

V-Synth GT

Quick Start

Roland®



00

The genesis of the V-Synth

In 1973, Roland unveiled its first synthesizer, the SH-1000. At that time, the signal was generated and processed by analog circuitry, and it wasn't possible to create realistic pianos or similar sounds. But the synthesizer continued to evolve toward more sophisticated sound-creating potential.

The early 1990's saw the further advance of digital technology, with various manufacturers releasing synthesizers containing sampled (PCM) waveforms. Roland also released the JD-800, which was a digital instrument, but allowed analog-like sound editing, as well as the XP-50 workstation which contained a built-in sequencer.

In this way, synthesizers became instruments that made it easy to obtain a wide variety of sounds, and became indispensable to music.

But what is the true attraction of synthesizers?

In 2003, Roland returned to one of the ideals from which the synthesizer originated. "It's fun to create sound"

The V-Synth was released, a synthesizer that utilized the latest technology to create new sounds. The time, pitch, and formant could be freely controlled even for sampled waveforms, allowing the creation of synthesizer sounds that had never been heard before.

And now in 2007, the V-Synth engine has evolved to Dual Core, giving birth to the V-Synth GT and bringing you "AP-Synthesis" which creating realistic sounds based on an analysis of the playing techniques characteristic of instruments such as violin and sax, and "Vocal Designer" which lets you perform human voice.

"New sounds for all musicians"—that is the genesis of the V-Synth.

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01

An overview of the V-Synth GT

This chapter introduces you to what can be done using the V-Synth GT.

Read this chapter first to get a glimpse into the world of the V-Synth GT.

What the V-Synth GT can do

There are sounds that can be produced only by the V-Synth GT

There are four important factors in sounds that can be produced only by the V-Synth GT.

AP-Synthesis

→ refer to "Performing with AP-Synthesis" (p. 28)



In AP-Synthesis, a "dynamic model" that's distinctive of actually existing acoustic instruments is applied to synthesizer sounds, allowing the "expression" and "movement" characteristic of those instruments to be portrayed, rather than simply reproducing the sound.

In other words, you can do things like **"use the playing technique of a violin to play synthesizer sounds such as sawtooth waves."**

VariPhrase

→ refer to "Using controllers to modify the sound" (p. 26)



The V-Synth GT can handle sampling. It also features a "VariPhrase" function that lets you freely modify the sampled sound. Breaking through the expectations of conventional samplers, this lets you freely vary the pitch, time (playback speed), and formants (vocal character) of the sampled sound in real time.

In other words, you can do things that were inconceivable until now, such as **"create strings sounds from a piano,"** or **"create phrase loops that you can play chords with."**

→ For details on sampling, refer to "Owner's Manual."

There are performance techniques that are possible only on the V-Synth GT

You can use the following two performance techniques to perform sounds that can be produced only by the V-Synth GT.

Time Trip pad

→ refer to "Using controllers to modify the sound" (p. 26)



You can apply a variety of effects by touching the Time Trip pad while you hold down keys on the keyboard.

By using the Time Trip function with VariPhrase **"you can touch the pad to stop the playback of a wave, or create scratch-type effects by moving your fingertip in a circle."**

Vocal Designer

→ refer to “Performing with Vocal Designer” (p. 34)

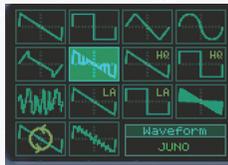


“Vocal Designer” is a further evolution of the vocoder, giving you possibilities that range from the familiar robot voice to realistic backing choruses.

In other words, **“you can use your own voice as part of the sound-creating process.”**

Analog Modeling / COSM

→ refer to “What is COSM?” (p. 12)



The V-Synth GT's analog modeling not only models analog synthesizers, but also contains data analyzed from the oscillators of famous Roland synthesizers of the past. It also provides a variety of filters as COSM processors.

In other words, you can do things like **“apply a TB-303 filter to a JUNO waveform.”**

D Beam

→ refer to “Using controllers to modify the sound” (p. 26)

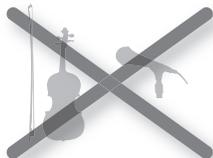


You can apply a variety of effects by moving your hand over the D Beam while you play the keyboard. If you assign this to control the Dynamics parameter of AP-Synthesis, **you can create a natural-sounding crescendo and decrescendo by moving your hand.**

What is AP-Synthesis?

AP-Synthesis (Articulative Phrase Synthesis) is one of the new features on the V-Synth GT. It enables performance expression that exceeds the realism of sampling.

A new method of expression that's neither sampling nor modeling



AP-Synthesis is a completely new method of sound generation; it does not merely sample and reproduce the sound of an acoustic instrument, but actually models the way that an instrument responds to being played.



In a big step up from merely seeking realism in the sound waveform itself, this method meticulously models the way in which the sound produced by the instrument responds to how the instrument is played.

While conventional physical modeling sound generators modeled an instrument's "structure" (the shape of its resonant body, the length of the tube, or the material of the vibrating object), AP-Synthesis models the "responses" or "operations" that are typical of that instrument being played, such as trills, portamento, vibrato, or dynamics.

This means that the synthesizer is not restricted to simply reproducing the "sound," but is also able to reproduce the "expressions" and "operations" that are typical of each instrument.

The V-Synth GT models the way in which the sound responds to playing technique on several categories of solo instrument that have particular expressive power: the saxophone, the flute, the erh-hu (a traditional Chinese instrument), and the violin. A trill played on a flute, a glissando on a violin, and special techniques such as vibrato or crescendo can be expressed simply by playing the keyboard, without your having to be conscious of them, allowing you to create humanly emotional performances in a realistic way.

Crescendo

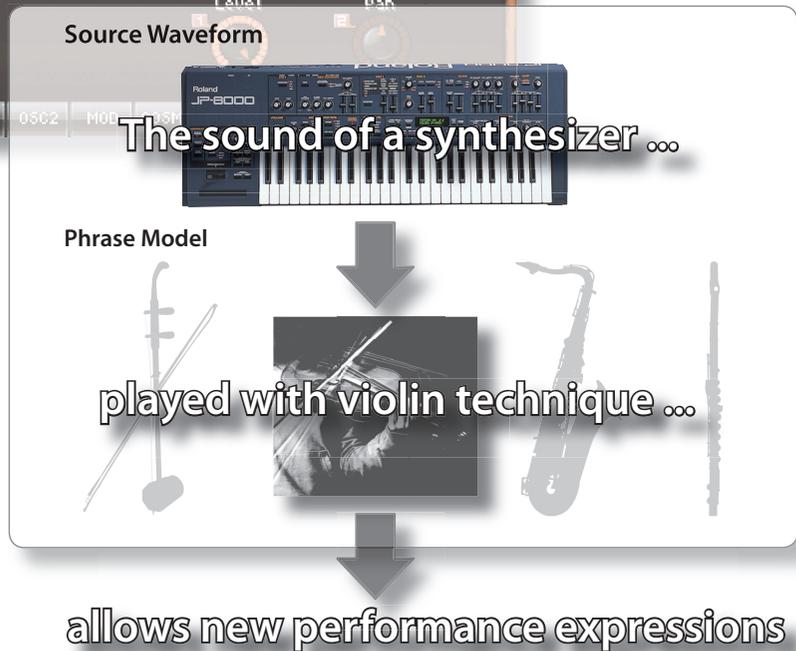


Glissando technique
Vibrato

For example by applying the "violin" phrase model to the "violin" source wave, you can obtain a realistically expressive solo violin sound that's just like what a violinist would play—simply by playing the keyboard in the conventional manner.

Beyond reality

AP-Synthesis modeling types also include variations that are possible only on a synthesizer; you can select distinctive models such as “analog lead synth sounds played using violin performance technique.” These sounds can then be processed by COSM, and layered with VariPhrase sounds to create sounds that are not limited to re-creations of conventional instruments.

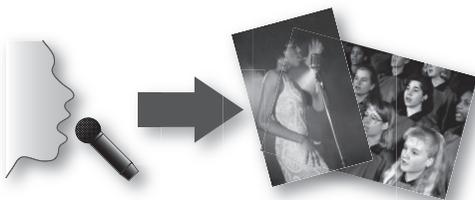


AP-Synthesis can be used with either the UPPER or LOWER tone (not both simultaneously).

What is Vocal Designer?

“Vocal Designer” is a further evolution of the “vocoder.” This function was featured on the VP-550, and is also provided on the V-Synth GT.

Vocal Designer



Vocal Designer uses cutting-edge modeling technology to attain a revolutionary leap in synthesis precision, succeeding in producing “human voice” that is incomparably more natural and realistic than conventional vocoders. Vocal Designer uses the audio from the mic to express elements of the sound other than pitch. The pitch is controlled from the keyboard.

Simply playing the keyboard or simply vocalizing into the mic will not make Vocal Designer produce sound. The important thing about learning to take advantage of Vocal Designer is the timing at which you play the keyboard and vocalize into the mic. For phrases involving rapid passages, it’s best to hold down the notes on the keyboard, and mark the rhythm using your voice.

Unlike conventional synthesizers, you’ll use the mic to control the volume. In other words, you’re using your voice to describe the volume curve. Try using your voice to add expression to an extent you might consider excessive.

“Play like you’re singing”—that’s the most important technique for taking advantage of Vocal Designer.

What is a vocoder?



The vocoder was invented by the physicist H. Dudley in 1939 as a method of compressing vocal signals. Taking advantage of this technology, the “vocoder” was born as an instrument that let you perform melodies or harmonies using a human voice. Of course, you’re not limited to using a human voice as the audio

source—any audio source can be used. Still, since the vocoder was developed with the human vocal apparatus as its starting point, we’ll explain how the human voice works.

