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MUSIC PRODUCTION and PERFORMANCE
With the MOTIF

Assigning Your PLG150 Plug-in Board in a MIX
Assigning Your PLG150 Plug-in Board in a Performance

Phil Clendeninn
Digital Products Support Group
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PLG150 Series boards (PLG150-AN, PLG150-DX, PLG150-PF, and PLG150-VL) can be installed in any slot configuration. A consistent arrangement is recommended when you have multiple boards, as the bulk files remember which slot the file was created from. For installation instructions please follow the Owner's Manual pages 282-283 carefully.

PLG150 Series Plug-in Boards are each single part boards. What this means is that they are capable of contributing **one** sound at a time where ever they are used within the Modular Synthesis Plug-in System host product. For the Motif, the host in this case, each PLG150 Series board can be used in a very similar fashion to the Internal sounds. However, there are a few things that may cause you to scratch your head, if you are unaware of just how the PLG boards integrate into the host product. For example, the boards are all synthesizers on their own, but they don't have screens, knobs, sliders, analog audio outputs, etc. It doesn't even have buttons for you to enter information. What it does have is the chip set necessary to do the calculations to deliver its technologies sound. Each board can be unique in terms of its sound-generating engine. The PLG boards will be using the host product for its screen (to communicate), its knobs to input data, its controllers to perform real time changes, its converters for translating its results to the analog output (in fact for all audio routing), and its effects and so on.[1] It is a rather complex network. But the Motif can address the boards. It has the ability to detect, and automatically load Preset sounds to the PLG slot for each board it detects. Each 150 board represents a different technology with an entirely unique set of parameters. Each PLG150 series Voice will access waveforms on its own board. The Motif can store and recall Voices that "point" to specific waveforms on your PLG board. The Motif will memorize the Voice data (pointers), the PLG board slot number and maintain all this data. Take your time when seeking to route and learn about using the PLG boards in your setup. This guide will help you understand why and how to setup what you need.

Single Part
A single PLG150 Voice per board can be played in Voice mode, layered with other sounds in a Performance, or used as a Part within a Song or Pattern Mix. Although each PLG150 series board has a unique story, the way in which

they work within the Motif's various modes will be pretty much the same. The current 150 series boards are the PLG150-AN (analog Physical Modeling), the PLG150-DX (Frequency Modulation), the PLG150-PF (AWM2 sample playback), and the PLG150-VL (Virtual Acoustic Physical Modeling).[2]

Using PLG150 Voices in a MIX
The Motif by itself (using just the internal sequencer) is capable of 16 Part Multi-timbral operation. The PLG boards have their own polyphony and are basically *separate* synthesizer engines that will use the host's hardware. Before you expanded the Motif with PLG boards, the 16 Parts of a MIX were always occupied by internal sounds. When viewing the SONG or PATTERN MIXING screen you are looking at PARTS 1-16 in the MIXER.

- Press MIXING
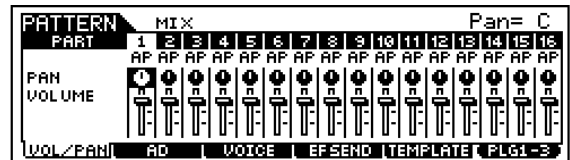
When you installed your PLG 150 board(s) you are able to toggle between viewing and editing PARTS 1-16 or PLUG-In slots PLG1-3 via the **F6** button.

Press F6 now, and get used to switching the view from 1-16 (Internal) and PLG1-3 (Plug-in slots 1-3). What you are going to do when you want to assign a PLG sound is either **layer** it with or **replace** one of the internal Motif sounds. As we stated, by default (when you first call up a new MIXING page) Parts 1 through 16 are occupied by internal sounds assigned to MIDI channels 1-16. This is quite natural and basic but must be stated because what you want to do now that you have PLG boards is decide what MIDI channel you want to address them on. The PLG boards default to

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[1] Additionally, the boards rely on external computer editors to fully address parameters when building Voices from scratch. The three "pure" synth boards (AN, DX and VL) can be fully edited from scratch. The PF is sample playback and the waves are fixed.

[2] At the time of this article there are two new PLG150 series boards announced (Drums and Latin percussion). These will also present some new challenges.

Receive Channel OFF and you must assign them a MIDI Channel in order to hear them. It is guaranteed that it will already have an internal Motif sound assigned – all 16 channels are currently used. If, for example, you want to place your PLG150 board on MIDI channel 1, you will need to make a decision. "Do you want it to *share* the MIDI channel with the current sound assigned to MIDI channel 1? Or do you want to *replace* the MIDI channel 1 sound (the sound assigned to PART 1)?"

Why PARTS?

You begin to appreciate the PART as a useful entity within the Motif when you realize that a Voice can be placed in a Performance or used in a Song or Pattern and you can edit it via these so called PART parameters. Instead of editing the Voice directly, you edit these PARTS. And, you know what? It does **not** edit your Voice for any other Performance, Song or Pattern in which it happens to be used. All your PART edits are "local" to the current Performance, Song or Pattern location. In many competing products, any change that you make to the String sound when you combine it or use it in a Song or Pattern will effect every other use of that String sound in the whole machine. Bummer! The PART parameters are what allow the Motif not to have to alter everything to accommodate the current tweak. When you understand PARTS, they really do become a necessity.

