

M7CL

Quick Start Guide

A guide for people using M7CL Version 3 in the real world.

Part 2

An introductory guide to the M7CL group of consoles including features included in Version 3 Firmware and the M7CL-48ES hardware.

These guides are for people about to use the M7CL for the first time, or for experienced users requiring some tips and tricks for better understanding of M7CL and its PC based software partner the M7CL editor.



M7CL Quick Start Guides.

The M7CL Quick Start Guide is in multiple parts. It is available as a download from www.yamahaproaudio.com in the “Self Training” area. Also available is the revised M7CL Short-cuts and Tips List.

Part 1 is an introduction to the M7CL and its variations and goes on to describe the basic operations of the console to the level of a similar featured analogue console.

Part 2 introduces the extra features provided only by digital consoles; the internal effects rack package and the basic use of scenes to store and recall parameters.

Part 3 looks at scene memory use in more detail and the connection of the PC based software for remote control and setup; Studio Manager and M7CL Editor.

M7CL-48ES users may also wish to look at Yamaha’s EtherSound Setup Guide. This explains the basic principals of designing an EtherSound network.

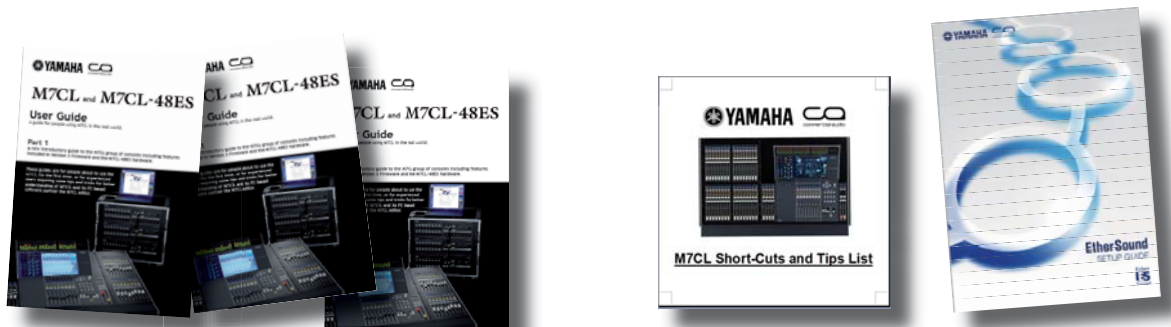


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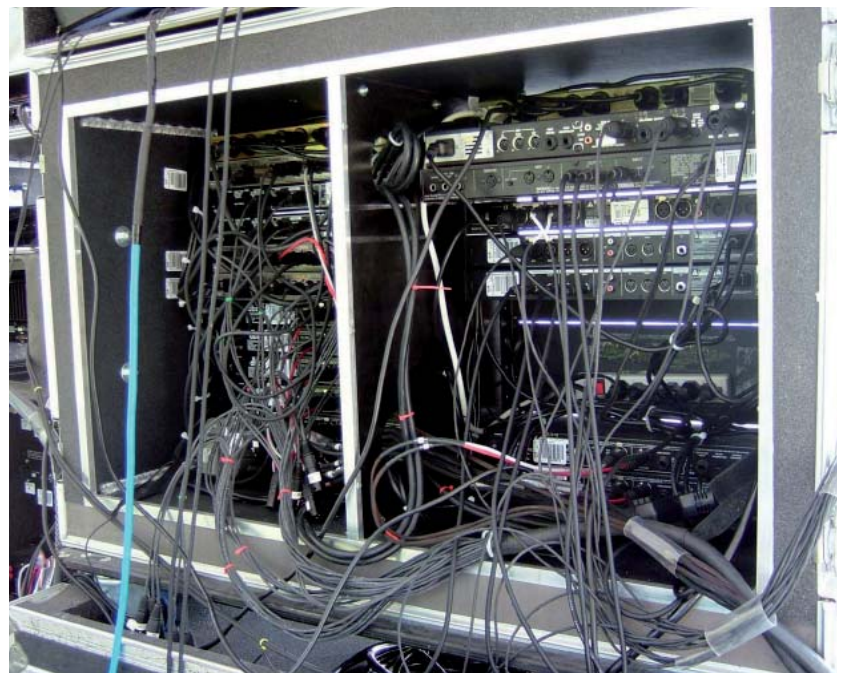
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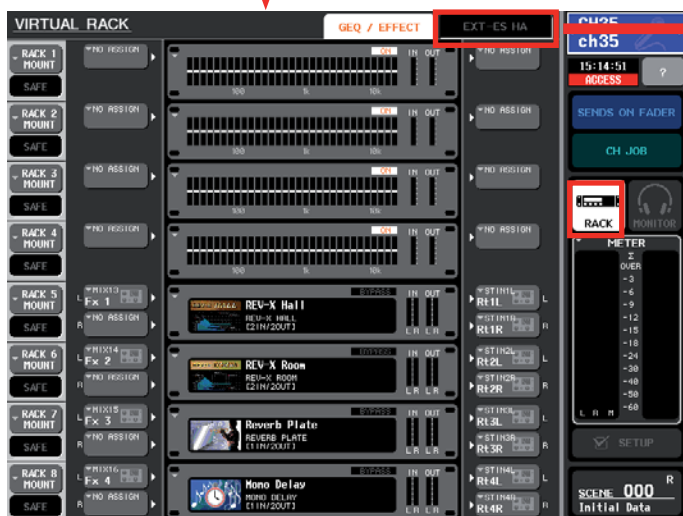
The virtual rack; Effects, graphic EQ and VCM processors.

