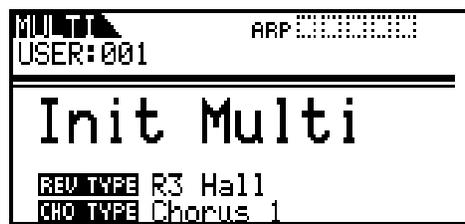


MOTIF-RACK ES: THE USER MULTI

- There are 128 **USER MULTI** locations. When the Factory Set is loaded there are 32 “placeholder” MULTI programs occupying the first 32 of 128 User Multi bank locations – these are examples. These locations are RAM (random access memory) – which means you can write new data to this bank. You are meant to store your MULTIS over these placeholders. In fact, you can initialize one (current) or all of the 128 USER MULTIS using a UTILITY mode JOB. (There is also a set of 128 **PERFORMANCES** and 6 Banks of Preset VOICES and 3 Banks of User VOICES)
- A Voice is the single channel playable program – made from up to 4 multi-sampled Elements.
- A Performance represents a playable layering of Voices (up to 4) on a single MIDI Channel.
- A Multi is a set of up to 16 internal Voices *for use with an external sequencer*. MULTI mode is the multi-timbral/multi-MIDI-channeled mode; ideal for when you are using an external sequencer. The Preset and User Voices can be placed on any of the 16 MIDI channels as necessary – even layering several on the same MIDI channel. Performances can be copied to MULTI mode. It is your choice to fill the USER MULTI bank with your own favorite setups. Stored Multi setups will remain in memory after power down. A Motif-Rack ES “MULTI” is equivalent to a SONG or PATTERN MIXING setup in the Motif ES keyboard.
- VOICES are placed in PARTS of a MULTI. VOICES can be placed in PARTS of a PERFORMANCE. A PART is set of parameters that are applied to the original VOICE.
- The PART is set of offset parameters – it will let you use your favorite sound in all 128 MULTIS/128 PERFORMANCES and in each one you can edit it differently. For example, if you need to Note Shift a string sound up an octave to combine it with an electric piano sound, you can offset the string sound just for the current Performance or current Multi, without destructively changing the original Voice. This way the same string sound can be used in other Multis and Performances without effecting how it sounds there.



- You navigate to the USER MULTIS by pressing the dedicated [MULTI] button.
- Use the Data Wheel or UP/DOWN cursor arrows to select the different USER MULTI program locations, 1-128.
- The purpose of the MULTI bank is to hold setups for play from an external sequencer.
- Press [SHIFT] + [MULTI] to select the **USER PERFORMANCE Bank**. The purpose to the PERFORMANCE bank is to hold all of your playable setups both from a keyboard in real time on a single MIDI channel. All Parts of a Performance are on the same MIDI channel.
- The difference between a PERFORMANCE Bank and the MULTI Bank is how the MIDI Receive Channels are set. Programs in the PERFORMANCE bank are intended to be played in real time from a keyboard. This bank is easily recalled with Program Change events – up to four PARTS are assigned to the BASIC MIDI RECEIVE channel and the other PARTS are set to (MIDI Receive) OFF and are unavailable.
- Programs in the MULTI bank are designed to work with an external sequencer and are equivalent to MIXING mode on the ES keyboard. However, you can manually combine the Performance and Multi Mix concepts. Performances can be copied to a MULTI – occupying up to the first 4 Parts. You can set certain PARTS to the Basic Receive Channel, while the sequencer plays the other Parts on different MIDI channels.