Replace it:

If you want to replace the internal AWM2 sound, you will need to assign the PLG150 Part a MIDI Receive Channel and then deactivate the MIDI Receive Channel on the internal sound assigned to MIDI channel 1. (This will require that you drop into MIXING EDIT). Although you can accomplish a lot in the MIX without hitting the EDIT button, things like MIDI Receive channel are stored there. Let's take it a step at a time. But first…

A little more background on "PARTS":
- When you first call up the MIXING view you can make quick changes to your basic mix such as Volume, Pan, Effect send, and you can even select a Voice. But you need to drop into MIXING EDIT (both LEDs lit) to change the PART parameters such as MIDI receive channel assignment, the polyphony mode, the Arpeggio switch, Output assignment, filter cutoff and resonance, portamento, controllers, note range,
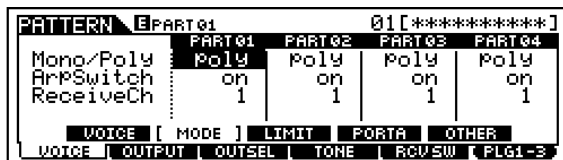
Amplitude and Filter envelopes, etc. These are the PART edit parameters that store changes to the VOICE (via offsets) without having to edit the original Voice directly. Therefore by storing just these offset parameters to your SONG or Pattern's MIX it is possible for the Motif to apply them without changing the original Voice data. It also is possible to swap out the VOICE without changing the offsets – this allows you to easily try different Voices in the same PART without having to redo all the settings.

Let's clear up one other point right now. PARTS, TRACKS and CHANNELS, it is important that you are clear on the difference.
- A PART is a set of OFFSET parameters that can be saved with a Performance, a Song MIX or Pattern MIX. Each Part is assigned a Voice. They allow you to effectively edit a sound 'locally' without making a permanent change to the Voice.
- A CHANNEL is a MIDI communication bus, 1-16. In the case of a sequencer each track sends (transmits) data on a specific MIDI channel. In the case of the tone engine (receiving device), each PART of a multi-timbral MIX is assigned a MIDI channel to respond to.
- A TRACK is a storage place in the sequencer and transmits on a MIDI channel to a PART.

Each PART can be individually assigned a MIDI channel. You can, in fact, assign several Parts to the same MIDI channel. Doing so will mean that when you transmit on that MIDI channel you can play multiple PARTS simultaneously. This is exactly what occurs when you COPY a Performance into a MIX.

How do you know what MIDI channel you are transmitting on? Before you put plug-in boards in the Motif this was always easy to answer, because MIDI channel 1, PART 1 and Track 1 where always in alignment. You didn't need to know the difference. But let's get this down – because now you will need to know the difference. The Motif keyboard can be directed to play any of the PARTS – simply select them in the multi view. Even though you can only highlight one division in the screen at a time, it is possible to play multiple sounds simultaneously. This is accomplished by assigning multiple PARTS to a single MIDI channel, then transmitting on that MIDI channel. If you set several PARTS to the same MIDI channel (as in the screen shot below), you will find that only 1 of the PARTS when you select it will cause them all to "sound". Which one and why?

```
PATTERN ▶PART01            01[**********]
          PART01  PART02  PART03  PART04
Mono/Poly  Poly    Poly    Poly    Poly
ArpSwitch   on      on      on      on
ReceiveCh    1       1       1       1

      VOICE [ MODE ] LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ PLG1-3 ]
```

The answer is 1. Your transmit channel is determined by the OUTPUT CHANNEL of the TRACK you select (highlight).

```
PATTERN                    01[**********]
          1  2  3 | 4  5  6  7  8 | 9 10 11 12|13 14 15 16

OUT CH    1  2| 3| 4| 5| 6| 7| 8| 9|10|11|12|13|14|15|16
PORT     off|off|off|off|off|off|off|off|off|off|off|off|off|off|off|off
      PLAY | GROOVE | OUTPUT | PATCH | TR VCE | CHAIN
```

Referring to the two screens above, you can play the four PARTS assigned to MIDI Receive Channel 1 (top screen) if, and only if, you select (highlight) the TRACK that is set to transmit to them, in this case track 1 (bottom screen). If you reassigned the sequencer TRACK to a different channel, that is the channel the keyboard will communicate on. If you changed track 16 to transmit on Channel 1, then highlighted track 16, it will trigger the four Parts assigned to MIDI channel 1.

The Track's OUTPUT Channel settings are found from the main SONG or PATTERN screen by pressing F3 OUTPUT (bottom screen above). This is why when you illuminate the TRACK SELECT button you can select any *one* of the sixteen tracks. *Your MIDI channel output will be dependent on the OUTPUT CHANNEL assignment of the TRACK NUMBER that you select.* If, for example, you assign your PLG150 board to receive on MIDI channel 12, then in order to communicate with that PLG150 board you will need to store the MIX and select the TRACK that is assigned to transmit MIDI channel 12.[3]
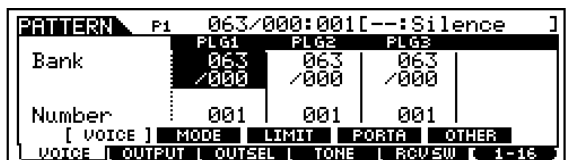
```
PATTERN  PART01  PRE1:001[AP:PowerGrand]
          PART01  PART02  PART03  PART04
Bank       PRE1    PRE1    PRE1    PRE1

          (A01)   (A01)   (A01)   (A01)
Number     001     001     001     001
    [ VOICE ] MODE  LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ PLG1-3 ]
```