M7CL has an on-board virtual rack to replace the conventional rack of outboard processing like multi-effects engines, graphic EQ and hi-end characterful dynamics processors. The virtual rack consists of eight stereo/two channel units. Any of the eight can be filled with 31 band graphic EQ and the last four can be filled with SPX type multi-effect units or VCM processors. Any one unit can be a single 31 band GEQ or 2 x “flex 15” GEQ.

Press the [RACK] button in the Function Access Area to access the onboard virtual effects rack. There are two tabs [GEQ/EFFECT] and [EXTERNAL HA]. Press the tabs to change between the screens.



The traditional analogue rack is replaced by the “Virtual Rack”



This is the VIRTUAL RACK GEQ/EFFECT screen for selecting and controlling GEQ and effects.



EXTERNAL HA view in M7CL-48/32



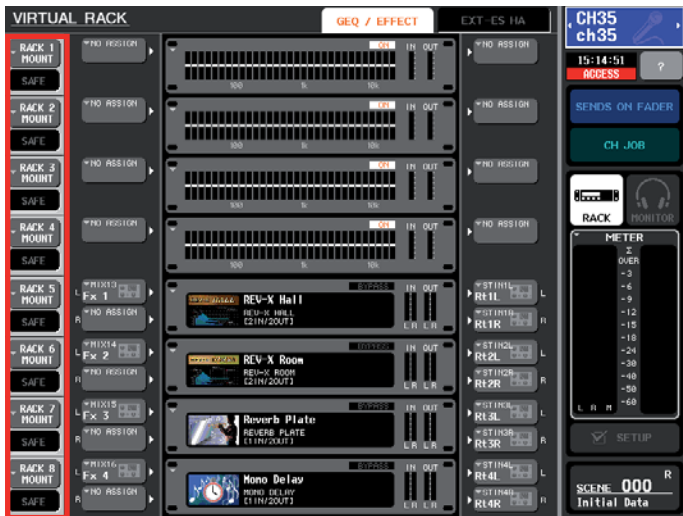
EXT-ES HA view in M7CL-48ES

This is the VIRTUAL RACK EXTERNAL HA screen for controlling external headamps. Either AD8HR type or SB168-ES.

The virtual rack; Mounting units in the virtual rack.

The default Scene 000 has four effects and four GEQ selected. There are always eight virtual rack units, even if some are blank or unused.

Only units 5-8 can be selected as effects. Any of the units can be GEQ or Flex15GEQ. To change the selected unit from its current state to one of the other states, press the [RACK MOUNT] button. This brings up the RACK MOUNTER pop-up window for the selected unit.



Press [RACK MOUNT] to open the Rack Mounter popup and choose the kind of unit you want to mount.

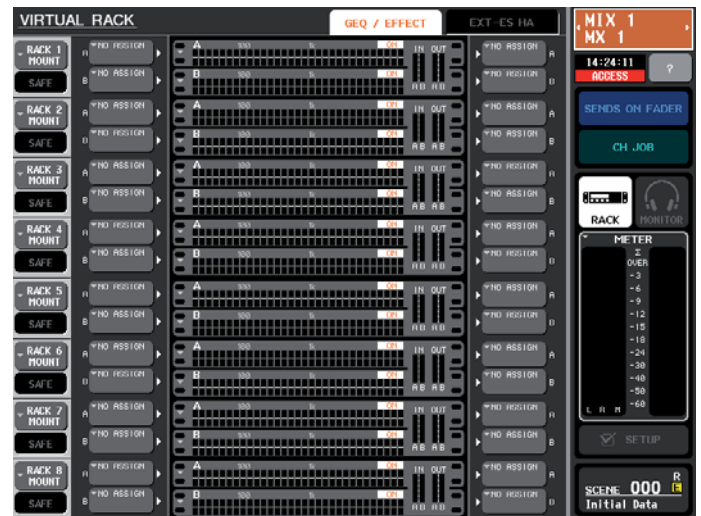


And remember to press [OK] before closing the popup!

Newly mounted rack units are not patched. See page 7 to patch a new effect or GEQ.

Tip: If all eight units are mounted as Flex-15 GEQs then the rack can contain 16 GEQs; great for monitor mixing with wedges.

