YAMAHA | commercial audio

PM5D/PM5D-RH
Quick Start Guide

A guide for people using PM5D in the real world.

Part 1

Introduction to PM5D layout.
Set up walk through guide.

PM5D
DIGITAL MIXING CONSOLE

This is a "quick start guide" designed for people about to use Yamaha PM5D for the first time. It is not a guide to audio mixing and it assumes the reader has experience of analog mixers. It does not cover all features or all approaches to PM5D use, nor does it replace the manual; we recommend referring to the manual if further information is required.

The PM5D / PM5D-RH Quick Start Guide is in three parts.

Part 1 (Introduction and set up walk through guide);

1) An overview of the PM5D connections, the layout of the surface and main mix features.

2) A quick explanation of storing / recalling and saving / loading.

3) A walk through example of how a band's engineer could set up the console for a specific show. The walk through goes as far as the creation of the first scene of the show.

The set up walk through guide covers;

1) Inputs naming and patching
2) Phantom set
3) Outputs naming and patching
4) Effects patching
5) Matrix naming and patching
6) GEQ patching
7) User defined keys programming
8) Assignable faders assignment
9) Monitor on fader if required
10) Storing all that as a starting scene

362 pages of manual and then the editor and driver guides. Mmmm... there has got to be a quicker way...
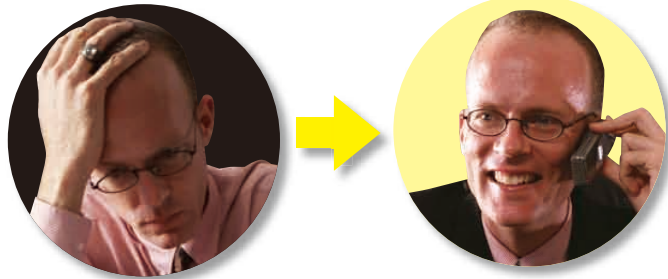
Part 2 (Store edit and save);

1) Storing and editing stored scenes using PREVIEW mode, Global Paste and Tracking Recall.

2) Recalling scenes and limiting the recall with Recall Safe or Selective Recall.

3) Saving and loading with a PCMCIA card; how to save individual libraries or scenes and load them into another console without loss of audio or data on the receiving console.

Part 3 (PM5D Studio Manager and Editor quick start);

The guide covers the PM5D Editor and how the set-up and actions covered in parts one and two can be achieved with the Studio Manager Software.
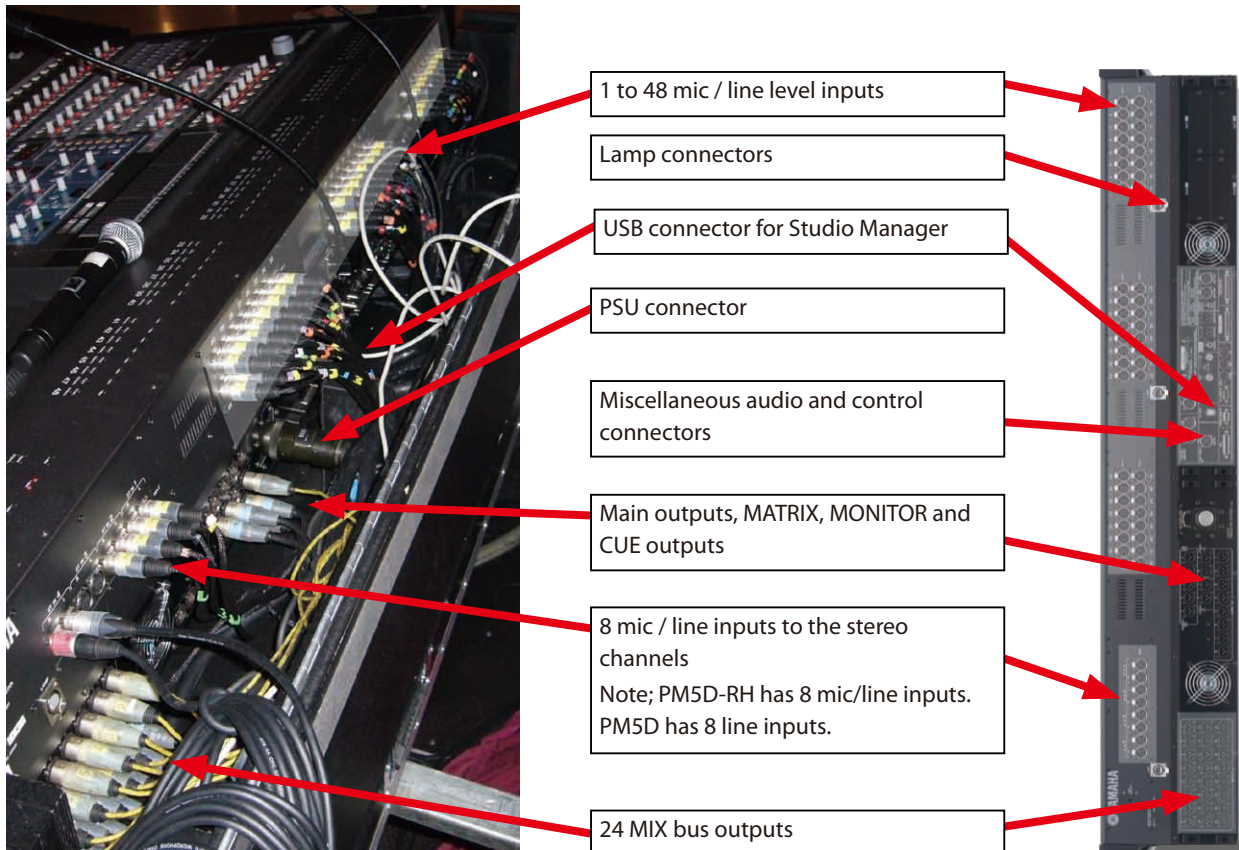
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Table of contents

Get in front, and behind the PM5D and get familiar with the layout.

Connect your PM5D just as you would an analog desk and switch on.

Note that the PM5D-RH does not have analog insert points as standard; there are dynamics on all channels, but for external inserts you need additional MY option cards.

1 to 48 mic / line level inputs

Lamp connectors

USB connector for Studio Manager

PSU connector

Miscellaneous audio and control connectors

Main outputs, MATRIX, MONITOR and CUE outputs

8 mic / line inputs to the stereo channels
Note; PM5D-RH has 8 mic/line inputs. PM5D has 8 line inputs.

24 MIX bus outputs

Differences in connectivity between PM5D and PM5D-RH;

On PM5D-RH there are 48 mic preamps patched by default to the 48 mono channels and a further 8 identical mic preamps patched to the 4 stereo channels. With PM5D there are 48 mic preamps patched to the mono channels and 8 line inputs patched by default to the 4 stereo channels. In addition PM5D has 48 analog insert points on the mono channels.

Both models share the same outputs and the various 2 track inputs and outputs.

PM5D-RH could use the 2 track connections for insert points but for large numbers of insert points you need to use MY cards in the option slots.

The MY Cards; Mini Yamaha General Digital Audio Interface Cards;

sometimes called MiniYGDAI cards.

There are four MY card slots on PM5D. The cards allow extra audio connectivity in various formats; AES/EBU, CobraNet, ADAT, analog, etc. See www.yamahaproaudio.com for the latest list.

Note; The maximum capacity per slot in digital formats is 16 channels of in and out at 48 kHz or 8 channels in and out at 96 kHz.

Note; The maximum capacity per slot in analog format is 8 channels in and out.

Note; MY cards just give more connectivity; they do not give more processing channels!

Scene 000; a good place to start.

Before working on an analog console it is customary to check that the console has been "set to zero". This normally means setting the gain to minimum, the EQ to flat, auxes to zero, group routing de-selected, insert points switched off, etc. Look at and check upwards of 2000 knobs! PM5D can memorize its settings, so Yamaha have provided a handy memorized scene (Scene 000) where the console is set to zero, ready to start at the touch of a button.

Note: Recall Safe functions can prevent some resetting; for a full initialization of the console see page 13, or see section on Recall Safe in Part 2.
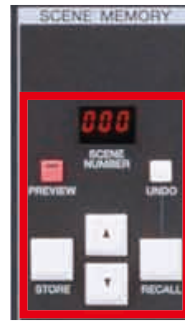
To recall scene 000, press the up / down keys until "000" flashes in the SCENE MEMORY panel. Then press the [RECALL] key.