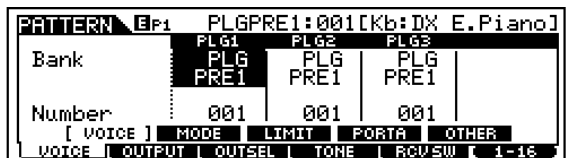Setting the PLG slot to a MIDI channel:
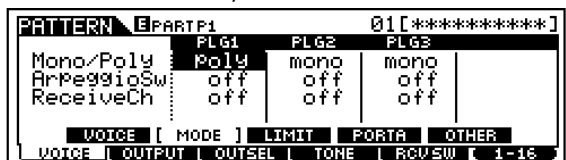- Press MIXING/ EDIT

---

[3] -Which ever track(s) that happens to be.

- Touch the F6 button to toggle to PLG1-3 view. The Parts are labeled PLG1, PLG2 and PLG3. Select the board in slot 1

```
PATTERN   P1    063/000:001[--:Silence    ]
              PLG1   PLG2   PLG3
Bank          063    063    063
             /000   /000   /000

Number        001    001    001
    [ VOICE ] MODE  LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ 1-16 ]
```
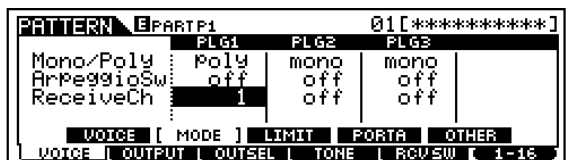
- Select the sound that you want to use. It is very important to select a bank associated with the PLG board in slot 1. Select the board's "PLG PRE1" bank[4] and Program Number 001.
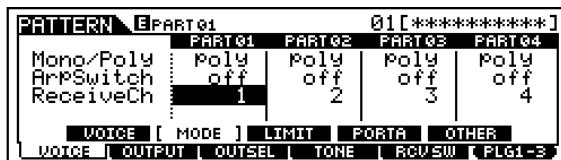
```
PATTERN ▶P1    PLGPRE1:001[Kb:DX E.Piano]
              PLG1   PLG2   PLG3
Bank          PLG    PLG    PLG
              PRE1   PRE1   PRE1

Number        001    001    001
    [ VOICE ] MODE  LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ 1-16 ]
```

- Select F1 Voice/ SF2 Mode:

```
PATTERN ▶PARTP1            01[**********]
              PLG1   PLG2   PLG3
Mono/Poly     Poly   mono   mono
ArpeggioSw    off    off    off
ReceiveCh     off    off    off

      VOICE [ MODE ] LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ 1-16 ]
```

- Set the Receive Channel to MIDI Channel 1

```
PATTERN ▶PARTP1            01[**********]
              PLG1   PLG2   PLG3
Mono/Poly     Poly   mono   mono
ArpeggioSw    off    off    off
ReceiveCh      1     off    off

      VOICE [ MODE ] LIMIT  PORTA  OTHER
 VOICE | OUTPUT | OUTSEL | TONE | RCVSW [ 1-16 ]
```
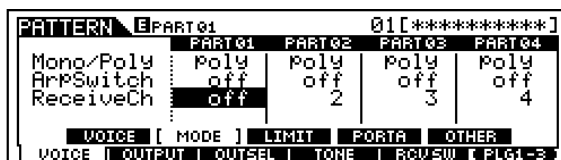
Once the Receive Channel is set to channel 1, the PLG sound will be "layered" with the Motif internal sound(s) associated with MIDI channel 1 (PART 01 by default). To turn off the internal PART 1 sound:
- Touch the F6 button to toggle to the 1-16 view.
- Select F1 Voice/SF2 Mode

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[4] The PLG PRE 1 bank is automatically loaded when the Motif detects a PLG150 series board on power up. You know, when you power up it says "Checking Plug-in boards…" If it finds a board it loads 64 VOICES into a PRESET ROM location determined by the board it detects in the slot.

```
PATTERN  PART01         01[**********]
                PART01  PART02  PART03  PART04
Mono/Poly   :   Poly    Poly    Poly    Poly
ArpSwitch   :   off     off     off     off
ReceiveCh   :    1       2       3       4
          VOICE [ MODE ] LIMIT  PORTA   OTHER
    VOICE | OUTPUT | OUTSEL | TONE | RCVSW | PLG1-3
```

- Set the Receive Channel of the internal PART01 to OFF:

```
PATTERN  PART01         01[**********]
                PART01  PART02  PART03  PART04
Mono/Poly   :   Poly    Poly    Poly    Poly
ArpSwitch   :   off     off     off     off
ReceiveCh   :   off      2       3       4
          VOICE [ MODE ] LIMIT  PORTA   OTHER
    VOICE | OUTPUT | OUTSEL | TONE | RCVSW | PLG1-3
```
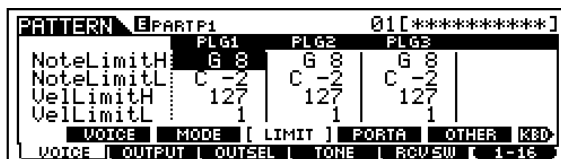
You can now play the PLG150 sound "in place of" the internal sound.

