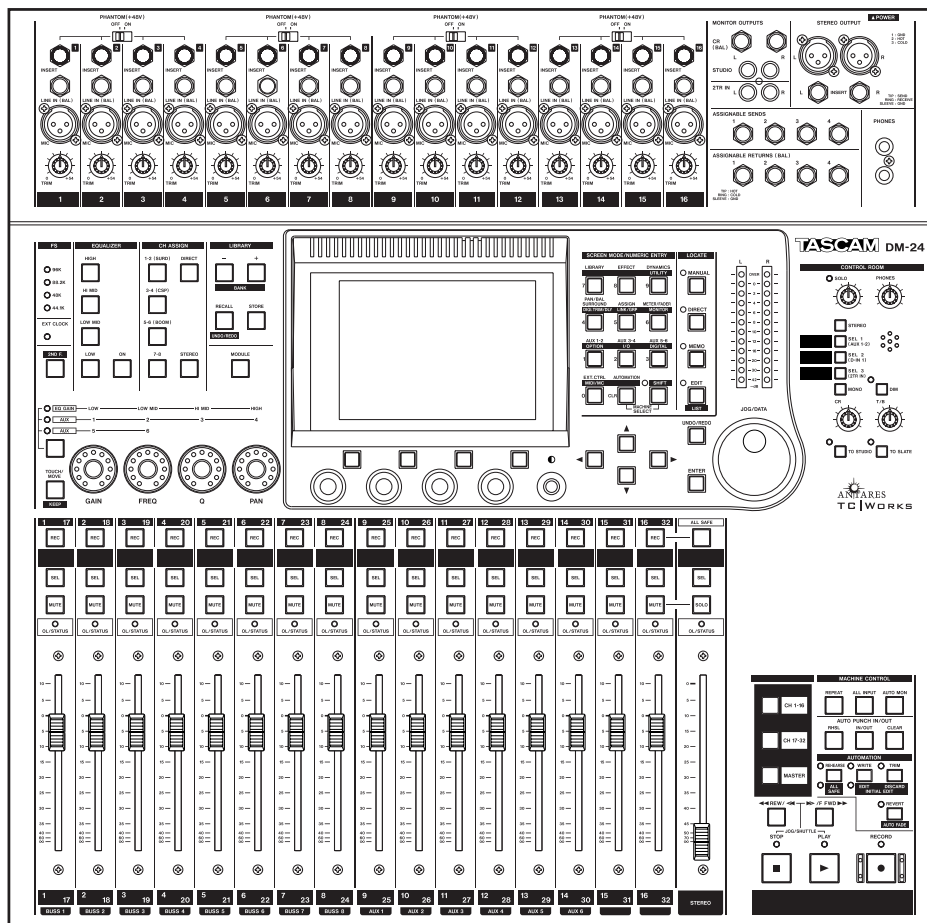


TASCAM

TEAC Professional Division

DM-24

Digital Mixing Console



Version 2.0 — RELEASE NOTES

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The following notes explain the differences between the current (2.0) version of the DM-24 software and the earlier version as explained in the manual. You should keep this page together with the existing manual for easy reference.

Although some of these changes may seem relatively minor, many of them, especially those connected with the I/O settings, have important implications for the way you work.

IMPORTANT NOTE on upgrading

NOTE

If you want to upgrade your DM-24 firmware, and you do not have a good understanding of Microsoft Windows or Mac OS, and a good understanding of MIDI, TASCAM recommends that you take your DM-24 to a TASCAM service center to be upgraded. If you are upgrading the firmware yourself, note that TASCAM supports only the following applications: Windows Media Player 7.1 (Windows) or MIDIGraphy 1.4.3 (Mac OS 8.8 or higher - not Mac OS X).

Please see the detailed upgrade note obtainable from the TASCAM Web site for full details of how to install and configure the software and to update your DM-24.

http://www.tascam.com/products/digital_mixers/dm24/index.php

NOTE

We suggest that you back up snapshots and other library settings, etc. before performing an upgrade. If you do this, in the unlikely event of data being lost during an upgrade, you will not suffer a permanent loss of your settings.

New snapshots

The version 2.0 software replaces previous snapshots with the new snapshots described here. Because of the changes to the system described later in this document, which make recording substantially easier, the recording snapshots are very different from their previous equivalents.

Note that there are now no high sampling frequency snapshots.

48-CH MIXING (snapshot 000)

- TDIF 1, TDIF 2, and TDIF 3 assigned to channels 1 through 24 (return).
- Effects 1 and 2 (L and R) assigned to channels 25 through 28 (input).
- Digital input 1 (XLR) assigned to channels 29 and 30 (input).
- Assignable sends 1 and 2 set as inserts for channels 1 and 2 (pre) (but set to OFF).
- Assignable returns 3 and 4 set as returns, routed to channels 31 and 32 (input).
- All channel buss assignments off, and channels assigned to ST with direct off.

- The Aux 1-2 source of channels 1 through 16 is set to Mic/Line 1 through 16.
- Aux 1-2 is sent to the stereo buss.

This snapshot is the basis for a 48-channel mix, with 24 of the 32 input channels used by the three TDIF returns. The additional 8 input channels are used by the two internal effects, a digital stereo pair, and an external send/return. However, the mic/line inputs can also be used, by their direct assignment to Aux 1-2. This means that up to 16 channels of live MIDI sequenced instruments can be added to the 24 recorded tracks, with three effect loops (two internal and one external) available.

New mixing (snapshot 001)

- TDIF 1, TDIF 2, and TDIF 3 assigned to channels 1 through 24 (return).
- MIC/LINE inputs 1-8 assigned to channels 25 through 32 (input).
- Assignable send/returns 1 through 4 set as send/returns for Aux 3 through 6. Assignable returns assigned directly to ST via the ASSIGN page.
- Effects (1, 2) returns assigned directly to ST via the ASSIGN page.
- All channel buss assignments off, and channels assigned to ST with direct off.

- Aux 1-2 sent to the stereo buss, stereo linked, with all pans at center.

Similar to the previous mix snapshot, 24 returns are immediately available, but in this case, the full channel facilities, including EQ, are available for the eight mic/line inputs. Working this way also provides more external effect capabilities. Mic/line inputs 9-16 are still sent to Aux 1-2 and the outputs of the internal effects as well as the assignable returns are assigned directly to the stereo buss.

Overdub 17-24 (snapshot 002)

- Channels 1-4 set as inputs (MIC/LINE 1 through 4).
- Channels 1-2 assigned to buss 1-2, channels 3-4 assigned to buss 3-4.
- Effects 1, 2 (L, R) returns assigned to channels 5 through 8 (input).
- TDIF 3 assigned to channels 9-16.
- TDIF 1 and TDIF 2 assigned to channels 17-32.
- Assignable send/returns 1 through 4 set as send/return.

- Channels 5 through 32 assigned only to ST and set to unity gain.

With TDIF tracks 1-16 assigned to the second fader layer (channels 17-32), the first fader layer (1-16) is used for four mic/line inputs, the returns from the two internal effects units, and the returns from the third return group (tracks 17-24). This is ideal for overdubbing solo parts, etc. to tracks 17-24 over the 16 backing tracks. This snapshot also gives you the resources to record a vocal track dry, yet monitor the vocal with reverb in the cue mix.

Recording 1-16 (snapshot 003)

- Channels 1-16 set as MIC/LINE inputs.
- TDIF 1 and TDIF 2 assigned to channels 17 through 32 as returns.
- Channels 17-32 assigned only to ST (minimum gain).
- Channels 1 through 16 assigned as direct outputs (ST off).
- Assignable send/returns 1 through 4 set as send/return.

This allows you to record and monitor the first 16 tracks of a multitrack session, using the first and second fader layers. Since the channel outputs are all direct-to-track, the second fader layer controls the levels of the tape returns to the stereo buss (and hence the monitoring). Aux 1-6 can be used as six mono, or three stereo, studio cue feeds.

I/O-OUTPUT selection

- Buss 1-8/Direct out 1-8
- Buss 1-8/Direct out 9-16
- Buss 1-8
- Stereo
- Stereo

Module screens

The following items refer to the basic module settings (see “Module operations” on page 51 of the main manual).

On-screen fader adjustment

It is now possible to move the cursor to the on-screen fader representation in the module screen and use POD 4 to adjust the level of the fader. This allows you to make the smallest possible increments to the fader supported by the DM-24.

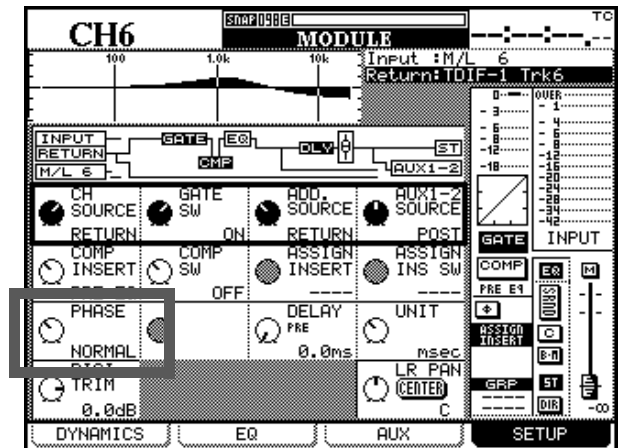
You may need to hold down the **2ND F.** key to make

the most subtle changes to the fader value, depending on whether the single-step or coarse setting (“Fine value settings using the PODs” on page 15) is selected using the OPTION SETUP screen. This can be useful when you want to make very subtle changes to a mix.

Phase

In previous versions of the software, the phase setting was shown on the screen with the phase symbol (Φ). See “Phase switch” on page 53 and “Phase” on page 63 of the manual.

The screen now shows the word PHASE, rather than the symbol.

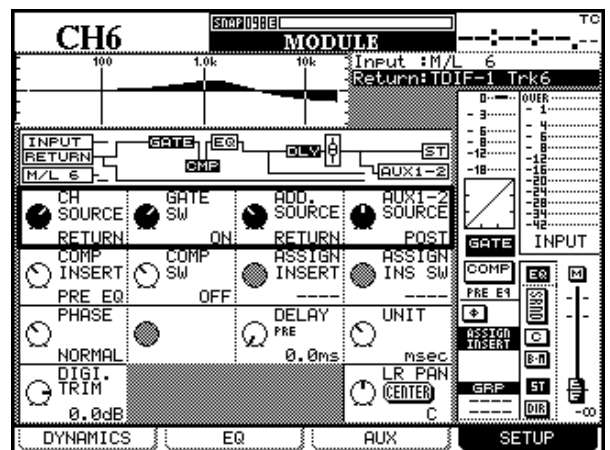


Use of module setup screen

The cursor moves in a more “natural” way between options on the MODULE screens.

If a row is highlighted, and the screen is switched from, say, the EQ settings screen to the dynamics screen, the highlighted row on a particular screen is memorized and highlighted the next time you return to that screen.