EDITING A MULTI

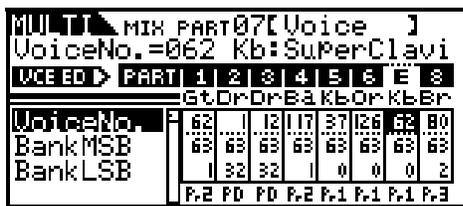
- You can initialize a MULTI using a JOB function. JOBS are found under the [UTILITY] button. When you press [UTILITY] you will find a number of PAGES. Use the PAGE [<] LEFT/[>] RIGHT buttons to navigate the ULTILITY mode. By paging to the right you will ultimately arrive at the “JobSel” or Job Select screen. The top JOB is “INITIALIZE”, use the UP/DOWN cursor arrows, if necessary. The Motif-Rack ES is

“context sensitive” – what this means is, if you entered from MULTI mode it will offer two selections: Initialize the current (1) MULTI or Initialize ALL MULTIS. Use the UP/DOWN cursor arrows and Data Wheel to make your selection. If you enter this JOB from VOICE mode it will offer you an opportunity to initialize the current (1) Voice or ALL USER Voices in the current User bank. If you enter from PERFORMANCE mode it will offer you an opportunity to initialize the current (1) Performance or ALL Performances.

- To execute an initialization: Highlight the INITIALIZE job, press [ENTER], select the type of initialization you wish to perform (current 1 Multi or All User Multi) by using the UP/DOWN arrows and the DATA WHEEL to mark the option; press [ENTER] twice to execute. This places a new INIT MULTI in the edit buffer. The Full Grand (PRE1 01) will be assigned to all 16 internal PARTS; the PLG150 boards, if installed and active, will go to their first preset Board bank sound 01, and will be assigned to MIDI channel 1 and MIDI channel 2 for slot 1 and slot 2, respectively. Edit the Multi, as necessary. It may be necessary to change the MIDI RECEIVE CHANNEL parameter of the PLG150 boards to prevent them from layering with Internal Parts 01 and 02. If you are using USB to trigger the Motif-Rack ES you can set the PLG150 boards to a separate MIDI Port.
- If you initialize all USER MULTIS you can either re-store the 32 factory examples later if you want with a FACTORY SET (found at the bottom of the list of JOBS).
- The basic theory of operation is for the user to eventually totally customize the USER MULTI bank with their own favorite setups, whether they are for real-time play or sequencer play, or both. You can create your own from scratch, as necessary. All USER MULTI programs will remain in memory after power down. So do not be afraid to use the INITIALIZE ALL MULTI command.

Quick Access Edit parameters:

- Like its sister products, the Motif-Rack ES has two levels of Editing: A quick access layer of editing (for simple changes) and an in depth layer of editing for detailed editing.
- The quick access layer is viewed by simply touching the MULTI button a second time while in MULTI mode. This area has three Pages (Voice, Output, Effects). Use the PAGE [<]/[>] arrows to navigate. The top line will always indicate what Mode and Part is selected, and which Page is current. The second line will give you information about the selected Part. Below you can see that Part 07 is Voice Number 062, Kb: SuperClavi – which is Bank MSB/LSB 63/0 (Preset bank 1)

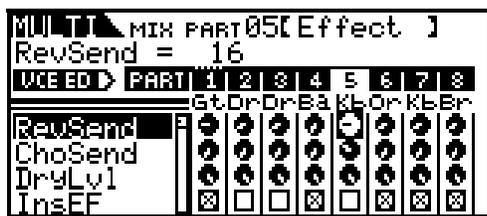


- **Voice** (shown above) – it will show you the Voice (MSB/LSB bank numbers and program number) selected for each PART. It will show you 8 Parts at a time. You can navigate them with the PART select buttons: Make sure the [MUTE/SEL] LED is OFF - this selects the “Select” function. Then you can use the 4 PART buttons to toggle between PARTS. Take the time to become comfortable with how the PART “SELECT” and the PART “MUTE” functions work: (1/5/9/13), (2/6/10/14), (3/7/11/15) and (4/8/12/16). When you add a PLG board they are added to the first two groups as P1 and P2. That is, (1/5/9/13/P1), (2/6/10/14/P2); the other two buttons simply toggle as before.
- Notice in the screen shot below MIX PART 07 is selected; Part 07 has been edited (“E”) but the MIX has not yet been stored.