> If you had assigned the PLG board to MIDI channel 12, then you would go to the PART set to receive on MIDI channel 12 and deactivate its MIDI Receive channel, thereby replacing the internal sound with the PLG sound. And you would need to transmit from a track assigned to MIDI channel 12 to play the PLG150 sound.
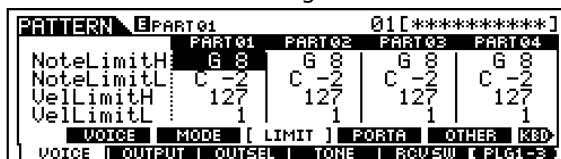
- Any further tweaks you want to make to the PLG sound can be done by toggling back, via F6, to the PLG1-3 view and editing its PART parameters
- STORE your MIX

Layer it:
If you want to layer or split the PLG sound with the internal sound, simply leave both Parts with their MIDI channels assigned. You can then set the Note Limits, Volumes, pan positions, controller receive switches, etc., of each individually using PART parameters.

```
PATTERN  PARTP1         01[**********]
                PLG1    PLG2    PLG3
NoteLimitH  :   G 8     G 8     G 8
NoteLimitL  :   C -2    C -2    C -2
VelLimitH   :   127     127     127
VelLimitL   :    1       1       1
          VOICE  MODE [ LIMIT ] PORTA  OTHER  KBD
    VOICE | OUTPUT | OUTSEL | TONE | RCVSW | 1-16
```

You can set the Note range for the PLG Part

```
PATTERN  PART01         01[**********]
                PART01  PART02  PART03  PART04
NoteLimitH  :   G 8     G 8     G 8     G 8
NoteLimitL  :   C -2    C -2    C -2    C -2
VelLimitH   :   127     127     127     127
VelLimitL   :    1       1       1       1
          VOICE  MODE [ LIMIT ] PORTA  OTHER  KBD
    VOICE | OUTPUT | OUTSEL | TONE | RCVSW | PLG1-3
```
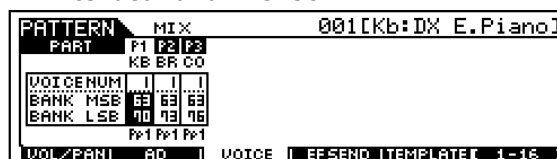
You can set the Note range of the internal Part

- STORE your settings. And exit EDIT

MIXING: VOICE Selection and BANKS

Let's now take a look at some of the MIXING parameter views and learn something about the Bank Select and Voice selection functions available with the PLG Boards.

- From the MIXING mode: Song or Pattern…
- While on the VOICE screen (F3) you can use Category Search to find Voices on the PLG board, however, you must be aware that you can only recall Voices that address the PLG board of the slot you are in. In other words, the DX board in slot 1 below, will only be able to make sound when the Voice data it is pointing to is intended for a PLG150-DX.

```
PATTERN   MIX          001[Kb:DX E.Piano]
PART     P1 P2 P3
         KB BR CO
VOICENUM |  |  |  |
BANK MSB 63 63 63
BANK LSB 70 73 76
              Pp1 Pp1 Pp1
VOL./PAN |  AD  |  VOICE  | EFSEND |TEMPLATE| 1-16
```

In the screen above, P1 (DX board) is set to the MSB/LSB bank 63/70, the P2 (VL board) is set to bank 63/73 and P3 (AN board) is set to bank 63/76. Here's what you need to know about these BANKS numbers:

PLUG-IN PRESET Voices:
63/70 This MSB/LSB[5] number will always address the PLG PRE1 (Pp1 or Plug-in Preset 1) bank of the PLG150 board that is placed in slot 1 – it matters not which board, only that it is a PLG150. The PLG PRE1 bank Voices are loaded at power up. The data for them is stored permanently in the Motif ROM and is loaded when a board is detected in a slot. In the example above, the DX board in P1, was detected and therefore the Motif would load the 64 PLG PRE1 Voices intended for the PLG150-DX into this reserved bank. If it had detected a different board it would have loaded the Voice data appropriate for that board. Therefore, the bank 63/70 will always reference the PLG150 board you place in slot 1 (regardless of which one it is).

> 63/71 PLG PRE2 (reserved for VL only)*
> 63/72 PLG PRE3 (reserved for VL only)*

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[5] These two numbers are used by the MIDI system to identify different Voice banks. Banks can contain up to 128 sounds each. You will use these MSB/LSB bank numbers when you are inserting a PLG board into a Song Mix or a Pattern Mix.

63/73 is the PLG PRE1 (Pp1) bank for any PLG150 board placed in slot 2.

> 63/74 PLG PRE2 (reserved for VL only)*
> 63/75 PLG PRE3 (reserved for VL only)*

63/76 is the PLG PRE 1(Pp1) bank for any PLG150 board placed in slot 3.