The human voice starts from the “vocal cords.” Except for differences in the force and the pitch of the voice, and differences between individuals, the vibrational waveform produced by the vocal cords does not change significantly even when different sounds (such as “aah” or “ooh”) are being produced. These sounds become intelligible as spoken words because of various resonances produced by the vocal tract (i.e., changes in the shape and structure of the throat and movements of the mouth) and time-varying sounds known as “sibilants,” “fricatives,” and “nasals.” The effect of the waveform produced by the vocal cords is relatively small.

A vocoder analyzes these time-variant changes in the sound, electrically synthesizes the changes in the shape of the throat and mouth (formant movements), and produces sound by using these formants to modulate a signal from a musical instrument (the carrier) instead of the signal from the vocal cords. “Voices” produced by a vocoder in this way are typically closer to a robot in a science fiction movie than to any actual human voice.

Resonances (formants) resulting from the vocal tract (shape and structure of the throat) and movements of the mouth



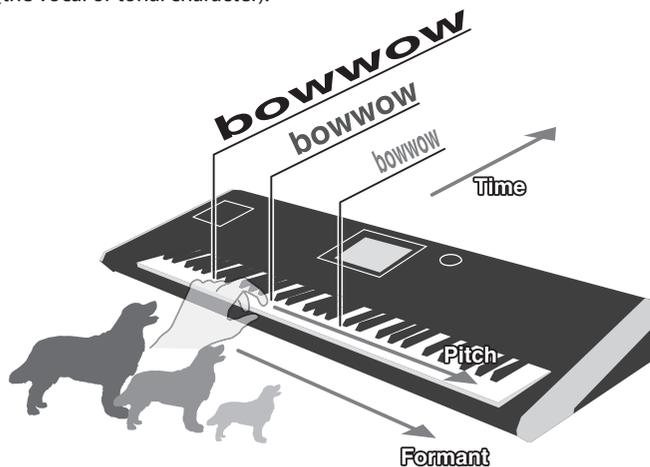
Vocal cords (carrier)

What is VariPhrase?

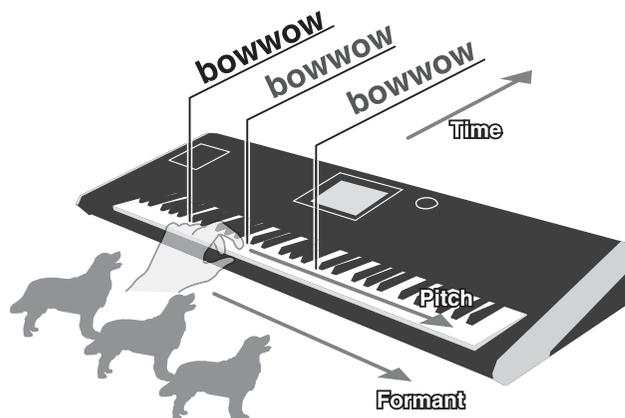
“VariPhrase” is technology that breaks through the limitations of conventional samplers, and allows you to independently change the pitch, time (playback speed), and formants (vocal character) of the sampled sound in realtime.

VariPhrase

On conventional samplers, changing the pitch would also change the time (playback speed) and the formants (the vocal or tonal character).



However when using VariPhrase, you can change just the pitch while leaving the time and formants unaltered.



Of course, you can also change just the “time” or just the “formants” to transform the bark of a large dog into the bark of a small dog.

In this way, the VariPhrase that’s at the core of the V-Synth GT gives you a range of control that was not possible on conventional samplers.

What is COSM?

COSM (Composite Object Sound Modeling) is proprietary Roland technology that uses DSP technology to model physical characteristics such as the structure of an object, materials, electricity, electronic circuits, and magnetism in order to calculate the effect they have on the sound that reaches the human ear as vibrations in the air.

The V-Synth GT provides two COSM units as extensions of a conventional analog synthesizer's filters. In addition to the filters of a conventional synthesizer, these provide unique filters found only on the V-Synth, such as SBF (Side Band Filter) and TB filter. You can also apply various modeling types such as amp, speaker, or acoustic guitar body resonances, as well as effects such as compressor and distortion.

COSM types provided by the V-Synth GT

	<p>Overdrive/Distortion This simulates the sound of overdrive produced by vacuum tubes, and the intense distortion sounds of a guitar amp.</p>		<p>Wave Shaping This allows you to create a distinctive distortion that is even more intense than Overdrive or Distortion.</p>
	<p>Amp Simulator This simulates a guitar amp to add natural-sounding distortion. You can adjust the tonal character of the low/mid/high-frequency ranges, and the depth of the distortion.</p>		<p>Speaker Simulator This simulates a speaker. It does not produce as much distortion as the amp simulator, but simulates the equalizer-like changes caused by various speakers.</p>
	<p>Resonator This adds the body resonances of a guitar. You can choose from three types of guitar body: banjo, acoustic guitar, and resonator guitar.</p>		<p>Side Band Filter 1 This allows you to add a sense of pitch to unpitched sounds (or sounds without a clear pitch) such as drums, percussion, or noise.</p>
	<p>Side Band Filter 2 This allows you to add a stronger sense of pitch than Side Band Filter 1.</p>		<p>Comb Filter This filter is named for its comb-shaped response curve. It boosts the fundamental and overtones of the sound, producing a sound like that of a stationary flanger.</p>
	<p>Dual Filter This connects two filters in series or in parallel. Use this when you want to cut a broad range of the sound.</p>		<p>TVF This is a common type of filter that allows you to choose from five types. You can choose from -24 or -12 dB/octave, and also choose -6 dB/octave for a LPF/HPF.</p>
	<p>Dynamic TVF This filter adds a Dyn parameter that allows the volume of the audio input to vary the filter setting. You can use this to create a "wah" effect.</p>		<p>Polyphonic Compressor This smoothes-out inconsistencies in the overall volume of the sound.</p>
	<p>Polyphonic Limiter This compresses excessively loud input sounds to prevent distortion.</p>		<p>Frequency Shifter This shifts the frequency relationship between the fundamental and the overtones, allowing you to create unusual overtone structures.</p>
	<p>Lo-Fi Processor This lets you lower the bit-depth or sample rate.</p>		<p>TB Filter This is based on an analysis of the filter of the Roland TB-303.</p>



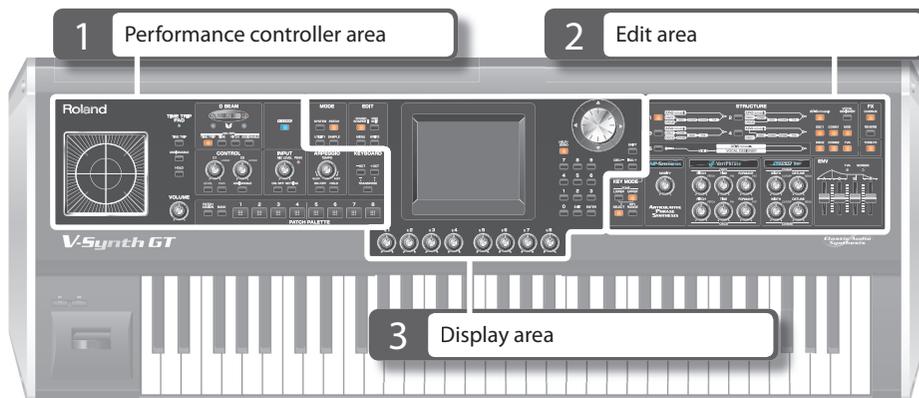
When you play a chord, the effect produced by a conventional effect processor will apply to the combined sound of all notes of the chord. However the V-Synth GT's COSM effects are applied individually to each note within the chord.

02

Basic operation

This chapter explains basic operation of the V-Synth GT, focused mainly on the screen.



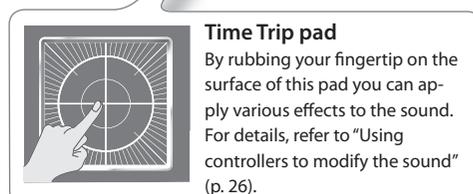
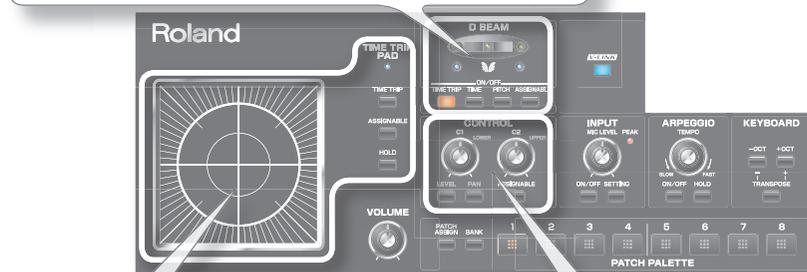
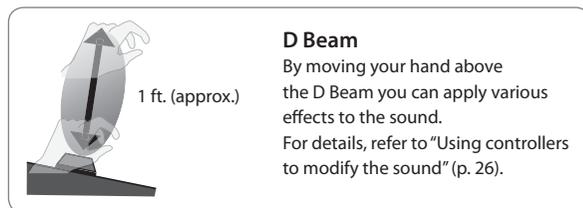


The V-Synth GT's panel contains numerous buttons and knobs, but we can broadly group these into three areas. We'll describe each of these below.

For details on what each control actually does, refer to the "Owner's Manual."