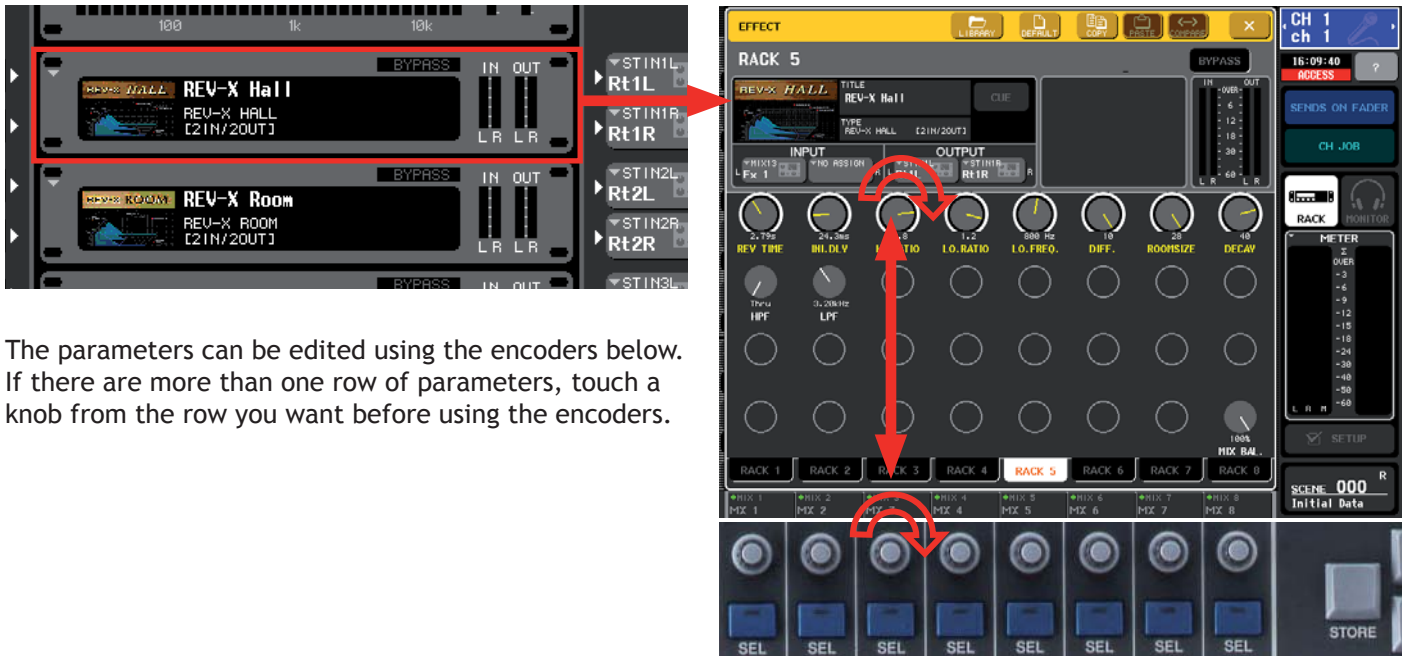
Tip: GEQ parameters are part of scene memory. If you don't want the GEQs changing with scenes then press [SAFE] below the Rack Mount button. This will "SAFE" the patching and the fader settings against scene recall changes.



The virtual rack; Effects. Selecting, editing and storing the effect you want.

The effects selected in Scene 000 are a typical user selection. The default REV-X reverbs are the most natural sounding and were developed for the SPX 2000 multi-effect unit, but for Yamaha's older reverb effect sounds choose non-REV-X reverbs taken from the older Yamaha SPX multi-effects units.

From the main rack screen press the centre of the virtual rack mounted effect. This brings up the EFFECT parameter pop-up.



The parameters can be edited using the encoders below. If there are more than one row of parameters, touch a knob from the row you want before using the encoders.

To select another type of effect either; press the coloured effect image to reveal the EFFECT TYPE pop-up or press the LIBRARY tab button at the top of the pop-up and use the EFFECT LIBRARY.



The virtual rack; effect selection. VCM effects.

As an alternative to the varied SPX multi-effects available there are six VCM (Virtual Circuit Modelling) effects. These VCM effects give M7CL users access to some sounds only previously available from rare, fragile, analogue equipment or other higher cost live Yamaha mixers like PM5D V2.

Every channel on M7CL has EQ and a compressor included, but the VCM effects provide an alternative style. However VCM technology is extremely demanding of DSP resources so only one stereo or dual mono unit can be created from each M7CL effects engine.

Note; In the default, the effects engines are patched as send and return effects so we suggest re-patching the VCM effects as inserts. **Tip;** Try Open Deck inserted on your masters to add analogue quality to your mix.



Comp 276. These models recreate the fast response, frequency characteristics, and tube-amp saturation of the most in-demand analog compressors for studio use, delivering classic-style compression with all the punch and fatness you'd expect from a fine piece of studio-grade analog gear.



