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 3 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│    Chorus wheel        +32           │
│                                      │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Chorus wheel". In this case with a value of +32.
This parameter determines how much the Mod Wheel controls the amount of Chorus effect. Use the higher Fast Data knob and nudge buttons to adjust this parameter. Fully anticlockwise the Chorus will be reduced with full modulation of the Mod Wheel, fully clockwise the Chorus 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 "Effects Used" parameter.

Delay - 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.

Menu - Button (Delay)

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Delay section there are 4 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 "Fast Data" Knobs on the right of the display are used to alter these parameter's values.

Page 1 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│    Delay time          020           │
│                                      │
│    Feedback            090           │
│                                      │
└─────────────────────────────────────┘
```

As can be seen the higher parameter is "Delay time". In this case with a value of 020
This parameter determines the Delay time of this effect. Use the higher Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter is 00 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 "Effects Used" parameter.

⚠
NOTE:

If the Sync (Delay) parameter is set to anything but "Off", this parameter will not work.

As can be seen the lower parameter is "Feedback". In this case with a value of 090.
This parameter determines how much feedback there is in the Delay effect. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. The higher the value of this parameter the more "Repeats" are 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 "Effects Used" parameter.

Page 2 looks like so:

```
┌─────────────────────────────────────┐
│                                      │
│    Stereo width        010           │
│                                      │
│    Delay ratio          1:1          │
│                                      │
└─────────────────────────────────────┘
```

EFFECTS SECTION

As can be seen 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 higher Fast Data knob and nudge buttons to adjust this parameter. In the 000 position the delay is Mono. 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 "Effects Used" parameter.

As can be seen 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. 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, . 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.

Page 3 looks like so:

```
Sync              32nd Triplet

Delay HF damp           020
```

As can be seen the higher parameter is "Sync". In this case with a value of 32nd Triplet.
This parameter determines if the delay is synchronised to MIDI Clock or not and at what resolution. Use the higher Fast Data knob and nudge buttons to adjust this parameter. Turning the higher Fast Data knob and nudge buttons fully anticlockwise selects the "Off" option which means the Delay is running on its own clock 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 in various signatures ranging from 12 Bars to 32nd Triplets.
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 "Effects Used" parameter.

⚠️
NOTE:
If this parameter is set to anything but "Off", the Delay Time parameter will not work.

As can be seen the lower 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 lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 4 looks like so:

```
Delay wheel             +20
```

As can be seen the higher 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 higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Pan - Knob

This knob adjusts the Pan of the selected Program. Turning this knob fully anticlockwise will pan the sound to the left and fully clockwise 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 "Effects Used" parameter.

Menu - Button (Pan)

When this button is pressed, a series of pages is available on the display containing parameters relevant to this section.
In the Pan section there are 2 pages available.

Page 1 looks like so:

```
┌─────────────────────────────────────────┐
│                                          │
│   Pan type          Autopan              │
│                                          │
│   Pan speed         040                  │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen 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 higher Fast Data knob and nudge buttons 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 2 phases are provided L-R & 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 "Effects Used" parameter.

As can be seen the lower parameter is "Pan speed". In this case with a value of 040.
This parameter determines the rate at which the Autopan & Tremolo effects run. Use the lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 2 looks like so:

```
┌─────────────────────────────────────────┐
│                                          │
│   Pan depth         080                  │
│                                          │
│   Dry level         020                  │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "Pan depth" In this case with a value of 080.
This parameter controls the intensity of the Autopan & Tremolo effects. Use the higher Fast Data knob and nudge buttons to adjust this parameter. In the 000 position there is no movement of sound in the stereo field & 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 Off. 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.

As can be seen the lower parameter is "Dry level". In this case with a value of 020.
This parameter determines how much "Dry" signal is in the mix. Use the lower Fast Data knob and nudge buttons to adjust this parameter. This allows "Pre" effects "Sends" arrangements to be realised. If this parameter is set to 000 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 "Effects Used" parameter.

Menu - Button (Special)

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the Special 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 "Fast Data" Knobs and the Nudge Up and Down buttons on the right of the display are used to alter these parameter's values.

EFFECTS SECTION

Page 1 looks like so:

```
┌─────────────────────────────────────────┐
│                                           │
│     EQ treble              + 4            │
│                                           │
│     EQ bass                + 4            │
│                                           │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "EQ treble". In this case with a value of +4.
This parameter adjusts the Treble of the selected Program. Use the higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

As can be seen the lower parameter is "EQ bass". In this case with a value of +4.
This parameter adjusts the Treble of the selected Program. Use the Lower Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 2 looks like so:

```
┌─────────────────────────────────────────┐
│                                           │
│     Comb frequency         0 6 9          │
│                                           │
│     Comb boost             + 1 0          │
│                                           │
└─────────────────────────────────────────┘
```

As can be seen 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 higher Fast Data knob and nudge buttons 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 "Effects Used" parameter.

⚠️ **NOTE:**

No effect will be heard when altering this parameter if the Comb Boost parameter is set to 00

As can be seen 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 Fast Data knob and nudge buttons 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 "Effects Used" parameter.