1. Performance controller area

In this area you'll find the controllers that you can operate to modify the sound while you play. The result that each controller has will depend on the patch.



Control knobs

By turning these knobs you can apply various effects to the sound.



When the [LEVEL] or [PAN] buttons are lit, you can use the C1 knob to control the level or pan of the lower tone, and the C2 knob to control the level or pan of the upper tone.

2. Edit area

You'll use this area mainly to edit tones.

Parameters of the selected tone can also be directly selected from the panel.

STRUCTURE

You can change the way in which the V-Synth GT sound generator's elements (sections) are connected. The way in which the sections are connected is called the "structure," and you can choose one of five structures.

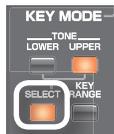
Section on/off buttons

Here you can directly turn on/off each section in the structure. While you're editing, this gives you a convenient way to hear what each section is actually doing.



KEY MODE

Here you can turn the lower tone and upper tone on/off.



If the [SELECT] button is lit, these buttons will operate as the select buttons for the lower tone and upper tone.

In the illustration shown at left, the upper tone is selected, meaning that you can use the buttons and knobs of the edit area to edit the upper tone.

ENV (envelope)

Here you can control the TVA section. If the SCREEN indicator is lit, you can edit the envelope directly in the screen.



3. Display area

This area groups the buttons and knobs that are related to operations in the display.

Touch panel

You can perform various operations by directly touching the buttons or knobs shown in the display. For details, refer to “Basic touch panel operations” (p. 18).



MODE and EDIT buttons

Use these to switch between display modes.



Cursor buttons

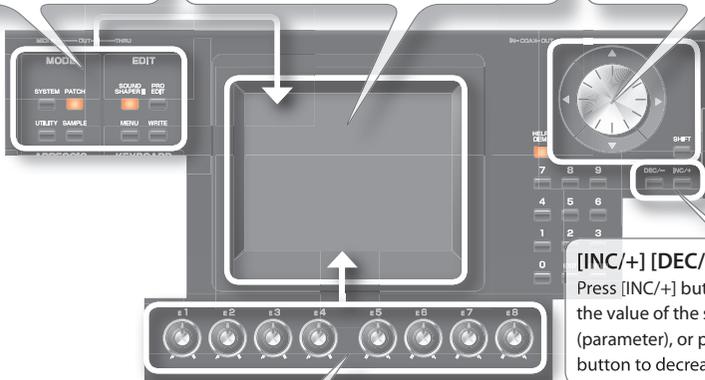
Use these to move the cursor in the display.

VALUE dial

Use this to edit the value of the item (parameter) you've selected.

[SHIFT] button

You can access convenient shortcuts by using this in conjunction with various other buttons.



[INC/+] [DEC/-] buttons

Press [INC/+] button to increase the value of the selected item (parameter), or press [DEC/-] button to decrease it.



E1-E8 knobs

When the Patch Play screen or the SOUND SHAPER II screen are shown, you can use these knobs to directly control the parameters shown in the bottom of the display.

In the Pro Edit screen, these knobs directly control the parameters numbered 1-8.



About the display

The V-Synth GT's display is a touch panel. You can perform a variety of operations by directly touching the display. There are many screens, but here we'll introduce some basic rules.

Screen name

This indicates the name of the current screen.

Help



If this icon is lit green, you can touch it to open a Help window.

MENU



Touch this icon to open the pulldown menu.



Search



This opens a list window of items (such as a patch list) you can currently choose from.

ON/OFF



This turns a function on/off.

The knobs shown in the lower part of the screen can be directly controlled by the E1-E8 knobs.



The numerical portion of the parameter selected by the cursor will turn blue.

Knobs labeled with a number 1-8 can be controlled directly by knobs E1-E8.

MAP



This indicates which part you're currently editing.

EXIT



This takes you back to the Patch Play screen.



If you've lost track of the screen you're in, you can touch <EXIT> to return to the Patch Play screen.

Overview

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Basic touch panel operations

The V-Synth GT uses a touch panel. You can perform a variety of operations simply by touching the display. Here we'll try actually switching between screens, and editing the value of a parameter.

- * The touch panel will operate when you simply touch it lightly with your finger. Pressing it strongly or with a hard object may damage the panel. Use only your finger to operate the panel, and don't use excessive force.
- * Text enclosed in [] indicates a button on the panel. Text enclosed in < > indicates a button or knob shown in the screen.

Switching screens

1. Access the Patch Play screen.

If the Patch Play screen is not displayed, press the [PATCH] button located at the left of the touch panel.

2. Touch <PRO EDIT>.



When you touch <PRO EDIT> for the upper tone, the Pro Edit window for the upper tone will appear.

- * You can also switch to the Pro Edit window by pressing the [PRO EDIT] button of the panel.

3. Touch <TVA>.



When you touch <TVA>, the Pro Edit TVA screen will appear.

You can switch screens by touching the touch panel in this way.

Editing the value of a parameter

4. Touch the <Level> knob.



When you touch the <Level> knob, the numerical area will turn blue, and the cursor will move to Level. Continue touching the <Level> knob, and drag your finger up/down or left/right. Dragging your finger up or to the right will increase the value, and dragging it down or to the left will decrease the value.

- * You can also use the panel VALUE dial or the [INC/+][DEC/-] buttons to edit the value of the parameter selected by the cursor.

In this way, you can edit parameter values simply by touching the screen.

5. Touch <EXIT>.



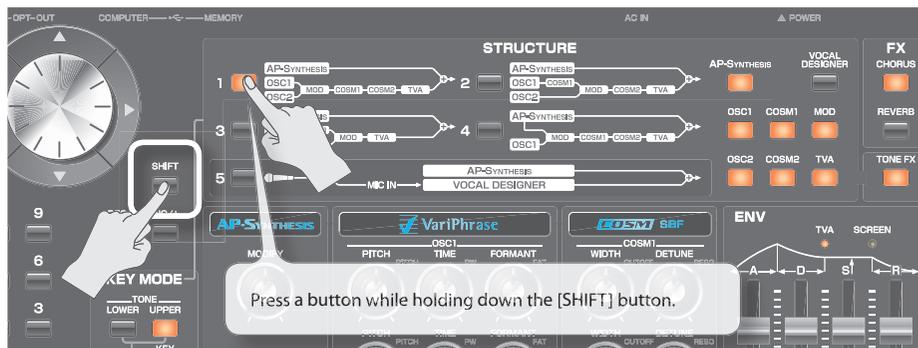
When you touch <EXIT> you will return to the Patch Play screen.

- * You can also press the panel [EXIT] button to return to the Patch Play screen.

Shortcuts

By pressing a button in conjunction with the panel [SHIFT] button, you can use a variety of shortcut functions.

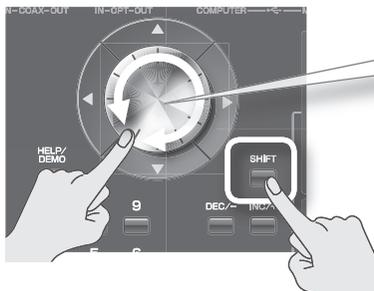
Shortcuts to screens



You can switch between screens by operating the touch panel, but you can also use a shortcut to switch screens.

Shortcut	Operation
[SHIFT] + [STRUCTURE 1-5]	Moves to the Structure setting screen.
[SHIFT] + [AP-Synthesis]	Moves to the AP-Synthesis setting screen.
[SHIFT] + [Vocal Designer]	Moves to the Vocal Designer setting screen.
[SHIFT] + [OSC1]	Moves to the OSC1 setting screen.
[SHIFT] + [OSC2]	Moves to the OSC2 setting screen.
[SHIFT] + [COSM1]	Moves to the COSM1 setting screen.
[SHIFT] + [COSM2]	Moves to the COSM2 setting screen.
[SHIFT] + [MOD]	Moves to the MOD setting screen.
[SHIFT] + [TVA]	Moves to the TVA setting screen.
[SHIFT] + [CHORUS]	Moves to the Chorus setting screen.
[SHIFT] + [REVERB]	Moves to the Reverb setting screen.
[SHIFT] + [TONE FX]	Moves to the Tone FX setting screen.
[SHIFT] + [ARPEGGIO ON/OFF]	Moves to the Arpeggio setting screen.
[SHIFT] + [ARPEGGIO HOLD]	Moves to the Arpeggio pattern editing screen.

Shortcuts when editing a value



If you hold down the [SHIFT] button and turn the VALUE dial, the value at the cursor in the screen will change in steps of ten.

This is convenient when you want to change a value by a large amount.

Calibrating the touch panel

If the touch panel no longer responds as you expect, use the following procedure to calibrate it.

1. Press the [UTILITY] button.

The Utility Menu screen will appear.

2. Touch <Calibration>.



3. Touch <Touch Screen>.



4. Successively touch each "+" symbol as it is enclosed in the square border in the screen (left → top → right → bottom).



This completes calibration of the touch panel.

Changing the wallpaper

The V-Synth GT lets you change the screen wallpaper. You can personalize your V-Synth GT by choosing a favorite photo as your wallpaper.

1. Press the [UTILITY] button.

The Utility Menu screen will appear.

2. Touch <Wallpaper>.



3. Choose the wallpaper you want.



4. Touch <EXIT> to finalize your choice.

Importing wallpaper

The V-Synth GT lets you use any bitmap image (Windows standard 24-bit BMP format, 320 x 240 pixels) as wallpaper.

1. Use your computer to save the desired image in bitmap form on your USB memory device (in the root level).
2. Connect your USB memory to the V-Synth GT's USB connector
3. In the Wallpaper screen, touch <Import>.
4. From USB memory, choose the image you want to import.
5. Touch <OK> to import the image.