Comp 260. Featuring faithful modelling of the solid-state VCA and RMS level detection circuitry of the late 70's, these Add-on Effects bring back the sound of classic comp/limiters used primarily for live sound reinforcement applications.



The 601 equalizer offers two equalizer types - Clean and Drive. The Drive type models the distortion characteristics of 70's analog EQ circuitry, delivering musical-sounding drive and saturation. The 601 is a stereo sixband parametric, and it accurately reproduces both the boost and cut frequency response and band interaction of vintage analog gear.



Open Deck recreates both the analog circuitry and tape characteristics that shaped the sound of openreel tape recorders. Because of their ability to smooth out peak levels and tidy up the response, many high-end recording studios still maintain open-reel recorders to be used to provide tape compression at the mastering stage.

Different types of tape; new, old, etc. are also selected and used according to the unique sounds they produce. The Open Deck provides models of four machine types: Swiss '70, Swiss '78, Swiss '85, and America '70. You can even combine different record and playback decks for a wider range of variation.



VCM is a technology developed to use traditional DSP processing power in a revolutionary new way to recreate the circuits of traditional analogue audio devices. Pioneered by Yamaha's *K's Lab* it was originally used to recreate the sounds of analogue synths, but the techniques were soon adapted to make models of analogue devices like Compressors and EQs. Until the M7CL V3 upgrade this technology was only available on Yamaha's higher end products or at extra cost.



Dr Toshifumi Kunimoto, founder of K's Lab and VCM pioneer.

Note; "S" versions of the Comps are stereo. The non-S version is dual mono.

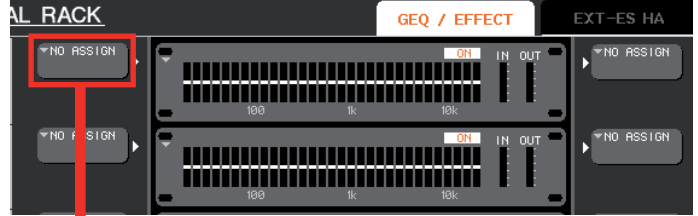


For engineers requiring an even broader range of processing choice, you can access Waves SoundGrid effects running on an external PC/Mac server via a special Mini YGDAI card made and distributed by Waves. This system is very low latency and can offer redundancy to provide excellent characteristics for live mixing use.



The virtual rack; effects/graphic EQ. Assigning Effects and GEOs.

By default in scene 000 the effects are prepached. The sends are mixes 13-16, the returns are Stereo Inputs 1-4. However these can easily be repatched if desired.

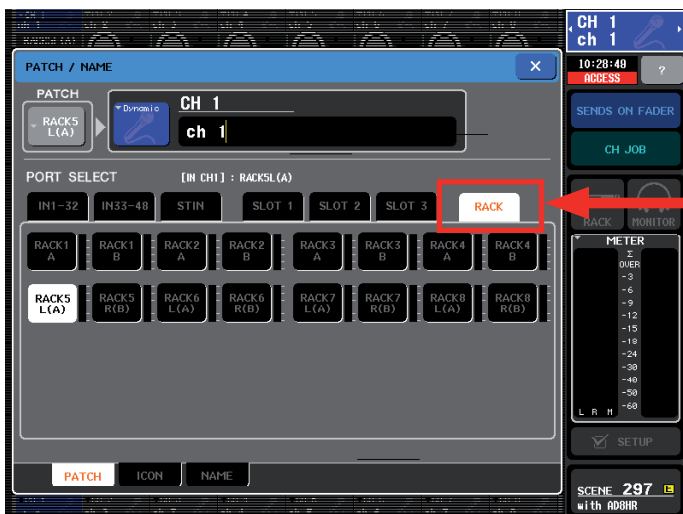


GEQ can *only* be assigned to any insert point; Input, mix, matrix or master channel. Effects can be inserted *or* fed from a mix, matrix or master out.



Effects also need a channel assigned to return to. By default, in Scene 000, the STEREO channels are selected, but these can be changed. To get to the INPUT CH SELECT pop-up press the grey assign key beside the effect image OR go from the Centralogic™ Overview screen to the PATCH/NAME screen where you can route the effect return, name it and give it an icon.

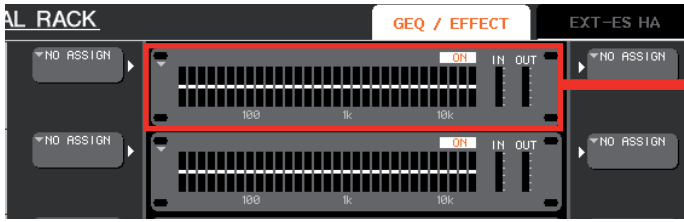
Tip; when choosing to return the effect to a different channel the original routing to the Stereo input channel is not lost. You should reassign the Stereo channel either as unassigned or to its associated rear panel HA.



