6416Y2 A-Net Interface Card Addendum

This document contains new and/or updated information which is not included in the current User Guide that ships with the 6416Y2 A-Net® Interface Card.

New m-control Remote Control Features

With m-control™ for Yamaha digital consoles, the 6416m Mic Input Module can be remote controlled directly from a Yamaha console's user interface when a 6416Y2 A-Net Interface Card is installed. Using m-control, an engineer has direct access to the 6416m preamp's gain control, +48V phantom power, and high pass (low cut) filter. Up to 64 channels of 6416m mic preamps can be controlled from a Yamaha console. Systems may utilize multiple simultaneous control points: multiple consoles, multiple RCI/MCS combinations, or any combination of the two.

Remote mic preamp control is not supported by every Yamaha console, and the actual number of remote controllable channels varies by console model. All existing 6416Y2 cards as well as 6416m and RCI modules in the field can be updated to take advantage of the new remote control features.

Since using the Pro64 m-control feature requires the use of the RS-422 resources of the Yamaha console, simultaneously controlling Pro64 6416m mic preamps with m-control and Yamaha AD8HR preamps via the Virtual Data Cables™ (VDC) is not supported.

Firmware Requirements

The m-control features require firmware version 2.41 or higher in the 6416Y2 A-Net card and firmware version 2.00 or higher in both the 6416m Mic Input Module and any RCI Remote Control Interfaces in the system. (The RCI is not required to use the console-based remote control feature, but it does need the firmware update if an RCI is installed in the same Pro64 network where m-control will be used.)

Before attempting to use the m-control remote control features, use the Pro64 Update Tool software to determine a Pro64 product's firmware version and to update it to the latest version. The current version of the Pro64 Update Tool application and all associated Pro64 firmware update files are available on the Aviom website free of charge.

Hardware Requirements

The following Yamaha devices can be used to send remote control commands to 6416m preamps:

- LS9-16
- LS9-32
- M7CL-32 and M7CL-48
- PM5D / PM5D-RH
- DM1000
- DM2000
- DME24N
- DME64N

Console remote control of the 6416m is not compatible with the PM1D, 01V96, and 02R96 consoles and the DSP5D expander for the PM5D because these devices do not have built-in RS-422 support. 6416Y2 A-Net cards may still be used with these devices for audio I/O.

DB9 Cables

Using m-control requires at least one 6416Y2 and one 6416m. A DB9 serial cable connected between the Yamaha device and the Aviom 6416Y2 card is required to make use of this feature on most consoles. Do not use a null modem type cable; null modem cables are typically used with RS-232 communications while serial cables are used with RS-422. Place DIP switch #1 in block SW8 in the up position when using a serial cable. (The down position should be used with a null modem cable only when connected to a PC for firmware updates, etc.)

The LS9 does not require an external DB9 remote control connection as its control data is passed from the console to the 6416Y2 card internally through the backplane connector that is part of the console's circuit board at the rear of the MY expansion card slot.

Remote Control Emulation

Aviom and Yamaha use different remote control architectures, and in order to provide the convenience of console-based control, Aviom emulates Yamaha's remote control scheme and presents remote controllable mic pre channels as "virtual devices" to the Yamaha console. Yamaha host devices associate external remote controllable mic preamps, referred to as Head Amp (HA) Devices, with their mini-YGDAI (MY) expansion card slots.

The most common remote controllable mic preamp connected to these consoles is the Yamaha AD8HR, an 8-channel device, so remote controllable Aviom channels appear to the console as AD8HR devices, and all text and graphics in the Yamaha user interface will refer to external AD8HRs. While each block of eight channels appears to the console as one virtual device, there is no requirement that the channels originate on the same 6416m Mic Input Module.

Similarly, there are differences in the functions for which Aviom and Yamaha provide remote control. In addition, the language used to describe these settings is different. For instance, while Aviom mic preamps can be muted remotely, Yamaha provides mute control only in the console (i.e., outside the A-Net network). Users who wish to have remote control of the 6416m channel mute at the preamp must use an MCS Mic Control Surface for remote control. When using m-control console-based remote control, the RCI and MCS can still be used with the Pro64 network as an alternative means of providing control and network monitoring.