Page 3 looks like so:

```
┌─────────────────────────────────────────┐
│                                           │
│     Fx config             D + R + C       │
│                                           │
│     Config Morph           + 1 0          │
│                                           │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "Fx config". In this case with a value of D + R + C.
This parameter changes the order/arrangement of the Delay, Reverb & Chorus/Flanger/Phaser effects. Use the higher Fast Data knob and nudge buttons to adjust this parameter. Different configurations can make the effects sound quite different. i.e. a sound that is delayed then reverbed and then chorused sounds quite different to a sound that has been Chorused then Delayed then Reverbed. There are 19 different effects configurations available in the Supernova. Below is a diagram showing how the "Normal" effects configuration.

EFFECTS SECTION
IN THE NORMAL POSITION

(D + R + C)

C/F/P

Rev

Delay

Input → Dist → EQ → Comb → Pan → Output

The section enclosed
can be Morphed into
different configurations
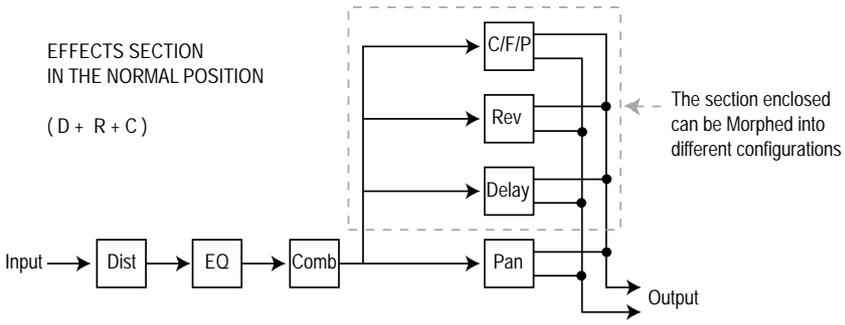
Below are diagrams showing how the different effects are connected in different configurations.

SERIES CONFIGURATIONS

D > R > C

→ Delay → Rev → C/F/P →

D > C > R

→ Delay → C/F/P → Rev →

R > D > C

→ Rev → Delay → C/F/P →

R > C > D

→ Rev → C/F/P → Delay →

C > D > R

→ C/F/P → Delay → Rev →

C > R > D

→ C/F/P → Rev → Delay →
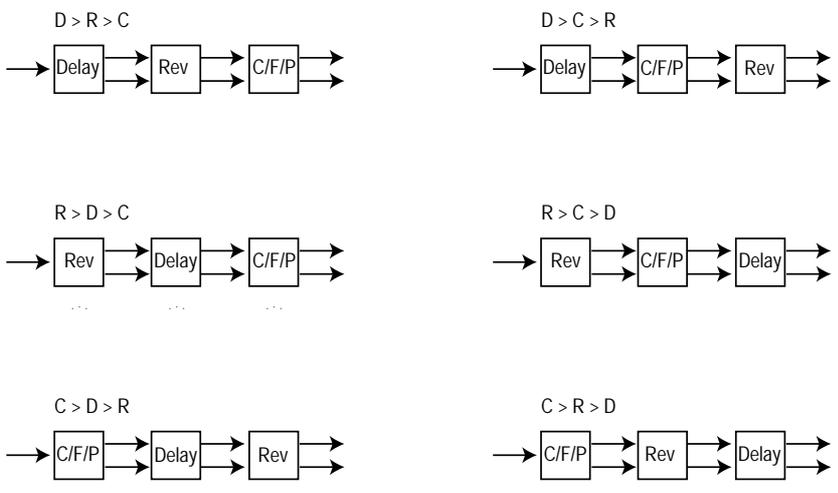
SERIES/PARALELL CONFIGURATIONS

D + [R > C]

Delay

Rev → C/F/P →

D + [C > R]

Delay

C/F/P → Rev →

R + [D > C]

Rev

Delay → C/F/P →

R + [C > D]

Rev

C/F/P → Delay →

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EFFECTS SECTION

C + [D > R]

C + [R > D]

D > [R + C]

R > [D + C]

C > [D + R]

[R + C] > D

[D + C] > R

[D + R] > C
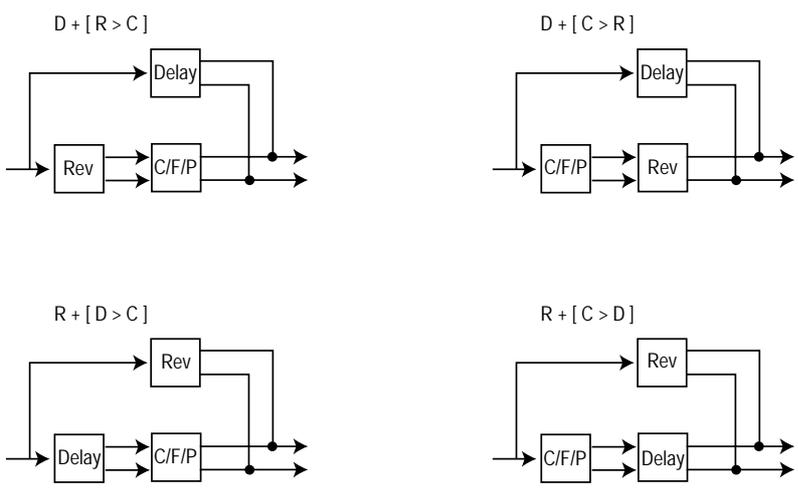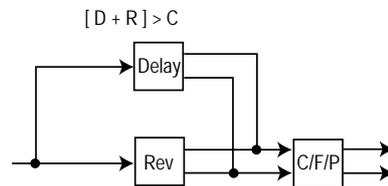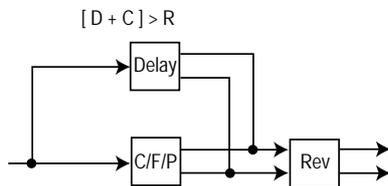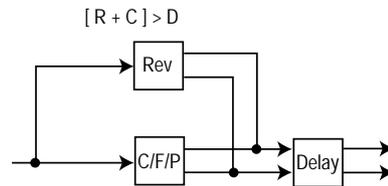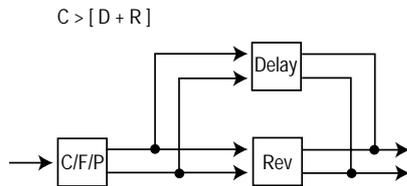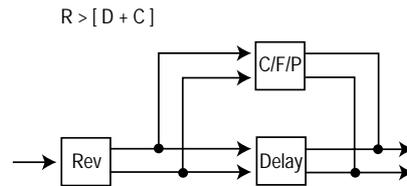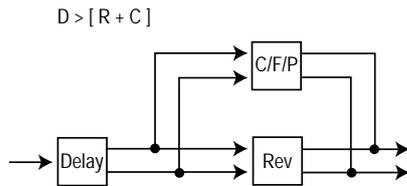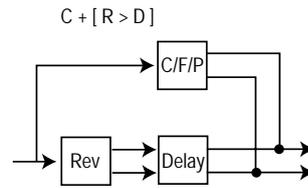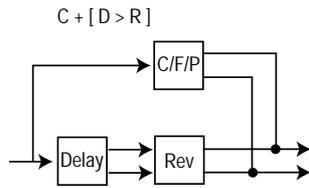
The range of this parameter is D+R+C, D>R>C, D>C>R, R>D>C, R>C>D, C>D>R, C>R>D, D+[R>C], D+[C>R], R+[D>C], R+[C>D], C+[D>R], C+[R>D], D>[R+C], R>[D+C], C>[D+R]. [R+C]>D, [D+C]>R & [D+R]>C. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Effects Used" 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.

As can be seen the lower parameter is "Config morph". In this case with a value of +10.
This parameter morphs the effect configuration from the "Normal" D+R+C configuration to any configuration selected by the Fx config parameter. Use the Lower Fast Data knob and nudge buttons to adjust this parameter. If this parameter is set to the mid position (00) the config is "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 "Effects Used" parameter.
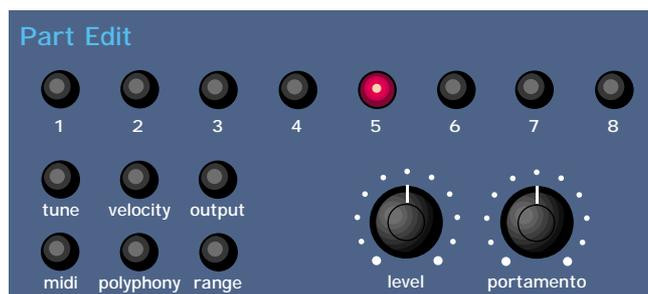
This section contains all the Knobs and buttons associated with the Part Edit Section.

Level - Knob

This knob adjusts the level of the currently selected Program. Fully anticlockwise the Program is not heard. Turning the knob clockwise turns the volume of the currently selected Program up. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with Performance in Performance Mode.

⚠ NOTE:

If a Program or Performance is distorting, it may be because the "Level" of the Program is to high. Try reducing the level until distortion ceases.

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 only work in Performance Mode. In Program mode they 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 selected Part. To assign a different Program to this Part use the Bank & 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 24 for details.

⚠ NOTE:

Part selection can be transmitted and recorded as controller data to a sequencer and the played back to the Supernova.

Tune - Button

⚠ NOTE:

This button only works in Performance mode.
This button alters the Tuning of the Program assigned to the currently selected Part. When this button is pressed the display shows parameters relevant to this section.

PART EDIT SECTION

When this button is pressed the display shows:

```
Part semitone        +07

Part detune          +25
```

As can be seen the higher parameter is "Part semitone". In this case with a value of +07.
This parameter Transposes the Program by the number of semitones selected using the higher Fast Data knob and nudge buttons. The range of this parameter is -24 to +24 semitones. This parameter is memorised with the Performance.

As can be seen the lower parameter is "Part detune". In this case with a value of +25
This parameter Detunes the Program by the amount selected using the higher Fast Data knob and nudge buttons. The range of this parameter is -64 to +63 cents. This parameter is memorised with the Performance.

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:

```
Part velocity curve

                Normal
```

As can be seen the higher parameter 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 Fast Data knob and nudge buttons. In the "Normal" position the Program plays in a normal velocity sensitive way. (If the Velocity parameter for the selected Program has 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 Velocity parameter for the selected Program has 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 & 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 works in Program and Performance mode.

When this button is pressed a series of pages is available on the display containing parameters relevant to this section.
In the In/Out menu there are 3 pages available. There are a maximum of 2 parameters displayed. One for each line on the display. The "Fast Data" Knobs on the right of the display are used to alter these parameter's values

Page 1 (Performance Mode) looks like so:

```
Part outputs         1 & 2

Effects used         Program
```

As can be seen the higher parameter is "Part outputs". In this case with a value of 1&2. This parameter determines which set of outputs the currently selected Part will be output from. Use the higher Fast Data knob and nudge buttons to adjust this parameter. It is possible to have each Part go to an individual output. (Mono) To do this set Part 1& 2 to go to outputs 1&2 then pan Part 1 to the Left (output 1) and Part 2 (output 2) to the Right with the panpot. Set Part 3&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 Part 5&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. The range of this parameter is 1&2, 3&4, 5&6 and 7&8. This parameter is memorised with the Performance.

⚠
NOTE:

If the Delay, Reverb or 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 make sure the send levels of these effects are set to 000.

As can be seen the lower parameter is "Effects used". In this case with a value of Program. Use the lower Fast Data knob and nudge buttons to adjust this parameter. This parameter determines if the Effects to be used by the Part will change when a MIDI Program Change message is received from the current settings to the settings of the new Program or not. This can be useful for dramatic changes in Effects by setting this parameter to Program, or this parameter can be useful for retaining the effects used on this Part when a MIDI Program Change is received by setting it to "Part".
The range of this parameter is Program & Part. This parameter is memorised with the Performance.

Page 2 looks like so:

```
Copy to part effects

All program effects
```
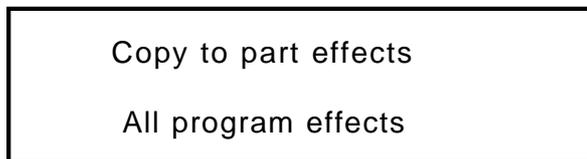
As can be seen the parameter is "Copy to part effects" with a value of All program effects.
This is a copying utility that allows copying of the effects settings in the currently selected program to the "Part Effects Buffer".
To activate the copying press the write button while in this mode. The display will show what is being copied briefly and then resume to this display. The effects will be copied across and the sound will sound exactly the same if the "Effects used" parameter on page 1 of this menu is set to Program or Part. The range of this parameter is All program effects, Program distortion, Program reverb, Program chorus, Program delay, Program panning, Program EQ, Program comb filter & Program FX config. This parameter is not memorised.

Page 3 looks like so:

```
Copy to prog effects

All part effects
```
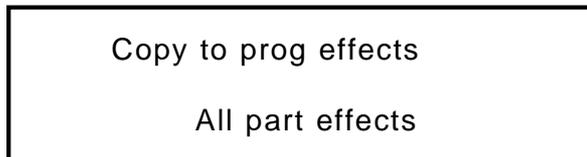
As can be seen the parameter is "Copy to prog effects" in this case with a value of All part effects.
This is a copying utility that allows copying of the effects settings in the currently selected Part's "Part Effects Buffer" to the Part's assigned Program. In fact, this is the reverse of the above. To activate the copying press the write button while in this mode. The display will show what is being copied briefly and then resume to this display. The effects will be copied and the sound will sound exactly the same if the "Effects used" parameter on page 1 of this menu is set to Program or Part. The range of this parameter is All program effects, Part distortion, Part reverb, Part chorus, Part delay, Part panning, Part EQ, Part comb filter & Part FX config. This parameter is not memorised.

MIDI - Button

This button only works in Performance mode.
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 2 pages available. There are a maximum of 2 parameters displayed. One for each line on the display. The "Fast 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.

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PART EDIT SECTION

Page 1 looks like so:

```
┌─────────────────────────────────────────┐
│                                          │
│    Sustain            Enable             │
│                                          │
│    Midi channel       Global             │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "Sustain". In this case with a value of Enable.
This parameter determines how the selected Part will respond to incoming MIDI Sustain pedal data. (Controller 64). This parameter is adjusted using the higher Fast Data knob and nudge buttons. 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 be set to do other things as well though. 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. Some manufacturers have different polarity pedals which can make this parameter behave in reverse so inverse parameters have been added as an option. Additionally it is often useful when layering 2 or more Parts to have one Part 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) & Off. This parameter is memorised with the Performance.