Getting the first sounds through PM5D in "Ten Easy Steps."
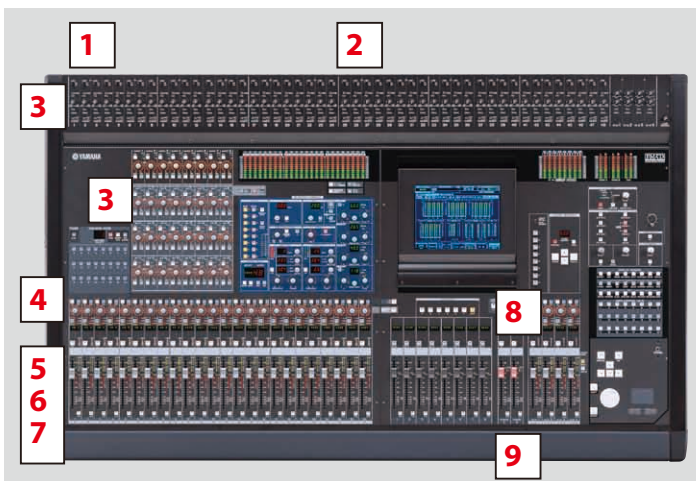
1 Plug in an input source.

2 Plug in the PA to STEREO A L & R.

3 Adjust the gain with this knob on the regular PM5D.

3 On PM5D-RH, check this [GAIN/ATT] key is pressed and the light is on.

4 If you have a regular PM5D go straight to step 5. On PM5D-RH, turn this encoder to set the gain.

5 Check the signal level with this meter.

6 Check the channel is ON with this key.

7 Push up the fader.

8 Check the output is ON with this key.

9 Push up the fader and listen!

10 Smile! You've done it!

The layout 1: The select [SEL] key, the layer [CH 1-24], [CH25-48], [ST IN 1-4] and [FX RTN 1-4] keys and the [MIX SEND] / [MIX MASTER] keys.

At first glance the PM5D looks radically different from any other mixer; either analog or digital... and it is. However after a very short time operating the console it becomes familiar and the benefits of all the extra features make the effort worthwhile.

There is not a "knob for every single function" so you must learn the **three key presses** to access the channel strip controls;

The [SEL] keys assign the SELECTED CHANNEL controllers to the selected channel. There are [SEL] keys for all the input, stereo input, MIX, MATRIX and master output channels

The [MIX SEND] and [MIX MASTER] keys toggle the mix encoders between being like the vertical column of mix send knobs above a channel and the horizontal row of mix master faders in the center section of an analog console.
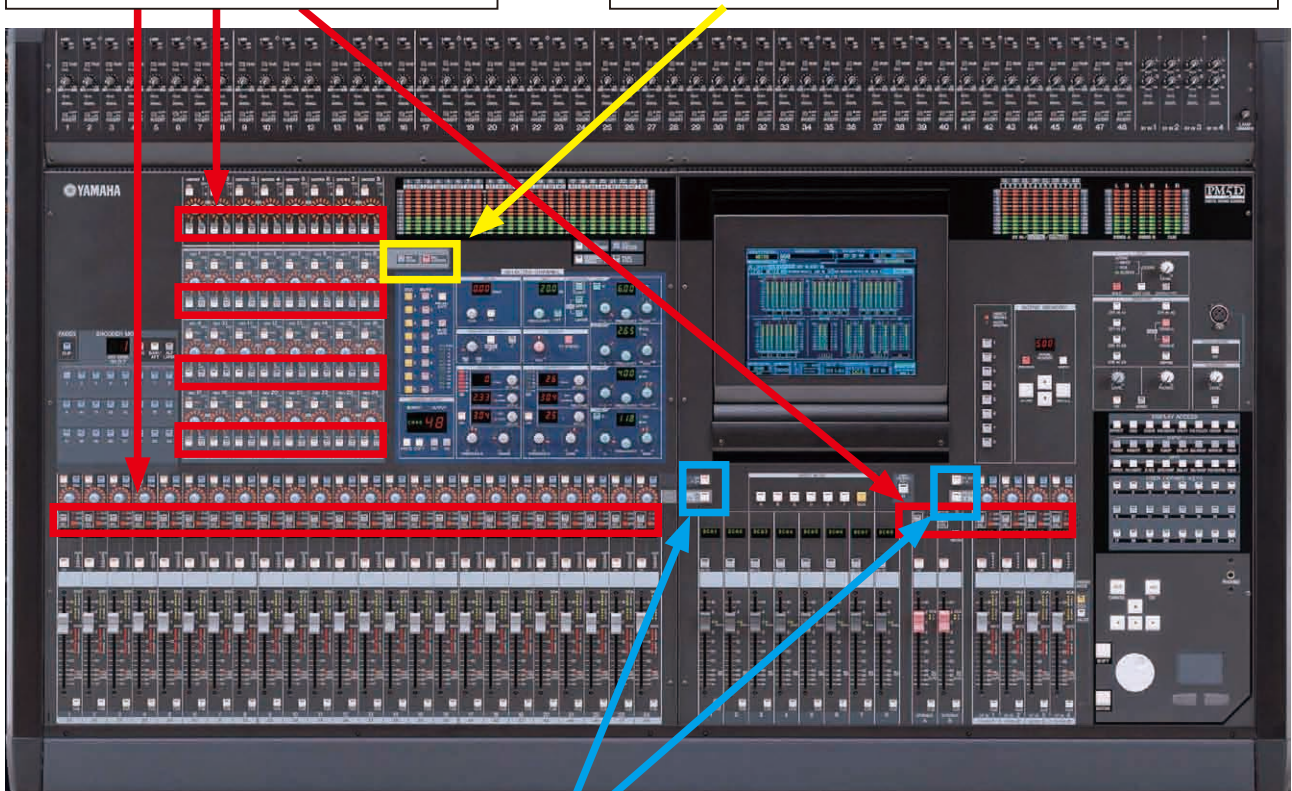
The fader layer (or fader bank) keys toggle the input mono faders between CH 1-24 and CH 25-48 or the input stereo faders between ST IN 1-4 and FX RTN 1-4.

With these three key types you can assign the surface controls to access any control you would find on an analog console and plenty more features too.

In fact you don't even need the screen to mix; it's just for set up and to give extra visual feedback and access for extra mix functions.

The layout 2: Navigating the screen menus.

It is possible to mix a complete show without using the screen. However the screen menus give access to many setup functions and allow you to see information about how the console is configured.

Screen display

Data entry panel
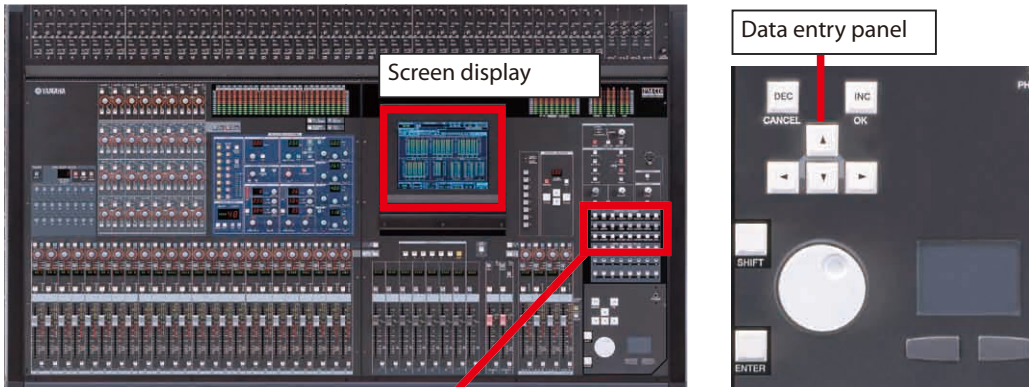
DISPLAY ACCESS keys
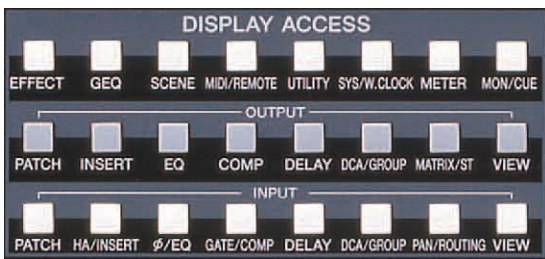
Tabs

Navigating the tabs;

Press the [DISPLAY ACCESS] key to move through the tabs forwards.