Likewise, Yamaha displays mic gain settings using a convention that is different from what Aviom and some other manufacturers use (for example, a range from +10dB (minimum) to -62dB (maximum). The exact values vary by product. These are really just two different ways of displaying the same type of information. Yamaha's method shows the level of the incoming signal; for example, when the console HA gain setting is "-32," the console is trying to tell you "the level of your incoming signal is -32dB." On a 6416m, if the corresponding gain readout is "25," the 6416m display means "you are adding 25dB of gain to the incoming signal." Control settings sent from a Yamaha device will be interpreted by the 6416m automatically and displayed accordingly. There is no need for the user to make any translations between the two approaches to displaying the data.

Supported 6416m Features

When using Pro64's m-control feature, note that only parameters available natively on the Yamaha control surface itself and supported by the Yamaha interface can be controlled on the 6416m Mic Input Module remotely. These include channel preamp gain, low cut filter (referred to as a high pass filter in the Yamaha interface), and +48V phantom power on the 6416m. The 6416m has a fixed 85Hz low cut filter, while Yamaha consoles offer a variable range High Pass Filter (abbreviated as HPF) in their user interface. When using Yamaha remote control with Aviom 6416m preamps, you can turn this filter on and off, but the cutoff frequency remains fixed at 85Hz. Editing the HPF filter cutoff frequency from the Yamaha user interface will have no effect at the 6416m; the cutoff frequency remains fixed at 85Hz.

The 6416m pad setting is controlled indirectly through the head amp gain setting on the console. There is no direct command for turning the 6416m pad on or off from the Yamaha control surface.

Physical Connections

Remote control commands between the Yamaha host console and Pro64 remote preamps are sent using RS-422 communication. Most Yamaha devices have DB9 RS-422 jacks on their rear panel, while others send remote control communication directly to external devices via the

console's multipin backplane connector where the MY format expansion cards connect to the console's circuit board.

For Yamaha devices with a DB9 jack for remote HA control, a DB9 serial cable must be used to connect the console to the 6416Y2 card set up for m-control. No additional connections are required anywhere in the network, as all remote control commands are managed by the Pro64 devices and transmitted via the network cabling.

In Pro64 systems where more than one 6416Y2 A-Net Interface Card is installed in a Yamaha console, only *one* of the 6416Y2 cards should be set to provide m-control communication and messaging between the Yamaha host and the Pro64 network. This one card will manage remote control communication for all 6416Y2 cards in the host console.

Channel Count and Control

As with audio I/O, the exact number of Aviom mic pre channels that can be controlled from a console is determined by the Yamaha device's expansion capability, the number of 6416Y2 cards that the host's power supply subsystem can support, the current MY mode being used (MY8 or MY16) and the current sample rate being used. Each MY expansion slot on a Yamaha console provides up to 16 channels of I/O and remote control functionality.

The LS9-32 console, for example, which has two MY slots available, can have two 6416Y2 cards installed in it and will have a maximum of 32 channels of external mic preamps available to be remote controlled in its user interface, displayed in four groups of eight channels. The LS9 uses MY16 mode and operates at 48kHz.

Use the following table to determine the number of Pro64 cards that a particular console can support.

Model	MY Slots	6416Y2 Cards	HA Remote Control	Cable Required	Card Mode	Sample Rates
DM1000	2	2	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
					MY8	88.2 kHz, 96 kHz
DM2000	6	5	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
					MY8	88.2 kHz, 96 kHz
DME24N	1	1	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
					MY8	88.2 kHz, 96 kHz
DME64N	4	4	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
					MY8	88.2 kHz, 96 kHz
PM5D PM5D-RH	4	4	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
					MY8	88.2 kHz, 96 kHz
M7CL	3	3	DB9 connector	DB9	MY16	44.1 kHz, 48 kHz
LS9-16	1	1	Backplane	none	MY16	44.1 kHz, 48 kHz
LS9-32	2	2	Backplane	none	MY16	44.1 kHz, 48 kHz

No Yamaha devices support Pro64's 176.4 and 192kHz sample rates.

DIP Switches

New DIP switch functions and settings on the 6416Y2 card available in version 2.41 and above allow the user to choose a specific Pro64 channel/ Slot range to control (in groups of 16 channels) as well as the total number of Pro64 channels available for remote control (subject to the limits of the host console's expansion capability as mentioned previously.) This allows multiple consoles to be used in the same Pro64 network, each with unique m-control remote control settings.