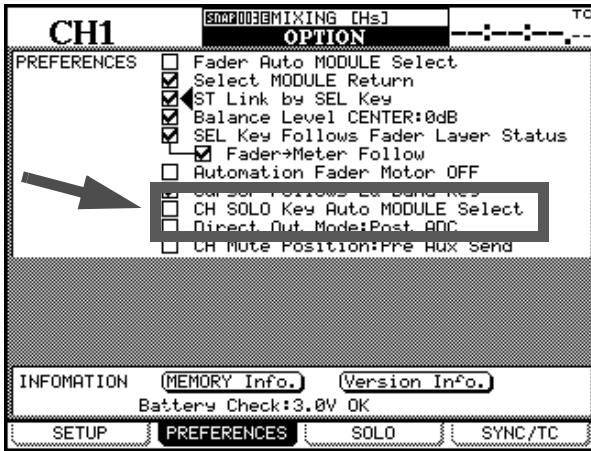
Also, the layout of the SETUP screen has been slightly changed, as shown here:



Channel selection following solo

In the PREFERENCES page, it is now possible to set a new option (CH SOLO Key Auto MODULE Select).

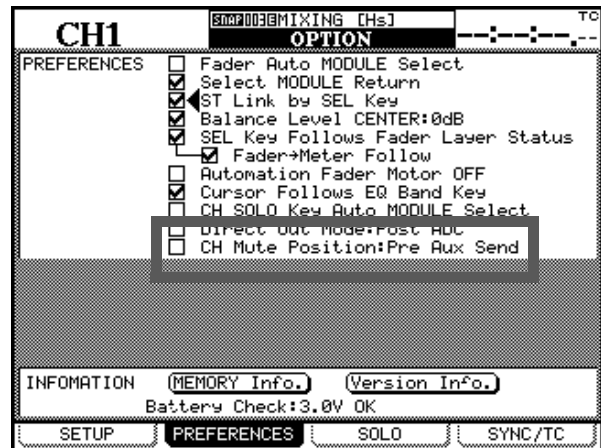
When this option is set, soloing a channel will automatically select that channel as well.



Muting pre-fader sends

The channel mute can now be changed so that pre-fader Aux sends may be muted along with the rest of the channel.

This is available from the OPTION PREFERENCES screen:

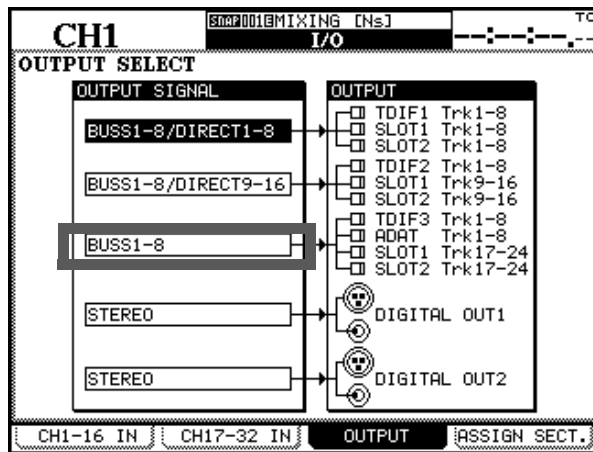


I/O setup changes

The following changes refer to the I/O setup screens as described in “Setting up the I/O” on page 38. Take careful note of these changes, as some of them may prove to be useful to you when setting up and using the DM-24 with other equipment.

New output assignment options

In the I/O OUTPUT screen (see “Output assignments” on page 44), it is now possible to select Buss 1-8, AUX1-6 and Stereo as options.



24-track simultaneous recording The Buss 1-8 option allows you to record 24 tracks simultaneously. To set up the DM-24 for 24-track simultaneous recording, the following output assignments should be made, as shown in the illustration above:

Output block 1	BUSS1-8/DIRECT 1-8
Output block 2	BUSS1-8/DIRECT 9-16
Output block 3	BUSS1-8

The DM-24 is only fitted with 16 mic/line inputs. You will have to fit an IF-AN/DM analog I/O slot card, with eight +4 dB balanced analog inputs and outputs on 25-pin D-sub connectors, and use an appropriate snake cable to separate XLR, TRS balanced 1/4" or RCA connectors.

If you need eight more microphone inputs, you will need to use an outboard 8 x microphone pre system with the appropriate slot interface card.

An example of an 8-balanced analog output microphone pre system is the PreSonus M80, which can be used with the IF-AN/DM card.

The same maker also produces the DigiMAX unit, which provides the outputs from the mic pre-amps in ADAT “lightpipe” format and can be connected to the integral ADAT input on the DM-24.

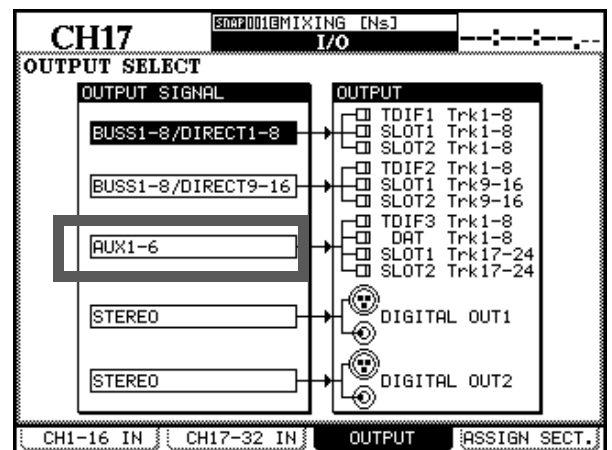
When these connections have been made, assign these inputs to channels, and make the appropriate assignments for buss outs and direct outs.

- In high sampling frequency mode, only busses 1 through 4 (BUSS1-4), or 5 through 8 (BUSS5-8), can be selected.

NOTE

It is not possible to monitor all 24 tape returns simultaneously while recording 24 tracks at once. The aux sends can be used to monitor the 24 input channels, or you can monitor up to 16 tape returns using the AUX 1-2 RETURN method.

Six analog effect sends It is now possible, with the AUX1-6 output setting, to route all six effect sends in analog format through an optional IF-AN/DM analog I/O slot card. This leaves the assignable I/O free for insert purposes.



This could be used for six effect sends in analog format, or to drive headphone amplifiers, etc.

Note that only six of the outputs are used here (7 and 8 are not used).

DM-24 version 2.0—Release notes—I/O setup changes

In high sampling frequency mode, only aux sends 1 through 4 (AUX1-4) can be selected here.

Stereo mix output via TDIF This allows a TDIF connection (**TDIF-3**) to output the stereo mix. This can be useful when working with a DAW fitted with a TDIF interface.

Additionally, this stereo mix can also be output from the ADAT and SLOT 1 and SLOT 2 outputs.

Support of TDIF optional slot card

The TDIF optional slot card is now supported for use with the DM-24. However, this does not mean that 32 channels of TDIF digital input are simultaneously available for mixing.

Instead, it means that you now have the ability to choose between different sets of TDIF inputs. For example, with a DTRS recorder and an MX-2424 both connected, it is now possible to select either of these as the TDIF input source, using the DM-24 in effect as a digital patch bay.

The extra TDIF output channels can also be used if you already have 24 channels of TDIF input that you are mixing in 5.1 format, and you need surround monitoring fed by the extra channels.

Note however, that in the above example, there is now a “Y”-splitter cable available (CU/PWSPLIT) which can be used to perform a similar function, splitting the TDIF signal into individual INPUT and OUTPUT. In this example, the INPUT comes from the MX-2424 and the OUTPUT is assigned to the DA-78HR.

NOTE

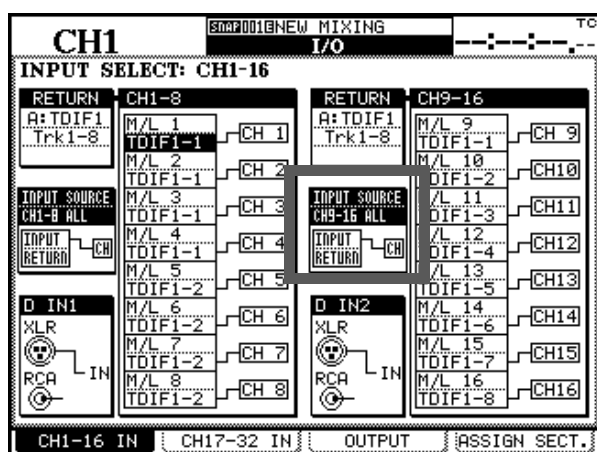
When a DTRS unit is connected to the DM-24 in this way, it may sometimes happen that the DM-24's display is illuminated, even with the power turned off, because of power being fed through the connection from the DTRS units. If any difficulty is experienced when powering up a system configured in this way, we recommend that the DM-24 is powered up first.

Also note that the DTRS remote terminal on the slot card is not operational. Use the DM-24's built-in remote terminal for control of all DTRS units connected to the DM-24.

New input options

Previously, channels 25 through 32 were input-only, but from this version, they can be used either as input or as return channels.

For example, channels 1 through 16 can be used as input channels whose direct outs are used for tracking, and channels 17 through 32 can be used as tape returns.



Also note that sources within a block do not necessarily have to be assigned to channels in order (it is possible to “cross over” a pair of input sources, for example). A source may also be assigned to more than one channel.

In addition, if a block has been assigned as a return block, sources from this block may also be used within a channel block. For example, if TDIF 1 and TDIF 2 have both been selected as return blocks, channels 1 through 8 may now contain returns from both TDIF 1 and TDIF 2 (previously a group of eight channels could only accept sources from one block at a time).

However, you should note that this does not provide 32-channel digital track mixing (although only 24 returns can be assigned, you can now decide where they go).

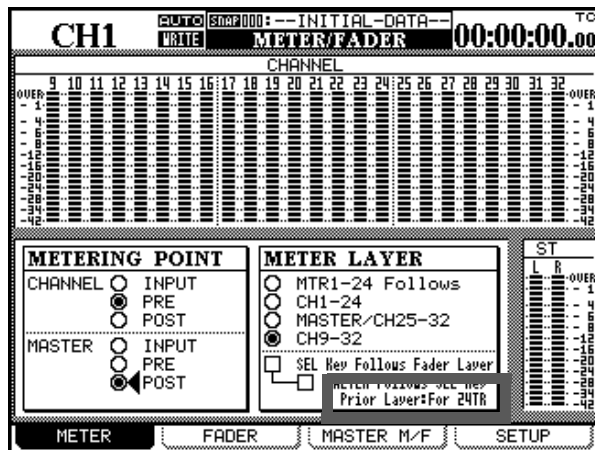
When using cascaded DM-24s for recording 24 simultaneous tracks, you now have access to full-featured EQ and dynamic channels for 24 track sends, the same for all 24 track returns, and many other channels for effects returns, cue mixes, etc.

