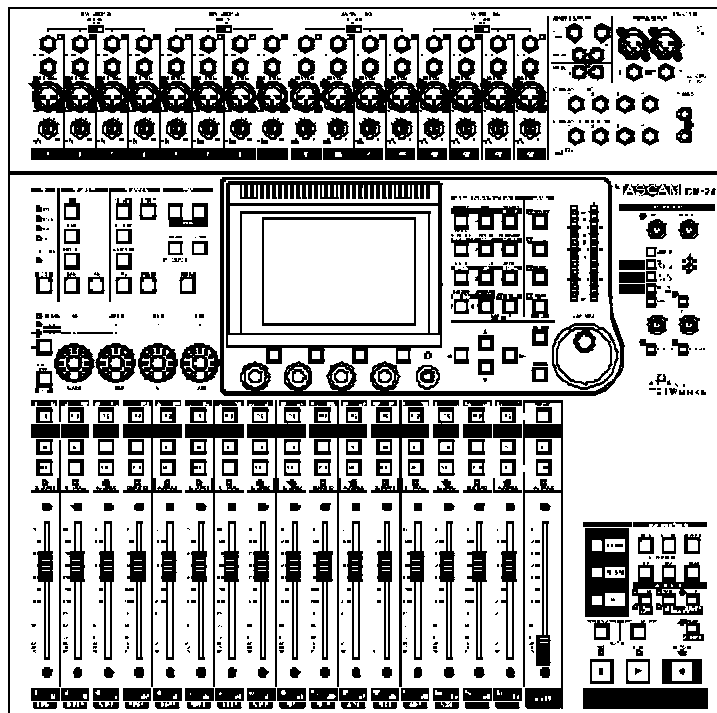


TASCAM

TEAC Professional Division

DM-24

Digital Mixing console



The DM-24 Basics V 2.0

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DM-24 Version 2.0

The DM-24 was originally released in October of 2001 with version 1.11 firmware. At that time it was the most powerful, low cost digital mixer in the world. In March of 2002 we released version 1.60 which added many new features including 16 extra channels making the DM-24 a 48-channel mixer. With the release of version 2.0 the DM-24 can now route 60 input signals to the stereo buss at mixdown! With new features like HUI emulation and some of the most powerful 5.1 surround panning found in any digital mixer, the DM-24 is even more powerful than other digital mixers costing two and three times more than the price of the DM-24. Two things haven't changed since October of 2001. The DM-24 is still the most powerful, low cost digital mixer in the world and the list price is still only \$2999.

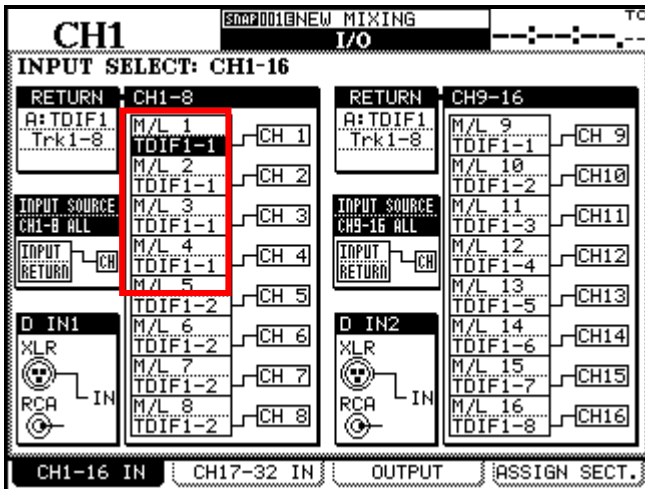
Inputs

"Inputs" can be assigned to any or all 32 channels. For instance Mic/line input #1 can be assigned to all 32 channels simultaneously. There are many times when you may wish to assign the same input signal to two different channels and manipulate them differently. Perhaps compress one channel, but not the other, etc.

Returns

"Returns" include TDIF I/O, ADAT lightpipe I/O and any option slot I/O that might be added to the DM-24. There are 24 channels of TDIF I/O and 8 channels of ADAT lightpipe I/O built in to the DM-24, but there are also two option slots available to expand your I/O capabilities. You can use any "3" of these returns simultaneously. For example, Return A might be used with TDIF1, Return B might be used with an analog card in SLOT 1 and Return C might be used with an AES/EBU option card in SLOT 2. You can choose what channels these returns are assigned to with out ever having to re-patch a cable. Returns are usually used to feed the signal from your recorder(s) in to the board for mixing, but they can also be used for other purposes like expanding your mic pres with external devices. For example Presonus makes an 8 channel mic pre with a ADAT lightpipe output called a Digimax LT. This could be used with the internal ADAT lightpipe connection on the DM-24 or multiple Digimax LTs could be used if multiple IF-AD/DM lightpipe option cards were installed.

Once your 3 banks of returns have been assigned, you can assign "any" of these 24 signals to any of those 24 channels. In other words, track 1 can be assigned to channel 1, 2 and 3. Track 17 can be assigned to channels 8, 9 and 10. This is probably one of the most powerful features added to version 2.0. This means I can assign my snare drum track to channel 2 and 3, compress channel 2 very hard and roll off the low frequency on channel 3 below 200Hz for a complex snare sound. Or I can take one guitar track and assign it to four different channels. Then I can pan and EQ them differently resulting in the ever popular "wall of guitars" sound.