The total number of channels that a 6416Y2 A-Net card can send to or receive from a Yamaha host device is also affected by the sample rate being used. In Yamaha's MY16 mode (used for 44.1/48kHz sample rates), each 6416Y2

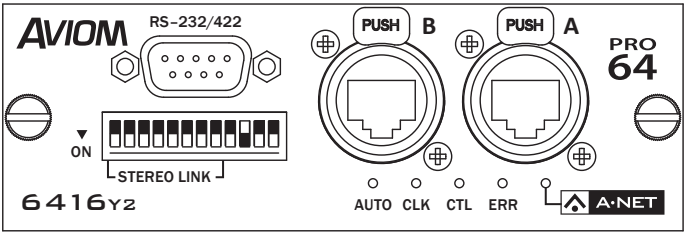
card (and its MY expansion card slot) will be associated with two virtual HA devices—16 channels total. In MY8 mode (88.2/96kHz), each 6416Y2 card installed is associated with a single virtual HA device (8 channels). Not all sample rates are available on every Yamaha console. Refer to the table above.

Only active Pro64 channels can be controlled remotely; any remote control commands sent from a Yamaha console to inactive 6416m channels will be ignored. As with the RCI/MCS, the 6416Y2 must be set to the same Control Group as all 6416m Mic Input Modules to be controlled. The Control Group is assigned using the internal DIP switches on the 6416Y2 card, and a 6416Y2 card must always be part of a Control Group when using m-control; it cannot be set to the "off" Control Group as the 6416m and RCI can.

m-control Remote Control Settings on the 6416Y2

On the front panel of the 6416Y2 card, set DIP switch #10 to the down position to enable m-control.

Note that even though multiple 6416Y2 cards can be installed in a Yamaha digital device, only *one* 6416Y2 card needs to be set to provide remote control messages from the Yamaha device to the Pro64 network.



DIP switch #10 in the down position enables console remote control. (DIP switch handles are shown in black.)

Once remote control is enabled, DIP switch block SW3 (internally) is used to configure the m-control remote control parameters. The A-Net Slots that are controllable from a particular Yamaha device are defined by the Channel/Slot Control DIP switches, which are DIP switches number 1 through 4 on block SW3. This feature allows the user to choose a specific range of the Pro64 network to control from a particular console.

Any combination of the Pro64 Slot banks can be activated for control. Channel/Slot Control settings are independent of the Slot ranges used for A-Net Transmit and A-Net Receive as well as for the individual channel activation settings for audio being sent from the console into the Pro64 network; both groups of settings must be properly configured for successful console-based control.

✓ **Note:** The actual number of remote controllable channels is determined by the expansion capability of the particular Yamaha console being used.

The following table shows the parameters that can be changed on DIP switch block SW3.

DIP Switch Block SW3 Functions		
DIP Switch	**Parameter**	**Function**
1	Channel/Slot Control 1-16	Activates remote control for Pro64 channels 1-16 from the current Yamaha device
2	Channel/Slot Control 17-32	Activates remote control for Pro64 channels 17-32 from the current Yamaha device
3	Channel/Slot Control 33-48	Activates remote control for Pro64 channels 33-48 from the current Yamaha device
4	Channel/Slot Control 49-64	Activates remote control for Pro64 channels 49-64 from the current Yamaha device
5	RS-422 Control Source Select (Backplane or DB9 connector)	Selects the source of the Yamaha RS-422 remote control information—directly from the console's backplane connector, or from the DB9 Remote connector (depends on the console)
6	*Unused/Reserved*	
7	6416m Mic Input Module Control Group assignment	Sets a Control Group (1-4) for the console and 6416Y2 card; allows only mic preamps in the same Control Group to be changed
8		

Note that any combination of switches 1-4 on block SW3 can be used to send control to a specific range of active Pro64 mic preamp channels. This set of DIP switches will typically be set to less than or equal to the total number of channels that the console can support—16 channels on the LS9-16, 32 channels on the LS9-32, 48 channels on the M7CL, and 64 channels on the PM5D.

The table below shows parameters that can be changed on DIP switch block SW3. Remember that any combination of DIP switches 1-4 can be used to allow control to be sent to a specific range of active Pro64 mic preamp channels.