MTR return metering

Because of the flexible return assignment described above, which means that tape return numbers are not automatically equal to channel numbers, the metering conventions have changed. Previously, channels 1 through 24 were assumed to be the return channels, but since channels 25 through 32 can now also be return channels, this assumption is no longer valid.

Accordingly, a new option has been added to the 24-channel meter display menu. This is the CH9-32 option. Also, the way in which the METER Follows SEL Key option works has changed as described here:

There is a new option, called Prior Layer, as shown below.



Use the dial and **ENTER** key to change between FOR 24TR and FOR 16TR (that is, the number of tape returns currently in use).

When this parameter is set to FOR 16TR, selecting channels 1 through 16 moves the meter layer to CH 1-24, and selecting channels 17 through 32 moves the meter layer to CH 9-32.

When this parameter is set to FOR 24TR, selecting channels 1 through 24 moves the meter layer to CH 1-24, and selecting channels 25 through 32 moves the meter layer to CH 25-32.

MU-24 operation If the optional MU-24 meter bridge is fitted, channels 9 through 32 (that is, 24-tracks) can be selected for metering by pressing the **CH1-24** and **MASTER/CH25-32** keys (of the MU-24) at the same time (both these indicators light). The on-screen metering mirrors that on the MU-24.

Direct assignment to the stereo buss

It is now possible to route the following directly to the stereo buss, without having to assign them to channels:

- Digital inputs 1 & 2
- Effects returns
- Assignable returns

This direct routing frees up a further twelve channels for inputs, etc. as well as providing a number of other uses.

For example, at mixdown, using an IF-AN/DM slot card, you could assign the eight buss outputs to the analog outputs provided by the card, and then route these back to channels 25-32, where you can use EQ

and compression before routing these channels (compressed and EQed buss outputs) directly to the stereo buss. You could even send the buss outputs digitally, convert them off-board, and then feed them back into the channels.

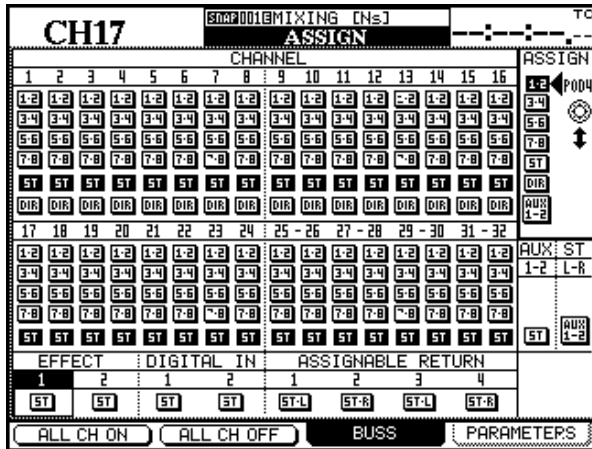
With the mic/line inputs also directly assignable to the stereo buss, you can now assign 60 input channels to the stereo buss at the mixdown stage (32 channels, 16 cue tracks (provided by assigning track returns to Aux 1-2), 12 returns to stereo). This represents outstanding value!

Use the ASSIGN BUSS screen to make these assignments.

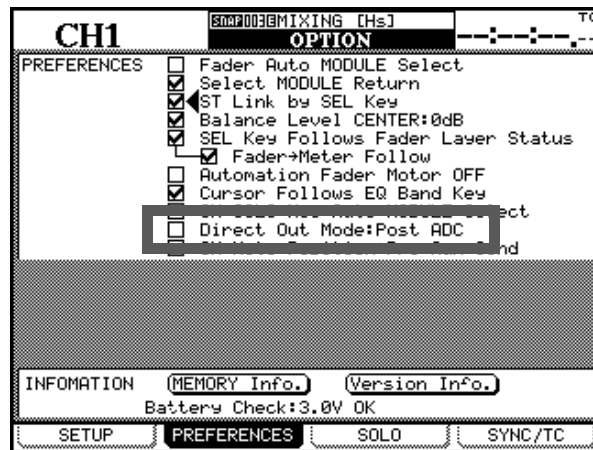
DM-24 version 2.0—Release notes—I/O setup changes

1 Navigate to the bottom line of the screen, and select the appropriate effect return or assignable return.

2 Next, use POD 4 to select the ST button, and then press ENTER.



Direct out post-ADC



This new option allows the direct output signal to be immediately post the A-D converter.

Press the **OPTIONS** key and select the PREFERENCES screen:

The Direct Out Mode:Post ADC option allows you to set the pick-off point after the A-D converter.

An example of where this might be particularly useful is when you are making a live recording. If a microphone is plugged into mic input 1, and you have selected the post ADC option you can split the recording and the live mix of this signal in the following way:

Press channel 1's **SEL** key, followed by the on-screen DIRECT OUT button for channel 1. This sends the post-ADC direct out signal to the multitrack recorder (assuming that all the patching, etc. is configured

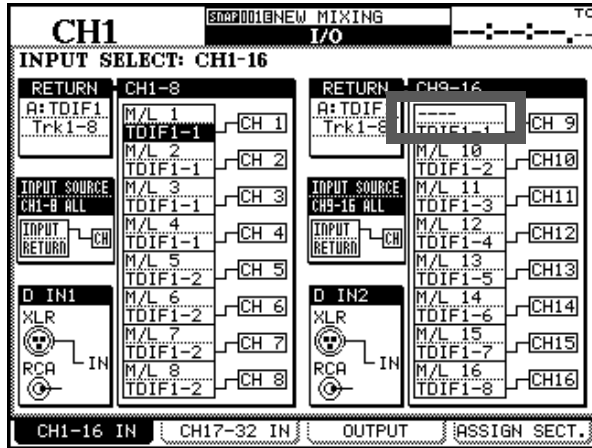
appropriately). For the live mix, channel 1 is set as an input fed by M/L 1, and assigned to the stereo buss. Now whatever changes you make to the channel do not affect what goes to multitrack.

Obviously, the signal feeding the multitrack is dry, and if you want to use any effects such as compressor, reverb, etc. while recording, you will have to use an analog insert loop.

This feature is also useful in the studio, where the post ADC direct outputs can feed the multitrack, and the tape return signals return to the channels, which are set as returns, rather than as inputs. This saves the use of Aux 1-2 as a tape return path, and frees up the aux sends for use as multiple cue mixes and effect sends.

No assignment to a channel

When you are making assignments to the DM-24, as described in “Assigning inputs to channels” on page 40, a new “source” has been added to the list.

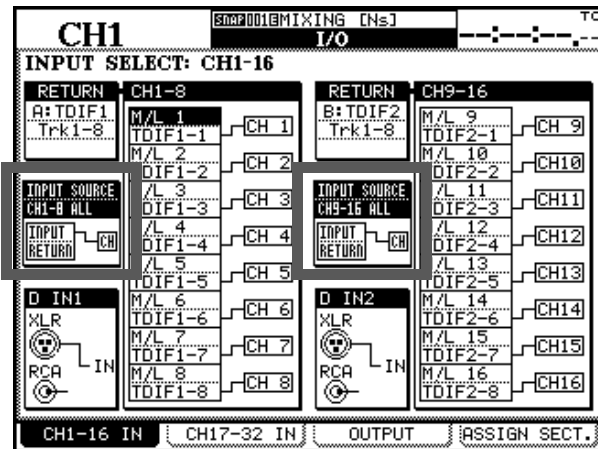


This is a null assignment, indicated by four dashes on screen ----; in other words, no input is assigned to the selected channel when this option is selected.

This null assignment applies to channel inputs, to return sources, and to return blocks.

Group switching

Also note that there is now an option that allows a whole group to be switched between input and return settings, rather than your having to make individual settings for each channel in the group, as described in “Assigning inputs to channels” on page 40.



Move the cursor to the on-screen “patch cable” of the center box to the left of the channel list (as highlighted here), and use the dial and **ENTER** key to change between INPUT and RETURN, as for individual channels.

Mic/line routing to Aux 1-2

It is now possible to assign mic/line inputs to Aux 1 and 2, which is a similar concept to the way in which aux 1 and 2 can be used for tape returns (1 through 16) in a tracking environment.

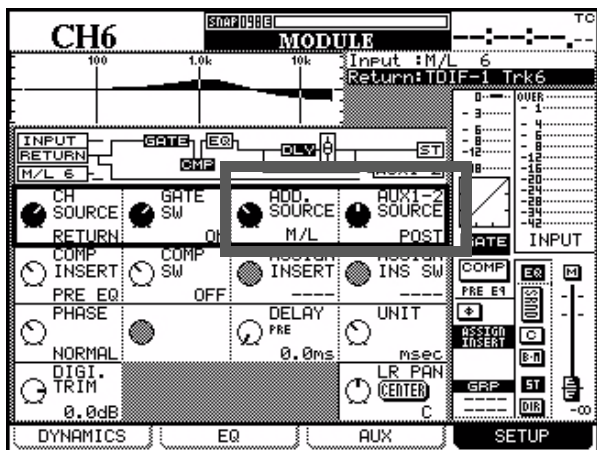
Now, when mixing, you can have channels 1 through 24 used as tape returns, 25 through 32 as effect returns, and the sixteen mic/line inputs assigned to aux 1 and 2. These two aux busses can then be stereo linked, and assigned using the ASSIGN BUSS page to the stereo buss outputs.

When this is done, you now effectively have 16 extra channels with pan and level controls, making a total of 48 mixdown channels (as in the 48ch MIXING snapshot 000). These “new” channels are perfect for use as MIDI instrument channels.

DM-24 version 2.0—Release notes—I/O setup changes

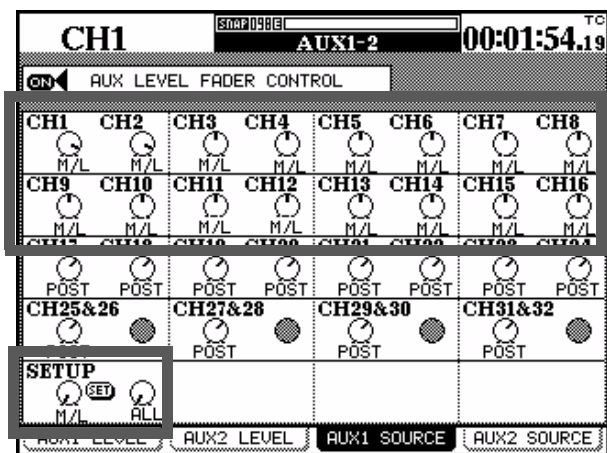
If an optional IF-AN/DM analog card is fitted, (see “New output assignment options” on page 7), busses 1 through 8 can be used like post-fader analog effect sends, with the analog returns fed through the mic/line inputs and routed through aux 1 and 2 to the stereo buss.

