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POWER USER

Motif ES and the Modular Synthesis Plug-in System

PLG100-VH Vocal Harmony Effect Processor Plug-in Board

A Getting Started Guide

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- The PLG100-VH board is part of the Modular Synthesis Plug-in System. It is an **effect** processor that can be used in Performance mode or 'live' in a Song or Pattern to effect a microphone plugged into the A/D input (analog-to-digital), it can be used in a sampling session to record the Vocal Harmony effects to tracks of the sequencer or it can be applied to audio samples after the fact. Please follow all the instructions in the Owner's Manual concerning installation. You can verify proper installation by powering up and viewing the UTILITY/ F6 PLUG /SF Status screen. This Guide will take you through setting up the A/D input and editing the PLG100-VH from the front panel of the Motif ES. (There is also available a VH EFFECT EDITOR that brings the front panel parameters to your computer screen).

This Guide assumes you are at the Motif ES with the PLG100-VH properly installed in slot 1 and have a quality microphone plugged into the LEFT (L) A/D input on the back panel of the unit. Follow this guide step-by-step at least the first time through. When you are comfortable with the setup procedures feel free to experiment creating your own setups.

Some terminology that you will find in the VH area:

Lead (Melody) – Refers to your natural voice or the synthesized lead Voice w/pitch correction. Can be assigned an independent MIDI channel from the Harmony

Harmony (H) – MIDI controlled backing vocals (3 max.) follow chord/MIDI input. Can be triggered on it's own channel.

Gender (G) – male or female voice. Change gender without expensive, painful medical procedures.

Depth (Dpt) – how much a parameter will effect the sound

Threshold (Thresh) - the level at which a particular effect kicks in. Signals below the threshold are not effected.

Pitch Correction (PchCorrect) - when activated and a Gender type is selected you can create a 'vocode' effect that will follow your played notes. You can balance this with your normal voice or mix it completely to the vocoder effect.

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 Vocal Harmony

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 synthesized voices + your voice). This MIDI control can be real time, as you play or controlled from a prerecorded MIDI track. You can have a prerecorded track the controls the harmonies. It can also create effects where you control the pitch of a lead "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 and turn them into musical pitches or into wild robot-like sound effects.

Once it is connected, the PLG 100-VH becomes another effect block in the Motif ES and can be applied to one of the Parts within a PERFORMANCE, or in a MIX. Although Harmony can be applied to normal instrument Parts, it is designed specifically to work with the A/D Input. You can also set up to sample through the Vocal Harmony effect into the Motif ES' Integrated Sampling Sequencer.

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.

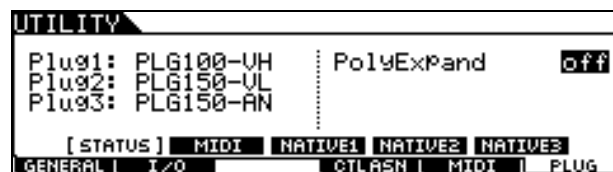
The VH EFFECT EDITOR

There is a free PLG100-VH Effect Editor available. It gives you comprehensive control over all PLG100-VH settings and parameters. It also provides exceptionally easy and intuitive editing, with graphic controls. This Editor is available in a stand-alone version and as a 'plug-in' editor for OPT compatible sequencers like the Yamaha SQ01.

BOARD INSTALLATION

To install the PLG100-VH, follow the instructions in the MOTIF ES Owner's Manual. The PLG100-VH must occupy slot 1 of the Motif ES (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 Motif ES. You can check your installation by navigating to the UTILITY/ F6 PLUG/ SF1 STATUS screen.

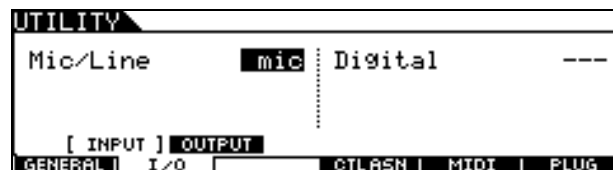


Using a Microphone & the A/D Input

Before we get started with the PLG100-VH, it is necessary to understand how to use the A/D Input of the MOTIF ES.

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

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



- Press STORE to store the UTILITY settings.

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

Each PERFORMANCE stores A/D input settings and these can be unique per Performance or per Mix. We will follow the steps of setting up a Performance. You can also apply these setting to a SONG or PATTERN Mix in a similar fashion or copy the PLG-EFF settings from a Performance to any MIX.

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.

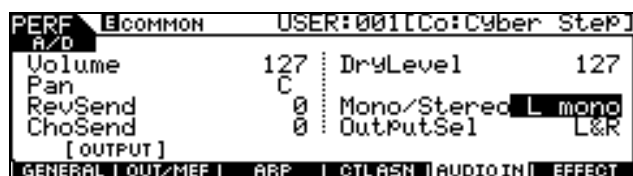
1>Initialize A PERFORMANCE:

- 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.