> 63/77 PLG PRE2 (reserved for VL only)*
> 63/78 PLG PRE3 (reserved for VL only)*

- *PLG150-VL has three PLG PRE banks, each containing 64 Presets. This was necessary with VL technology in order to include a preset bank setup for TOUCH EG play, one for Velocity play and one for Breath Control play. That is why bank numbers 63/71-72, 63/74-75 and 63/77-78 may also been seen, as PLG PRE2 and PLG PRE3 for a VL board that might be in that slot.
- In our example, the VL board in slot 2, when detected by the Motif, would have three PLG PRE banks loaded at power up: 63/73, 74 and 75
- If you have a PLG150-PF it would inherit one of three banks numbers for its PLG PRE1 sounds: 63/70 if in slot 1; 63/73 if in slot 2; or 63/76 if in slot 3.

The thing to know about the PLG PRE bank Voices is that they are completed PLUG-IN VOICES, which means they have been integrated with Motif parameters, controllers and effects - as opposed to BOARD VOICES which are entirely resident on the PLG board itself.

BOARD VOICES:

Board Voices are the raw data out of which you can construct your own custom PLUG-IN USER Voices.
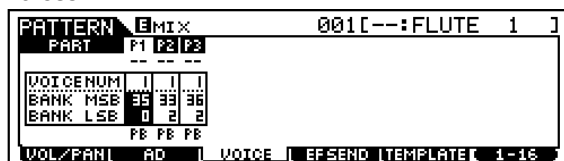
In the view above you see the three PLG boards in our example each pointing to a native BOARD VOICE bank. The size of banks and operation of each of the boards in our example is slightly different and depends on the technology involved.

35/0 is a bank specific to the PLG150-DX board. You see the "PB" below the bank numbers, which denotes PLG BOARD bank. On the DX board there are 64 USER locations for custom, "from scratch" DX sounds in this bank. This is a different thing from the 64 PLG USR Voices…we are talking 64 new FM synthesizer sounds created from scratch or imported from a DX7 or other 6-operator FM synth. Sounds are bulked to this bank in two separate loads 1-32 and 33-64. Use the DX Simulator Voice Editor to create and bulk (from scratch) sounds (or directly from a DX/TX product). There are several banks of presets and some 912 DX Voices total among the various DX banks. However, it is significant to note that "35/0" is the bank that will contain any custom sounds you make in the DX SIMULATOR – all the other banks are Preset (fixed) banks.

33/2 is a bank specific to the PLG150-VL board. It is a PB or PLUG-IN BOARD bank. It contains 6 custom locations for actual new (from scratch) configurations of the real time physical modeling VL engine. These are created in the VL Expert Editor. The PLG150-VL has three other banks you need concern yourself with: 33/0 = 128 Preset 1; 33/1 = 128 Preset 2 and 33/3 = 64 User[6]

36/2 is a bank specific to the PLG150-AN board. It is the PB USER bank for your custom AN Voices. Again these are from scratch analog voices you can create. There are 128 USER locations in this bank. Use the AN Expert Editor to create and bulk to this bank your (from scratch) analog voices. The AN board has two preset board banks 36/0 and 36/1, each contain 128 Preset sounds.

32/0 is a bank specific to the PLG150-PF board. There is no user "from scratch" RAM bank on the PF board. These are all preset piano waveforms (some with built-in programmed effects) that you can further enhance with Motif controllers and even add more effects. It contains 128 board sounds.

From BOARD bank sounds you can build 64 "PLG USER" Voices per board. So when you get a PLG Board only 64 sounds have been made

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[6] The 33/3 User VL bank is not for new models but for custom controller configurations of Preset and Custom bank sounds. With VL technology you need a degree in acoustics to program 'from scratch' but most of the programming that you will do is controller mapping and scaling to conform to *your* playing style. Much like saxophone players don't bang out new instruments but they do work on how the horn performs to their playing gestures.

for you (PLG PRE)[7]. You can make others in sets of 64 (PLG USR).

Summary: Unlike the banks beginning with MSB "63" which are Motif (integrated) level PLUG-IN VOICES, the banks where MSB is thirty (32PF, 33VL, 35DX, and 36AN) are BOARD VOICE level banks, specific to the board itself. In other words, a bank that starts with a thirty something number is addressing the board voice data directly.

PLG USR Voices
When a specific PLG150 Board is detected at power up, the Motif also creates 64 blank PLG USR locations for the slot containing the board. These are defined as Voices that you create using the PLG board data as the raw material (source data), add Motif controllers, and effects to make a custom user version called the "PLG USR" (Pu). You will see a number 1-3 associated with the PLG USR bank – this number refers to the slot that the board is placed in. They are PLG1USR (Pu1), PLG2USR (Pu2), and PLG3USR (Pu3). These get saved in an ALL DATA, ALL VOICE and the VOICE EDITOR file types.
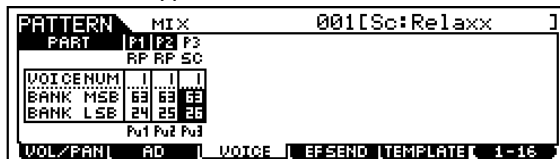
63/24 this is a PLG USR or PLUG-IN USER Voice bank. After you create or tweak a BOARD Voice by applying Motif effects and controller routing to it you will store it to one of 64 RAM locations that Motif reserves for each PLG150 Slot. This bank is the PLG USR and will reflect the technology of the board in that slot. In the screen above you see "Pu1" under the Bank Number for the P1 slot.