Hold the [SHIFT] key and press the [DISPLAY ACCESS] key to move through the tabs backwards.

Double click the [DISPLAY ACCESS] key to go directly to the first tab.

Press and hold the [DISPLAY ACCESS] key to move through the tabs backwards.

Navigating the screen;

The data entry panel lets you select and alter parameters shown on the screen.

There is a choice of methods to use;

Use the track pad to point the arrow at a button and click to press the button; the flashing red cursor frame will move over the button and the button status will change.

Move the flashing red cursor frame using the four arrow keys and press the [ENTER] key to press the button. Where the parameter control has a series of options, move the red frame over the box and either use the [DATA] encoder to scroll through or you can mouse click on the [<] / [>] arrows at each side of the box.
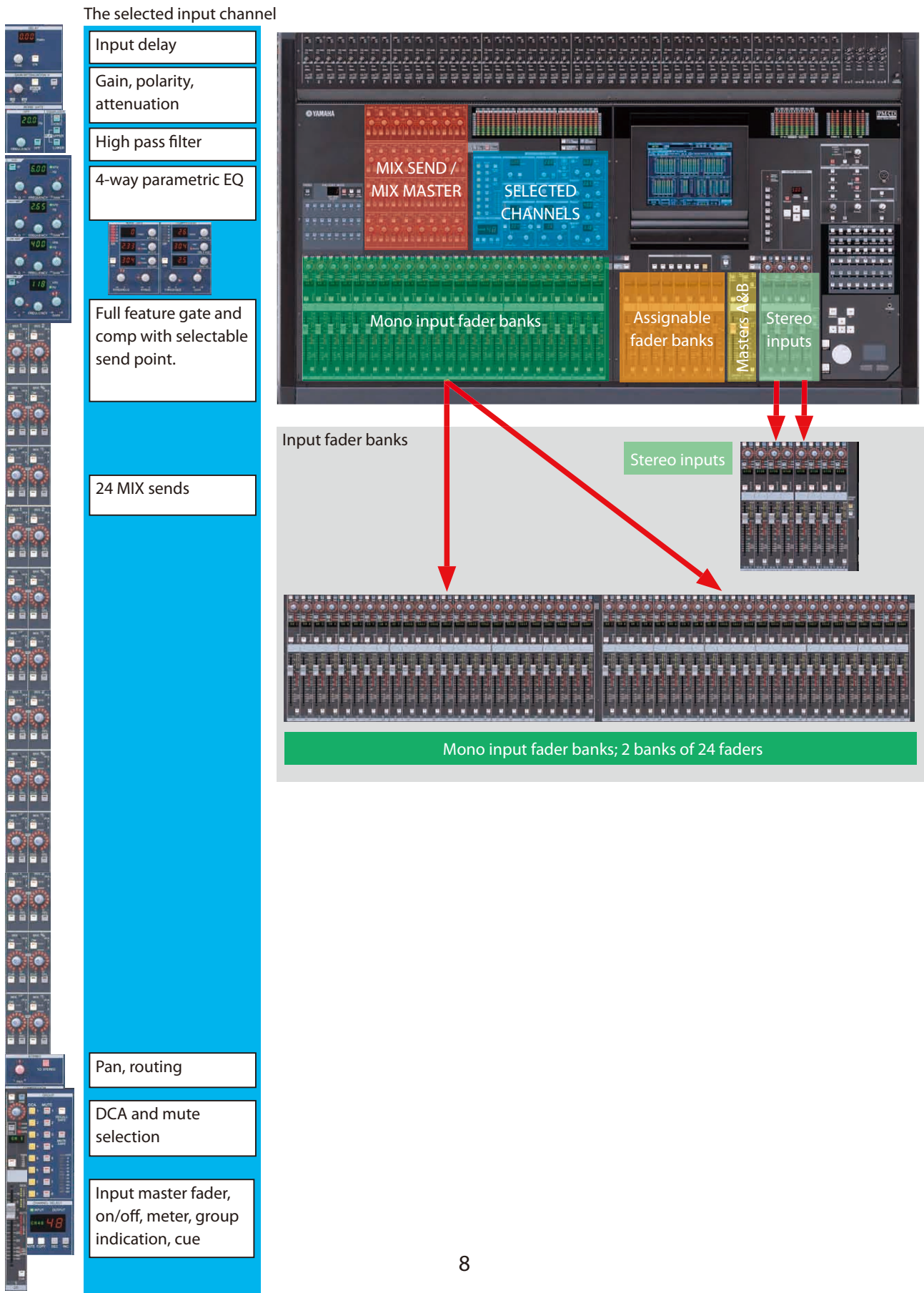
Display access;

Press the [DISPLAY ACCESS] keys to bring the various displays to the screen. Each key has several screens accessed from it; these are shown by "tabs."

What the screen shows;

Upper part; (always visible) shows useful information such as scene name and next scene, the function of the meters and the time / timecode or cascade status and clock speed.

Main area; shows the function parameters and the tabs.

Lower part; usefully identifies the name / number of the SELECTED CHANNEL, the fader banks and the status of the [MIX SEND] or [MIX MASTER] keys.

The layout 3: Where are the input channel controls?

The input channel strip controls are in the blue SELECTED CHANNEL area, the red MIX SEND/MIX MASTER area and the faders are in the two fader layers. Remember to use the [SEL] key to assign the selected channel, the [CH 1-24], [CH 25-48], [ST IN 1-4] and [FX RTN 1-4] keys to choose the correct faders and the [MIX SEND] and [MIX MASTER] keys to choose AUX send control not MIX master.

The selected input channel

| Input delay |
| Gain, polarity, attenuation |
| High pass filter |
| 4-way parametric EQ |
| Full feature gate and comp with selectable send point. |
| 24 MIX sends |
| Pan, routing |
| DCA and mute selection |
| Input master fader, on/off, meter, group indication, cue |

MIX SEND / MIX MASTER

SELECTED CHANNELS

Mono input fader banks

Assignable fader banks

Masters A&B

Stereo inputs

Input fader banks

Stereo inputs

Mono input fader banks; 2 banks of 24 faders

# The layout 4: Where are the output channel controls?

The outputs share the same selected channel controllers as the inputs, but some are not available; like the gate, and HA gain. Remember to use the [SEL] key to assign the selected channel and use the [MIX SEND] and [MIX MASTER] keys to select MIX master control not AUX send control. Assignable faders can be set to work as MIX masters.

The selected output channel

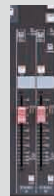| Output delay |
| 8-way parametric EQ |
| Full feature comp |
| 8 MATRIX sends |
| Pan, routing |
| DCA selection |
| Output master fader, on / off, group indication, cue |

Assignable fader banks, Inputs, Outputs and DCAs
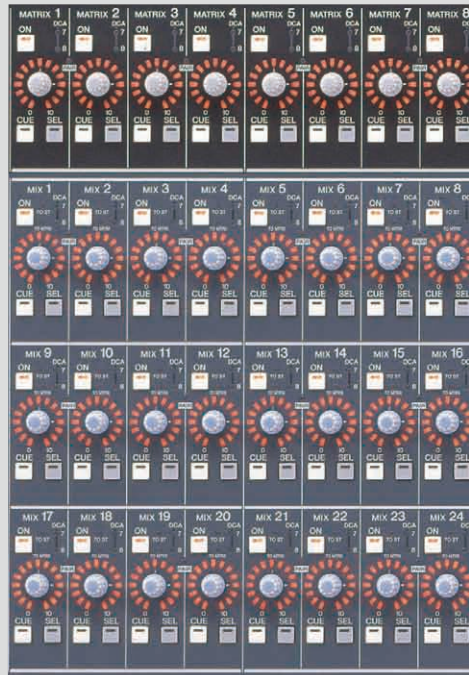
MATRIX masters

MIX masters

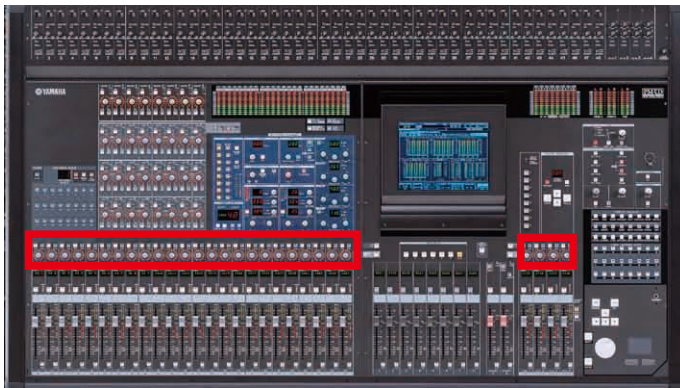Assignable fader banks
24 MIX masters, 8 MATRIX masters, 8 DCAs

Masters A+B

The layout 5: The multi-function encoders.