The assignment of a mic/line channel to the aux 1 and 2 busses is made on the MODULE SETUP screen as well as the AUX SOURCE screens:



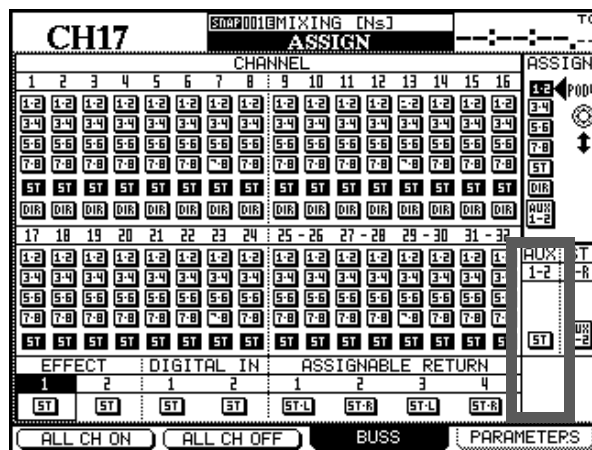
On the MODULE SETUP screen, the ADD. SOURCE (additional source) parameter for modules 1 through 16 can be set to RETURN or M/L. This can be set individually for each channel.

On the AUX SOURCE screens (aux 1 and 2 are linked on the screen here), the source for channels 1 through 16 can be selected either from PRE/POST/RETURN or PRE/POST/M/L, depending on the ADD. SOURCE setting for the channel:

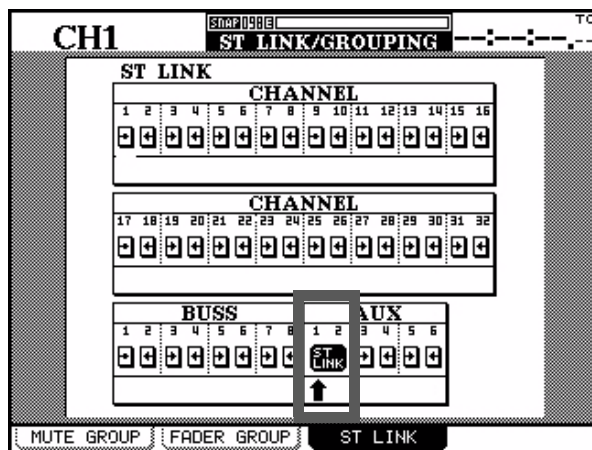


At the bottom of this screen is a SETUP section which allows you to make a “master” assignment setting. Use POD 1 to set the parameter to M/L and POD 2 to set the scope of the assignment to ALL. When you highlight the SET button and press **ENTER**, channels 1 through 16 will be set to M/L (17 through 32 remain unchanged).

Use the ASSIGN BUSS screen to highlight the AUX 1-2 to stereo assignment section, and press the **ST** key (**CH ASSIGN** section).



Link aux 1 and 2 using the **LINK/GRP** key to get to the ST LINK screen, move the cursor to aux 1, and press **ENTER**.



You can use the AUX 1-2 LEVEL and AUX 1-2 PAN/BAL screens to set the level and pan values for these M/L inputs, just as for any other channel. These level and pan settings affect the signals sent to the stereo master buss.

Remember that the input level of these signals is determined by the analog **TRIM** controls.

Digital outputs and Aux sends

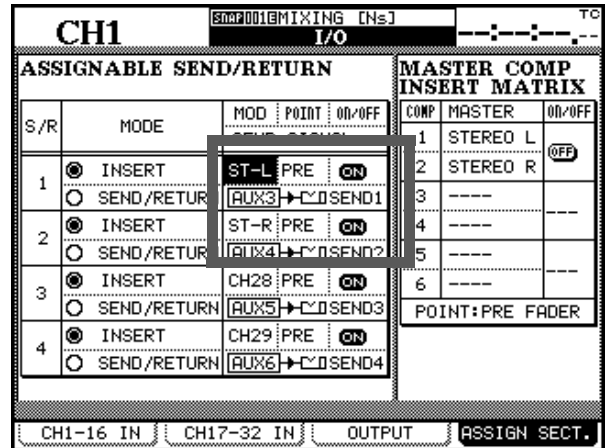
Previously, Aux sends had to be paired (1-2, etc.,) in order to output them from the digital outputs.

It is now possible to select individual (mono) Aux send busses for output in this way. In this case, the left channel of the digital output is used for the Aux send.

Assignable inserts

The assignable inserts can now be used with the L-R stereo buss. This allows any effect you are inserting to be “monitored” directly (this can be very useful when mixing to a digital recorder).

It also allows you to send a compressed stereo signal to digital outputs 1 and 2.



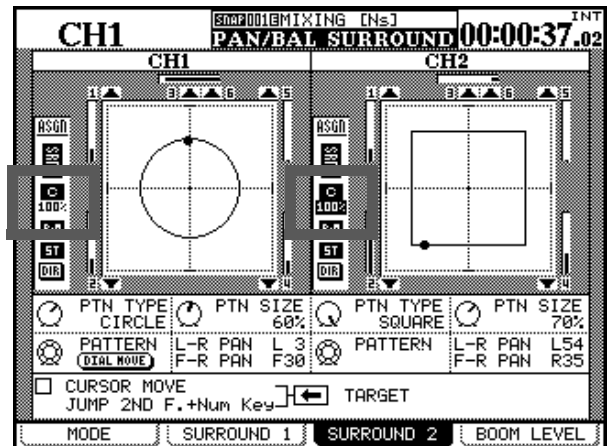
Surround mode

LPF on the Boom channel

This allows you to send only those frequencies below those selected on the LPF to the boom (LFE) channel. The choices are 80Hz, 120Hz or OFF.



Center channel percentage You can now set the amount of signal allowed into the center channel (set as a percentage). If this center channel is reserved for dialog, you may not want effects intruding into it, and you may want to reduce the level sent to this channel for these effect tracks (an on-screen switch is also provided).



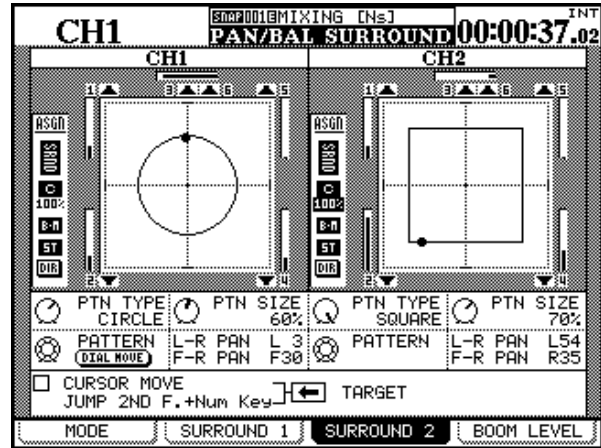
The switch and percentage level are shown in the screen above.

Circle and square patterns (using the dial)

Note that you can now use the dial to set the position of the pan cursor in the surround screen, allowing for very easy 360-degree panning.

The dial can be used to make diagonal moves, etc. (except when the cursor is highlighting the center channel percentage, as explained above)

Select either a square or circle type pattern and a size. Now moving the dial will act as a surround pan control, moving the source around the pattern as selected in the SURROUND 2 screen.



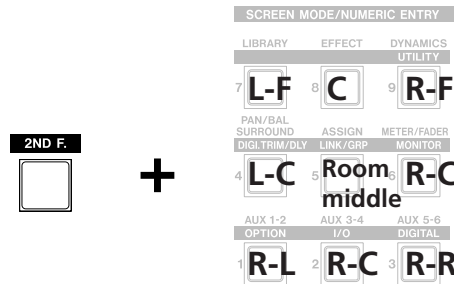
Using the cursor keys

If you check the CURSOR MOVE box in the SURROUND 2 screen, you can use the cursor keys to move the pan cursor in the appropriate direction (holding down two keys together moves diagonally).

Jumping using the keypad

JUMP, as defined here, allows the **2ND F** key to be used together with the number keys in the following way:

2ND F +	Result
1	Rear left
2	Rear center
3	Rear right
4	Left center
5	Middle of the room
6	Right center
7	Left front
8	Center
9	Right front



Note that these moves can be automated.

Effects (TC Works reverb)

A new setting has been added to the previous three settings (4s, 16s and 64s) for the decay range for the TC Works reverb internal effector.

This new setting is 1s, changing the on-screen viewing of the decay time settings.

Also, the stereo imaging of the TC Works reverb has been greatly enhanced in 2.0.

Effects (tap delay)

The external switch (typically a footswitch) can now be used to set the timing of the delay by tapping in time with the desired delay interval.

See “External switch (footswitch) functionality” on page 24 for details of how to set up the switch.

Library

New options are now available on all library management screens.

Deleting library entries

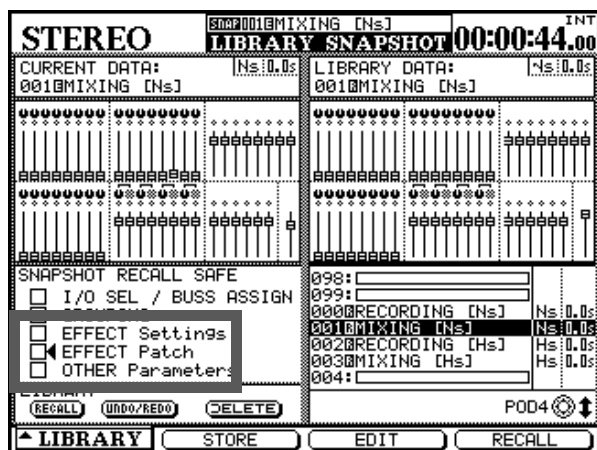
While before, it was only possible to recall entries, and to overwrite unwanted entries, the new DELETE button allows the data in the highlighted library entry to be deleted. A popup message appears when the DELETE button is pressed, asking for confirmation of the delete action (read-only data cannot be deleted, of course).

Library safe

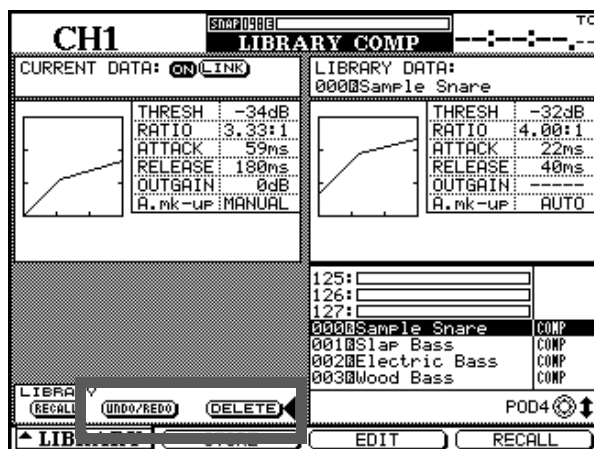
In addition to the existing parameters that may be saved when a snapshot is changed, the library snapshot screen now includes options to preserve both effect settings and effect patching.