As can be seen the lower parameter is "MIDI channel". In this case with a value of Global.
This parameter selects the MIDI Channel the Part will receive & transmit MIDI Data on. Use the lower Fast Data knob and nudge buttons 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 on any 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 on the desired channel. It is not possible to set the Part's MIDI channel Omni or Global using this method.

Page 2 looks like so:

```
┌─────────────────────────────────────────┐
│                                          │
│    Prog change filt        Off           │
│                                          │
│    Controller filt         Off           │
│                                          │
└─────────────────────────────────────────┘
```

As can be seen the higher parameter is "Prog change filt". 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 higher Fast Data knob and nudge buttons. 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 11 of the Global menu is set to Disabled, then no Program Change messages will be recognised regardless of this parameters's setting.

⚠️ **NOTE:**

If the Program Change filter is set to On it also filters out Bank select messages. (CC00 & CC32)

As can be seen 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 Fast Data knob and nudge buttons. 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 10 of the Global menu is set to Disabled, then no Control Change messages will be recognised regardless of this parameters's 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 in Performance and 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. There are a maximum of 2 parameters displayed. One for each line on the display. The "Fast 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 polyphony          Poly
```

As can be seen the higher parameter is "Part polyphony". In this case with a value of Poly.
This parameter assigns how the much polyphony is assigned to the selected Part and is adjusted using the higher Fast Data knob and nudge buttons. 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. 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 Mono, only one voice is assigned to the Part. (Monophonic). 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 in Program mode, use the lower Fast Data knob and nudge buttons to adjust this parameter. The range of this parameter in the Performance mode is Off, Poly & Mono. In the Program mode the range is Poly & Mono. This parameter is memorised with Programs in Program Mode and Performances in Performance Mode.

Range - Button

This button only works in Performance mode.
This button alters the Key Range of the currently selected Part. 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 "Fast 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 highest  key        C8

Part lowest   key        C0
```

As can be seen the higher parameter is "Part highest key". 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 higher Fast Data knob and nudge buttons. The range of this parameter is C-2 to G8 . This parameter is memorised with the Performance.

As can be seen the lower parameter is "Part lowest key." 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 Fast Data knob and nudge buttons. The range of this parameter is C-2 to G8 . This parameter is memorised with the Performance.

PART EDIT SECTION / TROUBLESHOOTING SECTION

⚠️ **NOTE:**

If the Lowest note is set higher than the Highest note, a reverse window can be created. For example:
If Part Highest key is set to C2 and Part lowest key is set to C3. The sound appears on the keyboard from C0 to C2 and from C3 to C8. In other words there is a "Hole" in the middle of the keyboard.

⚠️ **NOTE:**

The Range for the Part can be set via MIDI 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 into the Supernova the desired split point. You can set both parameters simultaneously by holding down both page buttons.

TROUBLESHOOTING

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 Supernova. 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 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 in a Performance are not set to 0.

LFOs, Delays and/or Arpeggiator do not sync to MIDI Clock.

Check the Clock parameter in the Global Mode is set to Ext. (refer page 34) If this is set to external, check the Supernova is synced by varying the tempo of the Sequencer. If the Supernova speeds up and slows down accordingly, Supernova 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 may be synced but synchronised at a strange time signature. Check the synchronisation parameters refer on page 65 for the LFOs, page 71 for the Delay and page 44 for the Arpeggiator for details.

LFOs, Delay and/or Arpeggiator is stuck/stopped/does not work.

This is almost certainly because the LFOs, Delay and/or Arpeggiator are set to sync to MIDI Clock. To check this see if the Clock parameter in the Global Mode is set to Ext. (refer page 34) If it is set to External then setting this parameter to internal 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 and confirm that the sequencer is actually sending MIDI Clock. A lot of software sequencers default to NOT transmitting MIDI Clock. If the LFO / Delay / Arp is stuck / not functioning and 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 program. Consult the sequencer / software's owners manual for details.

Cannot change "Banks" via MIDI.

Bank changes are different from program changes and are actually two 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 channels. If the message you send does not change the bank on the Supernova then you are not sending the right messages and values. Consult your sequencer / software owners manual for details. Bank change messages are 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. 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's front panel while recording into

a sequencer. Make sure the MIDI output of the Supernova is connected to the MIDI input of your sequencer / computer either directly or via a merge box.

⚠️
NOTE:

There is a Table of Bank messages recognised by the Supernova on page 99.

Supernova does not respond to Program Change / Bank select messages.

Check that the Incoming Program change parameter in the Global mode is set to Enabled &/or the Prog change filt parameter in MIDI menu of the Part edit section is not On.

Supernova does not respond to Controller messages.

Check that the Incoming control change parameter in the Global mode is set to Enabled &/or the Controller filt parameter in MIDI menu of the Part edit section is not On.

The knobs & buttons do not alter the sound / do anything.

Check that the Local On/Off parameter in Global mode is not set to Off.

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 an Expanded Supernova (Supernova Pro) to a standard Supernova, then these sounds will not go into the Supernova as corresponding banks do not exist in the satandard machine. You can however specify All Progs to bank A, B, C or D and All Perfs to bank A or B to get around this.

SPECIFICATION

SUPERNOVA / SUPERNOVA PRO SPECIFICATION

Synthesis System	Analogue Sound Modelling.
Polyphony	*20 Voice (expandable) for the standard Supernova and 44 Voice for the Supernova Pro.*
Sound Sources per Voice	3 Oscillators, 2 Ring Modulators and a Noise Generator.
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. The filter also features and overdrive control.
LFOs	2 LFOs capable of oscillating at Audio rates.
Program Effects	Distortion, Comb Filter, EQ, Reverb, Chorus/Flanger/Phaser, Delay and Panning effects for each Program.
Total number of Effects	56 Effects available simultaneously - 7 Effects for each of the 8 Parts of a Performance or Program. *Yes you can have a different Reverb on each part, a different Delay on each part, a different Chorus etc.*
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 24bit 128 x Oversampling Delta Sigma DACs for each output.
Number of Programs	512 Programs in 4 banks (expandable) on the standard 20 Voice Supernova, 1024 Programs in 8 Banks on the 44 Voice Supernova Pro.
Number of Performances	256 Performances in 2 banks (expandable) on the 20 Voice standard Supernova, 512 Performances in 4 Banks on the 44 Voice Supernova Pro.
Arpeggiator	Built in Arpeggiator with 384 Preset Polyphonic, Preset Monophonic and User Programmable Polyphonic and Monophonic Patterns. 8 Arpeggiators are 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.
MIDI	In/Out/Thru.
Dimensions	3U Rackmount - H133mm x D222mm (including Knobs) x W483mm.
Weight	5kg.

SUPERNOVA PRO EXPANSION BOARD SPECIFICATION
(For standard 20 voice version only)

Additional Voices	24 bringing the expanded model to 44 voice polyphony.
Additional Programs	512 additional Programs in 4 Banks bringing the expanded model to 1024 Programs in 8 Banks.
Additional Performances	256 additional Performances in 2 Banks bringing the expanded model to 512 performances in 4 Banks.

⚠️
NOTE:
Specification subject to change without prior notice due to improvements.

Function		Transmitted	Recognised	Remarks
Basic Channel	Default Changed	1-16	1-16	Memorised
Mode	Default Messages Altered	x 888888888888	2 x	
Note Number	True Voice	nn 888888888888	nn nn	
Velocity	Note On Note Off	o x	o x	Velocity is transmitted by the Arpeggiator.
After Touch	Keys Ch's	x x	o o	Key Aftertouch recognised but treated as Channel Aftertouch.
Pitch Bender		x	o 0-12 Semi	
Control Change		3-98, 100-119 (See Controller Map)	1-98, 100-119 (See Controller Map)	CC 0 ignored CC 99 ignored CC 2 re-mapable See Controller and NRPN Tables for full details
Program Change	True*	o 0-127 888888888888	o 0-127	
System Exclusive		o	o	Voice & User Pattern Parameters, Write & Dump requests
System Clock Real Time		x	o	Start, Stop, Continue & Clock
Aux Messages	Local Off All notes Off Active Sense Reset Control All Sound Off	o x x x x	o o x o o	

Mode1:	Omni On, Poly	Mode3:	Omni On, Mono
Mode2	Omni Off, Poly	Mode4:	Omni Off, Poly

Version 1	Date: 4/8/99	o =Yes	x = No

MIDI CONTROLLER / NRPN TABLES

[*] Sent / Received only on Global MIDI Channel
[**] Bits 0 – 2 Early Ref Level, Bits 3 – 6 Reverb Type

Controller Map

0 – Bank Select MSB	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 Confg 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 Map (CC98)