Above the input faders and naming strip there is a row of multi-function encoders.

Press the white key again to toggle from HA to ATT; the LED panel shows the current state.
The ALT LAYER is the hidden layer of 24+4 faders beneath the top layer input faders.

The multi-function encoders have four functions, assigned by buttons in the ENCODER MODE panel;
1) PAN   (pink)
2) GAIN/ATT   (white)
3) ALT LAYER   (grey)
4) AUX send   (blue 1-24)

ON

PAN	TO STEREO
GAIN	+48V (set in pref. 2)
ATT	No function
ALT	Channel ON on ALT LAYER
AUX	ON for chosen aux

PRE

PAN	No function
GAIN	No function
ATT	No function
ALT	No function
AUX	Pre fade aux

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Storing / recalling and saving / loading on PM5D.

PM5D can store up to 500 user scene memories (like snapshots on other consoles) and recall these scenes, together with other data, from the console or session file. PM5D can only hold one session file internally, but other sessions can be saved and loaded via PCMCIA cards or through an on line connection with Studio Manager. Sessions can be merged using ADVANCED save / load procedures.

Saving and storing; what's the difference;

Note the use of words on the console: **STORE** is for storing scene memory within the console; (BASIC) **SAVE** is for saving to the PCMCIA card. **ADVANCED SAVE** is saving to a PCMCIA card but with new library number locations. **RECALL** is for scenes, **LOAD** is for sessions and libraries. There is more information about saving and loading in part 2 of the guide.

Store a scene;

Use the console SCENE MEMORY panel to store scenes; use arrow keys to choose a location and press the [STORE] key to store.
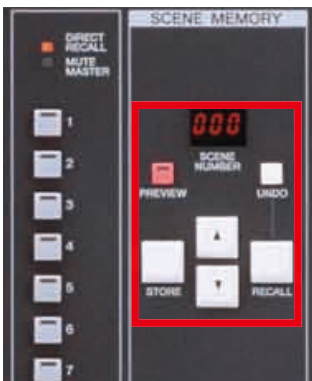
The SCENE STORE pop-up appears;

Type a scene name using a computer keyboard (connection point under the arm-rest), then press the [ENTER] key to store. Or click on the screen keyboard and the [STORE] button with the track pad. Confirm with the [OK] button.
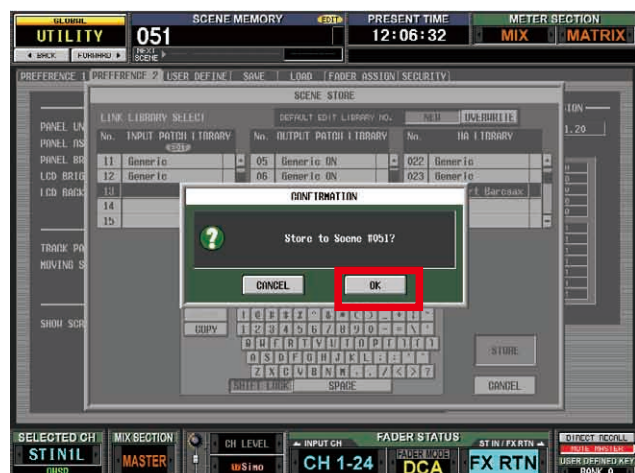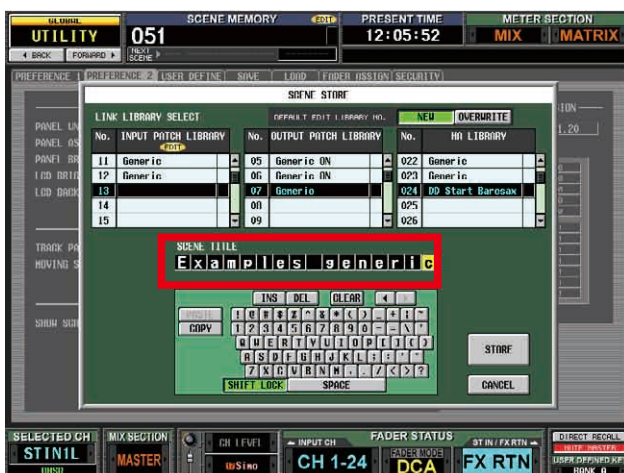
Scene storing short cuts and tips;

1) To speed up the scene storing process, disable the [STORE CONFIRMATION] in the PREFERENCE 1 tab of UTILITY menu.

2) To speed up even more, enable [AUTO STORE] in the same preference section. This does not actually auto store, but means a double click of the [STORE] key stores without renaming etc.

3) When storing a scene, the PATCH and HA LIBRARY data are stored automatically if a change has been made. In the SCENE STORE pop-up, there is an option to [OVERWRITE] the current libraries (useful when working towards one final patch and HA setting) or [NEW] useful when each scene has its own patch and HA settings... but be aware that there are less patch and HA memory positions than there are scenes.

PM5D set up; a walk through guide.

These are a typical documents indicating a bands input and output needs for a large monitor system. The aim of this guide is to work through the processes of setting up a PM5D for this show. Most of the techniques and ideas used will apply equally for a FOH or broadcast set up.

Input Channel List for THE EXAMPLES
As; August 2006

Ch	Channel	Mic	+48V
1	KICK 1	SH 53	
2	KICK 2	SH 92	Y
3	SNARE TOP	SH 57	
4	SNARE IN	XLR	Y
5	SNARE BOTT	KP 85	Y
6	TIMBALE	Theta 98	
7	HI HAT	A 452 *	Y
8	TOM 1	Theta 98	Y
9	TOM 2	Theta 98	Y
10	TOM 3	Theta 98	Y
11	TOM 4	Theta 98	Y
12	RIDE	A 461	Y
13	OH SR	A 415	Y
14	OH SL	A 415	Y
15	SPD	Active DI	Y
16	BASS PRE	Active DI	Y
17	BASS POST	UHF Theta 98	
18	OCARINA	UHF Theta 98	
19	SAX	UHF Theta 98	
20	ACC GTR	BSS DI	Y
21	GTR TOP	BT 4051 *	Y
22	GTR BOTT	MD422	
23	LINE 6	BSS DI	Y
24	HARMONICA	XLR	
25	SIMON VOX	UHF Theta 58d	
26	SIMON VOX SPARE	UHF Theta 58d	
27	BASS VOX	Theta 57d	
28	KEY VOX	Theta 57d	
29	GTR VOX	Theta 57d	
30	BV	UHF Theta 58d	
31	YAMAHA AN1x	Active DI	Y
32	YAMAHA FS1R	Active DI	Y
33	Motif ES	Active DI	Y
34	YAMAHA CS6x L	Active DI	Y
35	YAMAHA CS6x R	Active DI	Y
36	VL1 L	Active DI	Y
37	VL1 R	Active DI	Y
38	SEQ 1 - LOOPS	XLR	
39	SEQ 2 - LOOPS	XLR	
40	SEQ 3 - BASS	XLR	
41	SEQ 4 - FX	XLR	
42	SEQ 5 - KEY 1L	XLR	
43	SEQ 6 - KEY 1R	XLR	
44	SEQ 7 - KEY 2L	XLR	
45	SEQ 8 - KEY 2R	XLR	
46	SEQ 9 - VOX	XLR	
47	SEQ 10 - VOX	XLR	
48	SEQ 11 - GUIDE	XLR	
49	SEQ 12 - CLICK	XLR	
50	KEY TALKBACK	MXL 58mic	
51	AMBIENCE SR	A415	Y
52	AMBIENCE SL	A415	Y
53	Talk to Stage	MXL58 switch	
54	CD		
55	CD		
56	DDL Simon		
57	DDL Simon		
58	Rev Simon		
59	Rev Simon		
60	Rev Sax		
61	Rev Sax		
62	Rev Kit		
63	Rev Kit		
64			