03

Playing sounds

On Roland synthesizers, each sound is called a “patch.”

This chapter explains how to play patches, and how to apply various effects to the sound.

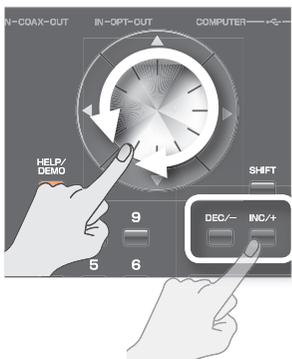
We'll also explain special playing techniques to get the most out of AP-Synthesis and Vocal Designer.

Selecting a patch

1. Press the panel [PATCH] button to access the Patch Play screen.
2. Touch the patch name.



3. Select a patch number by turning the VALUE dial or by pressing the [INC/+] or [DEC/-] buttons.



- * If you turn the VALUE dial while holding down the [SHIFT] button, the patch number will change in steps of ten.
- * If you hold down the [INC/+] or [DEC/-] button for a while, the value will change continuously. If you continue holding down one button and then press the other button, the change will become faster.

Using the numeric keys



You can also select a patch by using the numeric keys. Enter a number and press [ENTER] to finalize your choice.

In addition to selecting patches, the numeric keys can also be used for numeric input such as selecting tones, effects, or waveforms.

Selecting a patch from a list

1. In the upper left of the screen, touch <Search>.



2. From the displayed list, select a patch.

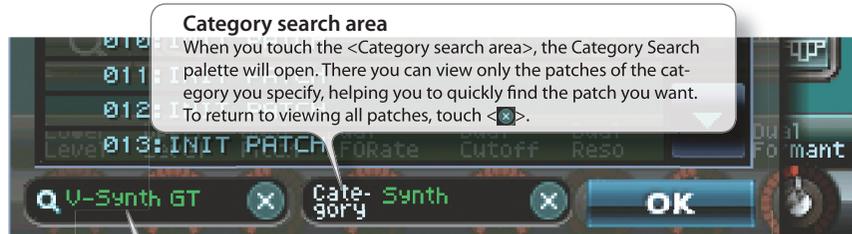


You can scroll the list by dragging it up or down.

- * You can also use the VALUE dial or the [INC/+][DEC/-] buttons to select a patch.
- * If you turn the VALUE dial while holding down the [SHIFT] button, the selection will change in steps of ten.
- * By turning the E8 knob you can scroll the list rapidly.

3. Touch <OK>.

Selecting a patch by specifying a keyword or category



Category search area

When you touch the <Category search area>, the Category Search palette will open. There you can view only the patches of the category you specify, helping you to quickly find the patch you want. To return to viewing all patches, touch <X>.

Keyword search area

When you touch the <Keyword search area>, a virtual keyboard will appear. When you enter a keyword and touch <ok>, only the patches that include the specified keyword will appear, helping you to quickly find the patch you want. To return to viewing all patches, touch <X>.

Using controllers to modify the sound

You can apply a variety of effects to the sound by touching the Time Trip pad located in the left of the V-Synth GT's panel, or by moving your hand above the D Beam controller.

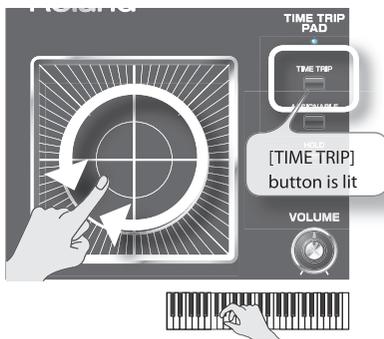
1. Select preset patch number 301.

→ "Selecting a patch" (p. 24)

Time Trip

2. Press the Time Trip pad's [TIME TRIP] button.

3. While holding down a note on the keyboard, touch the Time Trip pad.



What is Time Trip?

Time Trip uses certain features of VariPhrase, and lets you use your finger to control a wave's playback position and speed.

While holding down a note on the keyboard, touch the Time Trip pad; the currently-sounding wave will stop playing. When you move your finger in a clockwise circle, the wave will continue playing. If you move your finger in a counter-clockwise circle, the wave will play backward. This differs from "scratching" on a turntable in that you can control the playback without affecting the pitch, meaning that you can play these sounds at specific pitches.

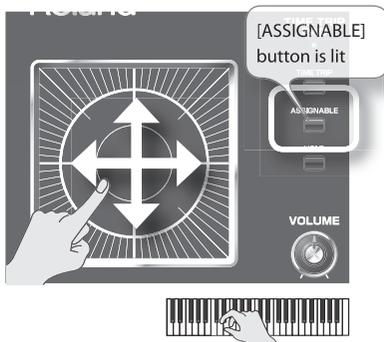


By moving your finger in a circle on the Time Trip pad, you can produce an effect similar to "scratching."

Assignable

4. Press the Time Trip pad's [ASSIGNABLE] button.

5. While holding down a note on the keyboard, touch the Time Trip pad.



By moving your finger up/down/left/right on the Time Trip pad, you can apply the effect that is assigned for each patch.



If you press the Time Trip pad's [HOLD] button, the effect will be maintained even after you take your finger away from the Time Trip pad.

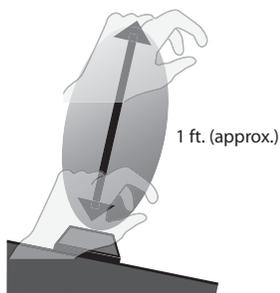
D Beam

6. Press the D Beam [PITCH] button to make it light.



* If you want to turn off the D Beam, press the lit button once again.

7. While holding down a note on the keyboard, position your hand above the D Beam controller, and slowly move it up/down/left/right.



* The effective range of the D Beam controller will be much less in conditions of strong sunlight. Be aware of this when using the D Beam controller outdoors.

The pitch will raise when you position your hand over the D Beam controller, and will return to normal when you take your hand away. The indicator will light when the D Beam is responding.

D Beam effects

Button	Effect
[TIME TRIP]	Applies the Time Trip effect.
[TIME]	Applies the Time Control effect.
[PITCH]	Applies the Pitch Control effect.
[ASSIGNABLE]	The effect assigned for each patch will be applied. However, you will need to make matrix control settings. For details, refer to the "Owner's Manual".

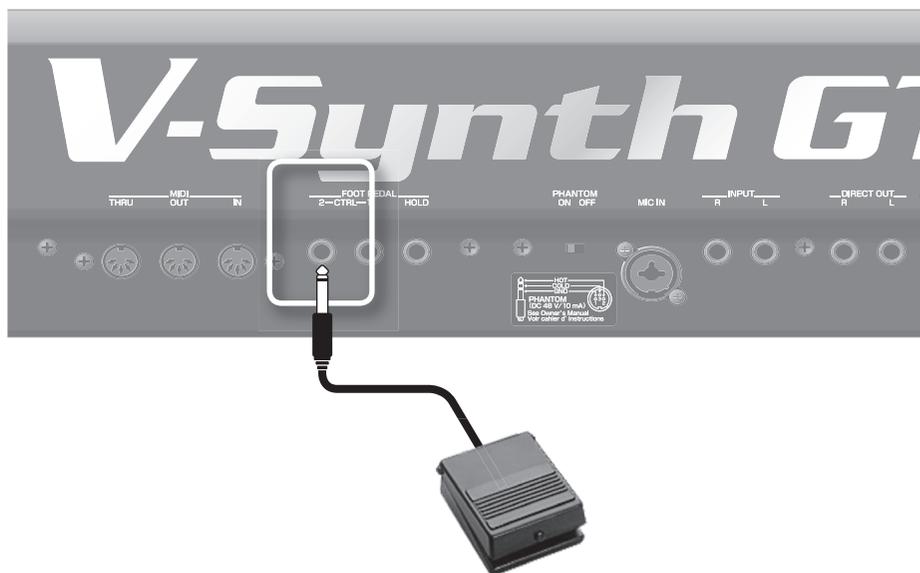
Performing with AP-Synthesis

AP-Synthesis gives you expressive performance power that is incomparably richer than any previous synthesizer. It's designed so that your playing will naturally be full of dynamic expression without your having to be consciously controlling it. There's no need to perform difficult operations. Just play the keyboard as you feel, and the V-Synth GT will respond.

By using a foot switch (separately sold DP series or BOSS FS-5U), you'll be able to take the fullest advantage of the expressive power offered by AP-Synthesis.

Setup

- 1. Connect your foot switch to CTRL 2 in the FOOT PEDAL section.**



Foot switch
(separately sold:
DP series, BOSS FS-5U)

Violin phrase model

The characteristics of the violin include “bow movement,” “finger movement,” and “double-stop.” This phrase model will express legato, tenuto, slurs, and double-stops. The model also expresses the lingering resonances of the strings and body when you stop the sound, and adds various other noises.

1. Select preset patch number 302.

→ “Selecting a patch” (p. 24)

* In order to make the effect of AP-Synthesis easy to understand, this patch matches the “Violin phrase model” with a “Violin waveform.”

2. Play a melody on the keyboard.

If you play legato (without allowing breaks between notes), the sound will change smoothly.



Try playing staccato (with clearly-defined breaks between notes), or with varying degrees of force. Notice that the pitch and volume respond in the way that is typical of a violin.

3. While playing the keyboard, move the modulation lever away from yourself.

Dynamics and vibrato effects will be applied.

* You can also use aftertouch to produce the same effect.

4. Play the keyboard while holding down the [S1] button.

While you hold down the [S1] button, your playing will have the distinctive tremolo of a violin.