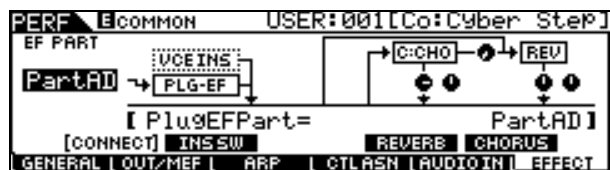
- Press [EDIT]/ then [COMMON] to enter Common level parameters
- Press [F5] AUDIO IN to make and verify microphone settings.
- Set the VOLUME = 127. Adjust the signal "gain" level by turning the small GAIN knob (located next to the left input jack).
- Set the MONO/STEREO input to "L mono" (we are using the Left input jack). This will place your voice in the center of the mix.



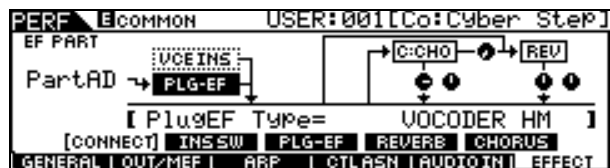
- Set any Reverb and Chorus effects or pan position to taste.
- Output Select: You can route your vocal to the regular stereo L&R or to any available assignable outputs (with the vocal effect).

3>Applying the PLG100-VH:

- 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 an Input reserved for the **PLG-EFF** or **Plug-In Effect** Processor. *That's us!* It reads "off" initially. Move the cursor down to highlight the word "off".
- Use the Data Wheel to set the EFFECT PART as "PART A/D" (your Microphone)
- Highlight the PLG-EF box to view the various VH board modes: Thru (bypass), Vocoder HM, Chordal HM, Detune HM, Chromatic HM. Use the Data Wheel to make selections.



Important navigation tip: The screen above is very informative and changes when you activate or highlight particular areas. Notice in the screen shot above both F6 (Effect) and SF1 (Connect) are

currently selected. When you install a PLG board that is an effect board, the "PLG-EF" box (which represents the VH board in this case), will display a button [SF3] that will allow you to drop down and see the native PLUG-IN EFFECT parameters. To return to this screen while editing the Vocal Harmony parameters remember to hit [SF1] Connect.

What Are the Four Vocal Harmony Types?

VOCODER HM: This produces up to three **synth** voice harmony notes whose pitches correspond to the exact notes you play on the MOTIF ES. In other words, you can sing the melody and "play" harmony parts 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 force 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 from 3 to 2.

Chordal HM: This produces up to three harmony notes that correspond to the chord-type you play on the MOTIF ES (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.

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 MOTIF ES or sequencer has no effect in this mode.

EXAMPLE 1

This first example will use the PLG100-VH's VOCODER Harmony type and the MOTIF ES A/D Input.

To do this:

- Follow STEPS 1-3 of "Easy Steps To Using The A/D Input and the PLG100-VH".

At this point, you should be able to:

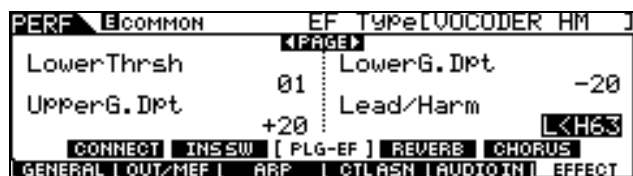
- a) Hear audio through the microphone
 - b) Play the MOTIF ES and hear a keyboard Voice.
 - c) Sing into the microphone while playing a chord on the MOTIF ES. The harmonies produced (up to three harmony notes) are pitches corresponding to the notes you play on the MOTIF ES.
- Now let's turn the Keyboard Voices down so that we can concentrate on the Vocal Harmony board. To do this use the CS controls to lower the Volume of the Keyboard Parts.

*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 dry microphone signal is heard, just the VOCODER effect.

While still in EDIT mode, press [COMMON]/ [F6] Effect/ [SF3] PLG-EF.

- We now can view the edit parameters of the VOCODER.
- Use the right cursor to select the page with the LowerG.Dpt (Lower Gender Depth) and the Lead/Harm (Lead/Harmony) balance parameters in the right column.
- 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. But don't overload the signal either. It may take a minute for you to adjust to how to sing to get maximum benefit. Remember

you have 3 parts so playing more notes than that is, well, 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 MOTIF ES (when applied in a MIX the harmony pitches can be determined by a track of the sequencer). Controllers such as pitch bend can also be applied to the harmonized effect. STORE this Performance, if you would like to keep it.