Output Channel list for THE EXAMPLES
As; August 2006

Mix	Description	Notes
Mix 1	SF SR	TOP + SUB
Mix 2	SF SL	TOP + SUB
Mix 3	Bass Out	Wedges
Mix 4	Bass In	Wedges
Mix 5	GTR Out	Wedges
Mix 6	GTR In	Wedges
Mix 7	Drum Wedge	Wedge
Mix 8	Drum Sub	Dual 15 Pwr Sub
Mix 9	Drum Rev	FX 3
Mix 10	Key Wedge L	Wedges
Mix 11	Key Wedge R	Wedges
Mix 12	Nick Ears L	Wireless IEM	Plus Extra Belt pack for Keys Tech
Mix 13	Nick Ears R	Wireless IEM	Plus Spare Pack = 3 packs
Mix 14	Drum Ears L	Wired Ears	Plus Spare Belt Pack = 2 packs
Mix 15	Drum Ears R	Wired Ears	
Mix 16	Simon Ears L	Wireless IEM	Plus Spare Belt Pack = 2 packs
Mix 17	Simon Ears R	Wireless IEM	
Mix 18	Anna Ears L	Wireless IEM	
Mix 19	Anna Ears R	Wireless IEM	
Mix 20	Sax Ears L	Wireless IEM	
Mix 21	Sax Ears R	Wireless IEM	
Mix 22	DDL 1	FX 1	
Mix 23	Rev 2	FX 2	
Mix 24	Rev 3	FX 4	
Matrix 1	Spare IEM		
Matrix 2	Spare IEM		Plus Spare Belt Pack = 2 packs
Matrix 3			
Matrix 4			
Matrix 5			
Matrix 6			
Matrix 7			
Matrix 8			
Master L	Wedge Cue L		
Master R	Wedge Cue R		
Master L	IEM Cue L		
Master R	IEM Cue R		

PM5D rider specifications;

When specifying a PM5D console, we suggest you make it clear which model you prefer; PM5D (Manual Head Amp) or PM5D-RH (Recallable Head Amp). Also specify you need the latest console firmware, any MY cards, spare PSU, desk lamps and mains power for your laptop to run Studio Manager. Always provide your own PCMCIA card for data back up and loading and remember your USB cable for Studio Manager connection!
If you need more inputs than one PM5D can provide you can cascade link (bus link) multiple PM5Ds or from summer 2007, you can specify a DSP5D "console expander". These extra channels can be remotely located using a lightweight cat-5 cable if you specify the DCU5D cable unit.

Other Yamaha specifications;

Did you know you can also specify Yamaha DME64N DSP engines for extra matrix options and extra graphic EQ controlled from the PM5D or for speaker processing, format conversion and many other useful functions. Yamaha make touring grade amplifiers and professional installation loudspeakers too; details from www.yamahaproaudio.com.

Can PM5D meet the spec? Use DSP5D for more input channels.

In PM5D or PM5D-RH there are;

64 MIX channels made up of 48 fully featured mono and 8 stereo inputs.

24 MIX buses with EQ and comp to cover auxiliary send and audio sub groups.

STEREO out bus with A and B channels.

8 MATRIX outputs and the stereo MONITOR / CUE bus.

Also there are 8 multi-effects engines and 12 ways of graphic EQ.

If you need more inputs you can bus link or "cascade" more PM5Ds!! The DSP5D rack mount "console expander" works in a similar way but takes up less space! Both will double the available input count and add another 8 way matrix, 8 effects engines and 12 graphic EQs.

If you need more than 24 MIX groups and 8 MATRIX buses then we recommend the Yamaha PM1D mixing system. PM1D has 48 MIX buses and 24 MATRIX buses.
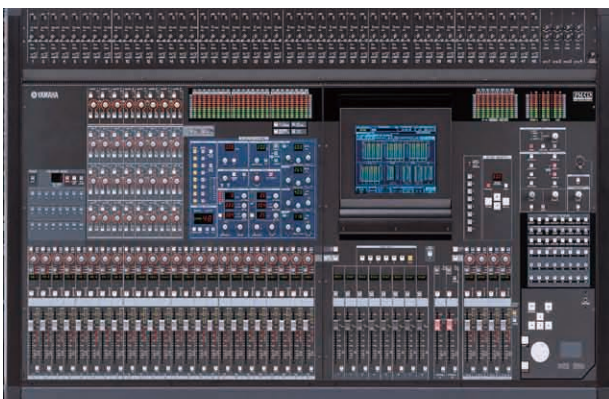
PM5D   DSP5D   DCU5D

PM5D and PM5D-RH can both have expanded input counts by using the DSP5D rack mount option. The DSP5D can be easily remote located using the DCU5D cascade cable converter.

Preparing the console before you start.

First make sure the last users of the console have backed up any data in the console they wish to keep.

Next check the console software version; DISPLAY ACCESS > UTILITY > PREFERENCE 2. The software version is shown here; we always recommend the latest software version for maximum reliability and best features. Find the latest versions from www.yamahaproaudio.com/downloads/firm_soft/index.html Update if necessary, following instructions from the website with the software. You will need a PCMCIA card.

If the software is current then initialize the console; this deletes all user memories and returns the set-up to the factory default.

To initialize the console; power up the PM5D whilst holding down the [STORE] key. Follow the on screen instructions to complete the initialization. The power switch is on the PW800W 19" rack mount PSU.

Entering names and doing the patch; the planning stage.

Some important points to remember;

1) Mono channels can be paired to make stereo but only adjacent odd / even channels.

2) There are 24 channels in each mono layer and stereo channels are in two layers of 4 so avoid putting groups of related channels across the layers. (Just like splitting related channels across a center-master analog console.)

"THE EXAMPLES" have less than 64 channel requirement and many are stereo so they can be accommodated on the PM5D.

The most obvious candidates for the stereo channels are the effects returns, CD and ambience mics. There needs to be one more stereo channel; this could be a stereo keyboard or stereo sampler line; but in this example the drum overhead mics were chosen.

The revised list here shows this in the "First Attempt" column.

| Input Channel List for THE EXAMPLES					As; August 2006	
Multicore PM5D	First Attempt! PM5D	Second Attempt!				
Ch	Ch	Ch	Channel	4Nam!	Mic	+48V
1	1	1	KICK B52	K 52	SH 53	
2	2	2	KICK 91	K91	SH 92	Y
3	3	3	SNARE TOP	SNtp	SH 57	
4	4	4	SNARE IN	SNin	XLR	Y
5	5	5	SNARE BOTT	SNbt	KP 85	Y
6	6	6	TIMBALE	Timb	Theta 98	
7	7	7	HI HAT	Hats	A 452 *	Y
8	8	8	TOM 1	Tom1	Theta 98	Y
9	9	9	TOM 2	Tom2	Theta 98	Y
10	10	10	TOM 3	Tom3	Theta 98	Y
11	11	11	TOM 4	Tom4	Theta 98	Y
12	12	12	RIDE	Ride	A 461	Y
13	Stereo 1L	Stereo 1L	OH SR	Ohsr	A 415	Y
14	Stereo 1R	Stereo 1R	OH SL	Ohsl	A 415	Y
15	13	13	SPD	SPD	Active DI	Y
16	14	14	BASS PRE	Bss1	Active DI	Y
17	15	15	BASS POST	Bss2	UHF Theta 98	
18	16	16	OCARINA	Ocar	UHF Theta 98	
19	17	17	SAX	Sax	UHF Theta 98	
20	18	18	ACC GTR	Acou	BSS DI	Y
21	19	19	GTR TOP	GtrT	BT 4051 *	Y
22	20	20	GTR BOTT	GtrB	MD422	
23	21	21	LINE 6	Lin6	BSS DI	Y
24	22	22	HARMONICA	Harm	XLR	
25	23	23	SIMON VOX	Simo	UHF Theta 58d	
26	24	24	SIMON VOX SPARE	Sspr	UHF Theta 58d	
27	25	25	BASS VOX	John	Theta 57d	
28	26	26	KEY VOX	Nick	Theta 57d	
29	27	27	GTR VOX	Andy	Theta 57d	
30	28	28	BV	Anna	UHF Theta 58d	Y
31	29	29	YAMAHA AN1x	AN1x	Active DI	Y
32	30	30	YAMAHA FS1R	Voco	Active DI	Y
33	31	31	Motif ES	Moti	Active DI	Y
34	32	32	YAMAHA CS6x L	CS6L	Active DI	Y
35	33	33	YAMAHA CS6x R	CS6R	Active DI	Y
36	34	34	VL1 L	VL1L	Active DI	Y
37	35	35	VL1 R	VL1R	Active DI	Y
38	36	>>37	SEQ 1 - LOOPS	Loop	XLR	
39	37	38	SEQ 2 - LOOPS	Loop	XLR	
40	38	39	SEQ 3 - BASS	Bass	XLR	
41	39	40	SEQ 4 - FX	FX	XLR	
42	40	41	SEQ 5 - KEY 1L	Key1	XLR	
43	41	42	SEQ 6 - KEY 1R	Key1	XLR	
44	42	43	SEQ 7 - KEY 2L	Key2	XLR	
45	43	44	SEQ 8 - KEY 2R	Key2	XLR	
46	44	45	SEQ 9 - VOX	Vox	XLR	
47	45	46	SEQ 10 - VOX	Vox	XLR	
48	46	47	SEQ 11 - GUIDE	Gide	XLR	
49	47	48	SEQ 12 - CLICK	Clik	XLR	
50	48	36	KEY TALKBACK	KeyT	MXL 58mic	Y
51	Stereo 2L	Stereo 2L	AMBIENCE SR	Ambi	A415	Y
52	Stereo 2R	Stereo 2R	AMBIENCE SL	Ambi	A415	
53	FX 4L	FX 4L	Talk to Stage	TTS	MXL58 switch	
54	FX 3L	FX 3L	CD	CD L		
55	FX 3R	FX 3R	CD	CD R		
56	Stereo 3L	Stereo 3L	DDL Simon	DDL		
57	Stereo 3R	Stereo 3R	DDL Simon	DDL		
58	Stereo 4L	Stereo 4L	Rev Simon	RevS		
59	Stereo 4R	Stereo 4R	Rev Simon	RevS		
60	FX 1L	FX 1L	Rev Sax	Rsax		