5. Play the keyboard while holding down the [S2] button.

While you hold down the [S2] button, your playing will be pizzicato.

* The operation of [S1] and [S2] can be assigned in Patch Common. For details, refer to “Editing a Tone (Pro Edit)” in the owner’s manual.

6. Play the keyboard while holding down the foot switch.

When you play legato (without allowing breaks between notes), the distinctive portamento effect of a violin will be applied.



The V-Synth GT’s AP-Synthesis is generally for solo (monophonic) sounds. However, depending on how you play it, the violin VariPhrase model can produce up to four notes of polyphony in order to simulate the sound of a violin’s four strings.

Erhu phrase model

The Erhu is a traditional bowed-string instrument of China. The sound produced by its unique structure is quite distinctive, and rich in expressive power. The characteristic feature of the Erhu is pitch change while playing. On conventional synthesizers, it was extremely difficult to express the kind of pitch changes that are typical of an Erhu performance. By using this phrase model, you can produce the distinctive expression of the Erhu simply by playing the keyboard.

1. Select preset patch number 303.

→ “Selecting a patch” (p. 24)

* In order to make the effect of AP-Synthesis easy to understand, this patch matches the “Erhu phrase model” with an “Erhu waveform.”

2. Play a melody on the keyboard.

If you play legato (without allowing breaks between notes), the sound will change smoothly.



Try playing staccato (with clearly-defined breaks between notes), or with varying degrees of force. Notice that the pitch and volume respond in the way that is typical of an Erhu.

3. While playing the keyboard, move the modulation lever away from yourself.

Dynamics and vibrato effects will be applied.

* You can also use aftertouch to produce the same effect.

4. Play the keyboard while holding down the foot switch.

When you play legato (without allowing breaks between notes), the distinctive portamento effect of an Erhu will be strongly applied.

Sax phrase model

A distinctive characteristic of the sax is the way in which the sound changes in the instant you begin blowing, or when you change the pitch. This phrase model also expresses the sensation of breath being blown into the instrument, and the key noise produced by fingering.

1. Select preset patch number 304.

→ “Selecting a patch” (p. 24)

* In order to make the effect of AP-Synthesis easy to understand, this patch matches the “Sax phrase model” with a “Sax waveform.”

2. Play a melody on the keyboard.

If you play legato (without allowing breaks between notes), the sound will change smoothly.



When you play staccato (with clearly-defined breaks between notes) or rapidly, the distinctive inconsistency of pitch that is typical of the sax will also be expressed. The upward “scoop” of the pitch at the beginning of the note will be added automatically.

3. Play the keyboard strongly.

A raspy sound (growl) will be expressed.

4. While playing the keyboard, move the modulation lever away from yourself.

Dynamics and vibrato effects will be applied.

* You can also use aftertouch to produce the same effect.

5. Play the keyboard while holding down the foot switch.

When you play legato (without allowing breaks between notes), the distinctive portamento effect of a sax will be applied.

Flute phrase model

The distinctive character of the flute lies in how the attack sound at the beginning of each note changes, and the way in which the sound changes when you play legato and slurs. This phrase model expresses even the subtle noises of the breath you blow, as well as the changes that occur when you change the pitch.

1. Select preset patch number 305.

→ “Selecting a patch” (p. 24)

* In order to make the effect of AP-Synthesis easy to understand, this patch matches the “Flute phrase model” with a “Flute waveform.”

2. Play a melody on the keyboard.

If you play legato (without allowing breaks between notes), the sound will change smoothly.



When you play staccato (with clearly-defined breaks between notes), you will hear the subtle noises of the performer blowing into the instrument and the changes that occur when the pitch is changed.

3. Play the keyboard strongly.

You will hear the typical attack sound of when a flute is blown strongly.

4. While playing the keyboard, move the modulation lever away from yourself.

Dynamics and vibrato effects will be applied.

* You can also use aftertouch to produce the same effect.

Multifade phrase model

Multifade is not a phrase model that portrays a specific instrument. It combines elements from the operation models of existing instruments to allow more synthesizer-like control.

1. Select preset patch number 306.

→ “Selecting a patch” (p. 24)

* This patch combines the “Multifade phrase model” with “Synth strings.”

2. Play a melody on the keyboard.

If you play legato (without allowing breaks between notes), the sound will change more smoothly than on a conventional synthesizer.



3. While playing the keyboard, touch the Time Trip pad.



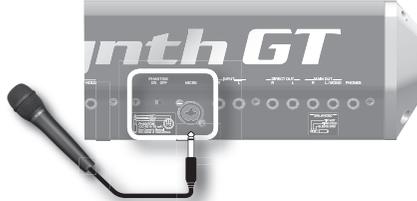
The sound will change when you move your finger up/down/left/right on the Time Trip pad.

* The way in which Multifade operates will depend on the AP-Synthesis source waveform.
For details, refer to the “Owner’s Manual.”

You'll need a mic in order to perform using Vocal Designer. Connect a mic before you continue.

Setup

1. Connect your mic to the "MIC IN jack" as shown in the illustration.



2. Press the [SETTING] button.

Press the [SETTING] button located below the panel INPUT knob to access the Audio Input Settings screen.



3. Vocalize into the mic.



4. Turn the INPUT knob to adjust the mic input level so that the Peak indicator does not light when the loudest input occurs.



* After adjusting the mic input level, you will generally leave it fixed. If you want to adjust the volume of Vocal Designer, use the VOLUME knob to make adjustments.

5. Touch <EXIT> to return to the Patch Play screen.

Performing

1. Select preset patch number 307.

→ Selecting a patch (p. 24)

2. Play the keyboard.



3. While holding down a key, vocalize into the mic.

Vocal Designer will produce sound according to the volume of your voice.

Even if you're holding down a key, Vocal Designer won't produce sound unless you're vocalizing into the mic. Nor will Vocal Designer produce sound if you're vocalizing into the mic but not holding down a key; you must be doing both.



The keyboard will control the pitch. Vocalize continuously ("aah...") while you play the keyboard. The pitch of your voice will change according to the notes you play.

Now hold down a chord on the keyboard, and vocalize in a more staccato manner ("ah, ah, ah, ..."). Vocal Designer will produce the pitches you're holding on the keyboard, at the rhythm of your vocalizing. That's right; the rhythm is being marked by your voice, not by the keyboard. This technique is particularly effective when playing rapid passages.

Unlike the case for a conventional patch, the volume is controlled by the mic. You will use your voice to describe the volume curve. Go ahead and use your voice to add expression to a degree that you might even consider excessive.

There are just two techniques you'll need in order to take full advantage of Vocal Designer.

- **Hold down the keys, and use your voice to produce sound and create the rhythm.**
- **Use your voice to control the volume (expression).**

Layering your natural voice



When using Vocal Designer, the Pro Edit icon will change as shown in the illustration.

The Vocal Designer screen will appear when you touch this icon.



Vocal Designer screen



Raising the Natural Voice level will directly output your own voice.

This adjusts the output level of the Vocoder.

Vocoder screen

In the Vocoder screen you can change the type of vocoder. The following Vocoder types are provided.

Vocoder Type	Characteristics
Stereo	Produces a stereo spread. This is suitable for simulating choral sounds such as choir or chorus.
Mono	Emphasizes clarity of the vocal. This is suitable for creating solo vocal sounds. The output will be mono.
Vintage	Produces the well-known “vocoder sound.” This is suitable for obtaining vintage vocoder sounds such as typical of the VP-330.
Enhance	Boosts the high-frequency range. This is a good choice when you want the vocal sound to be well-defined.

Changing the type of voice



If the Vocoder Type is other than Vintage, you'll be able to select a variety of Formant Types.

For example, you can change a male voice into a female voice.

Simulating a vintage vocoder



If the Vocoder Type is set to Vintage, you'll be able to create the familiar vocoder sound.

It's easy to get that “stereotypical” robot voice that was frequently used in techno music of the 1980's.

You can also apply COSM effects to produce new vocoder sounds obtainable only with the V-Synth GT.

04

Creating sounds

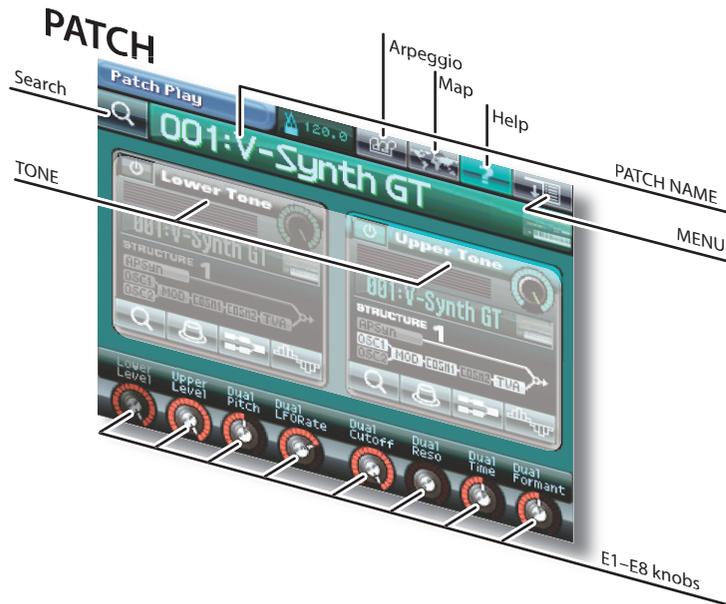
This chapter introduces you to the types of sound you can create using the V-Synth GT.