EXAMPLE 2

the "Classic" Vocoder setting

The next setting will give you the classic robot-like vocoder-effect with key control.

To do this:

- Follow STEPS 1-3 of "Easy Steps To Using The A/D Input and the PLG100-VH".
- Push Program (Track) button [1] to select PART 1
- Turn down the keyboard Part assigned to the Performance with the CS

*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 PLG100-VH to put the finishing touches on the robot-like voice effect.
- Alter the balance of the Lead/Harmony signal so that no actual dry 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 (may he R.I.P.); 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 MOTIF ES.

Please feel free to experiment with a parameter. Certain parameters will work together. For example, 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, male/female. The Threshold parameters will set sensitivity for the male or female, or upper and lower voices.

Keep in mind how you ‘shape’ your words (shape of the 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.

EXAMPLE 3

This next example will use the PLG100-VH’s CHORDAL harmony type and setup for a SONG/PATTERN Mix. It is virtually the same. If you are applying this effect to a MIX that already exists skip step 1.

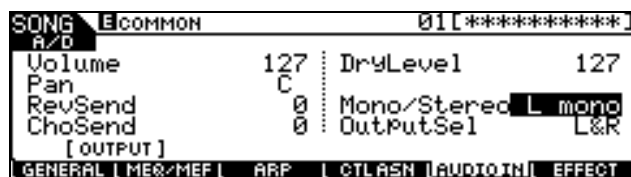
To do this:

1>Initialize a SONG Mix or PATTERN Mix:

- Press [MIXING].
- Push [JOB]. Select the Initialize job [F1].
- Push [ENTER] and then push [INC/YES]

2>Select the Source Input Level:

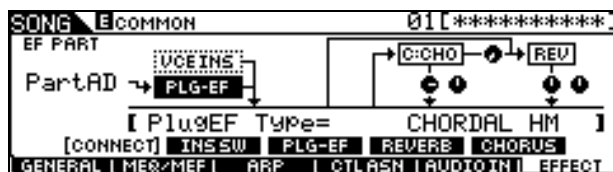
- Press [EDIT]/ then [COMMON]
- Press [F5] AUDIO IN to make and verify microphone settings.
- Set the VOLUME = 127. Adjust the signal “gain” level by turning the small GAIN knob (located next to the left input jack).
- Set the MONO/STEREO input to “L mono” (we are using the Left input jack). This will place your voice in the center of the mix.



- Set any Reverb and Chorus effects or pan position to taste.
- Output Select: You can route your vocal to the regular stereo L&R or to any available assignable outputs (with the vocal effect).

3>Applying the PLG100-VH:

- Press [F6] EFFECTS/ [SF1] CONNECT. The PLG100-VH is an effect processor and logically this is where you will program all of its parameters.



- In the upper left corner of the screen you will see an Input reserved for the **PLG-EF** or **Plug-In Effect** Processor. *The VH!* It reads “off” initially. Move the cursor down to highlight the word “off”.
- Use the Data Wheel to set the EFFECT PART as “PART AD” (your Microphone)¹
- Highlight the PLG-EF box to view the various VH board modes: select Chordal HM. Use the Data Wheel to make selections.

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 setup 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.

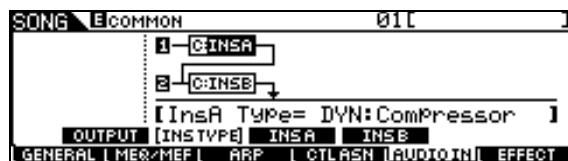
You must name and save the PERFORMANCE or the MIX you used to retain these changes. Backup your data in an ALL Data file to an optional SmartMedia Card or USB storage device. Performance data can be stored in the ALL data type file (.w7a), or bulked to an external device as system exclusive data. Song/Pattern Mixes can be stored in the ALL data type file or bulked to an external device as well. In general, your Performance data will remain in memory even after power down but you should back up all data as a good habit.

Can I record the Vocal Harmony in the Motif ES Integrated Sampling Sequencer?

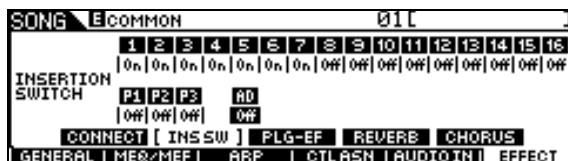
You *can* record any of the Insertion Effects in the Motif ES including your vocal using the Vocal Harmony board, directly. Simply setup the Vocal Harmony effect you want to use, go to Integrated Sampling mode set the input to A/D and your sampling through the VH Effect. What you hear is what you get... You can also apply the powerful DUAL INSERTION EFFECTS to the AD input (it can

¹ If you are applying the VH effect to a sample audio track you would dial up the PART 01~16 here and apply it.

be applied to any eight PARTS of a MIX – this includes the AD input and PLG150 boards). When in a Performance or Mix you will find the parameters for the AD input found in COMMON/ F5 Audio In/ SF2 INS TYPE:



You select which eight Parts of your MIX will have the Insertion Effects active in COMMON/ F6 EFFECT/ SF2 INS TYPE:



Once you have set up the microphone, the AD parameters, the Insertion Effects and the Vocal Harmony you can go to INTEGRATED SAMPLING and what you hear is what you will be able to sample. The Source will be "A/D".