Options

- IF-TD/DM (TDIF I/O) \$249
 - IF-AD/DM (ADAT lightpipe I/O w/ ADAT Sync) \$249
 - IF-AE/DM (AES/EBU I/O on a D-25 connection) \$299
 - IF-AN/DM (Analog I/O on two D-25 connections) \$499
 - IF-CS/DM (Cascade card w/ cascade cable) \$299
 - MU-24 (Meterbridge plus cable) \$949
- Each of the optional interface cards has 8 channels of I/O.
 - Mixing 24 tracks of ADAT or any other lightpipe device requires two optional ADAT I/O cards.
 - Adding two AES/EBU cards provides a total of 20 channels of AES/EBU I/O (four channels come standard on the DM-24 on two standard XLR connectors.)
 - Two analog cards are necessary if 32 channels of analog; +4 line level inputs are required.
 - The MU-24 has 26 meters (24 channels plus the stereo buss) and a large time code display. There is a meter menu in the DM-24 that provides access to all of the parameters for the meterbridge, such as meter ballistics and pre/post metering. The mounting brackets allow the MU-24 to be moved in front of or behind the input jacks on the DM-24. The MU-24 can also tilt backwards or forwards to achieve the best viewing angle for your needs.

Outputs

Although only 3 “return” interfaces can be used to assign the return signal to channels, all of the TDIF, ADAT, AES/EBU, S/PDIF and Option card outputs are always active. For instance, 24 channels of TDIF can be mixed in 5.1 surround to the ADAT outputs. Those same 8 busses could also congruently be routed to the two Option Slot outputs. This is useful if the 5.1 mix must be bussed to 3 different formats (such as ADAT, DTRS and Pro Tools) simultaneously.

Aux sends

The DM-24 has 6 aux sends, which can be configured Pre or Post fader. Any of them may be assigned to the two internal effect processors. Aux sends can be assigned (in pairs or mono) to the 2 channel AES/EBU and S/PDIF digital outputs for use with external effects processors with digital I/O. The returns of these external processors can be routed to the DM-24 via digital inputs 1 and 2 and can be assigned to any channels or directly to the stereo buss. Aux sends can also be used with the assignable send outputs. There are 4 assignable sends on balanced TRS jacks. “Assignable” means aux 6 can be assigned to assignable output 1 or aux 5 to assignable output 3, etc. There are also 4 balanced assignable returns on TRS jacks. These can be used as two stereo effects returns or simply as balanced inputs that can be assigned to any channel. Assignable sends and returns can also be configured as assignable “inserts.” Route assignable send 1 to a compressor’s input. Route the compressor’s output to assignable return 1 and assign that insert to any channel or the left or right side of the stereo buss. This makes it possible to use outboard dynamics processors on the tape return path. This is an extremely valuable feature! Using these inserts on the stereo buss makes it possible to “monitor” the compressed signal before it leaves the mixer and it allows you to use the S/PDIF or AES/EBU digital outputs to send your compressed mix to a 2-track digital recorder.

S/R		MODE	MOD	POINT	ON/OFF	COMP	MASTER	ON/OFF
ASSIGNABLE SEND/RETURN						MASTER COMP INSERT MATRIX		
SEND SIGNAL.						1	STEREO L	
1	<input checked="" type="radio"/>	INSERT	ST-L	PRE	<input checked="" type="radio"/>	2	STEREO R	<input type="radio"/>
	<input type="radio"/>	SEND/RETURN	[AUX3]	→	SEND1	3	----	----
2	<input checked="" type="radio"/>	INSERT	ST-R	PRE	<input checked="" type="radio"/>	4	----	----
	<input type="radio"/>	SEND/RETURN	[AUX4]	→	SEND2	5	----	----
3	<input checked="" type="radio"/>	INSERT	CH28	PRE	<input checked="" type="radio"/>	6	----	----
	<input type="radio"/>	SEND/RETURN	[AUX5]	→	SEND3	POINT:PRE FADER		
4	<input checked="" type="radio"/>	INSERT	CH29	PRE	<input checked="" type="radio"/>			
	<input type="radio"/>	SEND/RETURN	[AUX6]	→	SEND4			

Tracking options

The DM-24 has 32 channels. The first 16 channels have direct outputs that are normally “post” fader (See *post ADC direct out preference.*) There are 16 mic/line inputs. With a signal feeding into each of them, the signal goes all the way to the fader and then out to tape. Channel 1 goes to track 1, channel 2 goes to track 2, etc. The 16 tracks will then need to return to the console for monitoring. Channels 17-32 can be used for this purpose. The “RECORDING 1-16” snapshot can be recalled for this scenario. This allows 6 mono or 3 stereo cue mixes using aux sends 1-6. The only limitation to this set up is that there is no way to monitor with effects such as reverb in the cue mixes. This is because

all of 32 channels are now being used so there are no free channels to assign the effect return to that would have an aux send to get the signal to a cue mix.

TIP: *The only way to monitor with effects while recording and monitoring 16 tracks requires another small utility mixer like the Samson Mix Pad 4 (\$179 street price.) Usually only the vocalist requires reverb in their cue mix. Use Aux 3 as the vocalist's cue mix. (The DM-24 default setting is TC Reverb on EFFECT 2 with aux send 2 feeding the effect input. Your DM-24 must be setup this way for these instructions to work.)*

1. Use assignable sends 1-4 with aux sends 3-6 as four mono cue mixes.
2. Assign channels 17-32 to buss 1-2.
3. Monitor buss 1-2 in the Control Room section.
4. Assign the outputs of EFFECT 2 to the stereo buss on the ASSIGN page.
5. Route the stereo XLR outputs to ¼" inputs on stereo channel 3&4 on the Mix Pad 4. Bring the channel to unity gain. Make sure the DM-24 stereo buss is also set to unity gain.
6. Route assignable send 1 to the channel 1 line input on the Mix Pad 4. Make sure the trim control is set to line level. Bring the channel to unity gain.
7. Plug the vocalist's headphones into the Mix Pad 4 headphone jack and adjust the volume to taste.