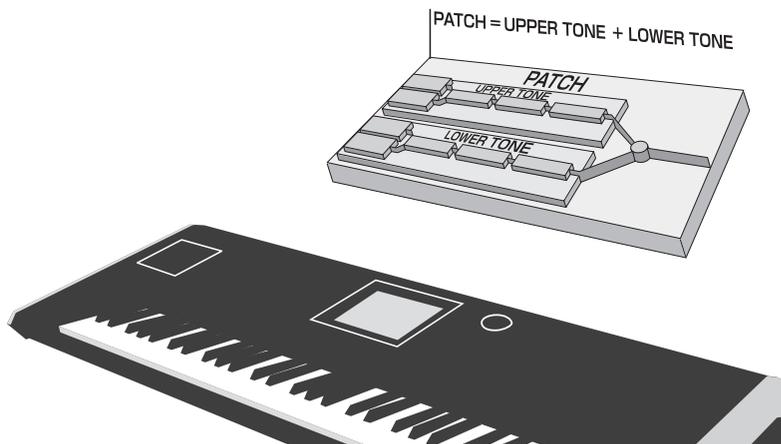
How Patches and Tones are related

What is a Patch?

On Roland synthesizers, each sound is called a “patch.” On the V-Synth GT as well, the individual sounds you play are called “patches.” The screen will show as follows.



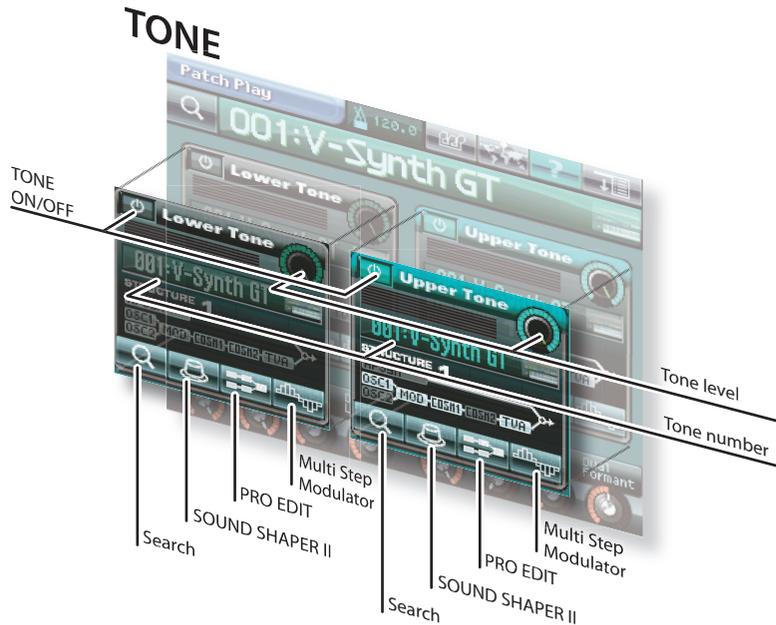
The V-Synth GT's patches consists of two “tones” layered together: the Upper tone and the Lower tone.



Patches of the previous V-Synth correspond to “tones” on the V-Synth GT (see next page).

What is a Tone?

A tone is an element that makes up a patch. There are two tones: upper and lower. The tones used in a patch are shown in the screen as follows.



Each tone can be turned on/off, and you can create a new patch simply by adjusting the level or pan of each tone.

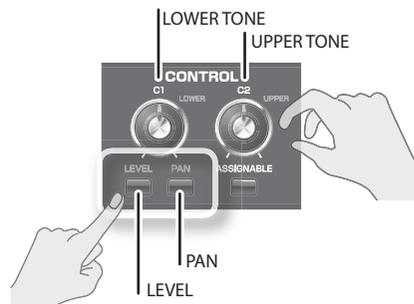


Turning a tone on/off

Touch <ON/OFF> in the screen.

Adjusting a tone's level or pan

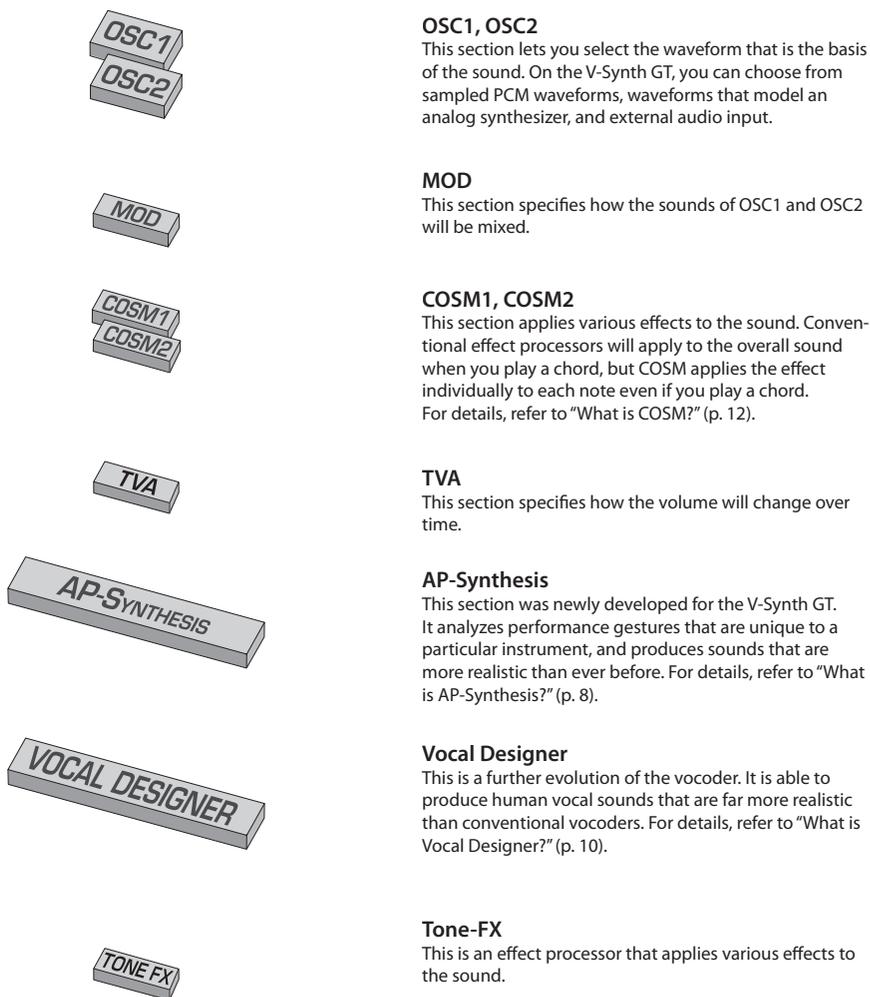
If you make the panel [LEVEL] or [PAN] button light, you'll be able to use the C1 knob to adjust the level or pan of the lower tone, and the C2 knob to adjust the level or pan of the upper tone.



How Patches and Tones are related

A tone consists of nine elements (sections).

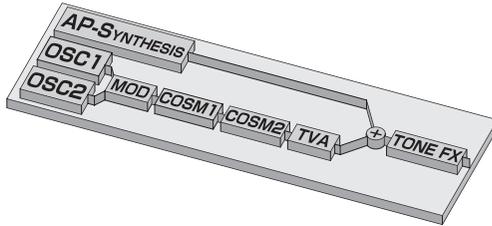
Elements of a Tone



Each section can be turned on/off individually, allowing you to create your sound using just the desired sections.

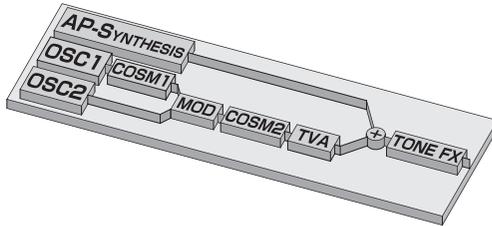
You can choose one of five “structures” to determine how the signal will flow between these sections.

Structure types (signal flow)



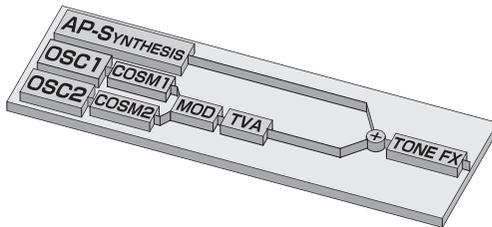
Structure Type 1

This is the most typical structure. Different sounds from OSC1 and OSC2 are mixed by MOD. Then you can select an effect such as SBF (Side Band Filter) for COSM1 to create the character of the sound, and choose TVF for COSM2 to adjust the tone. The sound of the V-Synth GT's new AP-Synthesis can be mixed into the final result.



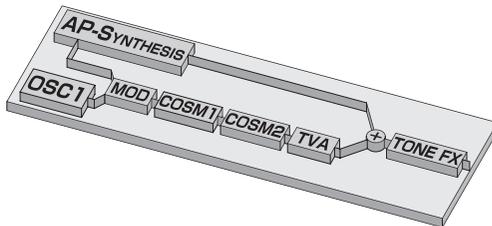
Structure Type 2

This structure connects OSC1 and OSC2 asymmetrically, and is a good choice when you want to use a modulation type other than “MIX” as the modulator. You can use OSC1 and COSM1 to create the basics of the sound, use the OSC2 sound and the MOD selection to add variety, and select TVF for COSM2 to adjust the tone. The sound of the V-Synth GT's new AP-Synthesis can be mixed into the final result.