DIP Switch Block SW3 Settings			
DIP Switch	**Parameter**	**Down**	**Up**
1	Channel/Slot Control 1-16	Control off	Control on (1-16)
2	Channel/Slot Control 17-32	Control off	Control on (17-32)
3	Channel/Slot Control 33-48	Control off	Control on (33-48)
4	Channel/Slot Control 49-64	Control off	Control on (49-64)
5	RS-422 Control Source Select	Use backplane connector	Use DB9 Remote connector
6	*Unused/Reserved*		
7/8	Control Group	*See table below*	

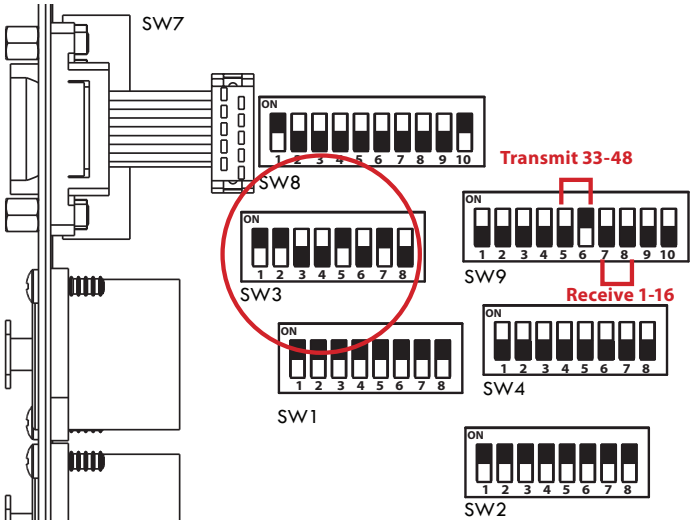
Control Group	DIP Switch 7	DIP Switch 8
1	Down	Down
2	Up	Down
3	Down	Up
4	Up	Up

The Channel/Slot Control settings are separate from the audio I/O setup (including A-Net Transmit and Receive settings). This parameter sets up remote control communications for all 6416Y2 cards installed in the same console. Each 6416Y2 card needs its A-Net Transmit and A-Net Receive range properly configured in order to get the desired results for your application.

The example below shows a 6416Y2 card fully configured for Yamaha remote control and audio I/O.

As seen in DIP switch block SW9, this 6416Y2 card is set to receive channels 1-16 from the Pro64 network (switches 7-8 are down) and to transmit audio from the console into channels/Slots 33-48 of the Pro64 network (switch 5 up, switch 6 down).

A second 6416Y2 card installed in the same console should be set to receive channels 17-32 from the Pro64 network in order to mix all 32 6416m mic preamp channels on the Yamaha console.



This example shows the 6416Y2 DIP switches set to control channels 1-32 of the Pro64 network's 6416m preamps (switches 1-2 up). It uses the rear panel DB9 connector for console remote control communication (switch 5 up), as would be typical for an M7CL or PM5D console. The DIP switch handles are shown in black.

With DIP switch #1 in block SW8 set to the up position as shown, the 6416Y2 will send the remote control commands to the Pro64 mic preamps as RS-422. Use a serial cable to connect the Yamaha console to the 6416Y2 card.

After the card's DIP switches are configured for your application, install the 6416Y2 in the host console and then connect the DB9 cable (if required) to the 6416Y2 card's RS-232/422 jack. Remember to connect the DB9 cable to the one 6416Y2 card that has been configured for m-control console-based remote control in a multi-card system.

Signal Routing to the Console

Routing channels to/from MY expansion cards can be accomplished directly from the Yamaha console's user interface or with a computer using the optional Studio Manager software (available from the Yamaha website at http://www.yamahaproaudio.com/downloads). In order to route channels in the console to and from the 6416Y2 cards, be sure that A-Net Transmit and Receive settings on the 6416Y2 cards (Slot range and channel activation) are properly configured.

Clock Settings

Remember that if a Pro64 module other than a 6416Y2 card is used as the network's Control Master, *all* Yamaha devices need to be set to slave to the external clock provided via A-Net. If a 6416Y2 card is set as the Control Master, all Pro64 devices will slave to the console's clock.

When multiple 6416Y2 cards are installed in a Yamaha host device, only one of the 6416Y2 cards needs to be set as the Pro64 network's Control Master.

When using multiple Yamaha consoles, the second console will need to be set as a slave if a 6416Y2 card in the first console is set to be the Pro64 network Control Master.

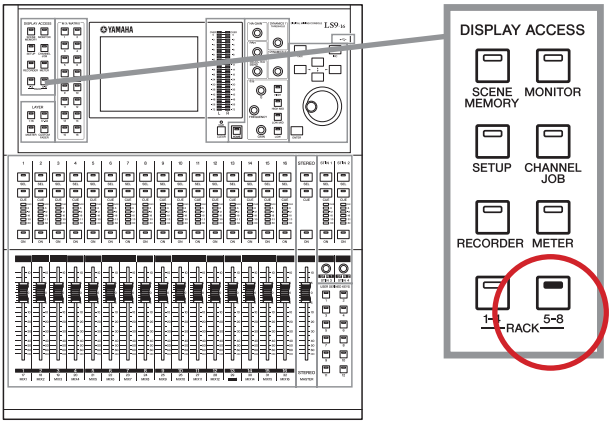
Refer to Yamaha's documentation for more information about clock and sync settings for specific consoles.