Use aux send 2 to adjust the approximate wet/dry ratio for the reverb. Now the vocalist can control the amount of reverb on their voice by manipulating the CH 3&4 volume knob on the Mix Pad 4. Plus they have their own headphone volume control. A headphone amplifier will be required for the other cue mixes. The Behringer HA-4600 is a great choice (\$99 street price).

Overdubbing tracks 17-24

There is another recording snapshot called "overdub 17-24." As you've already been using channels 17-32 to monitor the tape return path of tracks 1-16, those channels remain the same in this snapshot. Channels 9-16 are used to monitor the tape return path of tracks 17-24. Mic/line inputs 1-4 are assigned to channels 1-4, Effect 1 L&R outputs are assigned to channels 5&6 and Effect 2 L&R outputs are assigned to channels 7&8. Channels 9-32 are assigned to the stereo buss for monitoring in the control room. Channels 1&2 are assigned to buss 1-2 and channels 3&4 are assigned to buss 3-4. This allows you to record 4 mic/line inputs with separate cue mixes while monitoring with two separate effects. Use Aux 3-4 as a stereo cue mix. Use Aux 1 and 2 on channels 9-16 (tape returns of over dub tracks) to feed the internal effects. Send aux 3-4 on channels 5-8 to send effects to the cue mix.

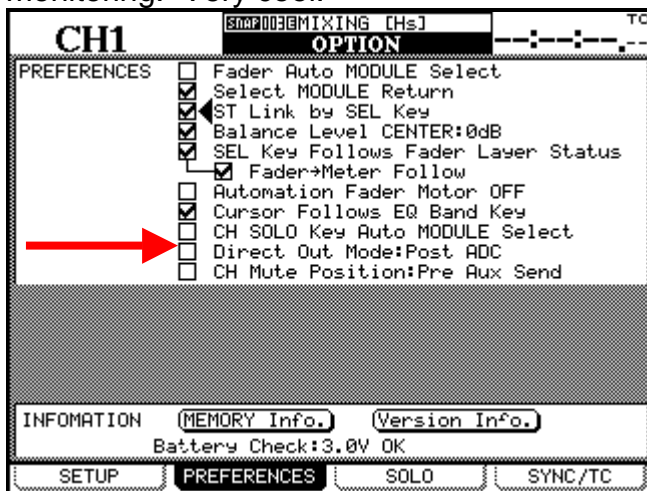
Post ADC direct out preference

In the OPTIONS-PREFERENCES page you can choose Post ADC direct out. This changes the signal flow of the DM-24. Normally the direct outputs are "post" fader. This option routes the direct output directly after the analog to digital converter. This is perfect for when you use the DM-24 as a live "front of house" mixer and you are also using the DM-24 to record the performance via TDIF to a MX-2424 for instance. In this mode the only signal feeding the recorder is the signal feeding the mic/line input. The signal then continues on to the channel for front of house mixing. But now none of your mix moves are effecting the signal going to the recorder.

Post ADC direct out in the studio

This option can also be used in the studio environment. Instead of assigning the mic/line inputs to channels 1-16 as you would in the “front of house” scenario, you would now assign channels 1-16 as tape returns 1-16. This allows the most direct path to the recorder. This way the input signal is not colored by the digital compressor, gate or EQ. But now the tape return signal can be “monitored” with digital compression, gates and EQ. Many people prefer to track this way. It is referred to as “tracking dry.” Most recorders allow you to buss the signals coming in to recorder inputs 1-8 to tracks 9-16 and/or tracks 17-24. (*On the MX-2424 you would set Menu 401 and 402 to: DIGITAL 1-8.*) The “48 ch MIXING” snapshot is set up perfectly for this scenario. But you do have to select the POST ADC DIRECT OUT preference. Channels 17-24 are assigned as tape returns for tracks 17-24. EFFECT 1 and 2 outputs as well as the assignable returns are assigned to channels 25-32.

Using this method is almost like using external mic pres to feed the recorder and only “monitoring” and mixing the tape returns with the DM-24. The benefit of using this technique is that you have full access to cue mixes with effect monitoring. Very cool.



Using the inserts to track analog and return digital

Many users are very particular about the analog to digital converters that they use to record. If they choose not to use the converters on the DM-24, this does not mean that they cannot still use the DM-24’s internal mic pres. Realizing the analog insert is just before the A/D converter in the DM-24’s signal chain, the following scenario is possible:

A mic can be connected to the mic input, where the mic pres level may be adjusted. The analog signal is then sent to the analog input on the outboard A/D converter. The digital output of the converter is then routed to the digital input of the recorder. The digital output of the recorder would then return to the DM-24 for monitoring and mixing. This scenario is just like having 16 outboard mic pres. TASCAM has many cables and cable snakes available for this situation. Please refer to our Cable Up catalog. Many of these cables are available directly from the SHOP TASCAM section of www.tascam.com. This includes the new \$20