Checking the EFFECT Patch box means that the effect patches and routing to and from the internal effects are preserved when the new snapshot is loaded.

Undo/redo In addition, there is now an UNDO/REDO button, allowing the last library recall operation to be undone or redone.



Checking the EFFECT Settings box means that the values chosen for the effects will remain when the new snapshot is loaded.



Snapshot recall

When a snapshot is recalled, MIDI Control Change messages are output, which correspond to the new settings of the following:

- Faders
- Mute status
- Pan controls

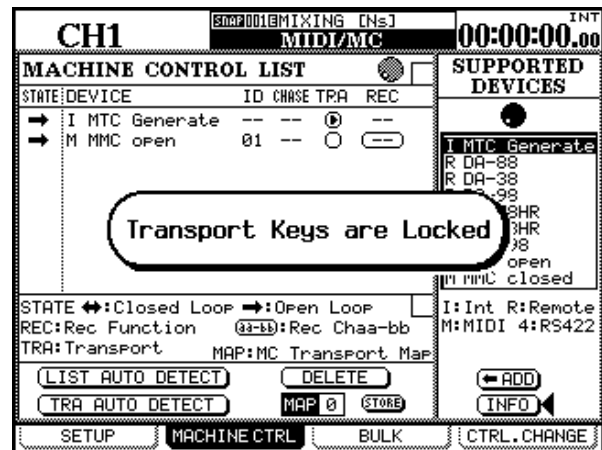
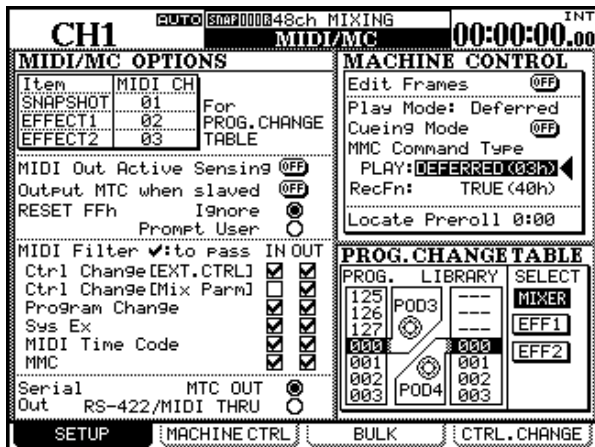
Additionally, when a snapshot is recalled using MIDI, that snapshot is now shown as the current snapshot in all screens.

External machine control

Play (MMC) When operating an external device controlled by an open MMC loop, the command sent when the **PLAY** key is pressed may now be selected between Deferred Play and True Play.

As a result, it is now possible to use the **PLAY** key to control a number of DAW applications and HDR machines using an open MMC connection.

Transport Lock Pressing the **2ND F.** and **STOP** keys together locks the transport keys. This is useful to stop accidental playback or recording when you are leaning over the DM-24 adjusting parameters.



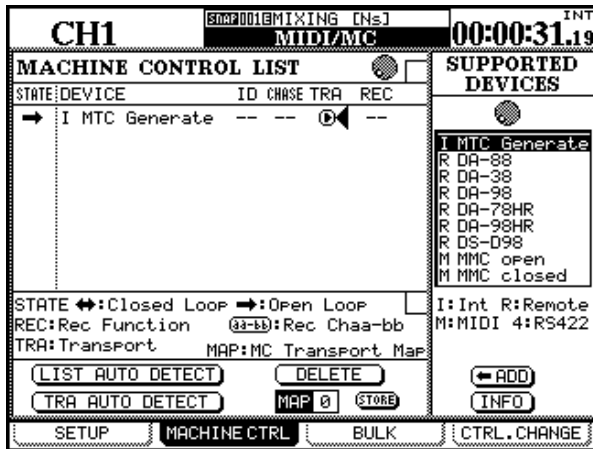
Track arming On the MIDI/MC SETUP page, there is a new parameter at the top right of the MACHINE CONTROL section (RecFn).

Set this to either TRUE(40h) or MASKED(41h). Previously, only the TRUE(40h) command was used, but units such as the Mackie HDR-24/96 and MDR-24/96 require the MASKED(41h) setting. The DM-24 is now fully compatible with the Mackie recorder family.

Press this key combination again to unlock the transport keys. The popup changes

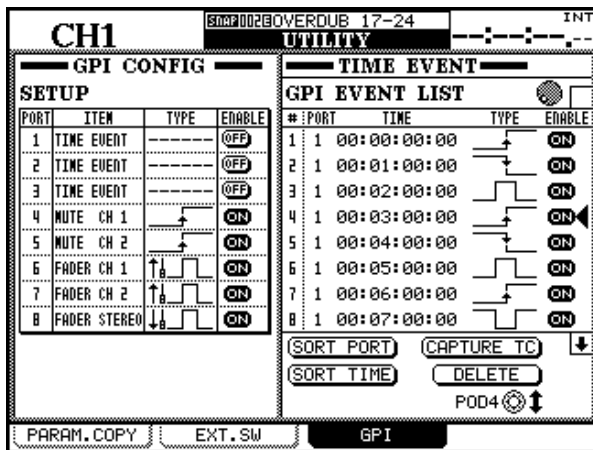
Internal MIDI Time Code generator The DM-24 now has its own generator, which can be used with DAWs, etc. which do not respond to MMC commands. By slaving them to MTC from the DM-24, you can use the transport keys of the DM-24 to control these DAWs.

To use the internal MTC generator, the SYNC SOURCE must be set to INT (internal), and the appropriate frame rate and internal generator start time selected in the OPTION SYNC/TC screen. See pages 23 and 24 of the main manual for full details.



GPI functionality

This release of the software added GPI functionality to the DM-24. Use GPI for tasks where items (video switchers, etc.) must be switched on or off, etc. as simple switching is available using this facility. The GPI outputs can be switched either using keys and faders on the DM-24, or they can be *time events*, triggered when the timecode source reaches a preset point.



The DM-24 is fitted with a 9-pin D-sub connector on the rear panel, marked **GPI**. Pin 5 of this connector is used as a frame ground, and the remaining eight pins are then used as GPI *ports*.

Pin	GPI port	Pin	GPI port
1	1	2	2
3	3	4	4
5	FG	6	5

Pin	GPI port	Pin	GPI port
7	6	8	7
9	8		

The ports provide switching (either a high-to-low or a low-to-high transition, or a momentary high or momentary low pulse).

The low level is 0V, and the high voltage level is +5V.

The typical load presented to these switches is 12mA, and the maximum load permissible is 25mA.

Switching is virtually instantaneous (3 ns) and the width of the momentary pulses is 150 ms.

Using GPI Enter the GPI screen from the UTILITY screen, and use soft key 3 to move to the GPI tab.

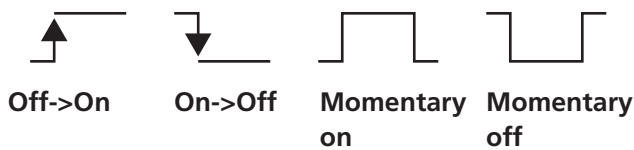
Set up the ITEMS of the eight available ports from the following list:

- **TIME EVENT**—this is a special item which disables this port for any manual events. If this is set, the TYPE is set to --- and cannot be changed here (it is set in the time event list). Also note that the enable/disable button is also set to a the OFF setting, which cannot be changed, showing that the port is not available from the manual events.
- **MUTE** (pressing the selected hardware **MUTE** key (any one of the 32 channel faders, or any of the aux or buss faders) will trigger the event)

DM-24 version 2.0—Release notes—GPI functionality

- **PLAY** (pressing the transport **PLAY** key will trigger the event)
- **STOP** (pressing the transport **STOP** key will trigger the event)
- **REC** (pressing the transport **RECORD** key will trigger the event)
- **FFWD** (pressing the transport fast-forward key will trigger the event)
- **REW** (pressing the transport rewind key will trigger the event)
- **INPUT ALL** (pressing the DM-24's **ALL INPUT** key will trigger the event).

The events triggered by these key presses can be any of the following:

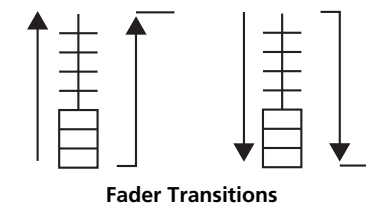
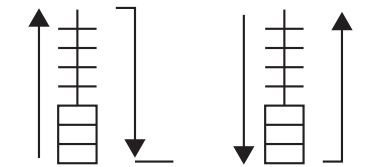
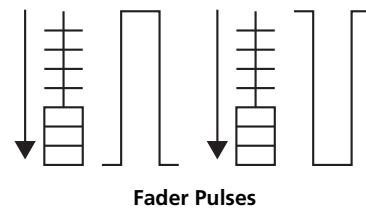
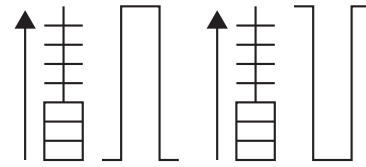


Select the type depending on the unit (active high or active low). Press **ENTER** to confirm both the ITEM and the TYPE settings.

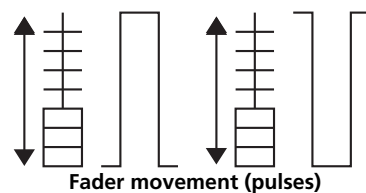
NOTE

For all keys triggering GPI events, the event is triggered when the key is active (the indicator lights), except in the case of **MUTE** keys which are being used to un-mute a channel. In this last case, it is the key **release** that triggers the GPI event.

Faders The FADER types (the 32 channel faders, the aux and buss faders, and the master fader may also be used to trigger events) are slightly more complex. The illustration below shows the fader options (when the fader is pulled up from the minimum position, and then when it is pulled down to the minimum position):



Fader movement in either direction can also be used to trigger pulse events (as shown in the illustration below):



Time events When a port type has been set as a TIME EVENT on the SETUP half of the screen, it can be added to an event list as shown on the right of the screen.

GPI time events can be entered on the fly for future replay by pressing the **CAPTURE TC** on-screen button when timecode is running. Alternatively, the dial can be used for setting and editing time values.

Scroll through the list with **POD 4**.

A port (defined in the SETUP part of the screen has to be selected for each event). Use the dial and **ENTER** key for this. Ports which have not been selected as time event ports produce a warning popup message.

Choose a type, as for the key manual events (either a transition or a pulse).

NOTE

Note that the same port can output different types of event at different times. You should be careful when

setting up a sequence of events from the same port to make sure that there is no conflict or contradiction.

The event types can be changed even when timecode is running.

The events can be sorted by time (SORT TIME) or by port (SORT PORT) for easy checking.