- **Output** (shown above) – this will show you Pan and Volume. Use the PAGE [>] button to view Output. You can move the cursor to highlight the control and change it here or you can send Control

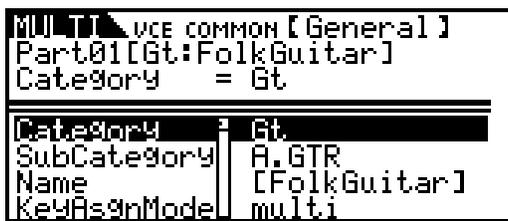
Change message 10 (pan) and Control Change message 7 (volume) from your controller or sequencer to set these quick access parameters.



- **Effects** (shown above) – will show you the Reverb Send, Chorus Send, Dry Level, and Insert Effect status (active/inactive). Note: All four Parts of a Performance and any eight Parts of any Multi can recall their dual INSERTION EFFECTS from the original VOICE in Voice mode. Use the PAGE [>] button to view Effects. What this means is the DUAL INSERTION EFFECTS are part of the Voice and are often the personality of a sound – eight of the PARTS in your MULTI can recall their own Effect processing from Voice mode. Insertion Effects are often distortion for guitars, rotary speakers for organs, auto pan for electric pianos, etc. All Parts have a send to the System Reverb effect and the System Chorus effect. See separate Power User article for details on the effects: “Introducing Motif-Rack ES Effects”

VOICE EDIT while in MULTI Mode

The Motif-Rack ES allows you to drop into Voice Edit without having to leave MULTI mode. This allows you to edit a Voice in the context of your sequence (while the sequencer is playing back). Therefore, if you want to make changes to the Dual Insertion Effect or any of the deeper editing parameters of the Voice itself you can access this Voice Edit layer from any of the three Quick Access screens mentioned above. In each of the screens you will see on the third line (at left): “VCE ED>” or Voice Edit. By pressing [SHIFT] + [EDIT] you can drop to the Voice Edit layer.



In the screen shot above you can see that we are in MULTI mode, and have dropped to VOICE COMMON Edit parameters. The Voice in **PART01** is the Guitar [Gt: FolkGuitar]. I can navigate to both Common and Element level parameters of any “normal” (non-drum) Voice using this Quick Access VOICE EDIT function. When you complete editing the Voice:

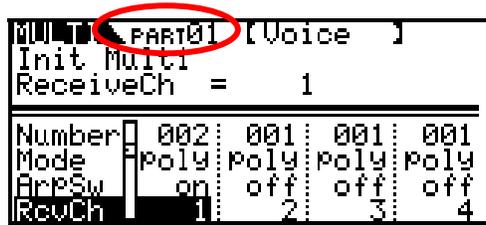
- Press STORE ([SHIFT] + [STORE])
- Use the UP/DOWN arrows to select a USER bank location in USER 1, USER 2 or USER 3
- Press [ENTER] twice to complete the process.
- The Motif-Rack ES will automatically update your current Mix by placing the newly created USER Voice in your mix, but you will have to determine you like it and then STORE the MULTI.

Full Detailed MULTI EDIT Mode

- The detailed edit layer is viewed by touching [EDIT] while in MULTI. This will give you access to the full compliment of MULTI edit parameters. And like its sister products, there are two levels of editing within the MULTI area:
 - COMMON - parameters that apply overall settings
 - PART - parameters that apply to individual PARTS of the MULTI
- To toggle between COMMON EDIT and PART EDIT when in a MULTI, the [MUTE/SEL] LED must be OFF (Select). You can reach COMMON by holding [SHIFT] + [COMMON], you can reach PART select when the [MUTE/SEL] LED is OFF, then hit PART to see the PART level of editing.
- The [MUTE/SEL] button is another important function to become familiar with using. When [MUTE/SEL] is lit the PART buttons can be used to temporarily turn ON and OFF PARTS. Thus it is MUTE mode. When the [MUTE/SEL] button is OFF, you are in SELECT mode. There are five Pages of

data on the PART level: (Voice, Output, Tone, EQ and Receive Switch). Use the PAGE [<]/[>] arrows to navigate:

- **Voice** – in addition to Bank Select, program number, you will find, the poly mode, arpeggio switch, MIDI receive channel, note limits, velocity limits, portamento switch/time/mode, pitch bend range, and velocity depth/offset. Use your cursor UP/DOWN arrows to navigate the parameters. Be sure to identify on the top line that you are in PART Edit, and identify which PART is currently selected. Below is shown the MIDI Receive Channel parameter> By default, PART 1 is on MIDI channel 1, PART 2 is on MIDI channel 2, and so on – but you can customize this, as necessary.



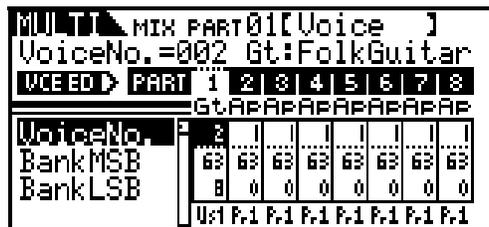
- **Output** – here you will find the volume and pan combined with the effect send parameters: reverb send, chorus, send, dry level and output select (L&R or to the assignable outputs).
- **Tone** - includes note shift (transpose), detune, filter cutoff, filter resonance, filter EG, filter ADSR (attack, decay, sustain and release), and amplitude ADSR.
- **EQ** - each Part has a 3-band equalizer: low frequency, low gain, mid frequency, mid gain, mid-Q (width), high frequency and high gain.
- **Receive Switch** – this section shows you what controllers are active for each Part: bank select, program change, control change, pitch bend, channel aftertouch, breath control, assignable device 1 and 2, foot control 1 and 2, volume, pan, sustain pedal, and foot switch.

MULTI ARPEGGIO SETUP

Let's select a Voice with an arpeggio that we want to work with. While in Voice mode I called up "USER 1: 002 Gt: Folk Guitar" (Pick what ever Voice you like). It has 5 different arpeggios associated with it. These are very realistic finger picking arpeggios.



You can change the active arpeggio in real time by pressing the PAGE [<]/[>] buttons on the front panel. Or you can assign a MIDI controller to do the job. For this example, place this Voice in an initialized Multi – as **PART01** (shown below)



If I wish to use the 5 associated Arpeggios from Voice mode, I can "copy" the ARP data from Voice mode into the current Multi using the Utility mode Copy function. Here's how:

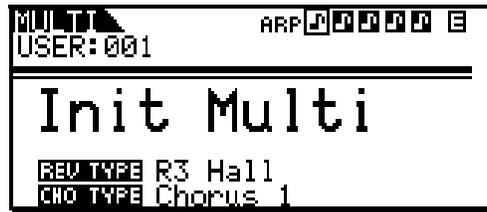
After you place the Folk Guitar Voice in **PART01**:

- Press [UTILITY]
- PAGE [>] to the JOB SEL screen

- Cursor down and select [COPY], press [ENTER]
- The COPY MULTI function appears, set the TYPES as below:

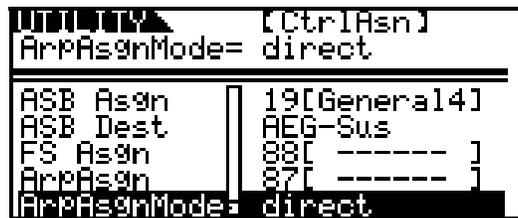


Executing this JOB will copy the 5 arpeggios associated with the FOLK GUITAR Voice currently occupying **PART01** to our MULTI. If you wish to associate other arpeggios with this Multi later, you can easily reassign these 5 positions with the arpeggios of a different PART. You can repeat this as many times as is necessary.