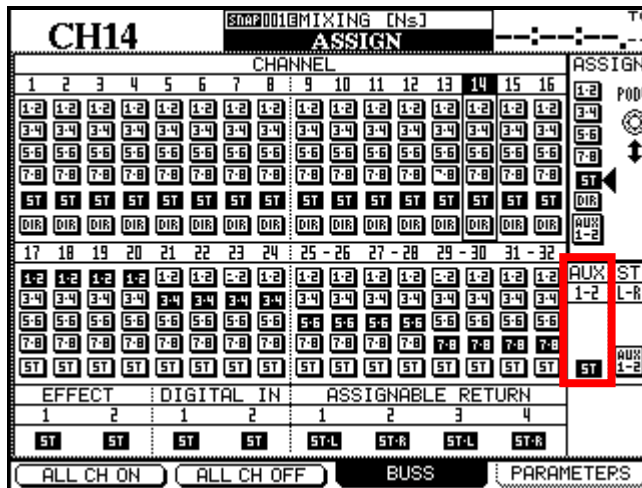
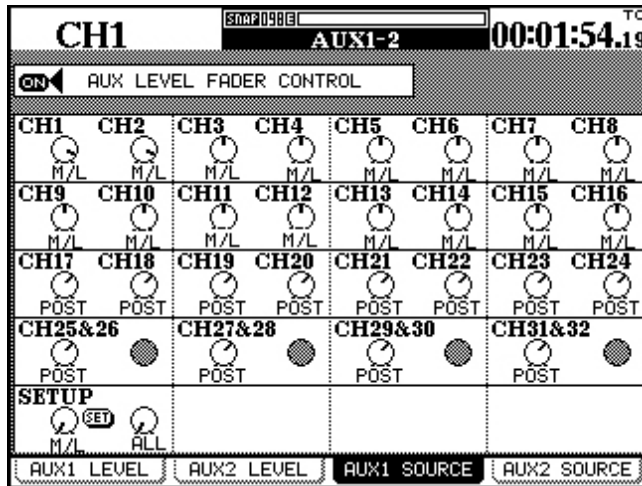
CU/PWSPLIT, our new TDIF splitter Y cable. This separates a standard TDIF cable in to a separate TDIF IN and TDIF OUT.

Special Aux 1-2 functions

Aux 1-2 also have other special functions. They can be used as a separate “input path” to the stereo buss for the RETURNS (TDIF, ADAT or option card inputs) or the mic/line inputs instead of being a “send” path. When you link Aux 1-2 you have a level and pan control for these inputs. On the ASSIGN page you can assign AUX 1-2 to the stereo buss.

Aux 1-2 Applications:

1. Using the “48 ch MIXING” snapshot you could use channels 1-24 as digital tape returns, channels 25-32 for effect returns and mic/line inputs 1-16 for the analog outputs of MIDI sound modules which can be assigned to the Aux 1-2 path then to the stereo buss.
2. Using the “NEW MIXING” snapshot you could use channels 1-24 as digital tape returns, channels 25-32 as mic/line inputs 1-8 for the analog outputs of MIDI sound modules that you want to add compression, EQ and effects to. Mic/line inputs 9-16 can be used for the analog outputs of other MIDI sound modules and can be assigned to the Aux 1-2 path then to the stereo buss. Here the outputs of the internal effect processors, digital inputs 1&2 and the assignable returns are also assigned directly to the stereo buss.
3. In the DM-24 busses 1-8 are used for recording. As such, they cannot be assigned to the stereo buss. When mixing it is often desirable to assign multiple channels to a buss, then manipulate that buss signal with compression and EQ and send it to the stereo buss. Using the “NEW MIXING” snapshot you could remove some signals on channels 1-24 from the stereo buss and assign them instead to buss 1-2. Assign the buss outputs to the internal ADAT output. Route a lightpipe cable from the DM-24 ADAT output to the ADAT input on a Alesis Ai3 (*lightpipe to analog converter \$399 street price*), then take the analog outputs from the Ai3 to line inputs 1-8. These inputs are assigned to channels 25-32. This allows you to compress and EQ the buss signals before they are then assigned to the stereo buss. Very cool work around. This can also be done with a MOTU 2408II with TDIF or lightpipe.



Effects

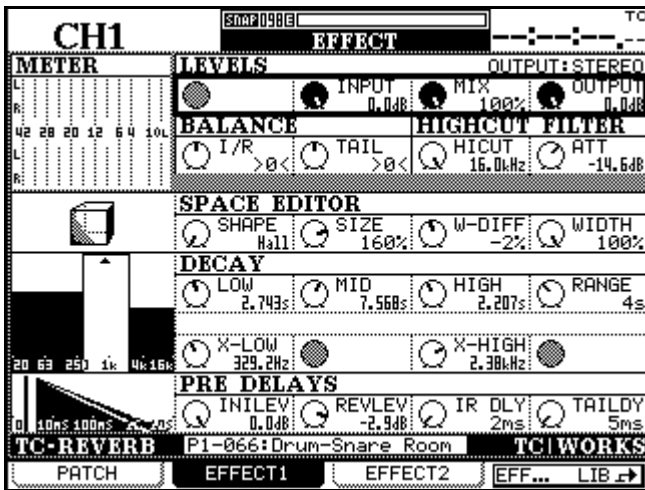
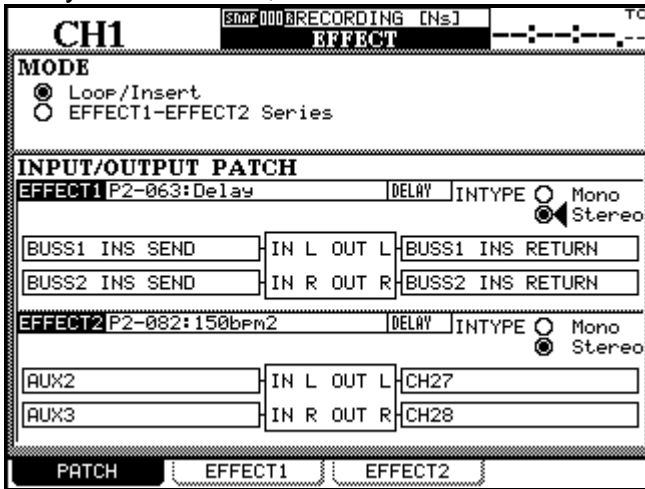
The DM-24 has two internal effect processors. Processor #1 contains the TC Works reverb (over 100 presets) and the Antares Mic and Speaker modeler. TC works reverb and the Antares Speaker modeler cannot be used simultaneously. Processor #2 contains TASCAM effects:

- Chorus
- Delay
- Pitch Shifting
- Phaser
- Flanger
- Compressor
- Guitar compressor
- Exciter
- De-esser
- Gate
- Distortion (with amp simulators)

There are two locations called “Effect 1 and Effect 2” where these algorithms can be loaded. The source of the inputs to Effects 1 and Effects 2 can be Aux sends 1-6. Effect returns can be assigned to any of the 32 channels or directly to the stereo buss. Effects 1 and 2 can also be routed as “inserts” on busses 1-8; Aux sends 1-6 or the stereo buss.

The internal effects can also be used with the “assignable” inserts. For instance, if a fretless bass is on channel 2 and chorus needs to be added to it, assign the chorus effect to assignable insert #1 and assign insert #1 to channel 2. Using the assignable insert saves an aux send and two return channels.

Effect 1 and Effect 2 can also be run in series. This would allow you to run a delay into a reverb, for instance.

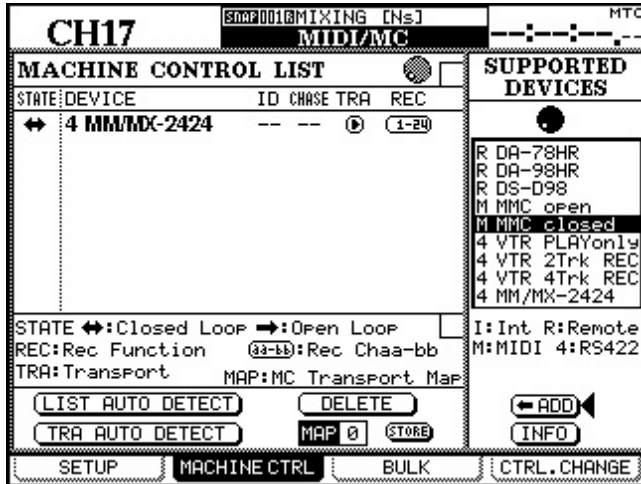


Machine control

The DM-24 can control a wide variety of external devices via RS-422 (P2 or 9-pin), MIDI Machine Control or the DTRS remote jack. There is a list of supported devices on the machine control page.

The DM-24 can control multiple devices simultaneously. A standard example would be controlling the transports of a VTR, while arming tracks on a DTRS machine.

The IF-AD/DM option card provides lightpipe I/O and an ADAT sync jack. ADAT sync is not operational in this version of firmware. This feature will be implemented in a future version of firmware. When ADAT sync is implemented, transports, track arming and jog/shuttle capabilities will available. ADAT ABS code cannot be used to trigger the DM-24's internal automation. A device that converts ADAT ABS to MTC or SMPTE will be necessary. The Alesis BRC, MOTU MTP-AV and JL Cooper dataSync2 are good examples of such a device. These devices will also allow ADATs to recognize MMC commands, making ADAT sync unnecessary.



MIDI

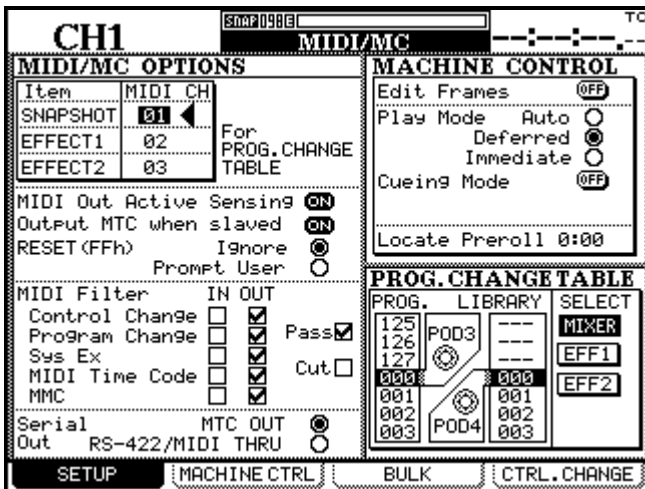
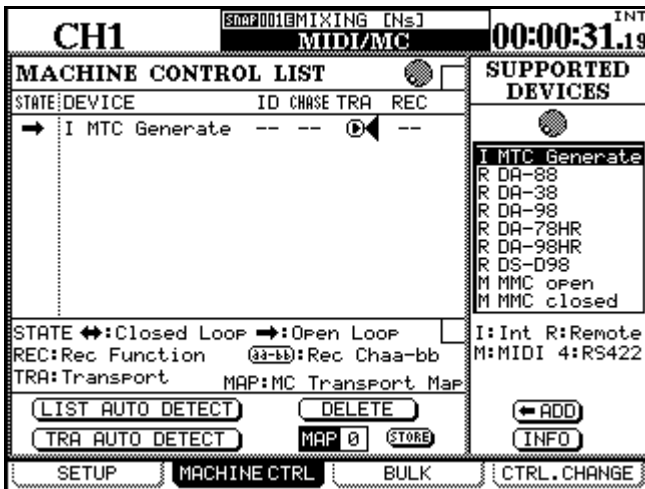
The DM-24 features MIDI In, Out and Thru. This allows you to:

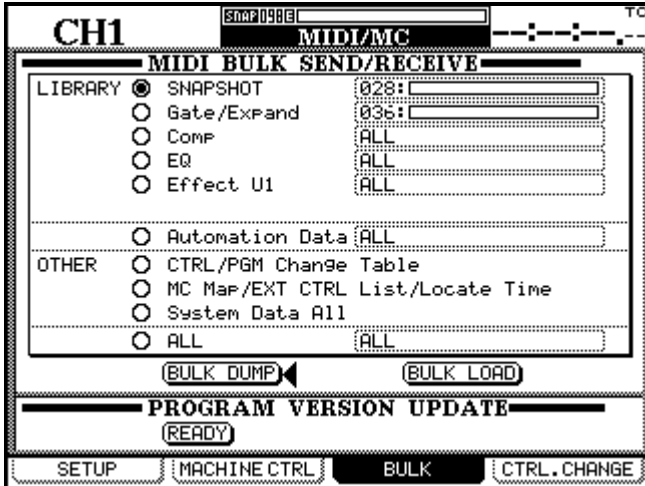
- Send MMC and MTC
- Lock to incoming MTC
- Update the firmware of the DM-24 with Standard MIDI File
- Offload and upload library and automation data
- Send and receive MIDI program changes
- Send and receive MIDI controller data

On channels 1-32 you can program a different MIDI channel and MIDI controller number for the fader, mute key and pan knob. On the master layer you can do this for faders and mutes only. This allows the DM-24 to control other devices or other devices to control the DM-24 via MIDI. Again, this uses the “audio faders.”

There is another separate layer called “MIDI MIXERS” that allows the same kind of control “with out” effecting the “audio fader” levels. When this layer is activated you can assign a MIDI channel and a controller number to the fader, pan and mute on the master layer. The MASTER layer status key will blink when this active fader layer is viewed to let you know that you are not viewing the audio faders.

There is also an external control page on the DM-24. This is where you can set up separate MIDI fader layers and controller pages. Any combination of fader layers and controller pages can be used up to a total of 8. With the MIDI fader layer, fader 1 is MIDI channel 1, fader 2 is MIDI channel 2, etc. A single controller number is selected for ALL faders. You can have up to 8 MIDI fader layers. Each layer would represent a different MIDI controller number. With the controller page you have access to 19 of the most common controller numbers. These are accessed using the POD knobs and Data wheel. Each of these controller pages represents one MIDI channel. You can use a total of 8 controller pages which would give you access to 8 different MIDI channels.





HUI Emulation

Mackie makes a control surface called the HUI. This is an abbreviation for Human User Interface. Initially this device was designed as a control surface for Pro Tools. Since then MOTU's Digital Performer and Steinberg's Nuendo have implemented HUI compatibility. So now, all of these popular DAW applications can be controlled by a HUI. The DM-24 has now implemented HUI "emulation." This means that these DAW applications see the DM-24 as a HUI and thus the DM-24 can now be used to control these DAW applications in much the same way.

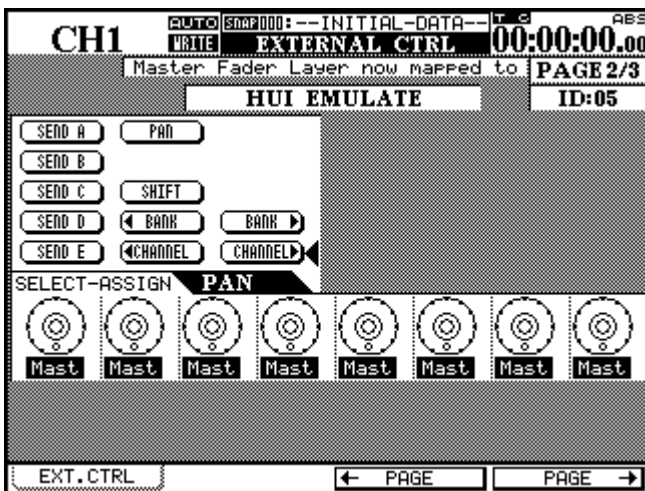
This is not a 100% emulation of every one of the Mackie HUI functions, and there is no guarantee, despite our best efforts, that an external unit that is controlled by a Mackie HUI will behave identically in every circumstance as the same unit controlled by the DM-24's HUI emulation.

HUI is a registered trademark of Mackie Designs Inc.

Pro Tools is a registered trademark of Avid Technology, Inc. and its subsidiaries and divisions.

Digital Performer is a trademark of Mark of the Unicorn.

Nuendo is a registered trademark of Steinberg Media Technologies AG.



Automation

The DM-24 features very powerful, internal automation. No computer required. The internal automation of the DM-24 is actually more powerful and easier to use than many large frame consoles used in professional studios.