At this stage it is noted that the stereo sampler lines are in even + odd pairs so they cannot be linked into pairs. By making the decision to move a single channel the pairing can be made; this is labeled second attempt.

With "THE EXAMPLES", the choice is made to keep the Simon vocal as the last channel in a layer; making it quick to find.

Entering names and doing the patch; DISPLAY ACCESS keys.

Press to get to NAME or INPUT PATCH page.
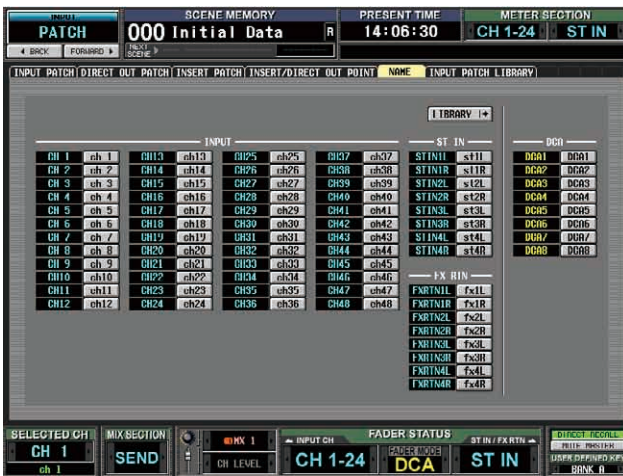
To name input channels;

Click on the grey name button and a keyboard pop-up will appear. You can use this but an external computer keyboard makes it much easier and quicker. Keyboard connection is under the front pad.

<table>
<tr><td>

On-screen naming; time to think of new four letter words!

Mouse to first name, [ENTER]

Mouse to letter, click, x4 or external keyboard [ENTER]

Arrow down one, [ENTER]

Mouse to letter, click, x4 or external keyboard [ENTER]

Arrow down one, [ENTER]

Mouse to letter, click, x4 or external keyboard [ENTER]

Arrow down one, [ENTER]

Mouse to letter, click, x4 or external keyboard [ENTER]

Arrow down one, [ENTER]

Mouse to letter, click, x4 or external keyboard [ENTER]

...... repeat up to 64 times......

</td><td>

At first this routine seems to have too many [ENTER] key presses but its worth getting used to.

Refer to your revised channel order to make sure each name is applied to the correct channel.

</td></tr>
</table>

To change the patch; DISPLAY ACCESS > INPUT PATCH;

The patch could be achieved analog style by moving the XLR connectors in the back of the console, but to avoid physical patching like this confusing any other engineers using the console it is better to use the internal "soft patch."

The blue blobs show the connection between the desk channels (down the left) and the input sockets (across the top). The default patch is 1 to 1.

Continue to next page...

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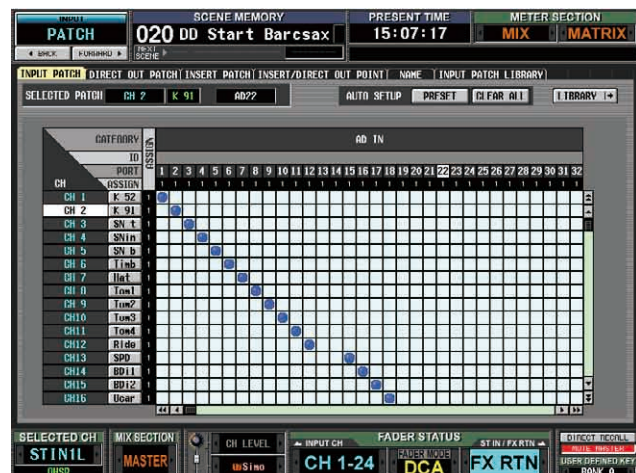
To change the patch;

Simply click on the blue blobs to add or remove connections.

Confirmation pop-ups can be disabled in UTILITY > PREFERENCES 1 > PATCH.

An input socket can be patched to several channels (Y-Split) but multiple inputs cannot be fed to one channel. (That's what you need a mixer for!)

Tips for navigating the patch;

1) Use the [DATA] encoder to move the cursor frame left to right.
2) Press the [SHIFT] key and the [DATA] encoder to move the cursor up and down.
3) If the cursor is in a scroll bar pressing the [SHIFT] key gives extra fast scrolling.
4) Use the [SEL] keys to "Auto Scroll". The cursor will jump to the selected channel.

To pair mono input channels as stereo;

Simply press and hold the two [SEL] keys for a second. The [SEL] key lights will both illuminate when the pair is made. Only odd / even pairs can be made.

Applying +48V to inputs.

On the regular PM5D model the +48V switch is located above the analog gain pots but the layout is different for the PM5D-RH.

There is no dedicated +48V switch in the selected channel.

There are two different ways to approach this;

1) Screen method;
DISPLAY ACCESS > HA/INSERT > CH 1-24. On this page you can select +48V for the first 24 channels and so on.

2) Encoder mode method;
This needs a preference setting in UTILITY > PREFERENCE 1. In the right hand column is a preference for; [USE ENCODER-ON AS +48V]. Now whenever the encoder mode is set to GAIN/ATT, the ENCODER [ON] button will activate +48V. Phantom is clearly indicated with a red LED near the preamp inputs and meters.

This button turns on +48V when encoder is selected as GAIN. (Preference for [ENCODER-ON AS +48V] in PREFERENCE 1 must be set.)

+48V MASTER switch!!

There is a physical +48V MASTER switch on the rear panel of PM5D-RH.

Output patching.

Output patch for the main XLR outputs on the back of the console (MIX 1-24, CUE, MONITOR, MATRIX 1-8, etc) are currently fixed and cannot be repatched. However, new firmware due for release in Summer 2007 will allow the repatching of these sockets and they will be added to the menu of the output patch page for MY SLOT patching, two track outputs and the internal FX inputs. We will look at FX patching separately.

Planning your outputs;

Only odd / even pairs can be linked to make stereo mixes so if you use stereo outputs plan the mixes accordingly.