Yamaha Console Notes

Because the Pro64 network is emulating Yamaha's own remote control protocol, it is important to note that the Yamaha user interface and its associated display screens will refer to external head amp (HA) devices as "AD8HR" in most cases and never as "Pro64" or "6416m."

LS9 Console Setup

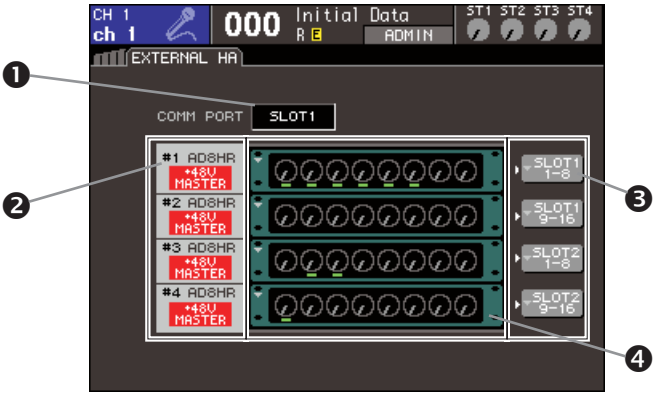
Access to external head amp settings on the LS9 series consoles is available from the Rack 5-8 screens, accessed by repeatedly pressing the **RACK 5-8** button found on the left side of the LS9 top panel until the External HA screen is displayed.



Press the Rack 5-8 button to access the LS9 External HA settings.

External HA Settings on the LS9

The External HA screens on both LS9 series consoles are similar—the LS9-16 will show two groups of eight remote controllable preamps (16 channels total) while the LS9-32 will show four groups (32 channels total). A COMM Port setting is also displayed on each console. (See the diagram below.)



The External HA settings screen on an LS9-32

The LS9 External HA screen includes the following setting:

1. **COMM Port Setting** — Set this to the same MY expansion slot where the 6416Y2 card being used for console remote control is installed. Setting this field to the Off setting (----) will stop all remote control communication. Use the **Dec/Inc** keys to select a port, and then press the **Enter** key.
2. **Remote Preamps ID** — Available remote controllable preamps are shown in groups of eight channels; note that the device name is always displayed as "AD8HR." The red "+48V Master" text indicates that the remote AD8HR preamp's master on/off switch for phantom power is on. The 6416m does not have a separate phantom power master on/off switch, so this parameter will always be on.
3. **Expansion Slot Port Assignment** — Use this field to assign channels of the 6416Y2 card(s) installed in the MY expansion slots to the groups of eight remote mic preamp channels. Each 6416Y2 offers two groups of eight channels, 1-8 and 9-16, at the 44.1/48kHz sample rate.
4. **Virtual Mic Preamps** — This overview shows the current level setting for each remote mic preamp device connected.

Selecting one of the virtual mic preamp fields and then hitting the **Enter** button on the LS9 will bring up the full size External HA screen that allows all remote controllable parameters to be viewed and edited, displayed in groups of eight channels. The available virtual racks can be selected by choosing one of the numbers at the top of the screen—two virtual racks for the LS9-16 and four virtual racks for the LS9-32. (See below.)

The eight-channel External HA screen shows all controllable parameters.

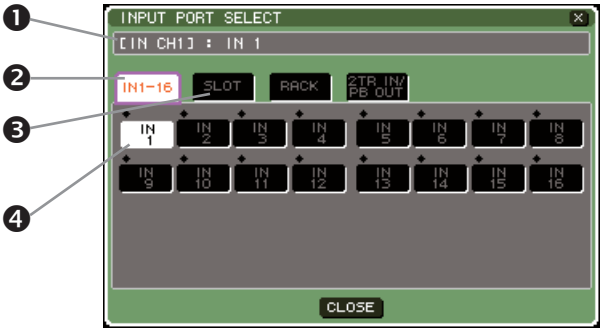
Only active Pro64 channels on connected 6416m preamps can be edited. Remember that the HPF parameters can only be set to on/off; the high pass filter cutoff frequency parameter does not apply to the 6416m Mic Input Module. The device type will always be displayed as "AD8HR" as Pro64's m-control is emulating this protocol. All changes made from this screen are instantly transmitted to active 6416m channels on the Pro64 network.