63/25 this is a PLG USR Voice bank for 64 USER Voices for the board in slot 2. In the screen above you see "Pu2" under the Bank Number for the P2 slot

63/26 this is the PLG USR Voice bank for 64 USER Voices for the board in slot 3. In the screen above you see "Pu3" under the Bank Number for the P3 slot.

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[7] Except the VL board which gives you 3 banks of 64 Preset.

WARNING: Troubleshooting
Each of the three "synth" boards in the PLG150 series (AN, DX and VL) has a separate Voice Editor program. And each of these three has a special RAM bank on the board itself, for custom "from scratch" Voice creation. The PLG150-PF is sample playback based and does not have its own RAM bank (samples take up too much RAM for that to be practical). Therefore you cannot technically build sounds on the PF board from scratch – you can tweak the 128 Voices that are provided. The Voice data of the three "pure" synth boards is very small compared to sample data. A typical bank of 32 DX Voices uses about 4Kb of memory. That's right 4k for thirty-two sounds. The so-called "from scratch" Voice data of the AN, DX and VL technologies is temporarily held in this RAM location on the board itself and must be backed up as a bulk type file: PluginAllBulk type for the slot containing your board. See the individual Power Users for each, PLG150-AN, PLG150-DX and PLG150-VL, in the Behind the Manual Section for details.
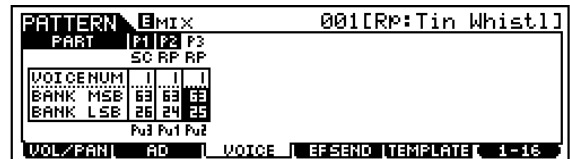

Here is an example of a bad assignment. Look closely, under the banks you can see that "Pu3" is listed under Slot P1, "Pu1" is under slot P2, and "Pu2" is under slot P3. This is BAD. Nothing will sound. The PU denotes a PLG USER bank. But in the screen shot above, our musician, Homer S., has the USER Voices for the AN board in the slot for the DX board, the DX data is pointing to the VL board and the VL data is pointing to the AN board. This is very bad and will result in NO SOUND! Doh!

In the screen above, Lisa Simpson has correctly aligned the finished (MSB in the sixties) Motif PLUG-IN Voices to the proper boards. Pu1 = P1, Pu2 = P2 and Pu3 = P3. This is GOOD and will result in many hours of happy musical enjoyment.

What if I am using USB MIDI to connect the Motif to an external sequencer?

The USB (MIDI) connection opens up possibilities and will allow you to break the 16 MIDI channel limit. The Motif is limited to just 16 MIDI channels when you are using its internal sequencer. If you are sequencing with a computer sequencer, you may have the option of addressing the Motif on as many as 34 separate MIDI channels (maximum).[8] You can address the PLG150 series boards via the USB multiple PORT system. Each MIDI PORT can address 16 MIDI channels. So the internal sounds can be addressed from your external software on PORT 1 (fixed) and the PLG 150 series boards can be addressed on three separate MIDI channels of PORT 2, for example. Even though the PLG VOICE is on MIDI channel 1 it will not interfere with the internal Motif sound on MIDI channel 1, if they are being addressed on separate PORTS. This way you do not have to "layer or replace" the sound.[9]
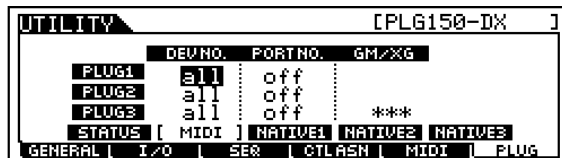
- UTILITY/F6 PLUG/SF2 MIDI

Each PLG board has settings for DEVICE NUMBER, and PORT NUMBER. The Device number will come in handy when you have two or more boards of the same technology. By giving each a unique Device number ID you can address each independently with bulk data – allowing you to load different sounds to each independently. The PORT assignment will allow you to break the 16-channel limit when using an external sequencer. In the scenario above, you could set the DX, the VL and the AN to Port 2, since each only requires a single MIDI channel (remember the PLG150 series are all

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[8] This scenario would be one where you have the 16 Internal parts, plus the 16-part multi-timbral PLG100-XG plus two PLG150 series boards. You can address the Motif via USB's multi-PORT system.

[9] We have purposefully ignored the PLG100-XG board up until now because you can only really make effective use of this MULTI part board through the USB MIDI interface with an external sequencer. It is recommended that you use an external sequencer when trying to take advantage of the additional 16 parts and 32 notes of polyphony.

---

single part boards). Therefore they would each only occupy 1 MIDI channel on Port 2. USB supports multiple sets of 16 MIDI channels. Each PORT represents 16 discreet MIDI channels. Your external sequencer will let you assign MIDI channel and PORT assignment per TRACK. So once again it is the track and its MIDI channel assignment that determines what plays what.