The following mix controls of the DM-24 can be automated:

- Fader levels
- Mutes
- *EQ* settings:
 - Gain, Frequency, Q, EQ On/Off switching can be automated
 - Individual EQ band *TYPE* switching between High/Low Pass Filter, Peaking & Shelving
- Auxiliary send levels and Pre/Post switching
- Auxiliary master send levels
- Bus master levels
- *GATE* settings:
 - *THRESHold*
 - *RANGE*
 - *HYSTeresis*
 - *ATTACK*
 - *HOLD*
 - *DECAY*
- *COMP*ressor settings:
 - *THRESHold*
 - *RATIO*
 - *ATTACK*
 - *RELEASE*
- Library recall
- Surround panning parameters

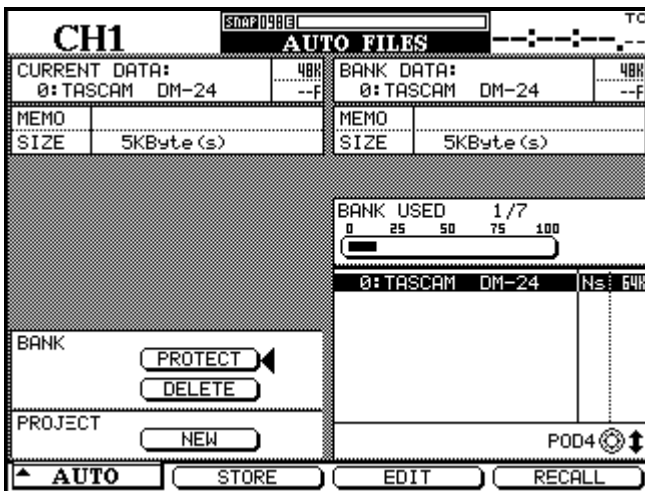
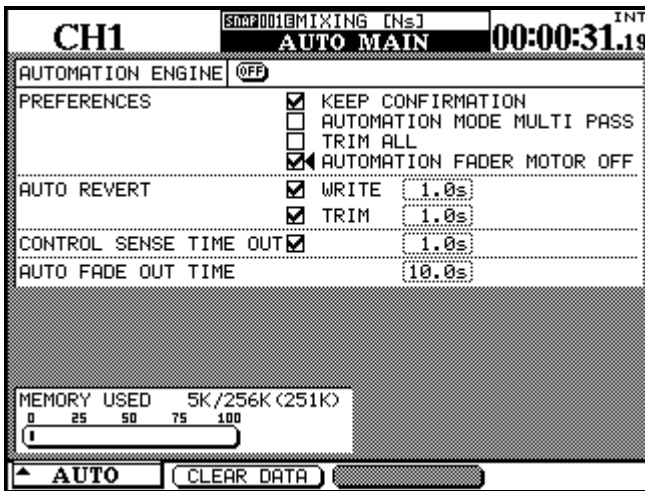
The automation can be triggered by external MTC (MIDI Time Code), SMPTE time code or by the internal MTC generator. ABS time code from an ADAT or DTRS machine **cannot** be used. Time code received from the RS-422 connection cannot be used to trigger automation. ADAT users will have to have a device that converts ADAT ABS to MTC or SMPTE in order to trigger automation. Such devices include the JL Cooper dataSync2, the MOTU MTP-AV and the Alesis BRC.

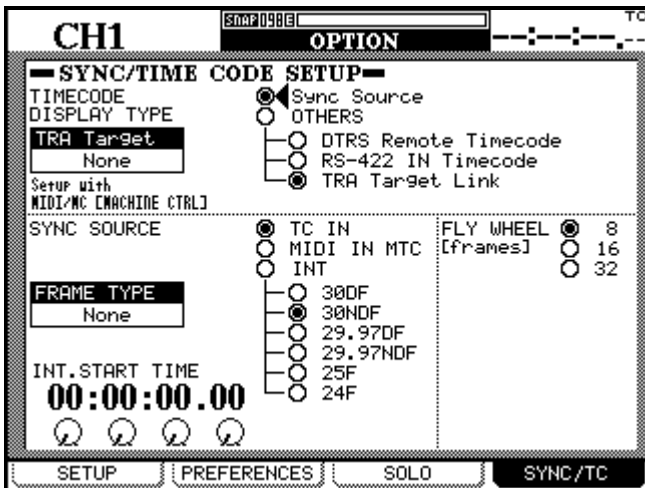
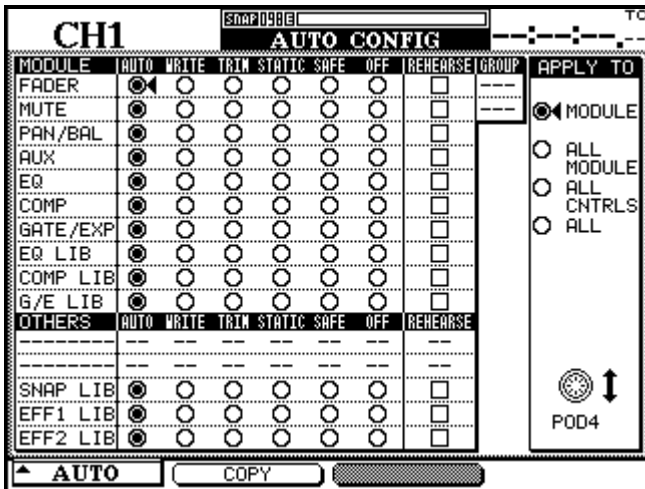
All automation mix files are stored internally on the DM-24. There are 7 banks that can each store up to 8,000 events. If 8,001 events are used in one mix, two banks are used for that mix. The next mix would use bank 3. Up to 32,000 events can be used in one mix. These files (as well as all library files, snapshots, EQ, Effects, etc.) can be dumped to a MIDI device (MDF-3 or sequencer) to make more room for new mixes. They can of course be reloaded at any time.