Assigning Remote Preamp Channels to the LS9 Mixer Faders

Each mixer channel on an LS9 can be configured to use any of the console's available audio resources, including the built-in mic/line inputs on the LS9 rear panel and channels coming into the console via MY expansion slots. The default routings for the LS9-16 have channels 1-16 patched to receive audio from the rear-panel jacks; audio from MY expansion slots defaults to channels 17 and above. The LS9-32 has the first 32 mixer channels patched to receive audio from the rear panel input jacks, with channels 33-64 defaulting to the two MY slots.

The highlighted area of the channel strip screen shows the patching for an external mic preamp from channel #1 of MY expansion slot card #1 to the LS9-32 mixer's fader 33.

Channel strips on the LS9 can be patched individually to create virtually any arrangement of its audio sources. To change a routing, select the current assignment from the channel strip view and press the **Enter** key to bring up the input port routing page.



Input routing page for the LS9-16

The LS9 input routing port page has the following settings:

1. The currently selected mixer channel being edited
2. The current source of the input to the selected channel—LS9 rear panel input jacks, MY expansion card, etc.
3. To use m-control with the 6416m the input routing source must be set to Slot. Select **Slot** and then press **Enter** to use a

channel coming into the console via the 6416Y2 card as the audio source for the channel.

4. Choose a specific input channel from the current input source to be routed to the channel fader on the console. Press **Enter** to confirm. Press **Close** to exit.

Once correctly patched, changing settings for gain, +48V phantom power, or high pass filter (HPF) on the channel strip will send those commands to the remote 6416m Mic Input Modules via m-control. Scene memories in the console can be used to store and recall these I/O routings and channel mix settings.

M7CL Console Setup

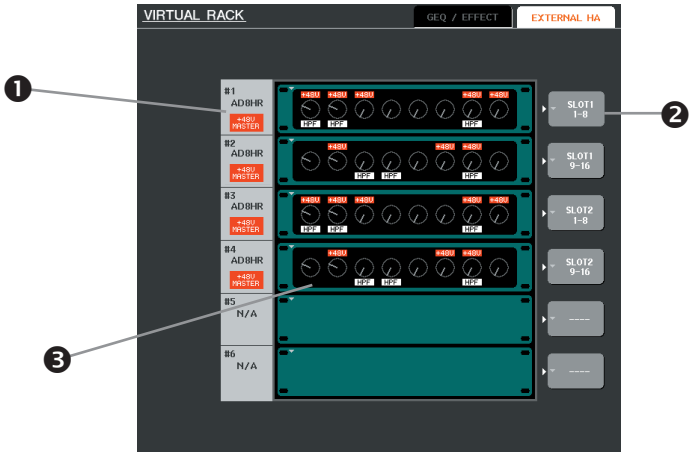
The M7CL comes in two sizes, 32 and 48 channels. Both consoles have three MY expansion slots and can accept up to three 6416Y2 A-Net Interface cards (48 channels total). The M7CL External HA screens will show six groups of eight remote controllable preamps maximum.

Access to external head amp settings on the M7CL consoles is available from the Virtual Rack window, available by pressing the **Rack** button in the Function Access Area of the console's touchscreen.

The M7CL touchscreen—the circle highlights the button used to access the Virtual Rack screen.

External HA Settings on the M7CL

When the Virtual Rack screen opens, press the **External HA** tab in the upper right corner to display and edit the External HA settings.



External head amp settings shown in the Virtual Rack screen on an M7CL

The M7CL External HA screen includes the following settings:

1. **Remote Preamps ID** — Available remote controllable preamps are shown in groups of eight channels; note that the remote device name is always displayed as "AD8HR." The red "+48V Master" text indicates that the remote AD8HR preamp's master on/off switch for phantom power is on. The 6416m does not have a separate phantom power master on/off switch, so this parameter will always be on.
2. **Expansion Slot Port Assignment** — Use this field to assign channels of the 6416Y2 card(s) installed in the MY expansion slots to the groups of eight remote mic preamp channels. Each 6416Y2 offers two groups of eight channels, 1-8 and 9-16, at the 44.1/48kHz sample rate.
3. **Virtual Mic Preamps** — This shows the current level setting for each remote mic preamp device connected. Click on a virtual rack to open the External HA screen.