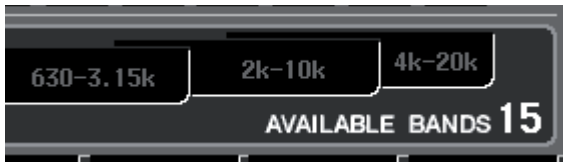
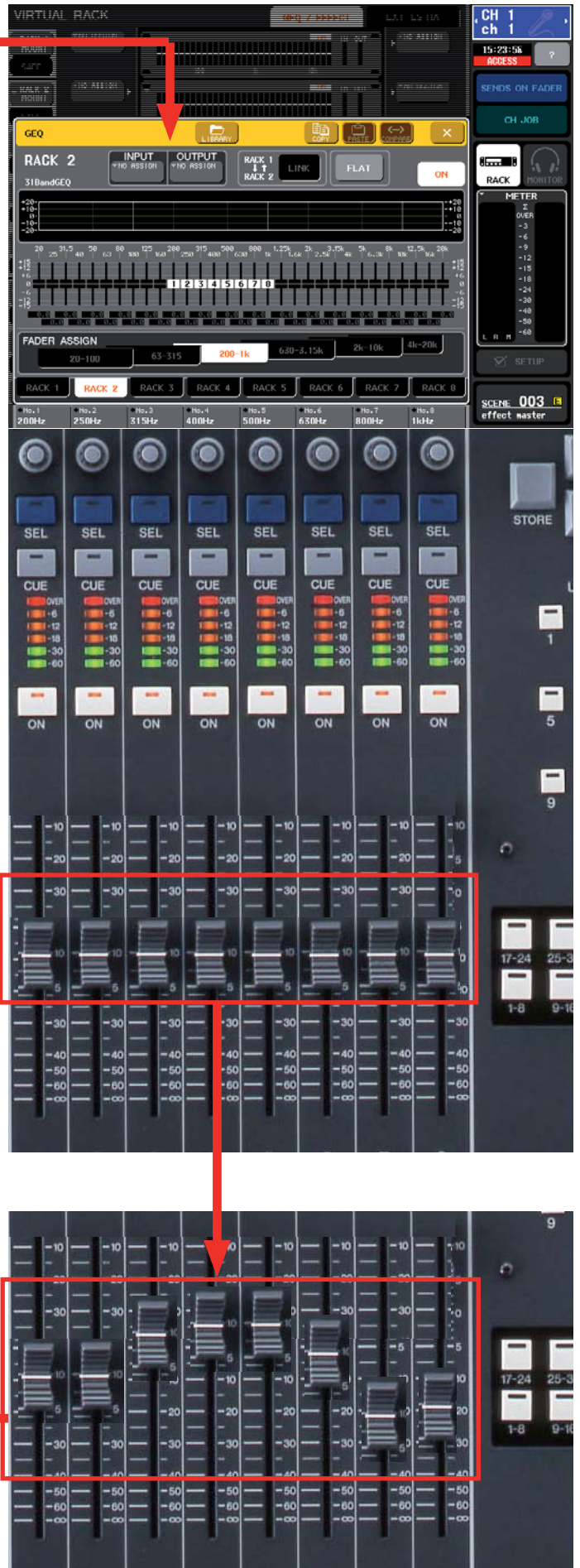
Note; The above screens show patching an effect to a channel, but there is no reason why the operation shouldn't be approached the other way; from the selected channel choose an effect to feed it. This is often the way to un-patch unwanted returns.

The virtual rack; Selecting and editing the GEQ.

From the main RACK screen, press the virtual rack mounted GEQ image; this opens the GEQ popup.



From the GEQ parameter pop-up press the GEQ image with the frequency range you want to edit. For example [200-1K]. The faders and tab will turn white and the faders of the Centralogic section will move to match the chosen frequency range. Moving these faders will edit the GEQ curve. Press different areas or tabs to access different frequency groups. Flat the whole EQ using the [FLAT] button on the screen pop-up.



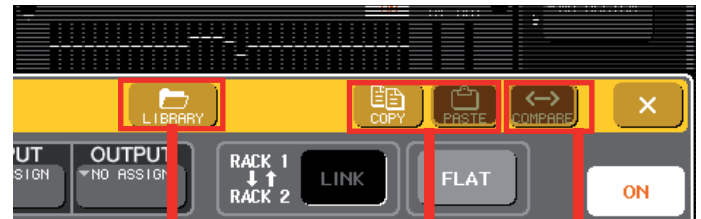
Note; Flex 15 GEQ are selected and edited in the same way. An AVAILABLE BANDS count-down is displayed.

Tip; Press the [ON] above the fader to zero that single GEQ fader. Flat the whole EQ using the [FLAT] button on the screen pop-up.