By assigning the Harmony parts to follow a specific MIDI channel you can 'orchestrate' your backing vocals with any track containing the controlling note data. The notes on that MIDI channel can be used to conduct the harmonies and you can choose to have it audible or you can set its volume to zero and just use the notes to control the vocals.

Visit www.motifator.com and download the FREE files called "VH_PLG_2.w7a" and "VH_PLG_2.w8a" for the Motif ES and transfer them to your SmartMedia card or USB drive. There are 15 examples. Ten are Chordal setups, 1 Detune, and 4 are Vocoder examples. Also you will find several Song Mixes setup to use the various setups. Plus a bonus Pattern setup dedicated to Barry White.

PLG-EFF setups can be copied from Performance mode to a SONG or PATTERN Mix using the PF COPY function.

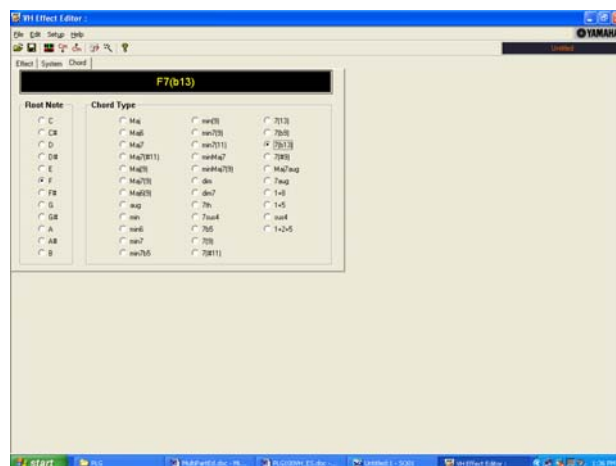
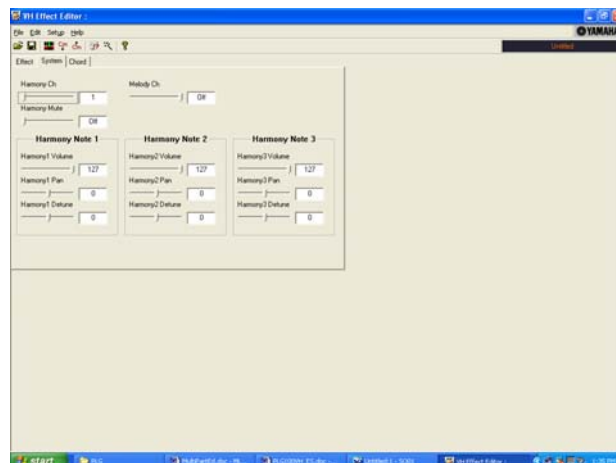
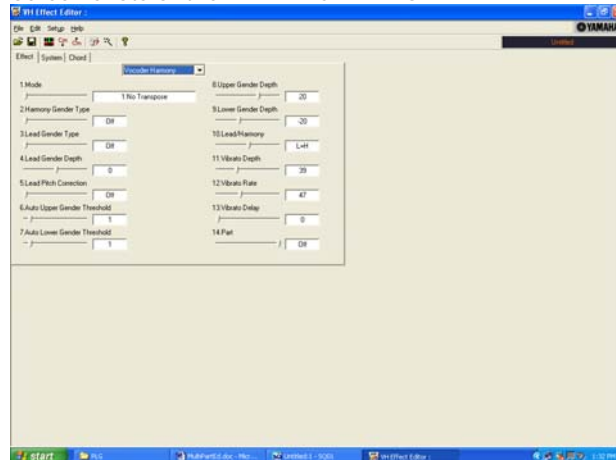
VH EFFECT EDITOR:

Stand-alone / OPT Plug-in VH Effect Editor

This program will let you setup the various parameters for the Vocal Harmony board. The OPT compatibility means you can open this Editor while running the OPT compatible sequencer (like the Yamaha SQ01) and you can have the software insert the setup data into a track for recall. As a

stand alone Editor you can store your setups in a special file and archive that file on your computer.

Screen shots of the VH EFFECT EDITOR



Tony Escueta and Phil Clendeninn
File examples prepared by Athan Billias
Technology Products
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