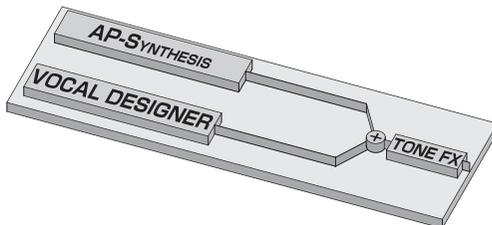
Structure Type 3

This structure pairs OSC1 with COSM1 and OSC2 with COSM2. For example you can use the Time Trip pad or other controller to morph between the sound created by OSC1 and COSM1 and the sound created by OSC2 and COSM2. The sound of the V-Synth GT's new AP-Synthesis can be mixed into the final sound.



Structure Type 4

Unlike types 1–3, this structure lets you apply MOD or COSM effects to AP-Synthesis sounds.



Structure Type 5

If you select this structure, you'll be able to perform using Vocal Designer. The sound of the V-Synth GT's new AP-Synthesis can be mixed into the final sound.

Selecting a tone

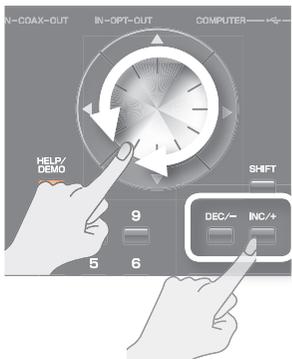
1. Press the panel [PATCH] button to access the Patch Play screen.
2. Touch the upper tone's <tone number>.



The tone number area will turn blue, and the cursor will move to the tone number.

- * If you want to select the lower tone, touch the lower tone's <tone number>.

3. Turn the VALUE dial or use the [INC/+][DEC/-] buttons to select the desired tone.



- * If you turn the VALUE dial while holding down the [SHIFT] button, the number will change in steps of ten.
- * If you hold down the [INC/+] or [DEC/-] button for a time, the value will change continuously. If you continue holding down one of the buttons and then press the other button, the change will become more rapid.

Using the numeric keys



You can also select a tone by using the numeric keys. Enter a number and press [ENTER] to finalize your choice.

In addition to selecting tones, the numeric keys can also be used for numeric input such as selecting patches, effects, or waveforms.

Selecting a tone from a list

1. Touch <Search>.



When you touch <Search>, the tone list will appear.

2. Choose a tone from the list.



You can scroll the list by dragging it up or down with your finger.

- * You can also make a selection by using the VALUE dial or the [INC/+] [DEC/-] buttons.
- * If you turn the VALUE dial while holding down the [SHIFT] button, the number will change in steps of ten.
- * By turning the E8 knob you can scroll the list rapidly.

3. Touch <OK>.

Selecting a tone by specifying a keyword or category



Category search area

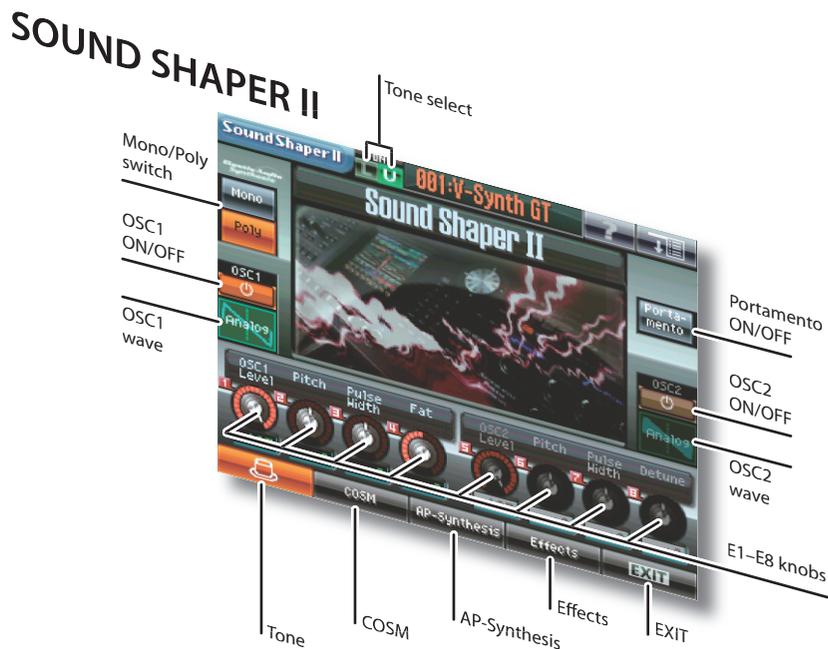
When you touch the <Category search area>, the Category Search palette will open. There you can view only the tones of the category you specify, helping you to quickly find the tone you want. To return to viewing all tones, touch <Back>.

Keyword search area

When you touch the <Keyword search area>, a virtual keyboard will appear. When you enter a keyword and touch <ok>, only the tones that include the specified keyword will appear, helping you to quickly find the tone you want. To return to viewing all tones, touch <Back>.

SOUND SHAPER II

It allows you to quickly create the sound you want by focusing your editing on relevant aspects of the sound, just like a professional sound designer.



SOUND SHAPER II contains Tone, COSM, AP-Synthesis, and Effects sections, and each of these sections provides a selection of the most appropriate parameters. In each screen, you can create your own original sound simply by turning the E1–E8 knobs and touching the screen.

Once you've used SOUND SHAPER II to edit a sound, you can use Pro Edit to make more detailed changes. For details, refer to "PRO EDIT" (p. 46).

1. Press the panel [PATCH] button to access the Patch Play screen.
2. Touch <SOUND SHAPER II>.



3. Turn the E1–E8 knobs to adjust the sound.



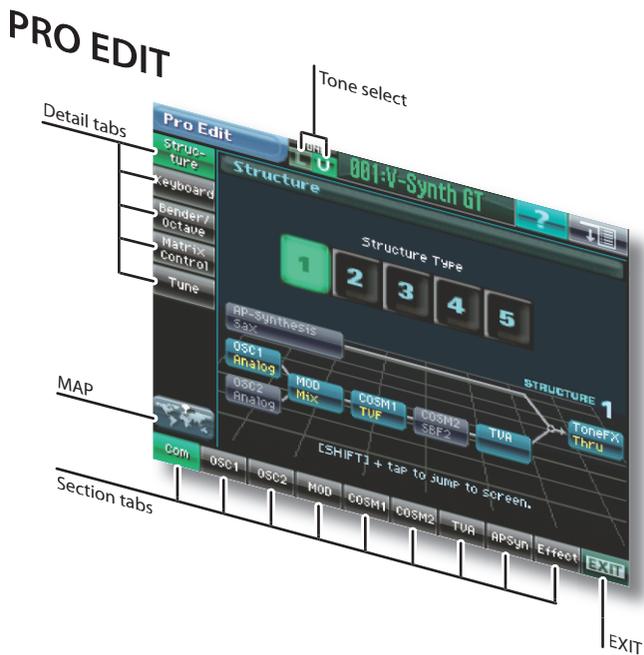
Use the tabs located at the bottom of the screen to switch between the different sections. In each section, you can adjust the sound by turning the E1–E8 knobs and touching the screen.

For details, refer to the “Owner’s Manual.”

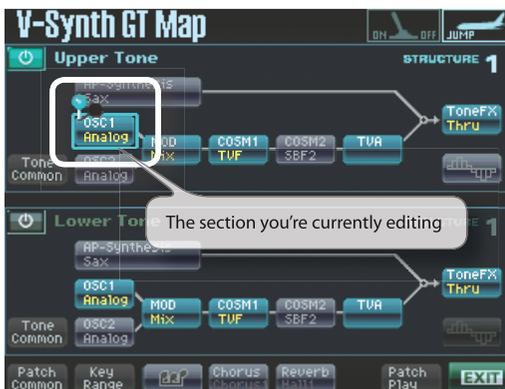
- * The edits you make to the tone are temporary, and will be lost if you turn off the power or select a different patch or tone. If you want to keep an edited tone, you must save that tone as described in “Saving patches and tones” (p. 50).

PRO EDIT

Pro Edit is an editing method that lets you individually edit every tone parameter of the V-Synth GT. This lets you create sounds in more detail than when using SOUND SHAPER II.



In the Pro Edit screen, you can use the section tabs located at the bottom of the screen to switch between sections such as OSC and COSM, and use the tabs located at the left to switch between details within each section. If you've lost track of what you're editing, touch <MAP> to see where you are.



The V-Synth GT Map screen gives you a convenient way to turn each section of the upper tone and lower tone on or off.

For details, refer to "Owner's Manual."

1. Press the panel [PATCH] button to access the Patch Play screen.
2. Touch <PRO EDIT>.



3. Use the section tabs at the bottom of the screen to select a section such as OSC or COSM, and use the detail tabs at the left to select detailed settings within that section.



- * The edited tone is temporary; it will be lost if you turn off the power or select another patch or tone. If you want to save a tone you edited, save it as described in “Saving patches and tones” (p. 50).

The Three Elements of Sound

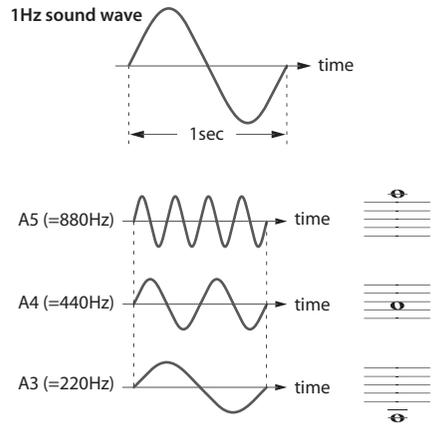
Sound is the vibration of a pressure wave in the air. This wave reaches our ears, and is interpreted by our brain as sound. The type of sound we experience is determined by the shape of this wave.