The virtual rack; Graphic EQ; Copying, pasting, comparing and storing GEQ settings

At the top of the GEQ pop-up are buttons for COPY, PASTE, COMPARE and LIBRARY.

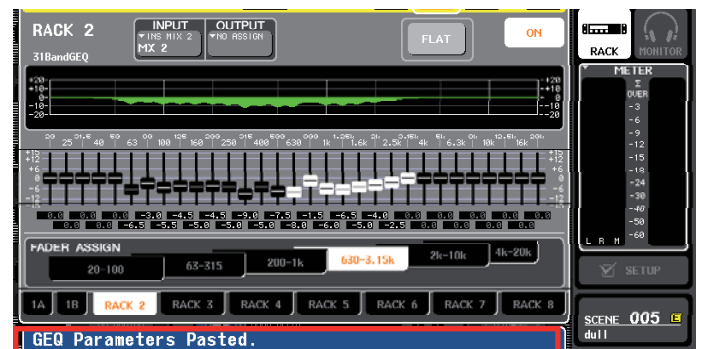


Pressing the [COPY] button stores the displayed GEQ curve into a temporary “copy buffer”. If another GEQ is selected to the screen, then pressing the [PASTE] button will change that GEQ to match the copied source.

Tip; You can use the [RACK] tabs at the bottom of the pop-up to move between different GEQ units.

Press the [LIBRARY] button to store or recall GEQ curves.

If you copy a GEQ curve to the copy buffer”, you can change the curve and then press the [COMPARE] button to alternate between the two curves.



Tip; You can copy and paste any GEQ curve to a 31 Band GEQ but only curves with less than 15 bands moved will paste to a Flex15GEQ.

Note; Flex 15 GEQ are treated as a pair of EQs when saved to the library; they will copy and paste together!



Use any encoder below the screen to scroll through the 199 library locations. Then press the [RECALL] or [STORE] button.

The Monitor Section; Cue buttons and assigning a monitor output.

Cueing a channel will send its audio signal to the CUE bus and meter the channel in the Function Access Area. The audio will be sent to the headphone output under the front panel. Press the [MONITOR] headphone symbol to access options for the monitor setup.



Note; Cue and SEL are linked in the default. To unlink go to SETUP>USER SETUP>PREFERENCES



By default, the MONITOR section is fed by STEREO L/R and these signals are sent to the headphone output. (Found under the front panel.) Cueing a signal interrupts this and replaces the cued signal.

The PHONES LEVEL LINK makes the headphone level control come after the MONITOR LEVEL pot on the surface. This link can be broken, which is especially useful for monitor mixing.

Tip; Press here for CUE clear

Using the SOURCE SELECT buttons in the MONITOR section can switch off the default STEREO L/R feed to the monitor bus or replace it with one of the other outputs or a ST IN rear panel socket.



As well as the headphones, the MONITOR section can output via an OMNI socket on the rear. This patching is also accessed from the MONITOR pop-up.
Tip; Use this to create a monitor out for a listen wedge or monitor engineer IEM pack.
Note; Don't select the C bus for a listen wedge; unless you are using LCR!

The Monitor Section; Monitor level on fader.

The monitor level is controlled by the pot on the surface, but there is a second “soft” control knob on the Monitor pop-up. This can be set by the multifunction encoders or it can be controlled by the Pink or Yellow fader. Monitor engineers often like this feature as they do not use the Master buses and like quick access to the monitor level.

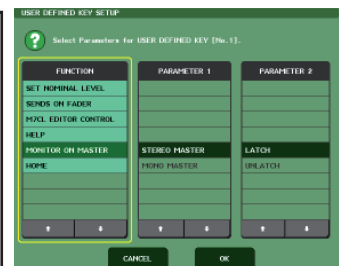
Note; The analog pot on the surface is always in line, but set this to 10 for nominal output when using Monitor level on Fader feature.



Press the Mode button to toggle between no fader, Pink and Yellow faders. It is not possible to have two outputs controlled individually by two faders.

Use the Mono Monitor key if you are using a single listen wedge and have any stereo or panned sources.

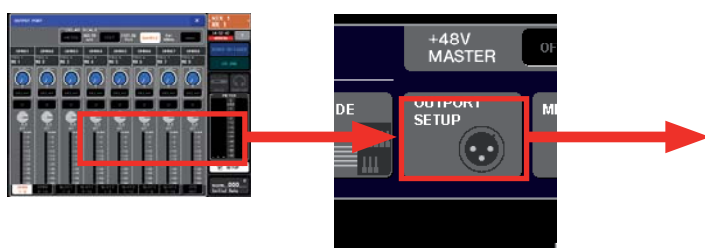
Tip; If you mix FOH, using Stereo and Mono buses, and Mons from the same console you can use this feature and have a User defined key to switch between Master and Monitor.



Output ports and delays;

Each output, including the three slots, AES port, and ES ports on M7CL-48ES has a delay, polarity and attenuator adjustment available from the OUTPUT PORT pop-up. This is found via the [SETUP] and [OUTPORT SETUP] buttons.