0 – PACKED NRPN 0
1 – PACKED NRPN 1
2 – Osc 1 Pitch LFO 2
3 – Osc 1 Pitch Mod Wheel
4 – Osc 1 Width Env 3
5 – Osc 1 Width Mod Wheel
6 – Osc 1 Sync Env 3
7 – Osc 1 Sync LFO 2
8 – Osc 1 Sync Mod Wheel
9 – Osc 1 Soften Env 3
10 – Osc 1 Soften LFO 1
11 – Osc 1 Soften LFO 2
12 – Osc 1 Soften Mod Wheel
13 – Osc 1 Mix Env 3
14 – Osc 1 Mix LFO 1
15 – Osc 1 Mix LFO 2
16 – Osc 1 Mix Mod Wheel
17 – Osc 1 Pitch Amount
18 – Osc 2 Pitch LFO 2
19 – Osc 2 Pitch Mod Wheel
20 – Osc 2 Width Env 3
21 – Osc 2 Width Mod Wheel
22 – Osc 2 Sync Env 3
23 – Osc 2 Sync LFO 2
24 – Osc 2 Sync Mod Wheel
25 – Osc 2 Soften Env 3
26 – Osc 2 Soften LFO 1
27 – Osc 2 Soften LFO 2
28 – Osc 2 Soften Mod Wheel
29 – Osc 2 Mix Env 3
30 – Osc 2 Mix LFO 1
31 – Osc 2 Mix LFO 2
32 – Osc 2 Mix Mod Wheel
33 – Osc 2 Pitch Amount
34 – Osc 3 Pitch LFO 2
35 – Osc 3 Pitch Mod Wheel
36 – Osc 3 Width Env 3
37 – Osc 3 Width Mod Wheel
38 – Osc 3 Sync Env 3
39 – Osc 3 Sync LFO 2
40 – Osc 3 Sync Mod Wheel
41 – Osc 3 Soften Env 3
42 – Osc 3 Soften LFO 1
43 – Osc 3 Soften LFO 2
44 – Osc 3 Soften Mod Wheel
45 – Osc 3 Mix Env 3
46 – Osc 3 Mix LFO 1
47 – Osc 3 Mix LFO 2
48 – Osc 3 Mix Mod Wheel
49 – Osc 3 Pitch Amount
50 – Ring Modulator 1 * 3 Mix Env 2
51 – Ring Modulator 1 * 3 Mix Env 3
52 – Ring Modulator 1 * 3 Mix LFO 1
53 – Ring Modulator 1 * 3 Mix LFO 2
54 – Ring Modulator 1 * 3 Mix Mod Wheel
55 – Ring Modulator 2 * 3 Mix Env 2
56 – Ring Modulator 2 * 3 Mix Env 3
57 – Ring Modulator 2 * 3 Mix LFO 1
58 – Ring Modulator 2 * 3 Mix LFO 2
59 – Ring Modulator 2 * 3 Mix Mod Wheel
60 – Noise Soften Env 2
61 – Noise Soften Env 3
62 – Noise Soften LFO 1
63 – Noise Soften LFO 2

64 – Noise Soften Mod Wheel
65 – Noise Mix Env 3
66 – Noise Mix LFO 1
67 – Noise Mix LFO 2
68 – Noise Mix Mod Wheel
69 – Osc 1 Pitch LFO 1 Mod Wheel
70 – Osc 2 Pitch LFO 1 Mod Wheel
71 – Osc 3 Pitch LFO 1 Mod Wheel
72 – Osc 1 Pitch LFO 1 Aftertouch
73 – Osc 2 Pitch LFO 1 Aftertouch
74 – Osc 3 Pitch LFO 1 Aftertouch
75 – Osc 1 Sync Formant
76 – Osc 2 Sync Formant
77 – Osc 3 Sync Formant
78 – Osc 1 Key Sync
79 – Osc 2 Key Sync
80 – Osc 3 Key Sync
81 – Osc 1 Sync Skew
82 – Osc 2 Sync Skew
83 – Osc 3 Sync Skew
84 – PACKED NRPN 84
85 – LFO 1 Speed Aftertouch
86 – LFO 2 Speed Aftertouch
87 – Filter Freq Mod Wheel
88 – Filter Res Mod Wheel
89 – Filter Freq LFO 2 Mod Wheel
90 – Filter Res LFO 2 Mod Wheel
91 – Filter Freq LFO 2 Aftertouch
92 – Filter Res LFO 2 Aftertouch
93 – Filter Freq Aftertouch
94 – Filter Res Aftertouch
95 – Comb Filter Freq
96 – Comb Filter Boost
97 – Effects Dry Level
98 – Panning Speed
99 – Panning Depth
100 – PACKED NRPN 100
101 – Delay Width
102 – RESERVED
103 – LFO 1 Speed Mod Wheel
104 – LFO 2 Speed Mod Wheel
105 – Env 1 Mod Wheel (Volume)
106 – Env 2 Aftertouch (Volume)
107 – EQ Treble
108 – EQ Bass
109 – PACKED NRPN 109
110 – PACKED NRPN 110
111 – Part Semitone Detune
112 – Part Detune
113 – PACKED NRPN 113
114 – Part Range Highest Note
115 – Part Range Lowest Note
116 – Master Tune [*]
117 – Breath Controller Remap Option [*]
118 – Arp Transpose MIDI Channel [*]
119 – Arp Transpose Ref Note [*]
120 – Program Map Edit Location [*]
121 – Program Map Program [*]
122 – Arp User Pattern Edit Location [*]
123 – Arp User Pattern Step No [*]
124 – Arp User Pattern Note / transpose [*]
125 – Arp User Pattern Velocity [*]
126 – Arp User Pattern No Of Steps [*]
127 – Filter Q Normalise

MIDI CONTROLLER / NRPN TABLES

NRPN 0 Map (CC6 values)

0 – Osc 1 Square Wave	64 – Osc 1 Semitone +7
1 – Osc 1 Saw Wave	65 – Osc 1 Semitone +8
2 – RESERVED	66 – Osc 1 Semitone +9
3 – RESERVED	67 – Osc 1 Semitone +10
4 – RESERVED	68 – Osc 1 Semitone +11
5 – RESERVED	69 – Osc 1 Semitone +12
6 – RESERVED	70 – Osc 2 Semitone –12
7 – RESERVED	71 – Osc 2 Semitone –11
8 – RESERVED	72 – Osc 2 Semitone –10
9 – RESERVED	73 – Osc 2 Semitone –9
10 – Osc 2 Square Wave	74 – Osc 2 Semitone –8
11 – Osc 2 Saw Wave	75 – Osc 2 Semitone –7
12 – RESERVED	76 – Osc 2 Semitone –6
13 – RESERVED	77 – Osc 2 Semitone –5
14 – RESERVED	78 – Osc 2 Semitone –4
15 – RESERVED	79 – Osc 2 Semitone –3
16 – RESERVED	80 – Osc 2 Semitone –2
17 – RESERVED	81 – Osc 2 Semitone –1
18 – RESERVED	82 – Osc 2 Semitone 0
19 – RESERVED	83 – Osc 2 Semitone +1
20 – Osc 3 Square Wave	84 – Osc 2 Semitone +2
21 – Osc 3 Saw Wave	85 – Osc 2 Semitone +3
22 – RESERVED	86 – Osc 2 Semitone +4
23 – RESERVED	87 – Osc 2 Semitone +5
24 – RESERVED	88 – Osc 2 Semitone +6
25 – RESERVED	89 – Osc 2 Semitone +7
26 – RESERVED	90 – Osc 2 Semitone +8
27 – RESERVED	91 – Osc 2 Semitone +9
28 – RESERVED	92 – Osc 2 Semitone +10
29 – RESERVED	93 – Osc 2 Semitone +11
30 – Osc 1 Octave –2	94 – Osc 2 Semitone +12
31 – Osc 1 Octave –1	95 – Osc 3 Semitone –12
32 – Osc 1 Octave 0	96 – Osc 3 Semitone –11
33 – Osc 1 Octave +1	97 – Osc 3 Semitone –10
34 – Osc 1 Octave +2	98 – Osc 3 Semitone –9
35 – Osc 2 Octave –2	99 – Osc 3 Semitone –8
36 – Osc 2 Octave –1	100 – Osc 3 Semitone –7
37 – Osc 2 Octave 0	101 – Osc 3 Semitone –6
38 – Osc 2 Octave +1	102 – Osc 3 Semitone –5
39 – Osc 2 Octave +2	103 – Osc 3 Semitone –4
40 – Osc 3 Octave –2	104 – Osc 3 Semitone –3
41 – Osc 3 Octave –1	105 – Osc 3 Semitone –2
42 – Osc 3 Octave 0	106 – Osc 3 Semitone –1
43 – Osc 3 Octave +1	107 – Osc 3 Semitone 0
44 – Osc 3 Octave +2	108 – Osc 3 semitone +1
45 – Osc 1 Semitone –12	109 – Osc 3 Semitone +2
46 – Osc 1 Semitone –11	110 – Osc 3 Semitone +3
47 – Osc 1 Semitone –10	111 – Osc 3 Semitone +4
48 – Osc 1 Semitone –9	112 – Osc 3 Semitone +5
49 – Osc 1 Semitone –8	113 – Osc 3 Semitone +6
50 – Osc 1 Semitone –7	114 – Osc 3 Semitone +7
51 – Osc 1 Semitone –6	115 – Osc 3 Semitone +8
52 – Osc 1 Semitone –5	116 – Osc 3 Semitone +9
53 – Osc 1 Semitone –4	117 – Osc 3 Semitone +10
54 – Osc 1 Semitone –3	118 – Osc 3 Semitone +11
55 – Osc 1 Semitone –2	119 – Osc 3 Semitone +12
56 – Osc 1 Semitone –1	120 – Portamento Type = Portamento
57 – Osc 1 Semitone 0	121 – Portamento Type = Glissando
58 – Osc 1 Semitone +1	122 – Portamento Glide = Linear
59 – Osc 1 Semitone +2	123 – Portamento Glide = Exponential
60 – Osc 1 Semitone +3	124 – LFO 1 Delay Envelope = Multi
61 – Osc 1 Semitone +4	125 – LFO 1 Delay Envelope = Single
62 – Osc 1 Semitone +5	126 – LFO 2 Delay Envelope = Multi
63 – Osc 1 Semitone +6	127 – LFO 2 Delay Envelope = Single

NRPN 1 Map (CC6 values)