The V-Synth GT makes it easy to create new sounds simply by moving the controllers of the panel. It's a good idea to start by selecting a patch that's similar to the sound you're trying to create.

But even if you have a clear idea of the sound you want, you won't obtain that sound simply by moving the controllers blindly. This section will give you some basic knowledge about sound to guide you in your editing.

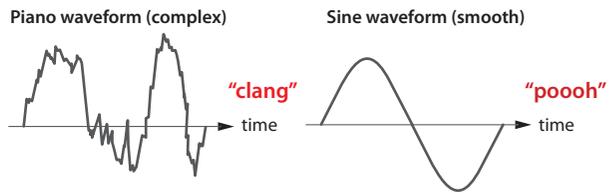
Pitch

The pitch of sound is determined by the speed of the wave cycles. A wave that vibrates 1 cycle per second is called 1 Hz (hertz). As the frequencies become higher, Hz becomes higher in numbers. Lower the number in hertz, and frequencies will become lower as well. For example, when A4 (center A) equals 440.0 Hz, an octave higher pitch would generate twice the amount of frequency at 880.0 Hz (A5). An octave lower pitch would produce half the frequency at 220.0 Hz (A3).



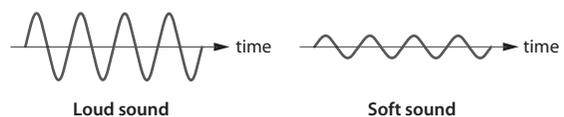
Brightness

The brightness of a sound is determined by the shape of its waveform. By comparing the piano and the sine wave side by side, you can see the difference in complexity. In this example, the complexity of the waveform results in a brighter sound.



Volume

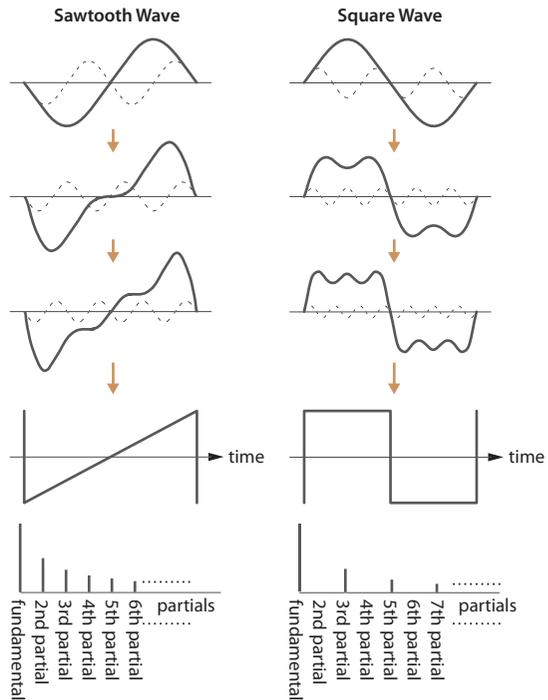
The volume of the sound is determined by the size or the width of the waves. As the waves become wider (vertically on the graph), the louder the volume becomes. As the width narrows, the volume becomes softer.



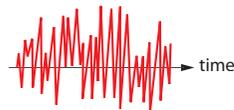
Harmonics

We've just talked about the brightness of sounds, and how they are determined by the shape of their waveforms. But how are these waveforms constructed? It is commonly known that waveforms are composed of a combination of sine waves. Let's take the sawtooth or the square wave for example; they are comprised of a sound basis and additional sine waves that are the integer multiples as in two times or three times the frequency (called harmonics, or overtones). There are two kinds of harmonics. One has the frequencies of integer multiples in two times or three times; the other has other frequencies that are non-integer multiples. By combining these harmonics, various sounds can be created.

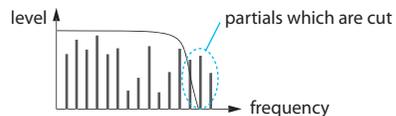
Brighter sounds include many high frequency harmonics; darker (rounder) include more of the low frequency harmonics. There is a technique called subtractive synthesis method in which harmonic elements are cut to change the brightness (waveform) of the sound. It is a popular method for creating composite waveforms. The V-Synth GT provides several types of filters, giving you a broad range of sound-creating possibilities.



Bright waveform



Low pass filter



Higher partials are cut, making the waveform more rounded (mellow)



Saving patches and tones

A patch or tone you edit is temporary; it will be lost if you turn off the power or select another patch or tone. If you want to keep a patch or tone you've edited, you must save it as follows.

1. In the upper right of the screen, touch <MENU>.



A pulldown menu will appear.

- * If you've edited patch settings, the patch pulldown menu will appear.
- * If you've edited tone settings, the tone pulldown menu will appear.

2. In the pulldown menu, touch <Patch Write> (or for a tone, <Tone Write>).



3. Turn the VALUE dial to specify the destination to which you want to write the patch (or tone).



4. Touch <OK> to write the data.

Initializing a patch or tone

Initializing means to return the currently selected patch or tone to a standard set of values. If you want to create a patch or tone from scratch, rather than starting from an existing patch or tone, you can execute the Initialize operation.

- * Initialize will affect only the currently selected patch or tone; it does not rewrite patches or tones saved in internal memory.
- * If you want to return all settings to the factory-set condition, execute Factory Reset. For details, refer to "Owner's Manual."

1. Select the patch or tone that you want to initialize.
2. In the upper right of the screen, touch <MENU>.



A pulldown menu will appear.

3. In the pulldown menu, touch <Patch Init> or <Tone Init>.



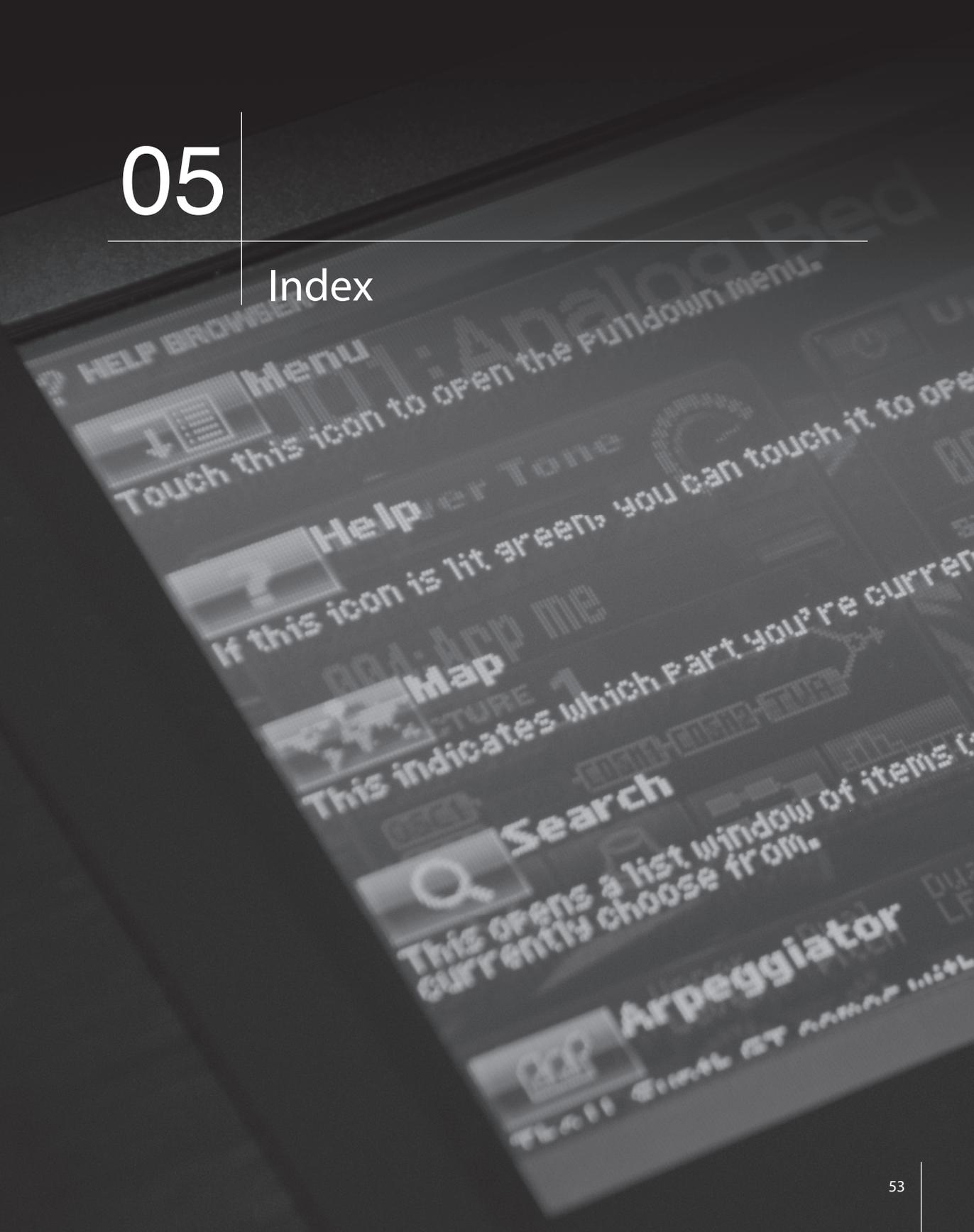
4. Touch <OK> to execute the Initialize operation.



The settings will be initialized, and you'll return to the previous screen.

05

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