Using PLG Voices in PERFORMANCE Mode

Each PLG150 series board is capable of contributing one sound at a time to a Performance. There can be a maximum of four Voices in a Performance. Each PLG board that you have can contribute one Voice per Performance.
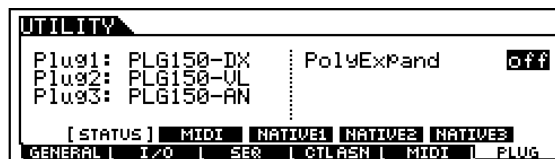
When you are ready to select sounds whether in a MIX or a Performance, you must point DX Voices through the slot containing the DX board, VL Voices through the slot containing the VL board and AN Voices through the slot containing the AN board, etc.(Remember Homer, Doh!) This sounds natural and simple enough and what it means is that if you place a Voice that is AN parameters in the PART that has the DX board you will not get any sound. Each board must find the parameters that its technology understands. DX parameters are meaningless when placed in a position where it is looking at an AN board and vice versa. The nice thing about the 150 series boards is they can go into any slot. But when you get into voicing and programming these unique technologies you will want to come up with a slot scheme that remains consistent. In other words, when you create Voices and save data, it matters where (what slot) the board is placed. Remain consistent. The easiest way: the order in which you purchased them.
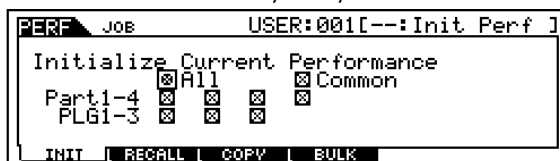
Let's put together a multi-technology Performance.

Creating a Performance using a PLG board and Native Motif sounds

In our example setup above, the **DX** board is in **slot 1** (hereafter referred to as P1 for Plug-in 1), the **VL** board is P2, and the **AN** board is P3.

When you are going to create a Performance, start by INITIALIZING a location. Any combination of Voices up to four can be selected. Only a single sound from each PLG150 board can be contributed to this Performance. But you could select one Internal and three PLGs (if you have three PLG boards). Or you could do two internals and two PLG boards (assuming you have 2 PLG boards) and so on - any combination up to four Voices. Let's learn something new about initializing a Performance.

- Press Performance/ JOB/ F1

```
PERF  JOB          USER:001[--:Init Perf ]
Initialize Current Performance
            ⊠All        ⊠Common
  Part1-4 ⊠  ⊠  ⊠
  PLG1-3 ⊠  ⊠  ⊠
   INIT   RECALL   COPY   BULK
```
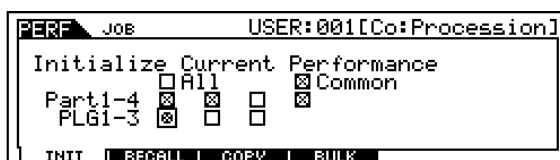
The figure shows the selections you can make when you are setting up a Performance.
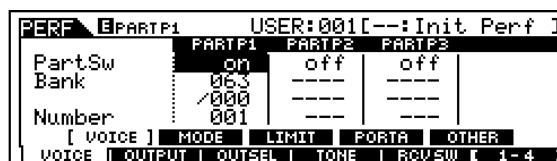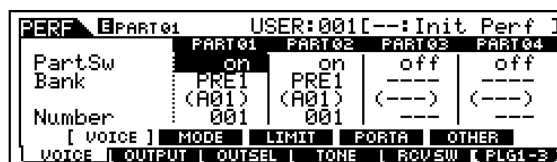
- Press ENTER/ YES to execute.

This creates an INITIALIZED Performance. This is important to do this initialization so that we are not inheriting any data from a previously programmed one[10]. When the ALL box is checked, all parts of the Performance are initialized, and only PART 01 will be assigned. This gives us a Performance temporarily named INIT PERF with just one internal sound (PowerGrand) assigned to PART01; all others will be turned OFF. That is the default INIT. Let's use a shortcut to setting up specific combinations.

After executing the INIT above, clear the ALL box, but place a "X" in the COMMON box and only the PARTS and PLG SLOTS you are going to use. Let's set up for two Internal parts and a DX sound. This would mean two "x's" on the PART line and one "x" in the P1 box, as shown:

```
PERF  JOB          USER:001[Co:Procession]
Initialize Current Performance
            □All        ⊠Common
  Part1-4 ⊠  ⊠  □  ⊠
  PLG1-3 ⊠  □  □
   INIT   RECALL   COPY   BULK
```

---

[10] Later when you become comfortable with the PART parameters, you can work with existing Performance data.

When you execute this INITIALIZE, it will give us the following setup: (use F6 to toggle).[11]

```
PERF  ▣PART01       USER:001[--:Init Perf ]
           PART01  PART02  PART03  PART04
PartSw      on      on     off     off
Bank       PRE1    PRE1    ----    ----
          (A01)   (A01)   (---)   (---)
Number     001     001     ---     ---
  [ VOICE ]  MODE   LIMIT   PORTA   OTHER
 VOICE  OUTPUT  OUTSEL   TONE   RCVSW  PLG1-3
```

```
PERF  ▣PARTP1       USER:001[--:Init Perf ]
           PARTP1  PARTP2  PARTP3
PartSw      on     off     off
Bank       063    ----    ----
          /000    ----    ----
Number     001     ---     ---
  [ VOICE ]  MODE   LIMIT   PORTA   OTHER
 VOICE  OUTPUT  OUTSEL   TONE   RCVSW   1-4
```

Of particular importance in the above two screens is the **PART SW** or Part Switch. This is where you can activate or deactivate a Voice in a PERFORMANCE. Notice the difference between the **internals** PART**01**, PART**02**, PART**03**, PART**04** and the **Plug-ins** PART**P1**, PART**P2** and PART**P3**.