0 – Filter 12db Slope	64 – Breath Sensitivity Normal [*]
1 – Filter 18db Slope	65 – Breath Sensitivity +1 [*]
2 – Filter 24db Slope	66 – Breath Sensitivity +2 [*]
3 – Filter Type = Low Pass	67 – Breath Sensitivity +3 [*]
4 – Filter Type = Band Pass	68 – Breath Sensitivity +4 [*]
5 – Filter Type = High Pass	69 – Breath Sensitivity +5 [*]
6 – RESERVED	70 – Arp Constant Pitch Off
7 – RESERVED	71 – Arp Constant Pitch On
8 – RESERVED	72 – Arpeggiator On
9 – RESERVED	73 – Arpeggiator Off
10 – RESERVED	74 – Arp Keysync On
11 – RESERVED	75 – Arp Keysync Off
12 – RESERVED	76 – Arp Pattern Bank = Mono
13 – RESERVED	77 – Arp Pattern Bank = Poly
14 – RESERVED	78 – Arp Pattern Bank = User
15 – RESERVED	79 – Arp Latch Mode = Constant
16 – LFO 1 Square Wave	80 – Arp Latch Mode = Pattern
17 – LFO 1 Saw Wave	81 – Arp Quantise = Off
18 – LFO 1 Triangle Wave	82 – Arp Quantise = Mode 1
19 – LFO 1 Sample & Hold Wave	83 – Arp Quantise = Mode 2
20 – LFO 2 Square Wave	84 – Arp Quantise = Mode 3
21 – LFO 2 Saw Wave	85 – Arp Quantise = Mode 4
22 – LFO 2 Triangle Wave	86 – Arp Velocity Mode = Played
23 – LFO 2 Sample & Hold Wave	87 – Arp Velocity Mode = Full (127)
24 – LFO 1 Trigger = Freewheel	88 – Arp Velocity Mode = Half (63)
25 – LFO 1 Trigger = Keysync	89 – Arp Velocity Mode = Programmed
26 – LFO 2 Trigger = Freewheel	90 – Arpeggiator Mute Off
27 – LFO 2 Trigger = Keysync	91 – Arpeggiator 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 User Pattern Gate = Normal [*]
31 – LFO 2 Range = Slow	95 – Arp User Pattern Gate = Tie [*]
32 – LFO 2 Range = Normal	96 – Arp User Pattern Gate = Rest [*]
33 – LFO 2 Range = Fast	97 – Arp User Pattern Gate = Glide [*]
34 – Env Triggering = 1:Multi 2:Multi 3:Multi	98 – Part Outputs 1 & 2
35 – Env Triggering = 1:Multi 2:Multi 3:Single	99 – Part Outputs 3 & 4
36 – Env Triggering = 1:Multi 2:Single 3:Multi	100 – Part Outputs 5 & 6
37 – Env Triggering = 1:Multi 2:Single 3:Single	101 – Part Outputs 7 & 8
38 – Env Triggering = 1:Single 2:Multi 3:Multi	102 – Arp Output = Program Only
39 – Env Triggering = 1:Single 2:Multi 3:Single	103 – Arp Output = Program & MIDI
40 – Env Triggering = 1:Single 2:Single 3:Multi	104 – Arp Output = MIDI Only
41 – Env Triggering = 1:Single 2:Single 3:Single	105 – Internal Clock [*]
42 – Glide = Normal	106 – External Clock [*]
43 – Glide = Autoglide	107 – Program Map Bank = Current Bank [*]
44 – Glide = 2 Semitones Down	108 – Program Map Bank = Performance A [*]
45 – Glide = 2 Semitones Up	109 – Program Map Bank = Performance B [*]
46 – Glide = 5 Semitones Down	110 – Program Map Bank = Program A [*]
47 – Glide = 5 Semitones Up	111 – Program Map Bank = Program B [*]
48 – Glide = 7 Semitones Down	112 – Program Map Bank = Program C [*]
49 – Glide = 7 Semitones Up	113 – Program Map Bank = Program D [*]
50 – Glide = 12 Semitones Down	114 – Program Map Bank = Performance C [*]
51 – Glide = 12 Semitones Up	115 – Program Map Bank = Performance D [*]
52 – Chorus Type = Quad Chorus	116 – Program Map Bank = Program E [*]
53 – Chorus Type = Chorus / Flanger	117 – Program Map Bank = Program F [*]
54 – Chorus Type = Phaser	118 – Program Map Bank = Program G [*]
55 – Panning = Auto Pan	119 – Program Map Bank = Program H [*]
56 – Panning = Tremolo	120 – Memory Protect On [*]
57 – Panning = L – R	121 – Memory Protect Off [*]
58 – Panning = R – L	122 – Arp Fill In = Off – Up
59 – Breath Sensitivity –5 [*]	123 – Arp Fill In = On – Up
60 – Breath Sensitivity –4 [*]	124 – Arp Fill In = Off – Down
61 – Breath Sensitivity –3 [*]	125 – Arp Fill In = On – Down
62 – Breath Sensitivity –2 [*]	126 – Arp Fill In = Off – Played
63 – Breath Sensitivity –1 [*]	127 – Arp Fill In = On – Played

NRPN 84 Map (CC6 values)

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 = Program
12 – Osc 1 Pitch Bend Range 0	76 – Part Effects = Part
13 – Osc 1 Pitch Bend Range +1	77 – Part Sustain Mode = Enable
14 – Osc 1 Pitch Bend Range +2	78 – Part Sustain Mode = Arp Latch
15 – Osc 1 Pitch Bend Range +3	79 – Part Sustain Mode = Arp Mute
16 – Osc 1 Pitch Bend Range +4	80 – Part Sustain Mode = Enable (Inverse)
17 – Osc 1 Pitch Bend Range +5	81 – Part Sustain Mode = Arp Latch (Inverse)
18 – Osc 1 Pitch Bend Range +6	82 – Part Sustain Mode = Arp Mute (Inverse)
19 – Osc 1 Pitch Bend Range +7	83 – Part Sustain Mode = 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 – Polyphony Mode = Mode 1
23 – Osc 1 Pitch Bend Range +11	87 – Polyphony Mode = Mode 2
24 – Osc 1 Pitch Bend Range +12	88 – Sysex Tx Option = Single Program [*]
25 – Osc 2 Pitch Bend Range –12	89 – Sysex Tx Option = All Programs [*]
26 – Osc 2 Pitch Bend Range –11	90 – Sysex Tx Option = Single Prog Request [*]
27 – Osc 2 Pitch Bend Range –10	91 – Sysex Tx Option = All Progs Request [*]
28 – Osc 2 Pitch Bend Range –9	92 – Sysex Tx Option = Single Performance [*]
29 – Osc 2 Pitch Bend Range –8	93 – Sysex Tx Option = All Performances [*]
30 – Osc 2 Pitch Bend Range –7	94 – Sysex Tx Option = Single Perf Request [*]
31 – Osc 2 Pitch Bend Range –6	95 – Sysex Tx Option = All Perfs Request [*]
32 – Osc 2 Pitch Bend Range –5	96 – Sysex Tx Option = Single Arp Pattern [*]
33 – Osc 2 Pitch Bend Range –4	97 – Sysex Tx Option = All Arp Pattens [*]
34 – Osc 2 Pitch Bend Range –3	98 – Sysex Tx Option = Single Arp Patt Request [*]
35 – Osc 2 Pitch Bend Range –2	99 – Sysex Tx Option = All arp Patts Request [*]
36 – Osc 2 Pitch Bend Range –1	100 – Sysex Tx Option = Global Parameters [*]
37 – Osc 2 Pitch Bend Range 0	101 – Sysex Tx Option = Global Parameters Request [*]
38 – Osc 2 Pitch Bend Range +1	102 – Sysex Tx Option = Total Data [*]
39 – Osc 2 Pitch Bend Range +2	103 – Sysex Tx Option = Total Data Request [*]
40 – Osc 2 Pitch Bend Range +3	104 – Sysex Tx Option = Program Bank A [*]
41 – Osc 2 Pitch Bend Range +4	105 – Sysex Tx Option = Program Bank B [*]
42 – Osc 2 Pitch Bend Range +5	106 – Sysex Tx Option = Program Bank C [*]
43 – Osc 2 Pitch Bend Range +6	107 – Sysex Tx Option = Program Bank D [*]
44 – Osc 2 Pitch Bend Range +7	108 – Sysex Tx Option = Prog Bank A Request [*]
45 – Osc 2 Pitch Bend Range +8	109 – Sysex Tx Option = Prog Bank B Request [*]
46 – Osc 2 Pitch Bend Range +9	110 – Sysex Tx Option = Prog Bank C Request [*]
47 – Osc 2 Pitch Bend Range +10	111 – Sysex Tx Option = Prog Bank D Request [*]
48 – Osc 2 Pitch Bend Range +11	112 – Sysex Tx Option = Performance Bank A [*]
49 – Osc 2 Pitch Bend Range +12	113 – Sysex Tx Option = Performance Bank B [*]
50 – Osc 3 Pitch Bend Range –12	114 – Sysex Tx Option = Perf Bank A Request [*]
51 – Osc 3 Pitch Bend Range –11	115 – Sysex Tx Option = Perf Bank B Request [*]
52 – Osc 3 Pitch Bend Range –10	116 – Sysex Tx Option = Program Bank E [*]
53 – Osc 3 Pitch Bend Range –9	117 – Sysex Tx Option = Program Bank F [*]
54 – Osc 3 Pitch Bend Range –8	118 – Sysex Tx Option = Program Bank G [*]
55 – Osc 3 Pitch Bend Range –7	119 – Sysex Tx Option = Program Bank H [*]
56 – Osc 3 Pitch Bend Range –6	120 – Sysex Tx Option = Prog Bank E Request [*]
57 – Osc 3 Pitch Bend Range –5	121 – Sysex Tx Option = Prog Bank F Request [*]
58 – Osc 3 Pitch Bend Range –4	122 – Sysex Tx Option = Prog Bank G Request [*]
59 – Osc 3 Pitch Bend Range –3	123 – Sysex Tx Option = Prog Bank H Request [*]
60 – Osc 3 Pitch Bend Range –2	124 – Sysex Tx Option = Performance Bank C [*]
61 – Osc 3 Pitch Bend Range –1	125 – Sysex Tx Option = Performance Bank D [*]
62 – Osc 3 Pitch Bend Range 0	126 – Sysex Tx Option = Perf Bank C Request [*]
63 – Osc 3 Pitch Bend Range +1	127 – Sysex Tx Option = Perf Bank D Request [*]