To make a stereo output mix;

Simply press and hold the two [SEL] keys and the mix will become stereo; the [PAIR] light will come on. The left encoder will become balance and the right level. The [MIX SEND] and [MIX MASTER] keys must be in the (pink) MIX master position.
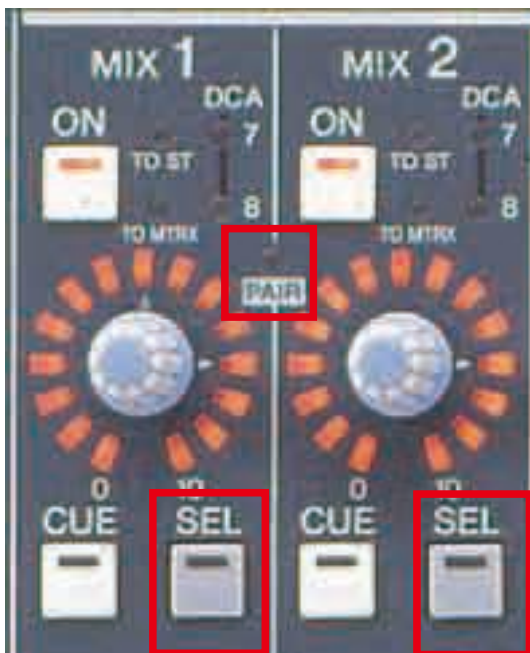
Output naming;

Names can be added on the OUTPUT PATCH menu by clicking in the grey boxes, just like the INPUT PATCH menu. Named outputs appear on the console if outputs are assigned to the assignable / DCA faders. (They are assigned to D, E and F by default) Names also appear and are very useful in Studio Manager.
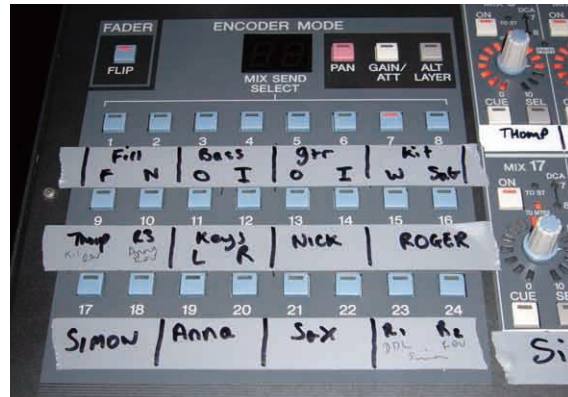
In addition to the electronic name system;

It is essential to name the MIX SEND or MIX MASTER. This is done with traditional tape and pen. Name the ENCODER MODE keys too; these also function as mix cue buttons and are used a lot when doing monitors.

MIX SEND / MIX MASTER naming for "THE EXAMPLES"

ENCODER MODE keys named for "THE EXAMPLES"

Now is a good time to store;

See page 11 for how to store now!

Choose a scene title like "start-up" or "generic", this is not a scene you will recall, just a store to reduce the chance of losing the work so far. When you save to the card or Studio Manager use the production or band name.

Internal effects engines.

There are eight internal effects engines; each works like a stereo in/out SPX type multi-effects unit. All the units have the same power and come loaded with Yamaha's best REV-X reverb algorithms in library locations 46, 47 and 48. The DSP of the effects engines can also be given up to run a Yamaha Add-On Effect package such as "Master Strip" or "OpenDeck."

Patching internal effects;

Effects patching can be done through the INPUT and OUTPUT PATCH menus seen already or they can be assigned directly from the EFFECT ASSIGN tab. DISPLAY ACCESS > EFFECT > EFFECT ASSIGN page.
Click the cursor on the input or output boxes and use the large [DATA] encoder to choose the correct source. Press the [ENTER] key to confirm and then move to the next box.

When patching a mono send to a stereo effect;

It is only necessary to send to the left side of the effect. The effect recognizes this and sends equally to both sides. If you connect the same mix to both sides the input level will be doubled.

To change the parameters of an effect from the default;

Click with the mouse or move the cursor over the picture image and press the [ENTER] key. This takes you to the EFFECT PARAM tab for that effect.
From here use the cursor and [DATA] encoder to edit parameters or click on the [LIBRARY] button in the top right to choose a different effect. You can store your own effects settings in the library too.

Both the effect parameters and effect type are controlled by scene recall. The memory is stored with the parameters of scene memory. "THE EXAMPLES" engineer also stores the singer's favorite effect settings in the FX library for recall and for loading into other consoles.

The matrix.

The PM5D matrix has 8 outputs and is fed by the 24 MIX buses and the two STEREO master buses. You can pair matrixes just like mixes.

To send a mix to the matrix;

Press and hold or double click the MATRIX [SEL] key. The MIX [SEL] lights will flash and the encoders will show the levels or pans sent to the chosen matrix. Alternatively press and hold or double click the [SEL] key of a mix or master to see the amount sent to the eight matrixes.

"THE EXAMPLES" use the matrix for their spare in-ear monitor system;

If there is a failure of a band member's IEM system then their mix can be sent to the spare;

1) Turn on MATRIX 1 and 2 and pair them by press and holding both [SEL] keys.
2) Turn up encoder 2 to 3 o'clock to give unity output.

The set up is now ready.

When the spare is required;

1) Double click the MATRIX 2 [SEL] key
2) Turn on and up the mix that needs to go to the spare.
3) Double click the MATRIX 1 [SEL] key and check that L and R are panned for stereo; or do this as part of the set up for all mixes.

Now is a another good time to store;

See page 11 for how to store now!

You can write over the previously saved scene or choose a new location if you think you might ever need to go back!

Graphic equalizers, GEQ.

PM5D has 12 internal graphic equalizers. These are 31 band, 1/3 octave GEQ with a choice of cut / boost depths and a spectrum analysis of what is passing through them. Control of the GEQ faders can be done using the screen, cursor and wheel but much more usefully the DCA / assignable faders can be used.

Assigning the GEQ;

GEQ can be inserted in any input channel or output bus, including the MONITOR bus. Make assignments from the DISPLAY ACCESS > GEQ > GEQ ASSIGN page. Move the cursor over the data box and turn the [DATA] encoder until the chosen MIX channel appears and press the [ENTER] key. The MIX insert point is automatically switched on, but the GEQ is still switched off. Turn on the GEQ from this page if required. Link GEQs together if mixes are stereo.

To operate the GEQ;

Access the GEQ PARAM page. You can use the cursor box and the [DATA] encoder, but to assign the GEQ to the DCA / assignable faders, move the cursor to the [ASSIGN TO FADERS] frequency buttons under the GEQ image and click. Or use the short cut; press the [SHIFT] key and a FADER MODE bank button to assign the DCA faders direct to the frequency group you selected.

The [AUTO ASSIGN] button;

Switch this on to automatically assign the DCA faders to GEQ functions whenever the GEQ PARAM page is opened.

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USER DEFINED KEYS.

There are 25 user defined keys; 24 in a block and one above the DCA fader section. The keys are all programmable to a variety of tasks; the most common are "Bookmarks" or short-cuts to screens, "Next or Last Scene" and tap tempo for delay type effects sends.
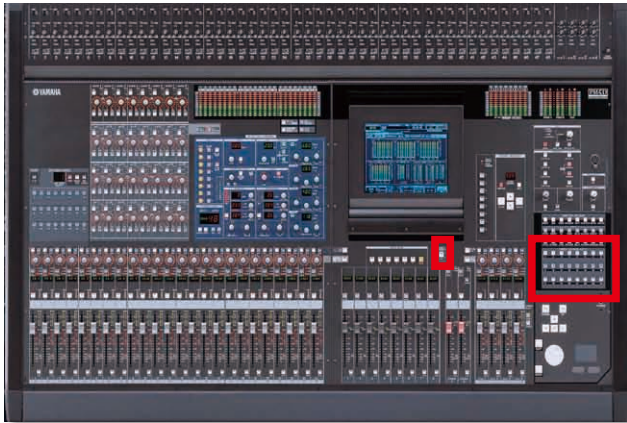
Access the user defined keys set up page from DISPLAY ACCESS > UTILITY > USER DEFINE.

Move the cursor onto the grey arrows and click to open the USER DEFINED KEY ASSIGN pop-up. Scroll to find a desired key and press the [ENTER] key. Scroll in the second column, and third if necessary, to precisely direct the action of the user defined key.

Label your chosen user defined keys with tape and pen and make a note of them on paper to make transferring the labels to another board easier.
You can even stick the labeling to the back of your set list after the show and then reapply them to the next desk the next day.
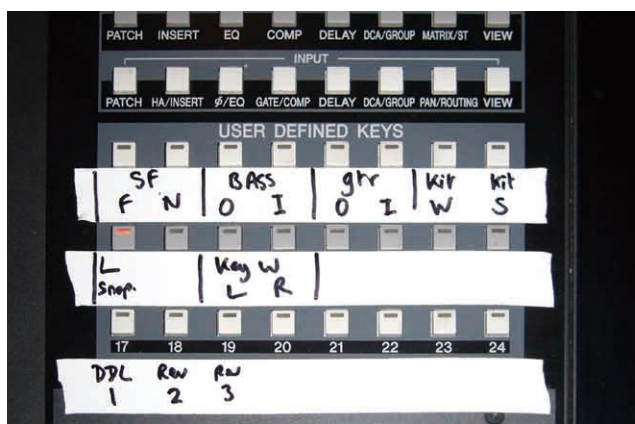
"THE EXAMPLES" engineer has used bookmarks for the GEQs and 3 effects engines. USER DEFINED 9 is a "LAYER SNAPSHOT"; it works like a "home" key and returns the layers to a familiar set up.