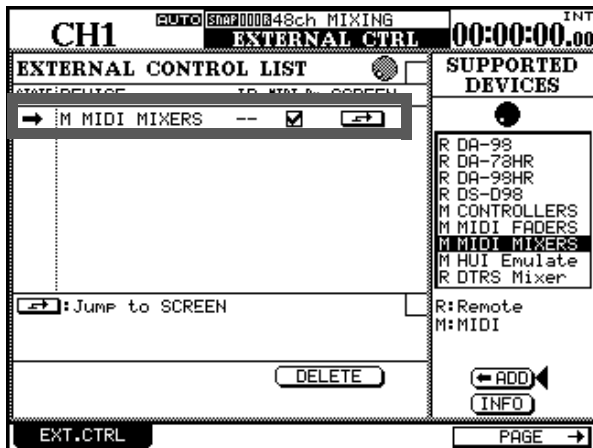
Individual events in the list can be deleted by highlighting them and using the on-screen DELETE button.

MIDI fader layer

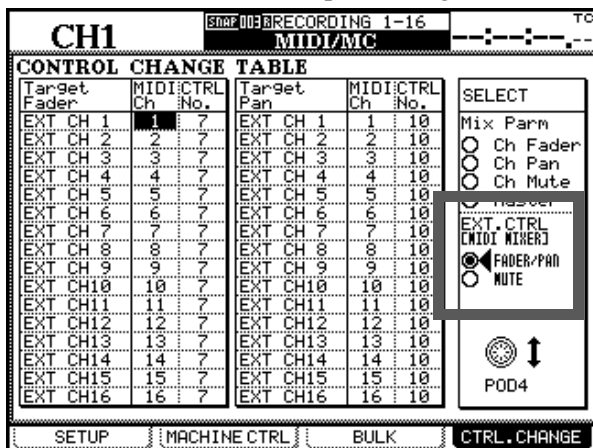
A new MIDI mixer layer has been added.

Previously, the audio faders, mutes and pan controls could be assigned to any MIDI channel and controller number. While this capability has been retained, another MIDI layer with the same attributes that does not affect the audio faders has been added.

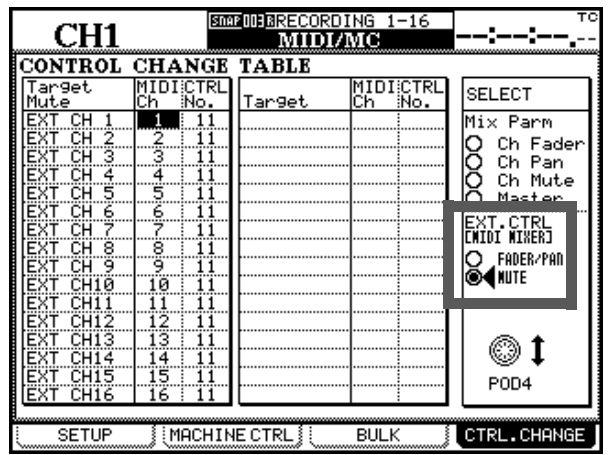
This new MIDI mixer layer is set from the external control screen. When this is active, the mute keys, faders, and the soft panpots send out MIDI Control messages.



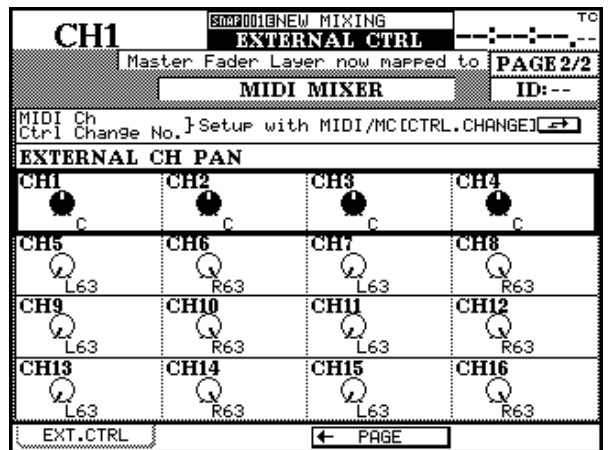
Use the MIDI CTRL.CHANGE screens to determine what messages are sent by each DM-24 control. This screen shows the faders and pan settings:



And this one shows the mute settings:



The default setting is for DM-24 channels 1 through 16 to transmit on the corresponding MIDI channels, with the fader being controller 7, the pan controls (shown below) being controller 10 and the mute being controller 11.

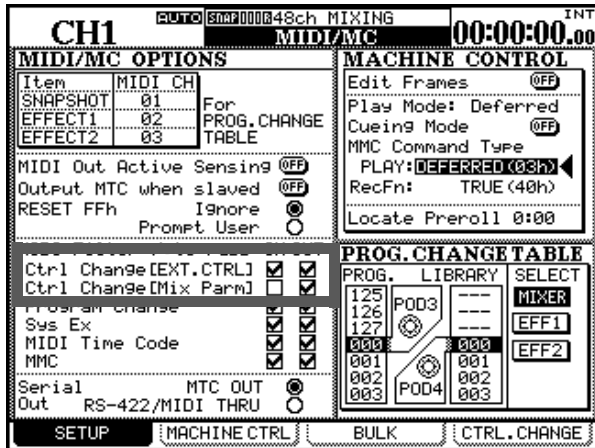


NOTE

The following MIDI controllers may not be assigned to DM-24 controls: 0, 6, 32, 38, and 96 through 127. Warning messages are shown if duplicate assignments are attempted.

DM-24 version 2.0—Release notes—GPI functionality

On the MIDI/MC SETUP page, the filtering of MIDI Control Change messages can now be carried out independently for external control (EXT.CTRL) and Mix parameters (Mix Parm). These can be set independently for In and Out for both types of Control Change message.



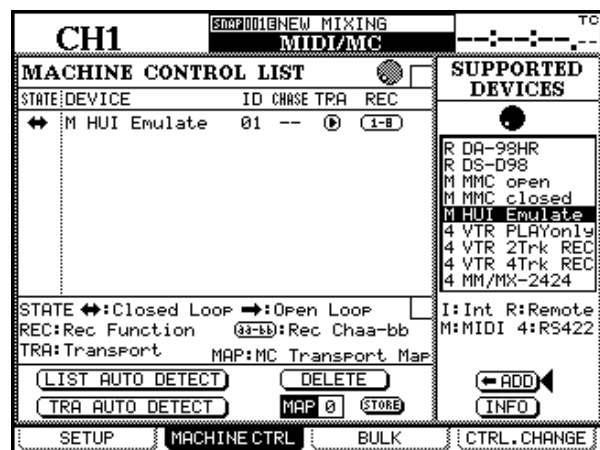
HUI emulation

The DM-24 is now able to emulate the Mackie HUI™ device, and can therefore act as a controller (pans, sends, faders and mutes) for various DAW applications (e.g. ProTools, Digital Performer and Nuendo) via MIDI.

NOTE

This is not a 100% emulation of every one of the Mackie HUI functions, and there is no guarantee, despite our best efforts, that an external unit that is controlled by a Mackie HUI will behave identically in every circumstance as the same unit controlled by the DM-24's HUI emulation.

The HUI “device” is a closed loop MIDI device, and is selected from the machine control list (if the closed loop is not detected, the display shows a cross for the device type, rather than the double-headed arrow usually used to denote a closed loop device. There is one parameter which may be set here—the MIDI channel (from 1 through 16).



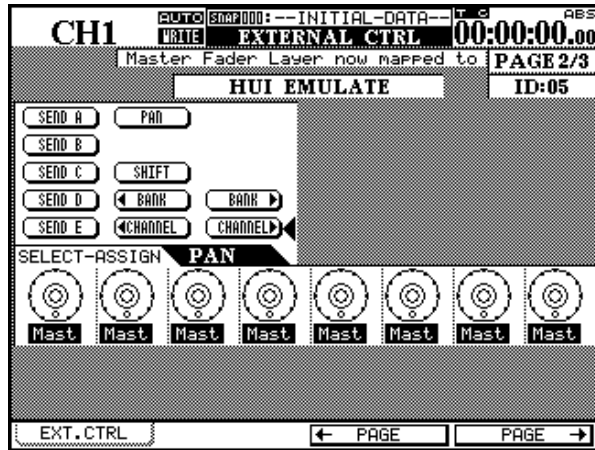
The setup enables MIDI to be received by the HUI emulation as well as setting the ID of the device.

HUI transport emulation, etc. can be enabled or disabled in this screen and the external control screen (described below) enables other functions.

As with other machine control devices, the SCREEN button jumps to the special screen from which the HUI is controlled:

DM-24 version 2.0—Release notes—GPI functionality

The HUI emulation, when selected, uses the first eight channel faders of the DM-24 as hardware faders for the DAW: the faders as DAW track faders, the hardware **MUTE** keys for the DAW mutes, hardware **REC** keys for track arming, and virtual on-screen PODs as the DAW pan controls:



Use the two on-screen BANK buttons to select groups of eight DAW channels. All the DM-24 physical controls change accordingly.

The CHANNEL buttons move the view of eight channels one at a time (compared to the BANK buttons, which move the view eight at a time).

Use the PODs to control the DAW track panning or the sends from A through E, as selected by the on-screen buttons at the top of the screen.

The SHIFT button provides a way of using the DM-24's touch-sensitive faders rather than the PODs for the aux sends, etc. by “flipping” the faders and PODs.