NRPN 1OO Map (CC6 values)

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 – UNUSED
16 – Delay Sync = 1 Bar	80 – UNUSED
17 – Delay Sync = 2 Bar Triplet	81 – UNUSED
18 – Delay Sync = 1 Bar Dotted	82 – UNUSED
19 – Delay Sync = 2 Bars	83 – UNUSED
20 – Delay Sync = 4 Bar Triplet	84 – UNUSED
21 – Delay Sync = 3 Bars	85 – UNUSED
22 – Delay Sync = 5 Bar Triplet	86 – UNUSED
23 – Delay Sync = 4 Bars	87 – UNUSED
24 – Delay Sync = 3 Bar Dotted	88 – UNUSED
25 – Delay Sync = 7 Bar Triplet	89 – UNUSED
26 – Delay Sync = 5 Bars	90 – UNUSED
27 – Delay Sync = 8 Bar Triplet	91 – UNUSED
28 – Delay Sync = 6 Bars	92 – UNUSED
29 – Delay Sync = 7 Bars	93 – UNUSED
30 – Delay Sync = 5 Bar Dotted	94 – UNUSED
31 – Delay Sync = 8 Bars	95 – UNUSED
32 – Delay Sync = 6 Bar Dotted	96 – UNUSED
33 – Delay Sync = 7 Bar Dotted	97 – UNUSED
34 – Delay Sync = 8 Bar Dotted	98 – UNUSED
35 – Velocity Sensing = Soft [*]	99 – UNUSED
36 – Velocity Sensing = Hard [*]	100 – UNUSED
37 – RESERVED	101 – UNUSED
38 – RESERVED	102 – UNUSED
39 – RESERVED	103 – UNUSED
40 – RESERVED	104 – UNUSED
41 – RESERVED	105 – UNUSED
42 – RESERVED	106 – UNUSED
43 – RESERVED	107 – UNUSED
44 – RESERVED	108 – UNUSED
45 – RESERVED	109 – UNUSED
46 – RESERVED	110 – UNUSED
47 – RESERVED	111 – UNUSED
48 – RESERVED	112 – UNUSED
49 – RESERVED	113 – UNUSED
50 – RESERVED	114 – UNUSED
51 – RESERVED	115 – UNUSED
52 – RESERVED	116 – UNUSED
53 – RESERVED	117 – UNUSED
54 – RESERVED	118 – UNUSED
55 – RESERVED	119 – UNUSED
56 – RESERVED	120 – UNUSED
57 – RESERVED	121 – UNUSED
58 – RESERVED	122 – UNUSED
59 – RESERVED	123 – UNUSED
60 – RESERVED	124 – UNUSED
61 – RESERVED	125 – UNUSED
62 – RESERVED	126 – UNUSED
63 – RESERVED	127 – UNUSED

MIDI CONTROLLER / NRPN TABLES

NRPN 109 Map (CC6 values)

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 Option = Disabled [*]
3 – Arp Octave Range 3	67 – Sysex Rx Option = As Saved [*]
4 – Arp Octave Range 4	68 – Sysex Rx Option = Programs To Bank A [*]
5 – Arp Gate Time 25%	69 – Sysex Rx Option = Programs To Bank B [*]
6 – Arp Gate Time 50 %	70 – Sysex Rx Option = Programs To Bank C [*]
7 – Arp Gate Time 75%	71 – Sysex Rx Option = Programs To Bank D [*]
8 – Arp Gate Time 99%	72 – Sysex Rx Option = Perfs To Bank A [*]
9 – RESERVED	73 – Sysex Rx Option = Perfs To Bank B [*]
10 – RESERVED	74 – Sysex Rx Option = Programs To Bank E [*]
11 – RESERVED	75 – Sysex Rx Option = Programs To Bank F [*]
12 – RESERVED	76 – Sysex Rx Option = Programs To Bank G [*]
13 – RESERVED	77 – Sysex Rx Option = Programs To Bank H [*]
14 – RESERVED	78 – Sysex Rx Option = Perfs To Bank C [*]
15 – RESERVED	79 – Sysex Rx Option = 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

NRPN 110 Map (CC6 values)

0 – Arp Sync = 32nd Triplet
1 – Arp Sync = 32nd
2 – Arp Sync = 16th Triplet
3 – Arp Sync = 16th
4 – Arp Sync = 8th Triplet
5 – Arp Sync = 16th Dotted
6 – Arp Sync = 8th
7 – Arp Sync = 4th Triplet
8 – Arp Sync = 8th Dotted
9 – Arp Sync = 4th
10 – Arp Sync = 2nd Triplet
11 – Arp Sync = 4th Dotted
12 – Arp Sync = 2nd
13 – Arp Sync = 1 Bar Triplet
14 – Arp Sync = 2nd Dotted
15 – Arp Sync = 1 Bar
16 – Arp Sync = 2 Bar Triplet
17 – Arp Sync = 1 Bar Dotted
18 – Arp Sync = 2 Bars
19 – Arp Sync = 4 Bar Triplet
20 – Arp Sync = 3 Bars
21 – Arp Sync = 5 Bar Triplet
22 – Arp Sync = 4 Bars
23 – Arp Sync = 3 Bar Dotted
24 – Arp Sync = 7 Bar Triplet
25 – Arp Sync = 5 Bars
26 – Arp Sync = 8 Bar Triplet
27 – Arp Sync = 6 Bars
28 – Arp Sync = 7 Bars
29 – Arp Sync = 5 Bar Dotted
30 – Arp Sync = 8 Bars
31 – Arp Sync = 6 Bar Dotted
32 – Arp Sync = 7 Bar Dotted
33 – Arp Sync = 8 Bar Dotted
34 – Global Incoming Prog Change = Enable [*]
35 – Global Incoming Prog Change = Prog Map [*]
36 – Global Incoming Prog Change = Disable [*]
37 – Program Map Bank = Arp Bank Mono [*]
38 – Program Map Bank = Arp Bank Poly [*]
39 – Program Map Bank = Arp Bank User [*]
40 – LFO 1 Sync = Off
41 – LFO 1 Sync = 32nd Triplet
42 – LFO 1 Sync = 32nd
43 – LFO 1 Sync = 16th Triplet
44 – LFO 1 Sync = 16th
45 – LFO 1 Sync = 8th Triplet
46 – LFO 1 Sync = 16th Dotted
47 – LFO 1 Sync = 8th
48 – LFO 1 Sync = 4th Triplet
49 – LFO 1 Sync = 8th Dotted
50 – LFO 1 Sync = 4th
51 – LFO 1 Sync = 2nd Triplet
52 – LFO 1 Sync = 4th Dotted
53 – LFO 1 Sync = 2nd
54 – LFO 1 Sync = 1 Bar Triplet
55 – LFO 1 Sync = 2nd Dotted
56 – LFO 1 Sync = 1 Bar
57 – LFO 1 Sync = 2 Bar Triplet
58 – LFO 1 Sync = 1 Bar Dotted
59 – LFO 1 Sync = 2 Bars
60 – LFO 1 Sync = 4 Bar Triplet
61 - LFO 1 Sync = 3 Bars
62 - LFO 1 Sync = 5 Bar Triplet
63 - LFO 1 Sync = 4 Bars

64 – LFO 1 Sync = 3 Bar Dotted
65 – LFO 1 Sync = 7 Bar Triplet
66 – LFO 1 Sync = 5 Bars
67 – LFO 1 Sync = 8 Bar Triplet
68 – LFO 1 Sync = 6 Bars
69 – LFO 1 Sync = 7 Bars
70 – LFO 1 Sync = 5 Bar Dotted
71 – LFO 1 Sync = 8 Bars
72 – LFO 1 Sync = 6 Bar Dotted
73 – LFO 1 Sync = 7 Bar Dotted
74 – LFO 1 Sync = 8 Bar Dotted
75 – Global Incoming Cont Change = Enable [*]
76 – Part Prog Change Filter = Off
77 – Part Prog Change Filter = On
78 – Arp Output Ranging On
79 – Arp Output Ranging Off
80 – LFO 2 Sync = Off
81 – LFO 2 Sync = 32nd Triplet
82 – LFO 2 Sync = 32nd
83 – LFO 2 Sync = 16th Triplet
84 – LFO 2 Sync = 16th
85 – LFO 2 Sync = 8th Triplet
86 – LFO 2 Sync = 16th Dotted
87 – LFO 2 Sync = 8th
88 – LFO 2 Sync = 4th Triplet
89 – LFO 2 Sync = 8th Dotted
90 – LFO 2 Sync = 4th
91 – LFO 2 Sync = 2nd Triplet
92 – LFO 2 Sync = 4th Dotted
93 – LFO 2 Sync = 2nd
94 – LFO 2 Sync = 1 Bar Triplet
95 – LFO 2 Sync = 2nd Dotted
96 – LFO 2 Sync = 1 Bar
97 – LFO 2 Sync = 2 Bar Triplet
98 – LFO 2 Sync = 1 Bar Dotted
99 – LFO 2 Sync = 2 Bars
100 – LFO 2 Sync = 4 Bar Triplet
101 – LFO 2 Sync = 3 Bars
102 – LFO 2 Sync = 5 Bar Triplet
103 – LFO 2 Sync = 4 Bars
104 – LFO 2 Sync = 3 Bar Dotted
105 – LFO 2 Sync = 7 Bar Triplet
106 – LFO 2 Sync = 5 Bars
107 – LFO 2 Sync = 8 Bar Triplet
108 – LFO 2 Sync = 6 Bars
109 – LFO 2 Sync = 7 Bars
110 – LFO 2 Sync = 5 Bar Dotted
111 – LFO 2 Sync = 8 Bars
112 – LFO 2 Sync = 6 Bar Dotted
113 – LFO 2 Sync = 7 Bar Dotted
114 – LFO 2 Sync = 8 Bar Dotted
115 – Global Incoming Cont Change = Disabled [*]
116 – Part Control Change Filter = Off
117 – Part Control Change Filter = On
118 – RESERVED
119 – RESERVED
120 – RESERVED
121 – RESERVED
122 – RESERVED
123 – RESERVED
124 – RESERVED
125 – RESERVED
126 – Part Sustain Mode = Part Mute
127 – Part Sustain Mode = Part Mute (Inverse)