Tip; Use multiple output ports with differing level and delay to reduce the number of matrix channels needed for complex output distributions.



Tip; This can be the best screen to view all output patching.

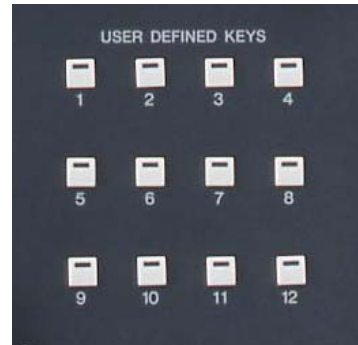
Tip; There are no input channel delays on M7CL, but if you have an MY card with Ins and Outs you can insert “nothing but a wire” into the channel. This insert includes an output port delay. So for eg, MY16-AE can give you access to 16 digital delays for inputs by just linking outputs to inputs and using console insert points.

Tip; Push the encoder and turn at the same time to get finer resolution for outport delays.

User Defined Keys: Programming User Defined Keys.

There are 12 user defined keys on M7CL. These are programmable shortcut keys; they can replace a screen press or cause some other action. They come pre-programmed with some examples but can be user defined from a menu in the SETUP page.

- Key 1. Enter Sends on Fader (Mixes)
- Key 2. Enter Sends on Fader (Matrix)
- Key 3>8 Page Bookmarks
- Key 9. Mute Group master 1
- Key 10. Mute Group master 2
- Key 11. Home Key. (Single or 8 CH view)
- Key 12. Talkback ON.



Page bookmark keys give direct access to certain screens. To program; access the chosen screen and press the UDK for 2 secs. Now pressing the key will always take you directly to that screen.
Tip; Try bookmarking GEQs or Effects parameter pages for quick editing.



To access the USER SETUP pop-up, press the [SETUP] button in the Function Access Area. Then press the [USER SETUP] button. If this does not show the USER DEFINED KEYS, use the tab at the bottom of the pop-up.

To change a key, press on the screen key to give the USER DEFINED KEY SETUP pop-up.



Note; Other Popular UDK examples;
Tap Tempo. Control delay effect tempos. Remember to turn on Sync function in the effect page.
Set by SEL. Press the UDK and the SEL key changes to the chosen role, eg +48V or Insert IN/OUT etc.
Scene access. Scene advance/back, direct scene recall and of course Scene Recall UNDO are popular.
Editor control. When connected online, Editor screens on your PC can be called up by the UDKs.
Mute Group Masters.

Tip; Use the encoders below to scroll the lists.

DCAs and Mute groups: Assigning channels to a DCA Master or Mute Group.

DCAs are Digital versions of the VCAs found on analog consoles. They can be used in exactly the same way to control the level of groups of input channels. There are 8 DCA masters and 8 Mute Groups on M7CL. To assign channels to a DCA or Mute Group there are two alternative ways;



From the Single Channel View simply press the DCA or Mute Group buttons.

This method is fine for editing a single channel, but generally to add all drum channels to a DCA or even all channels to a Mute Group it is easier to use the DCA/MUTE GROUP ASSIGN MODE popup. This can be accessed from the links on the Single channel view or via the CHANNEL JOB button.

When the DCA/MUTE ASSIGN MODE popup is showing on the screen the function of the SEL key is changed; it becomes a group assign key. Choose a DCA Group with the screen button and then use SEL to assign channels. For Mute groups change the Mode to Mute using the on screen buttons to the left.

Note; Only input channels can be included in a DCA, but In and Output channels can be in a mute group.



Tip; When the DCA Navigation key is pressed and the Centralogic faders are working as DCAs, just double-click the SEL key to short cut to the DCA/ Mute Assign popup.



Note; Channels muted in a mute group are indicated by a flashing ON key.
Tip; You cannot press the ON key to turn on a muted channel. To release a channel from a mute group, press the mute group UDK or use the Mute Safe function on the Mute Assign popup.

Using Scenes; Storing and recalling scenes.

M7CL can store 300 scene memories or snapshots. In addition to the 300 numbered memories, there is the default read only Scene 000 and also the 'current console settings' which are either the same as a scene or an edited version of a scene. These are in a special memory buffer which is retained in case of power failure.



Scene 000 is read only. When it is edited the yellow **E** appears.



When the console parameters are edited to a position you want to keep, press the [SCENE MEMORY] up/down keys to choose a numbered location for the new scene. The chosen number will flash. Next press the [STORE] key and the SCENE STORE keyboard pop-up will appear. This lets you name the scene and provides extra space for a comment or longer scene name.



Press the [STORE] button (on screen) or the [STORE] key (on desk), and the scene is stored. The scene number shows in the Function Access Area and the **E** goes out until another desk change is made. To recall a scene, use the up/down keys to find its number and then press the [RECALL] key. The desk will reset itself to the chosen scene. You cannot recall "empty scenes" with no data stored in them. If you want to start from a fresh clean desk, choose Scene 000.



