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POWER USER

S90 and the Modular Synthesis Plug-in System

PLG100-VH
Vocal Harmony Effect Processor
Plug-in Board

A Getting Started Guide

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ABOUT THE PLG BOARDS

The PLG-Modular Synthesis Plug-in System: This innovative feature allows you to add hardware plug-in boards that can be either complete synthesizers or specialized effect processing, as in the case of the PLG100-VH.

The PLG 100-VH

The PLG100-VH provides a sophisticated vocal effect that takes a microphone input and reproduces up to 3 harmony parts. These parts can be voiced under MIDI control to make for intricate 4 part choruses; (3 + your voice). This MIDI control can be real time (as you play) or controlled from a prerecorded MIDI track (you can have prerecorded track the controls the harmonies). It can also create effects where you control the pitch of a "synth voice" from your keyboard, and where you can transpose the pitch you are singing and can change the gender of the voice, as well. This is great, allowing you to talk, grunt or otherwise make noises into musical pitches or into wild robot-like sound effects.

Once it is connected, the PLG 100-VH becomes another effect block in the S90 and can be applied to one of the Parts within a PERFORMANCE. Although Harmony can be applied to normal instrument Parts, it is designed specifically to work with the A/D Input.

You can pre-program the pitch interval of the harmony, or you can play the harmony from the S90 keyboard and even have the harmony interval change, depending on the chord you play. As long as your own voice is in pitch and you play the appropriate chords, the PLG 100VH ensures that the harmony "voices" will be enharmonically correct and stay in pitch with the chord changes of the song.
It also includes a gender changer effect that turns a male voice into a female voice (or vice versa), and a vibrato effect that can add vibrato to your voice.

The VH EFFECT EDITOR

There is stand-alone PLG100-VH Effect Editor software. It gives you comprehensive control over all PLG 100-VH settings and parameters. It also provides exceptionally easy and intuitive editing, with graphic controls.

BOARD INSTALLATION

To install the PLG100-VH, follow the instructions in the S90 Owner's Manual. The PLG100-VH must occupy slot 1 of the S90 (All Blue wires, 1 Orange wire) in order to use the microphone input. Be sure to place the board in the slotted grooves and that boards do not touch each other or the chassis of the S90.

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Using a Microphone & the A/D Input

Before we get started with the PLG 100-VH, it is necessary to understand how to use the A/D Input of the S90.

This next section of the guide will instruct you how to use the A/D input of the S90 with a microphone, in conjunction with the PLG 100-VH. You can sing into a microphone that is plugged into the S90 and apply effects to the vocals.

Plug a microphone into the A/D Input of the S90. Check the MIC/LINE parameter found in [UTILITY]/ [F2] I/O /SF1 Input. Select MIC.

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Easy Steps To Using The A/D Input and the PLG 100-VH.

Each PERFORMANCE stores A/D input settings.
To start from the beginning you will need to "initialize" a PERFORMANCE. If you have a PERFORMANCE that you want to use, skip step 1.

1>Initialize A PERFORMANCE:
- Select the PERFORMANCE you wish to "Initialize".
- Push [JOB]. Select the Initialize job [F1].
- Push [ENTER] and then push [INC/YES]

2>Select the Source Input Level:
- Press the [PERFORM] button to select the main Performance screen
- Press [F2] AD to make and verify microphone settings. Adjust the signal "gain" level by turning the small (GAIN) knob (located to the left of the A/D input jack).
- Set the VOLUME = 127
- Set the MONO/STEREO input to "L mono" or "R mono" as is appropriate for your microphone.

- Set any effects or pan position to taste.

3>Applying the PLG 100-VH:
- Press the [EDIT] button.
- Press the [COMMON] button next to the Data Wheel to enter Common level parameters
- Press [F6] Effects/ [SF1] Connect. The PLG100-VH is an effect processor and logically this is where you will program all of its parameters. (Your PLG1 button will not work. The PLG100-VH is an effect processor and does not have Voices, per se.
- In the upper left corner of the screen you will see a diagram with two signals coming in from the left. The upper one is VCE INS or Voice Insertion Effect (the Part with the Insert Effects active). The lower one is reserved for the **PLG-EFF** or **Plug-In Effect** Processor. *That's us*! It reads "off" in the diagram below.
- Set the EFFECT PART as "PART A/D" (your Microphone)
- Highlight the PLG-EF box to view the various VH board modes: Vocoder, Chordal, Detune, Chromatic. Use the Data Wheel to make selections.

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What Are the Four Vocal Harmony Types?

VOCODER HM: This produces up to three **synth** voice harmony notes whose pitches correspond to the <u>exact</u> notes you play on the S90. In other words, you can sing the melody and "play" the harmony or harmonies from the keyboard (or have them follow from a sequencer track). The Harmony sound can be edited. The Lead voice can be synthesized, as well (Pitch Correct = ON). This is very useful when you want to Pitch Correct your voice, forcing the sound of your voice to the notes you play on the keyboard. You can

edit this synth lead voice from 'almost' natural to robot-like to munchkin-like (Lead Gender Depth). You can use your mouth shape and the sound of your voice to create unusual and bizarre out-of-this-world vocal effects. Changing the gender of the Voice uses one of the harmony voices and reduces the number of synth backing voices to 2.

Chordal HM: This produces up to three harmony notes that correspond to the chords you play on the S90 (or chords recorded to a sequencer).

For example, if you play a C major triad on the keyboard and sing a 'C' note (and Chordal Mode is set to "trio"), the resulting harmonies will be 'C', 'E', and 'G'. Thirty-four different chord types are recognized in this mode - giving you an amazingly full and flexible palette of harmonies, suitable for nearly any music style. The number of harmonies produced and their position above or below the melody is set in the Mode parameter.