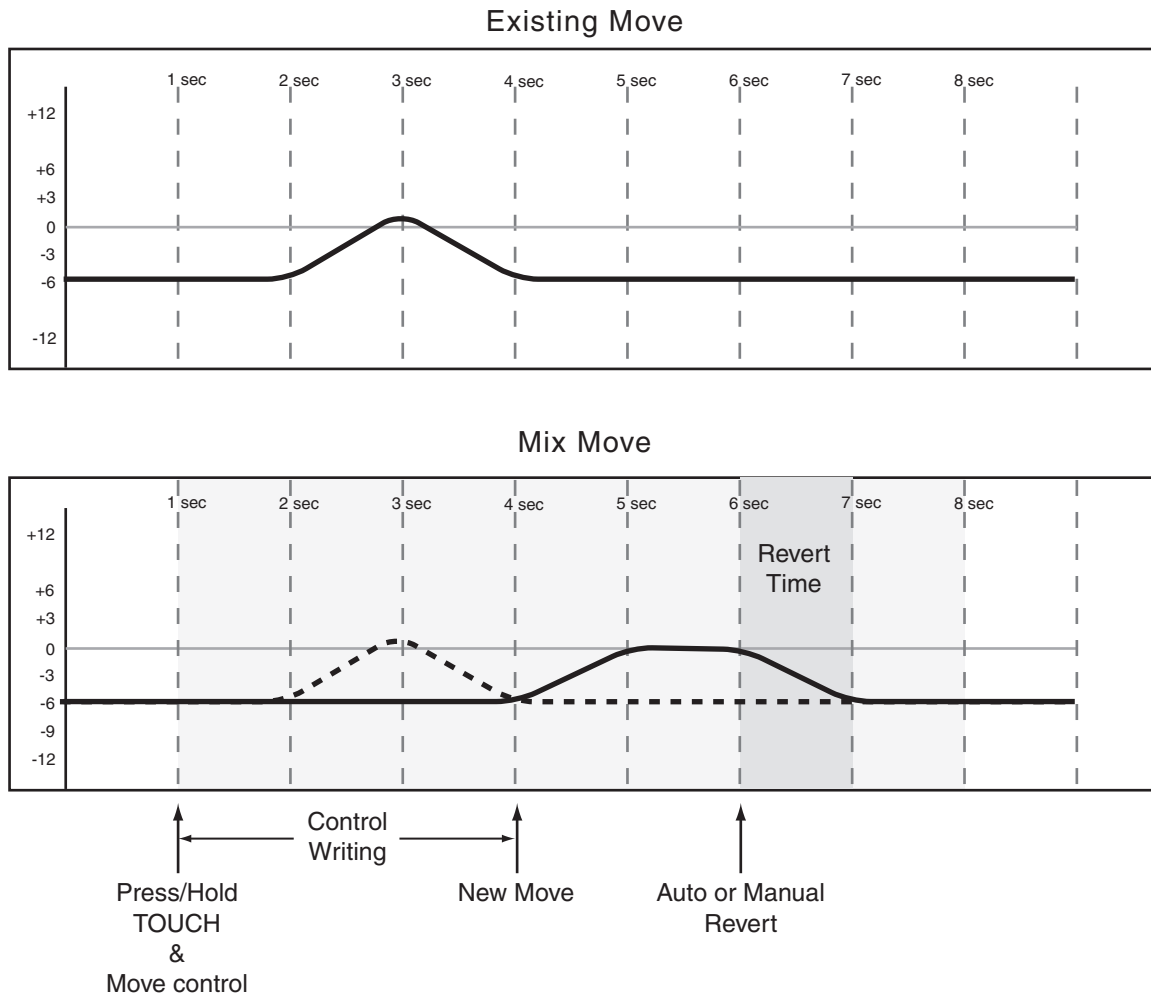
Note that the DAW's track naming capabilities are echoed through to the DM-24, so you can see the first four characters of the names on the DM-24 display. Note that this may produce some problems if you are not careful with the names, so you should use the first four characters to identify tracks, for example, BasD and BasG rather than Bass Drum and Bass Guitar.

Automation

Touch function

The touch function is used to overwrite and erase POD, rotary encoder or switch moves. Since these controls are not touch-sensitive, this is a useful way to erase previous mix moves on these controls.

The relationship between the previous mix moves and moves made using the touch function is shown below



To operate the touch function:

- 1 **Enable Global Write mode.**
- 2 **Press and hold the TOUCH key and while holding it, operate the non touch-sensitive control (PODs, rotary encoders or switches) to begin writing or overwriting at the control's current value. While moving the control, you can release the TOUCH key. Write mode is still enabled for this control.**
- 3 **Make a new mix move or end writing manually by pressing the REVERT key.**
If a new move is written, the revert action follows the settings made on the AUTO MAIN screen.

UNDO (static)

The **UNDO** key now can be used to undo adjustments made to a static control during a mix pass, as well as its previous “undo all mix moves” function.

KEEP operations

The keep operation saves a copy of the current mix into an empty memory bank, if available. If there is not enough space (all banks are filled) the top unprotected bank is erased, all other banks “slide up” and the lowest is filled with the new data.

If the KEEP CONFIRMATION option in the automation setup is checked, a popup message appears to ask whether the bank should be deleted, otherwise the bank is deleted with no confirmation.

To perform the keep function, press and hold the **2ND F.** key and press **KEEP**.

If the timecode is running when the Keep operation is performed, the DM-24 waits until the timecode stops before performing the data storage, otherwise the storage takes place immediately. The mix name’s last character is a number or letter (0-9, A-Z, a-z), automatically incremented as the data storage takes place.

If there is no change to the data between the previous store, and the time that the Keep operation is requested, a message appears, showing that there is no change, and asking whether the Keep operation is to take place.

Single control mix move erase

If a single control’s mix moves are to be erased, this can now be done by placing the control into static mode (using the AUTO CONFIG screen), and running timecode. This erases the mix move data for this control.

After an undo of this operation, the mode remains static, meaning that the data will be deleted if the mode is not changed to another mode (that is, other than static).

TRIM ALL function

To use the TRIM ALL function (also described in the main manual):

- 1 Enable TRIM ALL in the AUTO MAIN screen.**
- 2 Enable Global Trim mode and run the timecode.**
- 3 Adjust the control (typically a fader) that will use the Trim All function.**

- 4 Complete the mix pass by stopping the timecode.**

NOTE

You must stop the timecode to complete the Trim All pass. The Trim all function cannot be combined with other Global automation modes in the same mix pass.

Other automation improvements

In addition to the specific improvements and changes listed here, all automation functionality described in the manual (for example, the Trim All function and the Control Sense Timeout on/off function) is now complete.

Rehearsal In order to distinguish rehearsals from actual write or trim operations, the status indicator flashes in dim mode during rehearsal.

Undo (Write to End) The Undo function on Write to End operations has been improved.

Auto Fade Problems were occasionally reported when an Auto Fade was interrupted. The behavior of this function has now been improved.

Motorized faders The motorized fader setting is now made from the main AUTOMATION screen, as well as the PREFERENCES screen.

Miscellaneous changes

High-speed digital format restored

On the DIGITAL FORMAT screen, in high sampling mode (“Constraints on other devices” on page 142), the HI-SPEED mode is supported once more together with NORMAL and DUAL-LINE as options.

Note that in the 1.60 software release, this mode was not supported.

Flattening an EQ band

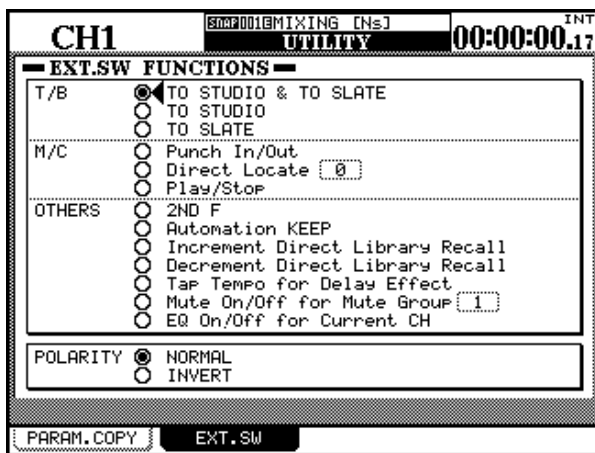
It is possible to flatten (set the gain to 0) of an EQ band of the selected channel by pressing and holding the **2ND F.** key together with the key corresponding to the EQ band to be flattened.

External switch (footswitch) functionality

The external switch (typically a non-latching footswitch) can be assigned to a number of different functions.

With the **SHIFT** indicator lit, press the **UTILITY** key, and then select the EXT. SW screen.

The following screen appears:

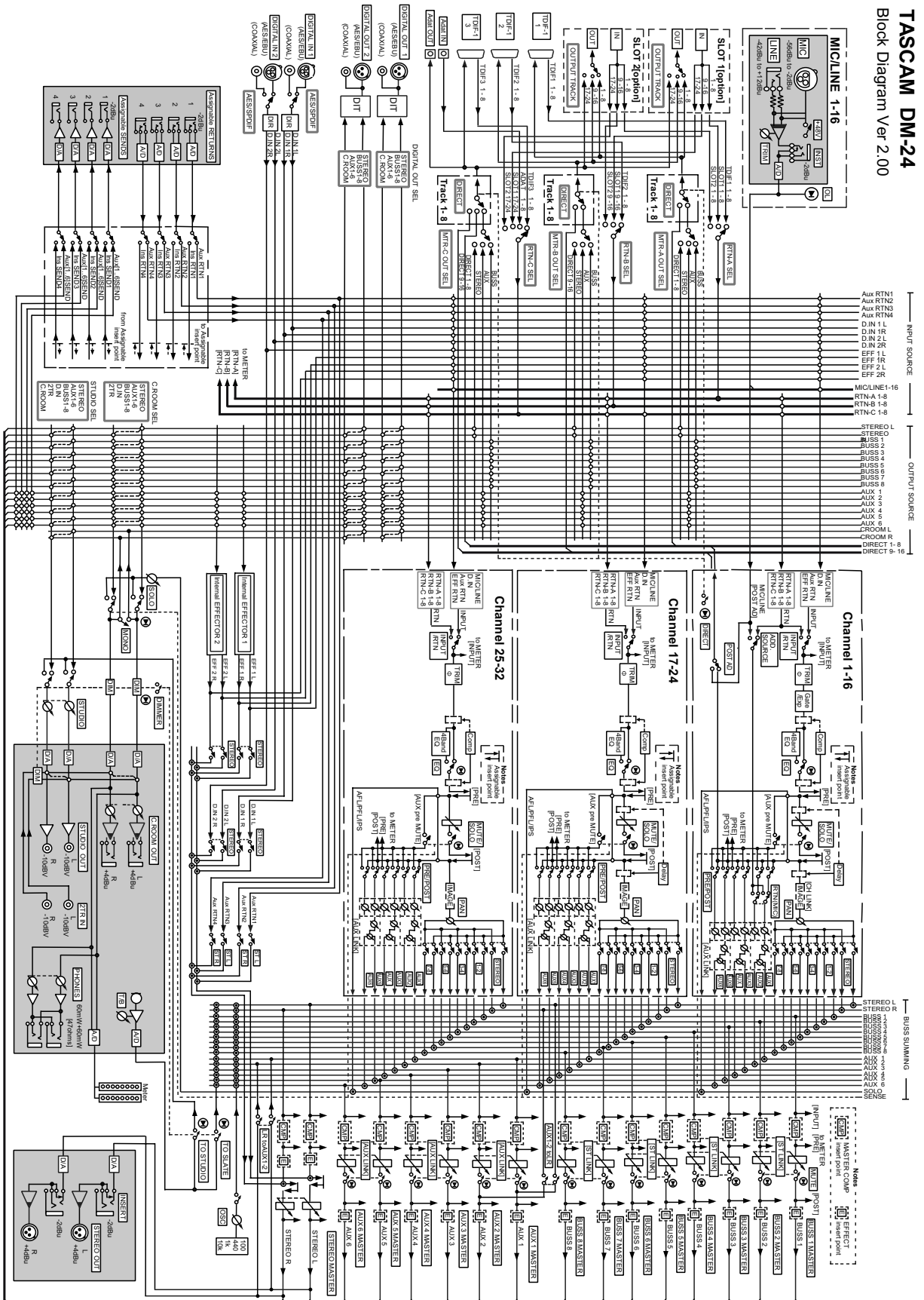


Select the switch function from the following list:

- Talkback to audio and slate (TO STUDIO AND SLATE)

- Talkback to studio only (TO STUDIO)
- Talkback to slate only (TO SLATE)
- Punch in and punch out (Punch In/Out)
- Direct location (Direct Locate)—the number of the direct locate point should be set here as well in the field following this option
- Start or stop playback (Play/Stop)
- Parallels the **2ND F.** key (2ND F)
- Parallels the automation **KEEP** key (Automation KEEP)
- Increments the number of the library entry which will be recalled next using direct recall (Increment Direct Library Recall)
- Decrements the number of the library entry which will be recalled next using direct recall (Decrement Direct Library Recall)
- Allows the timing of the integral delay effect to be set by using the footswitch as a tap tempo input device (Tap Tempo for Delay Effect)
- Mutes or unmutes a mute group (Mute On/Off for Mute Group)—set the mute group in the field following the option
- Turns the equalization on or off on the currently-selected channel (EQ On/Off for Current CH)

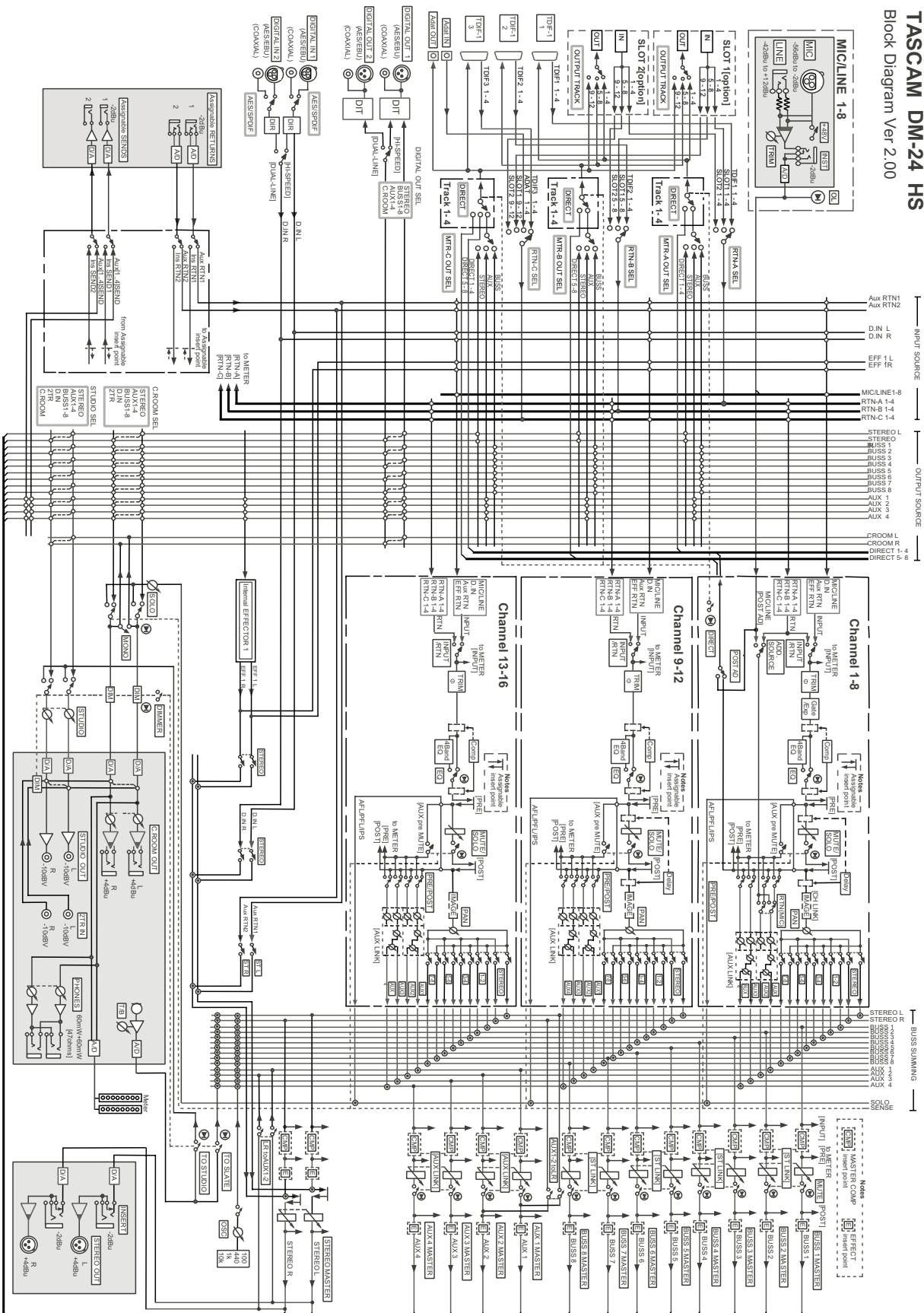
Block diagram (normal)



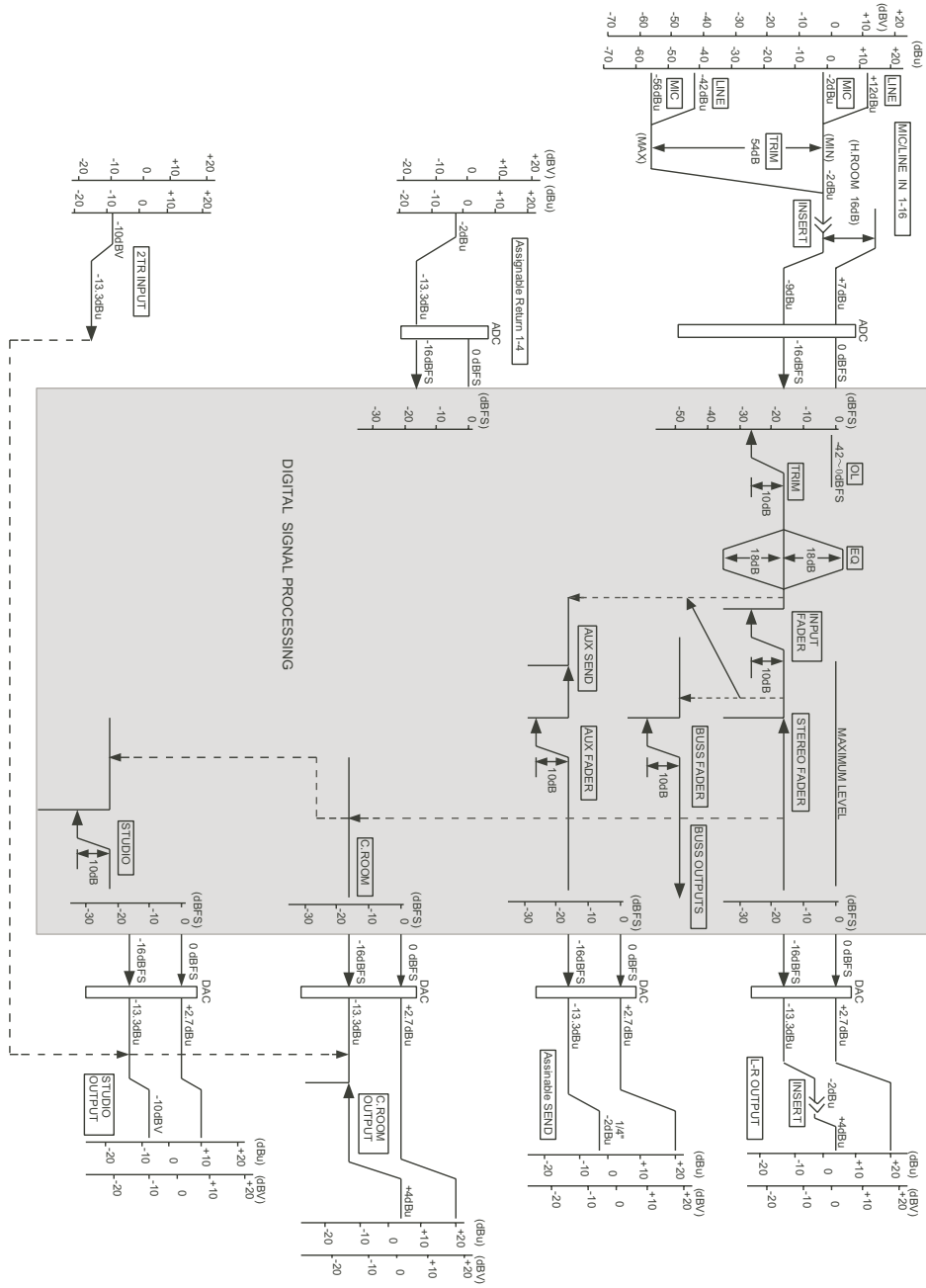
DM-24 version 2.0—Release notes—Block diagram (high-speed)

Block diagram (high-speed)

TASCAM DM-24 HS
Block Diagram Ver 2.00



Level diagram



TASCAM DM-24
Level Diagram Ver 2.00

Acknowledgements

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TASCAM

TEAC Professional Division

DM-24

TEAC CORPORATION

Phone: (0422) 52-5082

TEAC AMERICA, INC.

Phone: (323) 726-0303

TEAC CANADA LTD.

Phone: 905-890-8008 Facsimile: 905-890-9888

TEAC MEXICO, S.A. De C.V

Phone: 5-851-5500

TEAC UK LIMITED

Phone: 01923-819699

TEAC DEUTSCHLAND GmbH

Phone: 0611-71580

TEAC FRANCE S. A.

Phone: 01.42.37.01.02

TEAC BELGIUM NV/SA

Phone: 0031-162-510210

TEAC NEDERLAND BV

Phone: 0162-510210

TEAC AUSTRALIA PTY.,LTD. A.B.N. 80 005 408 462

Phone: (03) 9672-2400 Facsimile: (03)9672-2249

TEAC ITALIANA S.p.A.

Phone: 02-66010500

3-7-3, Nakacho, Musashino-shi, Tokyo 180-8550, Japan

7733 Telegraph Road, Montebello, California 90640

5939 Wallace Street, Mississauga, Ontario L4Z 1Z8, Canada

Campeños No. 184, Colonia Granjes Esmeralda, Delegación Iztapalapa CP 09810, Mexico DF

5 Marlin House, Croxley Business Park, Watford, Hertfordshire. WD1 8TE, U.K.

Bahnstrasse 12, 65205 Wiesbaden-Erbenheim, Germany

17 Rue Alexis-de-Tocqueville, CE 005 92182 Antony Cedex, France

Oeverkruid 15, NL-4941 VV Raamsdonksveer, Netherlands

Oeverkruid 15, NL-4941 VV Raamsdonksveer, Netherlands

280 William Street, Port Melbourne, Victoria 3000, Australia

Via C. Cantù 11, 20092 Cinisello Balsamo, Milano, Italy