If you press the SCENE field, you can view the SCENE LIST. From the list, you can store and recall, but also CUT, COPY, INSERT, CLEAR and PASTE single or multiple scenes to organize your scene list. **Note;** Cutting multiple scenes is restricted.

Tip; You can also access the scene store/recall UNDO button here. If you press recall and everything goes wrong; try UNDO. There is only one step back for UNDO. Put UNDO on a UDK for instant access!

Using Scenes; What is in a scene?

When a scene is stored, all the items from the “Included” column are stored to the scene memory. The items in the “not included” column are saved in a global memory (except mechanical pots) and do not change when scenes are recalled. They are remembered when the desk is powered down and will be recalled at power on.

Included in scene recall;

- Head amp (level, +48V, φ)
- Name/icon
- Routing (Input, Output, Insert, Direct, Monitor, Cascade, Rack)
- Insert (on/off, position)
- Direct out (on/off, position, level)
- EQ (all parameters inc HPF)
- ATT (digital attenuator)
- Dynamics 1 (all parameters)
- Dynamics 2 (all parameters)
- MIX sends (bus setup, on/off, level, pre/post)
- Pan/balance (position Stereo/ Mono/LCR)
- DCA (assignment, level)
- Mute group (assignment, on/off)
- Faders
- Rack (all parameters)
- Rear panel input to talkback routing (and levels in MONITOR screen)
- Focus
- Cross fade (on, time)

Not included in scene recall;

- User defined keys
- Preferences
- Monitor level pot
- Headphone level pot
- Front panel talkback level pot
- Brightness controls
- OUTPORT settings (except routing)
- MIDI setup
- Word clock
- Master +48V
- CUE pop-up (PFL trim inputs, DCA trim, PFL trim outputs)
- MONITOR pop-up (levels, source on/off, mono, link)
- Oscillator (all parameters)
- Safe assignments (mute, recall)
- Passwords
- Screen page or pop-up
- Sends on fader selected/channel
- Metering point selection
- External HA to slot assignment

When a scene is recalled, it is possible to select certain parameters not to be recalled. This is called to RECALL SAFE a parameter. Access to the RECALL SAFE MODE pop-up is from the [CH JOB] button in the Function Access Area. Part 3 of the guide contains much more detail about using scenes and Recall Safe.



There are 302 memories; Read only Scene 000, 300 user scenes and the current edited scene.

A reminder about scenes and sessions.

There are three hundred user scenes, but these form just part of one console or session memory file. When you SAVE a session to a USB key it always includes all 300 scenes (as well as various other libraries and UDKs) and when you load a session it always loads 300 scenes. Never forget there is only one memory for the session file in M7CL so when you load it erases the existing file inside. Always backup before loading!

Individual scenes can be extracted and loaded separately, but only by using the M7CL Editor as part of the Studio Manager host program. This is covered in Part 3 of this guide.

Trouble shooting.

I can't get +48V to work.

- +48V is switched on/off in the HA pop-up, but remember there is also a master switch on the SETUP page. This is not covered by scene recall.

The aux sends are in big steps when I turn the encoder;

I need a finer control on my output delays;

- Try pushing and turning at the same time. This gives a fine resolution mode.

When I press the navigation keys, the screen changes but the faders don't copy to the chosen bank.

- This is a feature often used to keep access to the DCA masters even when other banks are chosen. Press and hold the navigation key until it flashes. Now that fader bank is locked even though the screen information changes. To undo, just press and hold again.

I've recalled Scene 000 but some faders and other things have not reset to zero.

- Are there any recall safes set? This means that aspects of Scene 000 may not have been recalled because they are safe from recall changes. Check in CH JOB > RECALL SAFE. Clear all of these and recall Scene 000 again. See page 5 for details of things not reset by scene 000.

The fader has stopped working!

- Is SENDS ON FADER active; this means you are pushing up an aux send and not the channel master. You can tell easily when you are in sends on fader mode because all the green [SEL] indicators are on except the selected channel. In normal mode, the [SEL] indicators are off and the selected channel is lit.
- Have you 'moved' a channel or changed the patch or both? Check the patch and the channel name/number to confirm they are what you expect.

Where are the output delays?

- They are output delays, found in the OUTPUT PORT pop-up via the SETUP page.

Why doesn't my Tap Tempo key work?

- Probably you forgot to turn on the SYNC function. When the sync function is off the tap doesn't control the effect. If the time of taps doesn't seem correct; remember the tap is an average of the last four taps and the musical note parameters may need to be set further anticlockwise to access shorter repeat times.

Where can I find out more information?

- You can download the M7CL and Editor manuals from;
http://www.yamaha.co.jp/manual/english/result.php?div_code=pa&model=M7CL&cat_code=&div_code=pa