In general, the Chordal Type is best suited when you want to simply play the chords and have the Harmony effect automatically sort out the suitable notes.

DETUNE HM: This produces a slightly "detuned" pitch and mixes it with the input signal for a rich, chorusing effect. The amount of the detuning is editable via the MODE parameter.

MIDI note data from a keyboard or sequencer has no effect in this mode.

CHROMATIC (CHROMAT.HM): This produces a harmony at a fixed pitch interval from the original sound (such as an octave, or a third). The amount of the pitch shift is set with the MODE parameter.

MIDI note data from the S90 or sequencer has no effect in this mode.

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EXAMPLE 1
This first example will use the PLG 100-VH's VOCODER harmony type and the S90 A/D Input.
To do this:
- Follow STEPS 1-3 of "Easy Steps To Using The A/D Input and the PLG 100-VH".
At this point, you should be able to:
  a) Hear audio through the microphone
  b) Play the S90 and hear a piano Voice.

c) Sing into the microphone while playing a chord on the S90. The harmonies produced (up to three harmony notes) are pitches corresponding to the notes you play on the S90.

Now let's turn the piano Voice off so that we can concentrate on the Vocal Harmony board.
- Push Program (Track) button [1] to select PART 1
- Set the Part Switch to OFF for the piano voice currently in Part 1. [F1] Voice / [SF1] Voice. Part Sw = OFF

*At this point, you should **only** hear the original microphone signal and the harmonized parts (when you play the keyboard and sing into the microphone).

The next objective will be to alter the balance of the harmony signal so that no actual microphone signal is heard, just the VOCODER effect.

While still in EDIT mode:
- Press [COMMON]/ [F6] Effect/ [SF2] PLG-EF.
- We now can view the edit parameters of the VOCODER.
- Use the cursor to select the page with the Lower Gender Depth and the Lead/Harmony balance. Cursor to the right.
- Adjusts the balance between the "lead" and the PLG 100-VH's vocal harmonies.
- Set the L=H parameter to **"L<H63"**

*At this point, you should **only** hear the harmonized parts (when you play the keyboard **and** sing into the microphone). Don't be afraid to sing OUT LOUD. Many people never hear the effect because they don't give up enough signal to the microphone. Remember you have 3 parts so playing more notes than that is silly.

Using the PLG100-VH in this manner will allow you to actually play your vocal parts from the keyboard. The "synthesizer" harmony pitches will be completely determined by what is played on the keyboard of the S90. Controllers such as pitch bend can also be applied to the harmonized effect.

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EXAMPLE 2
the "Classic" Vocoder setting
The next setting will give you the classic robot-like vocoder effect.

To do this:
- Follow STEPS 1-3 of "Easy Steps To Using The A/D Input and the PLG 100-VH".
- Push Program (Track) button [1] to select PART 1
- Set the Part Switch to OFF for the piano voice currently in Part 1. [F1] Voice / [SF1] Voice. Part Sw = OFF

*At this point, you should **only** hear the original microphone signal and the harmonized parts (when you play the keyboard and sing into the microphone). If not, check the Lead/Harmony balance (L=H).

The next objective will be to:
- Adjust the settings of the PLG 100-VH to put the finishing touches on the robot-like voice effect.
- Alter the balance of the Lead/Harmony signal so that no actual microphone signal is heard, just the VOCODER effect.

- Set the parameters as follows:
- 'Mode' to –1 OCT
- 'H.Gender' (Harmony gender)to auto
- 'L.Gender' (Lead gender) to male
- 'Pitch Correct' to ON
- Upper Threshold to "5"
- Set Lower Thrsh to "6".
- Set Upper Gender Depth to "+00".
- Set the 'Lower Gender Depth to -20 (minus values move toward Barry White; positive values toward mechanical-man
- Lead-Harmony to **L63>H**

*The idea of this setting is to get a monotone, robotic sounding effect. At this point you are ready to determine what pitch the PLG board will drive by simply playing a key on the S90.

Please feel free to experiment with a parameter. With the Pitch Correction ON – the VH will force the 'lead' voice to the pitch you play on the keyboard when you select a Lead Gender Type. The Threshold parameters will set sensitivity for the male or female, or upper and lower voices.

Keep in mind, how you 'shape' your words (mouth), the register of your voices and volume that you speak or sing into the microphone, all determine the results of the synthesized voice(s). This allows endless and unique performance possibilities.

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EXAMPLE 3
This next example will use the PLG100-VH's CHORDAL harmony type.
To do this:

- Follow STEPS 1-3 of "Easy Steps To Using The A/D Input and the PLG 100-VH" and select CHORDAL in "Step 3".

In general, the Chordal Type will allow you to simply play the chords and have the Harmony effect - automatically sort out the suitable notes. Select the parts that the synth voice will create: duet, trio, above, above & below, below, etc.

The same method can be applied for using DETUNE and CHROMATIC types.

Additional settings can be altered within all of the Harmony Types to change the type of voicing of the harmonization, gender type of the harmonies, and detuning, transposition and pitch correction parameters.

You must name and save the PERFORMANCE to retain these changes.

Backup your data in an ALL Data file to an optional SmartMedia Card or SCSI storage device. Performance data can be stored in the ALL data type file (.w2a), or bulked to an external device as system exclusive data.

Can I send this wacky stuff out the assignable outputs?
When you setup a Performance or MIX to use the PLG100-VH as an Insertion Effect you can route it out to an assignable output. The Vocal and the Vocal Harmony Effect can be sent to the Assignable output. From the main Performance or MIX screen press F2 AD to make settings concerning the A/D input (including output assignment).

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