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Assignable / DCA faders.

These eight faders are multi functioning; they are either DCA masters or assignable to any user defined fader function. There are 6 user assigned banks and the dedicated DCA bank.

To change the assignments from the defaults;

In the DISPLAY ACCESS area press the [UTILITY] key repeatedly to get to the FADER ASSIGN page.

Move the cursor box over the chosen fader name and use the scroll wheel to reassign the fader. There is no need to confirm; assignment is instant.

The FADER ASSIGN page

Default settings;

A	Input channels 25-32
B	Input channels 33-40
C	Input channels 41-48
D	MIX masters 1-8
E	MIX masters 9-16
F	MIX masters 17-24

Note some features of assigned faders;

You can place the same fader control in many (or all!) of the layers and positions.

They are not affected by FADER FLIP so are never AUX sends.

Assignments other than DCA assignments are not stored in scenes.

The [MUTE] key currently applies only when used for DCA functions, but it will work as the on / off switch of a channel with the new firmware available summer 2007.

They also can control GEQ bands; assignment is from the GEQ pages.

Cue system set up.

## Understanding the cue/monitor relationship;

PM5D has a single stereo CUE bus that feeds into the console monitor system. In addition the monitor system is fed by copies of the mixes, matrixes and masters and the signals from the 2track inputs. This means that one of these sources can be listened to when no channel is cued; this is a common activity in broadcast use. The default setting is for the monitor to be fed by master A and the cue to interrupt this when selected. Levels are controlled by the rotary knobs on the work surface. For FOH mixing there is an optional monitor delay to time align the monitor signal to the PA.

Cue level on a fader;

The monitor volume is controlled by a rotary pot, but commonly stage monitor engineers want fader control. A direct method by software routing will be implemented with the new firmware available summer, 2007 There is currently no direct method for this. However it can be achieved indirectly.

1) In the OUTPUT INSERT PATCH page, patch MONITOR L and MONITOR R to a spare FX IN connection (INSERT OUTPUT grid).
2) Then in the INSERT INPUT grid on the right side of the page, patch ST AL and ST AR to the same FX OUT connection.
3) Switch on the INSERT for ST A, and check the INSERT POINT is PRE FADER (in the INSERT POINT page of the OUTPUT PATCH menu). Also check the effect is in bypass!
4) Connect the wedge amp or in-ear pack to the STEREO A output connection, and use the fader to adjust the listening level.
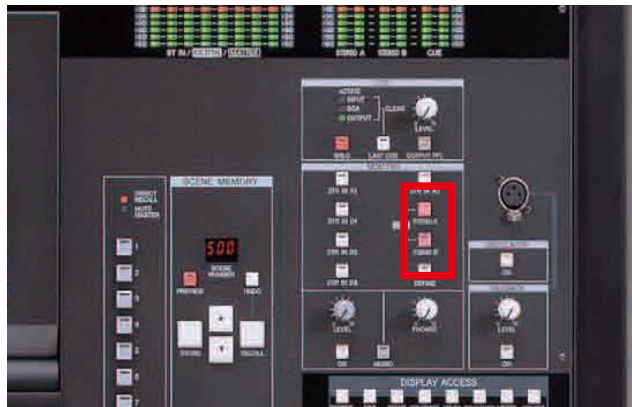

Continue to next page...

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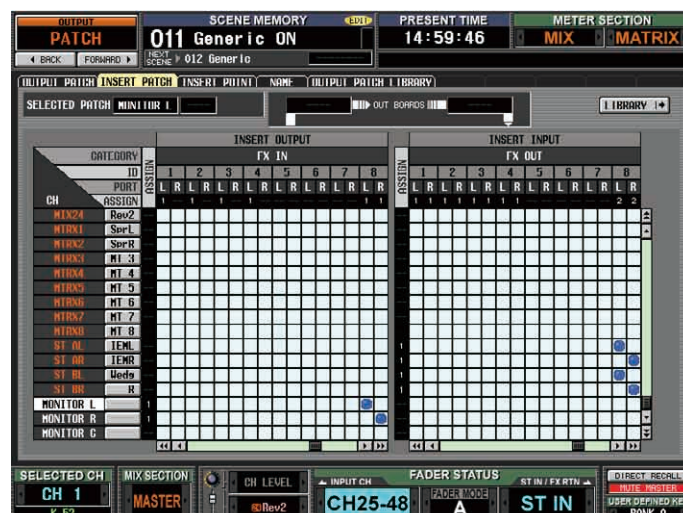
"THE EXAMPLES" engineer simply inserts the effect unit outs into the STEREO B insert return as well, so one fader can be used for a wedge, and the other for in-ears. Choose STEREO B for a single wedge as this can be made mono with the [MONO] key on the surface.

View and check your patching in the EFFECT ASSIGN page when switching the bypass on.

Alternative way; if all FX are in use, then an alternative is to use a digital 2TR OUT and IN connection, and use a cable to loop them together on the rear panel.

Note; Do not cue the STEREO A channel, and ensure the pink STEREO A MONITOR switch is off or a feedback loop will be created. This button's status is not stored with scene data or saved to a card so you must check each time you load data from a card or Studio Manager.

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## If you've followed through the work through you should now have;

1) Inputs named and patched
2) Phantom set
3) Outputs named and patched
4) Effects patched
5) Matrix named and patched
6) GEQ patched
7) User defined keys programmed
8) Assignable faders assigned
9) Monitor on fader if required
10) Stored all that as a starting scene

It's the equivalent of having patched up effect, insert and stage box racks and labeling up the desk.
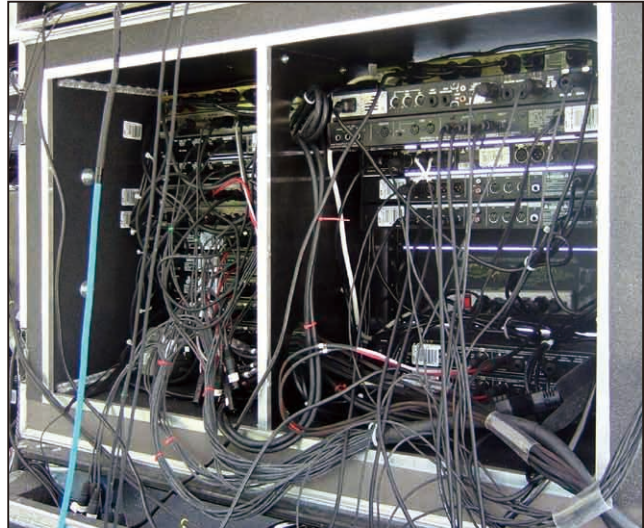
Now is a another good time to store;
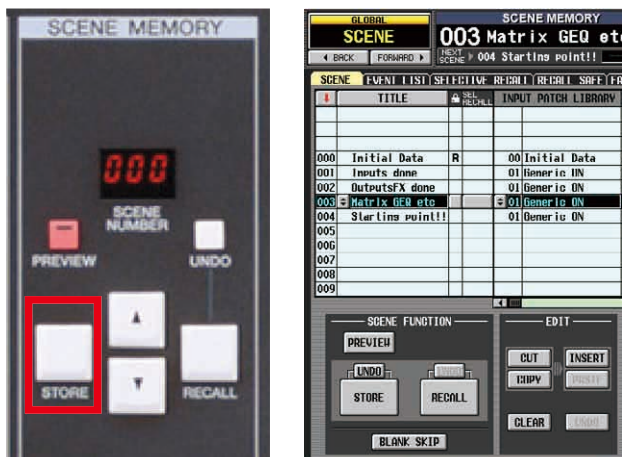
And now is a good time to SAVE to a card;

See part 2 of the guide.

Ready for soundcheck.

Load your card data into the console used for the show and now do your first soundcheck and show. Store scenes as you go along. If you are unsure about when to store, just do it often; you can always delete scenes later.

Part 2 of the guide gives further information on saving and loading with PCMCIA cards and also how to edit scenes and manage recall options.