Assigning a MIDI Controller to select Arps in Real-time

As mentioned earlier in the article, you can assign a MIDI controller to select the arpeggio pattern in real-time. Each program (Voice, Performance, and Multi) can have up to five different arpeggio types associated with it. I mentioned earlier that you can move between these five types by pressing the front panel PAGE [<]/[>] buttons. However, this may not be convenient when performing or recording due to the physical position of your unit, so the Motif-Rack ES has a method for you to either *increment* through them 1→2→3→4→5, or you can assign a controller where a specific value (*direct*) will recall a specific pattern. Here's how it works.



In [UTILITY] you will find the "CtrlAsn" screen (shown above). The parameters that control this function are "ArpAsgn" (arpeggio assign) and "ArpAsgnMode" (arpeggio assign mode). The default ArpAsgn control number is 87 – you can change this as necessary but cc87 is as good as any – because it does not have a defined function in MIDI...so you can use it for this. You will be able to select either "inc" (increment) or "direct" as the Arp Assign Mode.

INC – With this setting anytime, any value for controller 87 is received the unit will increment to the next higher numbered arpeggio, 1-5.

DIRECT – any value for controller 87 between **0-25** will select Arpeggio 1, **26-50** will select Arpeggio 2, **51-76** will select Arpeggio 3, **77-101** Arpeggio 4 and **102-127** will select Arpeggio 5.

If you have an assignable button on your controller, "INC" might be best. Or if you have an assignable Foot Switch set it to send cc087 - when you step on it the arpeggio will advance. If the foot switch is a momentary type (like a sustain pedal), when you press it down it will advance, when you release it, it will advance. To increment with a sustain type pedal you will have to maintain contact.

If you have an assignable sweep pedal, knob control **or** control slider that you can assign to this parameter, then the "DIRECT" might suit your needs better. A typical knob will sweep from 7 o'clock (minimum) position to 5 o'clock (maximum) position. This translates to:

- 7-9 on the clock dial = Arpeggio 1

- 9-11 on the clock dial = Arpeggio 2
- 11-1 on the clock dial = Arpeggio 3
- 1-3 on the clock dial = Arpeggio 4
- 3-5 on the clock dial = Arpeggio 5

Tip: you would **not** want to assign a knob to control this if you selected **increment**. Because **increment** advances anytime a value (any value) is sent. This will send the Arpeggio selection parameter crazy. Likewise you would **not** want to assign a foot switch to **direct** – because a typical foot switch sends 0 or 127 (no values in between). So choose your controllers wisely.

SUMMARY: The MULTI has VOICES that are placed in PARTS and the PART parameters can be edited without destructively harming the original VOICE data. The significance of placing VOICES in PARTS is that you can alter how a VOICE sounds without changing it permanently in VOICE mode – PARTS are non destructive. This allows you to use the same VOICE in 128 different Multi programs, each with a different set of parameters. Of course, we also showed you that you can drop into full blown Voice edit on any “normal” (non-drum) Voice and actually destructively edit and create a new User Voice. It is your choice.

STORING A MULTI

- As mentioned, you are always working in an *edit buffer* and you must store your work prior to moving to another function otherwise your changes will not be registered. Press [SHIFT]+[STORE] to select a location to store your work. Use the UP/DOWN arrows and Data Wheel, as necessary to select a location, then [ENTER] twice to actually store it. The inverse video “e” will disappear denoting you have saved.

BACKING UP YOUR DATA

- All Voice Edits, Performance Edits and Multi Edits are stored in battery-backed parameter RAM right on board the Motif-Rack ES. However, if you wish to back up your data for long-term storage this is done via MIDI Bulk dump. You can either dump the entire contents of the Motif-Rack ES to a MIDI Data Recorder. If you are going to dump them to a sequencer make sure it can handle very large system exclusive dumps (the Motif-Rack ES dump is over to 1.1MB of data). Or you can use the Motif-Rack Editor (VOICE) and the Motif-Rack Editor (MULTI) available for use within the Yamaha Studio Manager version 2 software host. These editors are available for both Windows XP and Macintosh OS X and are available for download FREE at <http://www.yamahasyth.com>