- Move the cursor down to the BANK and Select your VOICES. Notice that the PLG sound starts out at 063/000 – this is a "SILENCE" bank for the PLG boards. So you will have to select an appropriate bank for the board in that slot. Internal sounds can be selected for Parts**01** and **02**, while a DX sound can be selected for Part**P1**. (Remember you cannot select just any sound in any slot, the board must be there to support your selection!) Doh!

You will not be able to recall anything but the proper sound through the assigned Part. It is that simple. You cannot recall AN or VL sounds in this PART (using our example's slot layout) as long as it is a P1 Part. Knowing where to look and how to set up a Part for a particular slot is worthy of review.

Let's take a look at the individual Parts and the parameters you have available to edit in this multi-technologied Performance. Like most areas of the Motif you have two levels of EDITING: COMMON and in this case PART. The COMMON level, appropriately named, will be parameters that are common to all Voices in the Performance. Things like the name, master

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[11] Internal sounds will always be listed before PLG sounds. You can use the PART SW parameters as an alternative method to activate PARTS while in EDIT.

EQ, Effects, etc. You reach the COMMON level via a dedicated button (next to the Data Wheel). The Part level will let you address individual Voices within the Performance and you access them via the 1-4 buttons that are sometimes the TRACK buttons. Pressing one of them during EDIT will recall all the data for that individual Voice within this Performance. You toggle to your PLG boards via the F6 button labeled (PLG1-3).

Splits and Layers

The only difference between a Performance that is a Split and one that is a Layer is the NOTE LIMIT parameter. You can define a region for a Part, which is convenient when you need to isolate a bass sound for left-hand play and a lead sound for right-hand play. These can get as complex as you your imagination.

- Once you have completed you edits you should STORE your work. Then make a backup FILE to either SmartMedia card or to a SCSI ZIP drive. PLG USR Voices will remain in memory but any custom board Voices[12] must be either backed up in the Voice Editor where you created them or to the special "PluginAllBulk" file for the slot containing your PLG150 board. See the Power User articles for details on each individual board.

Other PLG board considerations

```
UTILITY                [PLG150-DX    ]
BulkBlock
             01-32
VelCurve
             Normal
   STATUS   MIDI  [NATIVE1] NATIVE2 NATIVE3
GENERAL |  I/O  |  SE& | CTLASN |  MIDI  |  PLUG
```
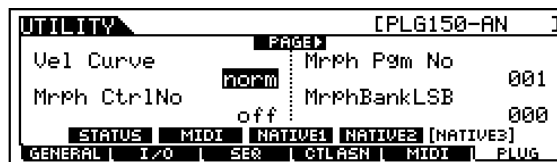
In UTILITY you will find the F6 PLUG function when you add PLG boards to your Motif. The NATIVE parameters refer to those 'native' to the particular type of PLG board you have installed – remember they can be entirely different technologies. In the example, we have been using you can see above parameters concerning the PLG150-DX. Voice data from any original 6-operator FM synth can be bulked into the DX boards USER RAM bank (35/00) in two blocks of 32 sounds. The Velocity curve can be changed to even mimic the response of an original DX7.

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[12] What we refer to as "from scratch" data.

```
UTILITY                [PLG150-VL    ]
WX Lip                BrthCtrl
             Norm                    BC
BrthMode              BrthCurv
             BC/WX                  +00
   STATUS   MIDI   NATIVE1 [NATIVE2] NATIVE3
GENERAL |  I/O  |  SE& | CTLASN |  MIDI  |  PLUG
```

This screen is parameters 'native' to the PLG150-VL technology. The WX LIP mode has to do with how it responds to the WX wind controller, if you were using one of those to play the VL board while in the Motif. The Breath Mode parameter allows you to globally change the assignment for applying "Pressure" to the virtual mouthpiece/bow. This is the function that starts the oscillation of the model (the virtual horn or bowed string). When you use this global Breath Mode setting it will address each individual VL Voice that has been programmed to follow the "SYSTEM" Global settings[13]. Breath Control can be written as controller 02 (BC) or converted to 11 (EXP). Breath Curve controls globally how much resistance there is to your blowing through the mouthpiece of the BC3.

```
UTILITY                [PLG150-AN    ]
                 PAGE>
Vel Curve             Mrph Pgm No
             norm                   001
Mrph CtrlNo           MrphBankLSB
             off                    000
   STATUS   MIDI   NATIVE1 NATIVE2 [NATIVE3]
GENERAL |  I/O  |  SE& | CTLASN |  MIDI  |  PLUG
```

There are several pages of parameters Native to the PLG150-AN board. Including Velocity Curve, and being able to "MORPH" via a controller from the current Voice to your favorite Voice. There are additionally (when you cursor right) four additional Assignable Control Numbers. After all it is analog and the more controllable parameters you have the better. These AC numbers let you apply the Knobs and Pedals of the Motif to any specific parameters within an AN Voice.

Phil Clendeninn
Digital Product Support Group
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[13] When programming your own VL controller settings you can store the individual Voice with its Breath Control setting set to SYSTEM. This will allow you to change your mind and reprogram all your VL sounds at once. All those set to SYSTEM will follow the global setting.