MIDI CONTROLLER / NRPN TABLES

NRPN 113 Map (CC6 values)

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 – RESERVED	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 – RESERVED
8 – RESERVED	72 – RESERVED
9 – RESERVED	73 – RESERVED
10 – RESERVED	74 – RESERVED
11 – RESERVED	75 – RESERVED
12 – RESERVED	76 – Part 1 Select [*]
13 – RESERVED	77 – Part 2 Select [*]
14 – RESERVED	78 – Part 3 Select [*]
15 – RESERVED	79 – Part 4 Select [*]
16 – RESERVED	80 – Part 5 Select [*]
17 – RESERVED	81 – Part 6 Select [*]
18 – RESERVED	82 – Part 7 Select [*]
19 – RESERVED	83 – Part 8 Select [*]
20 – RESERVED	84 – Arp Edit Via MIDI = Off [*]
21 – RESERVED	85 – Arp Edit Via MIDI = On [*]
22 – RESERVED	86 – Arp Edit Via MIDI = Note Only [*]
23 – RESERVED	87 – Arp Edit Via MIDI = Velocity Only [*]
24 – RESERVED	88 – Arp Edit Via MIDI = Gate Only [*]
25 – RESERVED	89 – Breath Mode = Absolute [*]
26 – RESERVED	90 – Breath Mode = Mod Positive [*]
27 – RESERVED	91 – Breath Mode = Mod Negative [*]
28 – RESERVED	92 – RESERVED
29 – RESERVED	93 – RESERVED
30 – RESERVED	94 – RESERVED
31 – RESERVED	95 – RESERVED
32 – RESERVED	96 – RESERVED
33 – RESERVED	97 – RESERVED
34 – RESERVED	98 – RESERVED
35 – RESERVED	99 – RESERVED
36 – Effects Config = Delay + Reverb + Chorus	100 – RESERVED
37 – Effects Config = Delay > Reverb > Chorus	101 – RESERVED
38 – Effects Config = Delay > Chorus > Reverb	102 – RESERVED
39 – Effects Config = Reverb > Delay > Chorus	103 – RESERVED
40 – Effects Config = Reverb > Chorus > Delay	104 – RESERVED
41 – Effects Config = Chorus > Delay > Reverb	105 – RESERVED
42 – Effects Config = Chorus > Reverb > Delay	106 – RESERVED
43 – Effects Config = Delay + [Reverb > Chorus]	107 – RESERVED
44 – Effects Config = Delay + [Chorus > Reverb]	108 – RESERVED
45 – Effects Config = Reverb + [Delay > Chorus]	109 – RESERVED
46 – Effects Config = Reverb + [Chorus > Delay]	110 – RESERVED
47 – Effects Config = Chorus + [Delay > Reverb]	111 – RESERVED
48 – Effects Config = Chorus + [Reverb > Delay]	112 – RESERVED
49 – Effects Config = Delay > [Reverb + Chorus]	113 – RESERVED
50 – Effects Config = Reverb > [Delay + Chorus]	114 – RESERVED
51 – Effects Config = Chorus > [Delay + Reverb]	115 – RESERVED
52 – Effects Config = [Reverb + Chorus] > Delay	116 – RESERVED
53 – Effects Config = [Delay + Chorus] > Reverb	117 – RESERVED
54 – Effects Config = [Delay + Reverb] > Chorus	118 – RESERVED
55 – Part 1 Mute Off [*]	119 – RESERVED
56 – Part 2 Mute Off [*]	120 – RESERVED
57 – Part 3 Mute Off [*]	121 – RESERVED
58 – Part 4 Mute Off [*]	122 – RESERVED
59 – Part 5 Mute Off [*]	123 – RESERVED
60 – Part 6 Mute Off [*]	124 – RESERVED
61 – Part 7 Mute Off [*]	125 – RESERVED
62 – Part 8 Mute Off [*]	126 – RESERVED
63 – Part 1 Mute On [*]	127 – RESERVED

Bank No	Nova Bank
0	Program Change Lookup Table
1	Performance Bank A
2	RESERVED
3	RESERVED
4	RESERVED
5	Program Bank A
6	Program Bank B
7	RESERVED
8	RESERVED
9	RESERVED
10	RESERVED
11	RESERVED
12	RESERVED
13	Arpeggiator Pattern Bank Mono
14	Arpeggiator Pattern Bank Poly
15	Arpeggiator Pattern Bank User

Sync Setting	MIDI Clocks (Ticks)
Off	NA
32 Triplet	2
32nd	3
16th Triplet	4
16th	6
8th Triplet	8
16th Dotted	9
8th	12
4th Triplet	16
8th Dotted	18
4th	24
2nd Triplet	32
4th Dotted	36
2nd	48
1 Bar Triplet	64
2nd Dotted	72
1 Bar	96
2 Bar Triplet	128
1 Bar Dotted	144
2 Bars	192
4 Bar Triplet	256
3 Bars	288
5 Bar Triplet	320
4 Bars	384
3 Bar Dotted (4.5 Bars)	432
7 Bar Triplet	448
5 Bars	480
8 Bar Triplet	512
6 Bars	576
7 bars	672
5 Bar Dotted (7.5 Bars)	720
8 Bars	768
6 Bar Dotted (9 Bars)	864
7 Bar Dotted (10.5 bars)	1008
8 Bar Dotted (12 Bars)	1152

PROGRAMS BANK A

0	Sintillator M-Wh	64	Pulsebass
1	Skewed Arp	65	Synth Scratch
2	Softena Bass M-Wh	66	Staccato Filter
3	Velo 303	67	Vienna Bender
4	Velocity Mutes	68	Piki
5	Its Not OK	69	Rez Square M-Wh
6	Garage Kick	70	DetuneBass M-Wh
7	FM EP	71	Randevous 2 harp
8	T-chu Wave	72	Comb Snare
9	Ravin On	73	Arpy 30Dist
10	Velo 303 Dist	74	Hard Bass
11	SyncHeathHazard	75	Prelude
12	Stringz	76	Arp Fingers
13	Garage Organ	77	Sweep 12 dB
14	Synthi Harp M-Wh	78	Strillan M-Wh
15	Square Basics	79	Waterphones
16	Synus M-Wh	80	Pulse Clav M-Wh
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	Pickled on…	88	No FM Huh?
25	Slynkie Slide	89	909 Clap
26	Full Organ	90	Perckie Saw M-Wh
27	Vorsprung…M-Wh	91	Coke Filter M-Wh
28	909 Snare 1	92	Sup Jup Horn M-Wh
29	Pad 4 Landing	93	Clockworks M-Wh
30	DigiTrouserCough	94	Comatose
31	Anafuzzy logik	95	Open High Hat 1
32	Spectra Pad	96	Your Pad or Mine
33	Vindalo Noise	97	Xtal Drop
34	SlapBass1	98	S-ash Tray M-Wh
35	Techno crat	99	Uplifting M-Wh
36	Obie Paddiviv	100	Subbass M-Wh
37	Deadly Sync M-Wh	101	Clix Organ
38	Echoed Maj 3rd	102	Swidge M-Wheel
39	Naked	103	Delicate Arp
40	U-no Bass1	104	Syncapation
41	EP	105	Closed High Hat 1
42	Ambient Line	106	Flange Pad
43	RainPicks	107	X mod Bass
44	No Moralies M-Wh	108	Nova Crash 1
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	Skwusha 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	909 Tom M-Wh
53	Sonar (C3) M-Wh	117	Virtual Panpipe
54	TeaSub Bass	118	Glider 2 Pad M-Wh
55	Bright EP	119	Hard Nosed
56	Brass	120	808 Kick2
57	Eleventh HourPad	121	Piano Pad M-Wh
58	SuperStrings1	122	Raver Pad M-Wh
59	TB1 M-Wh	123	Roundhouse Bass
60	All The Rave	124	Pick 'n' Mix
61	Stack HPF M-Wh	125	Rain Piz
62	Infiltrator SFX	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	Leader
4	Lonely Olive		68	D'you know Pick
5	Z-Plane VeloPick		69	Perci Blip M-Wh
6	Kickin Hardcore		70	Simple Bass 2
7	Giggin EP		71	Snotty Nose
8	U-no Brass		72	Snared
9	Screaming Raver		73	Harmonic Dist303
10	DistortOrgan		74	Hardbasssweep
11	Bigger 1		75	Obie String Pad
12	Polysikz Strings		76	Random Arp
13	Voxi Organ		77	Sweep 24dB
14	Lead Gat		78	Filmskore
15	HolidayLeadBass		79	Liquinova M-Wh
16	Sine-us		80	FM Clav
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	Squeege M-Wh		86	Organ 1
23	Organ Perc Bass2		87	Syncker
24	Don't Pick!		88	Psy1
25	Stab		89	Goes Like Clappr
26	Fuller Organ		90	Perckie Sq M-Wh
27	Hartkern M-Wh		91	Obie Extravert
28	909 Snare 2		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	Zing a Zing Ahh		99	Slow Sweepa
36	Choral Pad M-Wh		100	2 Osc & M-Wh Sub
37	Messy Sync M-Wh		101	MultiHigh Hat
38	Old'n'Rickety		102	Radar>Comms
39	TB Vac>scene 2		103	Rio Mod Wheel
40	U-no Bass2		104	DistLead
41	Velo Stabber		105	Boogie Lead
42	Dreamy Arp		106	Emerald
43	Ringglass		107	FilterBass M-Wh
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	Bell 1		112	Whiteout
49	Garage Swelch		113	Sync & Ring Bass
50	Single Sub Wheel		114	Needle Pick M-Wh
51	303 Groover 2 M-Wh		115	Electro Wire
52	PWM Crunchie		116	Electro Snare
53	Staccato		117	Low Transmitter
54	Simple Bass		118	Electro Guiro
55	Super Nova TramP		119	Velo 303 Arp
56	Brassic		120	Garage Kick Arp
57	Upstairs@Holgers		121	Simple Bass Arp
58	SuperStrings2		122	SyncSaturation
59	Doh!		123	Tin Can Wire M-Wh
60	Attacka M-Wh		124	Clickie Pickie
61	Xfade HPF		125	Chirpy Novae
62	Explosion		126	Simple Arp M-Wh
63	Pocket stylophone		127	Init Program