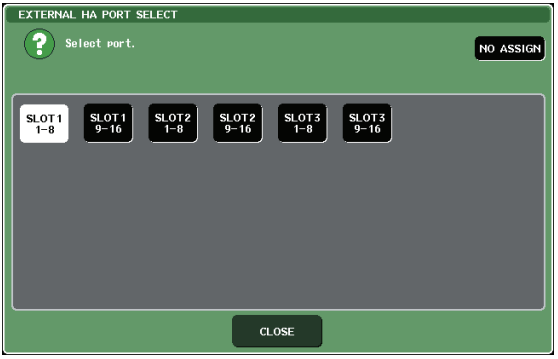
Clicking one of the virtual preamp fields in the External HA tab of the Virtual Rack screen (see #2 above) will bring up the eight-channel External HA screen for the selected group of eight channels that allows all remote controllable parameters to be viewed and edited.

The available virtual preamp racks #1-6 can be selected by choosing one of the six numbers at the bottom of the screen. (See below.) Each virtual rack displays eight channels.

The eight-channel External HA screen on the M7CL shows all controllable parameters in groups of eight.

Only active Pro64 channels on connected 6416m preamps can be edited. Remember that the HPF parameters can only be set to on/off; the high pass filter cutoff frequency parameter does not apply to the 6416m Mic Input Module.

To assign channels from a 6416Y2 A-Net card to the virtual preamp racks, use the External HA Port Select screen which can be accessed by pressing on one of the grey slot assignment blocks. (See the following screen.)



The M7CL External HA Port Select settings

Channels from external head amps are assigned in groups of eight, 1-8 and 9-16. The diagram above shows a console that has three expansion cards installed, for a total of 48 remote controllable channels.

Assigning Remote Preamp Channels to the M7CL Mixer Faders

Individual channels on an M7CL can be patched to use any available audio resource, including the console's rear panel mic/line analog inputs or digital audio coming into the console via MY expansion cards.

To change the assignments, first select the overview screen of the channel group you want to change (see below).

The channel overview screen on the M7CL routing info highlighted

Press the routing and name field of the channel whose assignment you want to change; the Patch/Name popup window will appear (shown below).

The Patch screen allows channels from the external MY card slots to be assigned to the M7CL faders.

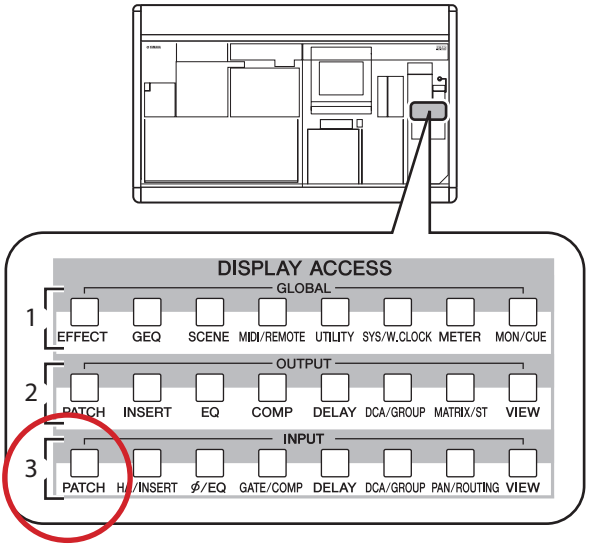
Click on one of the Input Patch assignments to change its source. The diagram above shows console channel #1 getting its audio from the first channel of the first MY expansion slot. Repeat this procedure as needed for any channels that need to be changed.

These Input Patch assignments will save and recall with the M7CL scene memories.

PM5D Console Setup

The PM5D comes in two distinct versions: the PM5D with manual, non-recallable head amp gain controls, and the PM5D-RH that has digital head amp gain controls that are fully programmable. Both versions of the console have four MY expansion slots and can accept up to four 6416Y2 A-Net Interface Cards (64 channels total). The PM5D External HA screens will show eight groups of eight remote controllable preamps maximum.

External head amp settings on the PM5D consoles are available from the Input Patch window. This can be selected from the Display Access section of the PM5D interface.