PROGRAMS BANK C

0	Neuroglider	64	Basse
1	Die Roboter	65	Synth Stop Scratch
2	Bace	66	Staccato Pulse
3	TB Vac>scene	67	Ring on a lead
4	Gated Pad	68	Poppy
5	SupJupVelBrass1	69	Dreamin Pick M-Wh
6	202 Kick	70	ThunderFloorBass
7	Phased EP	71	Synced M-Wh Muck
8	Jubrassic	72	Wabbler
9	Raversiren	73	TB2
10	Powerchord	74	PsyGrund
11	Lead or Bass	75	Airy Fairy
12	Smooth Strings	76	Ring Rise
13	Breath Dist	77	7th Machine
14	ElectroStratGat	78	Film Pad
15	Drubex SQ	79	Tubus
16	Softena	80	Clavi
17	Nasty Bass	81	MW Cut
18	Clickspace	82	Mallet
19	Jupiter Slapper	83	Jazzer Lead Gat
20	Fathead	84	Pad Sweep
21	U-no polysynth 2	85	Starfall
22	Zumph	86	Pianova
23	Garage Organ Bass	87	Simple Sync
24	Sass Pick	88	Psy2
25	7th Stak	89	D'you know Sq
26	ClickOrgan	90	Perckie Pulse M-Wh
27	Dutch M-Wh	91	PS_ Strings 7th
28	SnareDrummer	92	Echoed Strings
29	Glider	93	Syncrodrone
30	U-no Sub	94	MusicBox
31	Its OK as it is	95	Hi Hat (Open)
32	Inverse Square	96	SoftStrings
33	Velo Spitz	97	Pluck Knows M-Wh
34	SlapBass3	98	Deep Lord
35	Zing Leak	99	Nova Railway M-Wh
36	Plated analogue	100	Crystal Shimmer MWh
37	Synk	101	Force Field
38	Unison DaDaDaa	102	Science lab
39	Sass!	103	Madness 303
40	Zap Bass	104	Jazz Guitar
41	Sanxion Filtered	105	Hi Hat (Closed)
42	Heavenly Slide	106	Strung Up
43	Ring>Vince	107	Poms Bass4
44	Simpler Bass	108	Noisik
45	Sollie strings 1	109	Downsweep
46	Sync Lead M-Wh	110	Downloading
47	Smack M-Wh	111	Obie Wurlie
48	JDee Bell	112	S&H Noise
49	R'n'B Glide M-Wh	113	SyncBass
50	Pulsering Bass	114	Needle Pulse M-Wh
51	Ring Riser	115	Alienoiz1
52	Syncronicity	116	909 Snare 1 Arp
53	Alienoiz1	117	909 Clap Arp
54	Bass4	118	Kickin
55	Whirly	119	Closed H-Hat1Arp
56	Swishi	120	Spectrum
57	PurrFlange	121	Synth Cymbals
58	Formant Saw Pad	122	Saturated Square
59	TB Poly Arp	123	Trans Euro Exprs
60	Our Friend PWM	124	Seq Nova M-Wh
61	Cykokinetic M-Wh	125	Alienoiz2
62	Komb Noise	126	Arp Sync M-Wh
63	Whistle	127	Simplest Bass

0	Blaster Master	64	Juicy Gaff
1	Pad on Spec	65	Agro Pad
2	Tech 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	SintillatedWorry	71	Chime On
8	Cool Pad	72	Choccie
9	The Pizzacato	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 Aaah	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 Strings	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
33	Kit 1	97	7th Heaven
34	EP & Strings	98	3rd & 7th
35	String+PluckLead	99	Perky Synth Pad
36	Good Ole 80's	100	MooZ At 72oz..
37	Filming in Space	101	Staccato Saw
38	AttackVelo-Chord	102	Blip & Co
39	Probe	103	Trouser Fat
40	3rd Party Pad	104	Invert Filta Pad
41	Two Big Ones	105	Perci Fellow
42	Trance Nation	106	Flutter Pad
43	Morphwave	107	Liquid Sweep
44	Synth 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	Fantasam	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	Super Fat	117	Twin Organ 2
54	Squelchie	118	Kit 2
55	Heaven OrganPad	119	The Pizzacato 2
56	Super Unisyn	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 & Sparks	127	Init Perf

PERFORMANCE BANK B

0	Vanilla Perf		64	Vanilla Perf
1	Vanilla Perf		65	Vanilla Perf
2	Vanilla Perf		66	Vanilla Perf
3	Vanilla Perf		67	Vanilla Perf
4	Vanilla Perf		68	Vanilla Perf
5	Vanilla Perf		69	Vanilla Perf
6	Vanilla Perf		70	Vanilla Perf
7	Vanilla Perf		71	Vanilla Perf
8	Vanilla Perf		72	Vanilla Perf
9	Vanilla Perf		73	Vanilla Perf
10	Vanilla Perf		74	Vanilla Perf
11	Vanilla Perf		75	Vanilla Perf
12	Vanilla Perf		76	Vanilla Perf
13	Vanilla Perf		77	Vanilla Perf
14	Vanilla Perf		78	Vanilla Perf
15	Vanilla Perf		79	Vanilla Perf
16	Vanilla Perf		80	Vanilla Perf
17	Vanilla Perf		81	Vanilla Perf
18	Vanilla Perf		82	Vanilla Perf
19	Vanilla Perf		83	Vanilla Perf
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22	Vanilla Perf		86	Vanilla Perf
23	Vanilla Perf		87	Vanilla Perf
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25	Vanilla Perf		89	Vanilla Perf
26	Vanilla Perf		90	Vanilla Perf
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28	Vanilla Perf		92	Vanilla Perf
29	Vanilla Perf		93	Vanilla Perf
30	Vanilla Perf		94	Vanilla Perf
31	Vanilla Perf		95	Vanilla Perf
32	Vanilla Perf		96	Vanilla Perf
33	Vanilla Perf		97	Vanilla Perf
34	Vanilla Perf		98	Vanilla Perf
35	Vanilla Perf		99	Vanilla Perf
36	Vanilla Perf		100	Vanilla Perf
37	Vanilla Perf		101	Vanilla Perf
38	Vanilla Perf		102	Vanilla Perf
39	Vanilla Perf		103	Vanilla Perf
40	Vanilla Perf		104	Vanilla Perf
41	Vanilla Perf		105	Vanilla Perf
42	Vanilla Perf		106	Vanilla Perf
43	Vanilla Perf		107	Vanilla Perf
44	Vanilla Perf		108	Vanilla Perf
45	Vanilla Perf		109	Vanilla Perf
46	Vanilla Perf		110	Vanilla Perf
47	Vanilla Perf		111	Vanilla Perf
48	Vanilla Perf		112	Vanilla Perf
49	Vanilla Perf		113	Vanilla Perf
50	Vanilla Perf		114	Vanilla Perf
51	Vanilla Perf		115	Vanilla Perf
52	Vanilla Perf		116	Vanilla Perf
53	Vanilla Perf		117	Vanilla Perf
54	Vanilla Perf		118	Vanilla Perf
55	Vanilla Perf		119	Vanilla Perf
56	Vanilla Perf		120	Vanilla Perf
57	Vanilla Perf		121	Vanilla Perf
58	Vanilla Perf		122	Vanilla Perf
59	Vanilla Perf		123	Vanilla Perf
60	Vanilla Perf		124	Vanilla Perf
61	Vanilla Perf		125	Vanilla Perf
62	Vanilla Perf		126	Vanilla Perf
63	Vanilla Perf		127	Vanilla Perf

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	DNUPDNDN
55	Running Up Accented	119	UPDNDNDN
56	Running Up Slightly Accented	120	UPDNDNUP
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

POLYPHONIC PRESET PATTERNS

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	Nag 10
44	NAG5		108	Nag 11
45	NAG6		109	Nag 12
46	NAG7		110	Nag 13
47	NAG8		111	Nag 14
48	NAG9		112	Nag 15
49	DNDNDNUP		113	Nag 16
50	DNDNUPDN		114	Nag 17
51	DNDNUPDN2		115	Nag 18
52	DNDNUPUP		116	Nag 19
53	DNUPDNDN		117	Nag 20
54	DNUPUPUP		118	Nag 21
55	UPDNDNDN		119	Nag 22
56	UPDNUPUP		120	Nag 23
57	UPUPDNDN		121	Nag 24
58	UPUPDNUP		122	Nag 25
59	UPUPUPDN		123	Nag 26
60	BASS1		124	Nag 27
61	BASS2		125	Nag 28
62	BASS3		126	Nag 29
63	BASS4		127	Nag 30

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