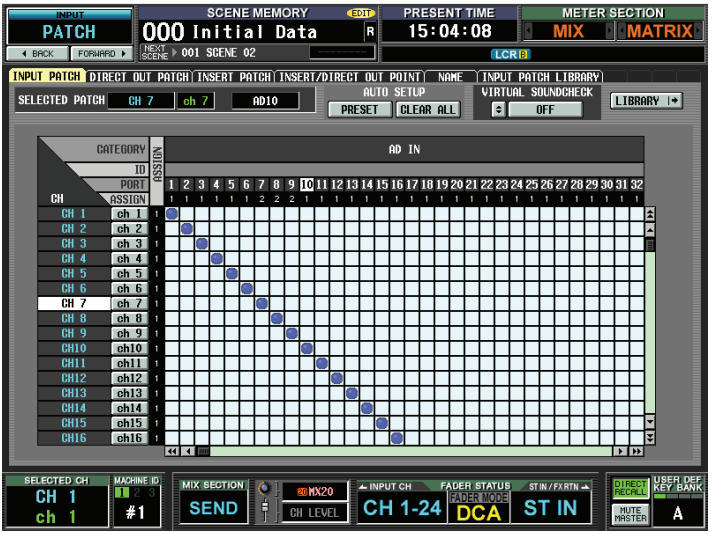


The Display Access area of the PM5D user interface

External HA Settings on the PM5D

Press the **Input Patch** button in the Display Access area of the PM5D to open the patching grid that graphically shows the current input source for each of the console's 48 inputs. Choices include the rear panel mic/line inputs, stereo inputs, and any of the 16 channels from up to four MY expansion cards such as the 6416Y2 installed in the console.

The window scrolls up/down and left/right to accommodate the large amount of patching information available to the operator. The current assignment is shown with a blue dot in the routing display (see the diagram below). Scroll right to show the expansion slot audio resources.



Input patching is shown as a grid on the PM5D.

Information about the currently selected channel's patching is shown across the top portion of the window (see below).

In this diagram mixer channel #1 is set to receive audio from channel 1 of MY expansion card #1.

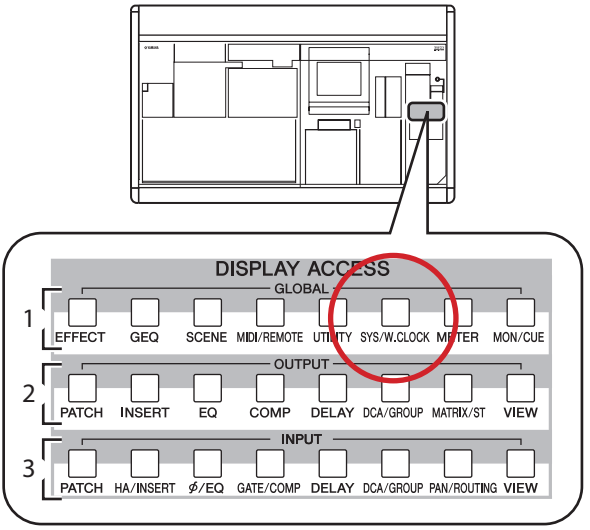
To change the routing for a channel, simply move the cursor to the desired source and click. Depending on the current PM5D preference settings, you may also have to click OK when making a patch change.

Consult the Yamaha documentation for more information on setting user preferences for the PM5D.

Changing 6416m Preamp Settings from the PM5D

Once the individual channels on the PM5D are patched as desired, the 6416m preamp gain, +48V phantom power, and high pass filter (HPF) settings can be changed as needed via m-control. A global view of the console's 48 channels is available on the HA screen, which is accessed from the System/Word Clock

page. Press the **SYS/W.CLOCK** button in the Display Access section of the PM5D to open it.



To display the External HA settings, click the **Sys/W.Clock** button.

Two External HA screens are available, each displaying four banks of eight channels, for a total of 64 remote controllable channels.

The External HA screen shows all editable parameters.

Click the **External HA 1-4** or **External HA 5-8** button in the display to show the remote preamps (see the detailed view below).

This close-up diagram of the External HA screen shows all editable parameters and routing info.

Console remote control messages sent from the PM5D can control the 6416m's gain, +48V phantom power, and high pass filter only via m-control.

The PM5D's HPF cutoff frequency and the remote preamp +48V Master on/off switch are not supported by the Pro64 preamps.

Other Yamaha Consoles

This document covers setup and use of m-control with the LS9, M7CL, and PM5D consoles. Refer to the documentation that came with your Yamaha console if you need to set up m-control for a DM1000, DM2000, or other host device not covered here.

Index

Symbols

A

B

C

D

E

F

G

H

I

L

M

N

P

R

S

V

Y

rev. 1.2 030909