The idea behind the automation is “power without interference.” When you’re mixing, you want to be thinking about your mix not trying to remember the 28

steps it takes to make the automation function. With the DM-24, as soon as the basic mix settings are made, automation can be activated. When automation is enabled, all automatable parameters go into static mode. As soon as the DM-24 receives time code and WRITE is pressed, the DM-24 is ready to write dynamic automation. Move a fader and release it. The fader will revert back to the static position within the default revert time. Only the fader that dynamic automation has been written to is effected. All other parameters are still in static mode. The touch sensitive faders make punching in on fader automation a breeze. The rotary encoders and POD controls detect movement in order to begin writing automation, but because these controls are not touch sensitive, there is a "Control sense time out" parameter (adjustable between 0.5 seconds and 10 seconds) that will automatically punch those functions out of write mode after the specified time has passed.

All of the other expected parameters are there as well, TRIM, Write to end, Safe, Off, rehearse, etc. There is even a Multi Pass mode where WRITE will remain active when Time Code stops. This way it is not necessary to press the WRITE key every time the current loop restarts.





Cascading two DM-24s

Two DM-24s can be cascaded together to act as one large console. This requires a cascade option card in SLOT 1 of each mixer. Cascading allows the two mixers to share busses 1-8, aux sends 1-6, the solo buss and the stereo buss. Connections to the control room and stereo outputs would be made on the cascade master.

Cascading two DM-24s provides access to 4 internal effects processors (2 in each unit). When the aux sends are cascaded, ANY of the four internal effects processors can be accessed from ANY aux send. The DM-24 represents the state of the art in effects routing for digital mixing consoles.

Mutes and Solos also act as if two cascaded DM-24s are just one big console. PFL, AFL or INPLACE settings are made on the cascade master. INPLACE solo defeats can be assigned to ANY channel on the cascade master and slave. Because busses 1-8 can be shared, 5.1 surround mixing is possible with two cascaded DM-24s. An AES/EBU option card could be added to the cascade master for sending the 5.1 mix digitally to the stem recorder and an analog option card could be added to the cascade slave to send the 5.1 mix to the surround monitoring system. This gives you independent control over monitoring and mix

level to the stem recorder. You can use the METER-FADER-SETUP parameters to control the output level of BUSS 1-8 for monitoring.

When a mix snapshot is stored on the master, a mix snapshot is also stored on the slave simultaneously. The same is true for saving automation mixes. However, when these files need to be cleared from the DM-24 to make room for new mixes, these files would have to be transferred individually from each DM-24 to an external MIDI device for storage.

The stereo buss, control room and studio outputs on the cascade slave can be used independently of the cascade master. This allows many benefits. For instance, the stereo buss on the cascade master could be output dry while a compressor could be inserted on the stereo buss of the cascade slave. With 2 AES/EBU, S/PDIF and balanced analog outputs, up to 6 stereo mixes could be output simultaneously. The control room and studio outputs on the cascade slave could be used to feed different monitors systems. Use the cascade master for your standard near field monitors and studio speakers, while the cascade slave could feed midfield speakers and small computer speakers. It is always nice to reference wide variety of different speakers when mixing. Cascading makes this easy.

One DM-24 allows you to very easily record and monitor 16 tracks simultaneously. However it does not allow you to monitor with effects or setup cue mixes with effects. Cascading two DM-24 makes for the ultimate 24-track recording/monitoring system. Let's say you have an MX-2424. Plug tracks 1-16 into the master DM-24 via TDIF. Plug tracks 17-24 into TDIF-1 on the slave DM-24. Recall the RECORDING 1-16 snapshot on the master and the slave will follow. At this point, the system is ready to record and monitor 32 tracks. Go to the I/O screen on the slave and assign EFFECT 1 L&R and EFFECT 2 L&R to channels 25-28 and assign nothing (----) to channels 29-32. If you have MIDI modules assign their outputs to line inputs 9-16 on the slave. Mic/line inputs are already assigned to channels 9-16, but channels 9-16 are assigned to DIRECT outputs at the moment. Instead, assign them to the STEREO buss. It would be wise to make stereo pairs out of channels 25-32 as the outputs of the MIDI modules are stereo. So now we have:

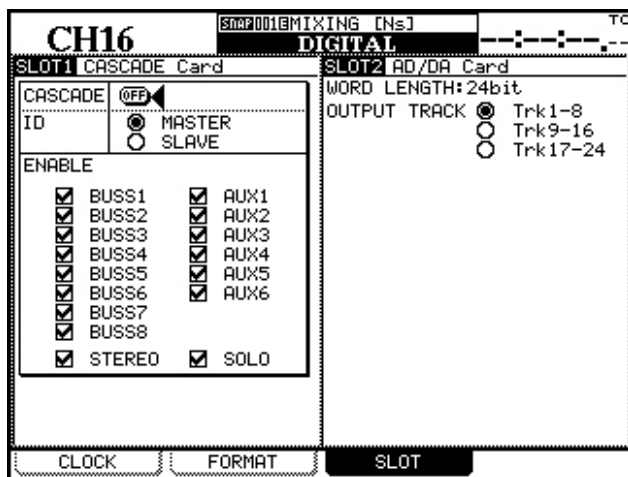
- 24 mic inputs assigned to direct outputs on channels 1-16 on the master and 1-8 on the slave. Each of these channels has a gate, compressor, 4-band EQ and 6 aux sends.
- 24 tape returns assigned to the stereo buss on channels 17-32 on the master and 17-24 on the slave. Each of these channels has a compressor, 4-band parametric EQ and six aux sends.
- The outputs of the internal effect processors are assigned to channels 25-28. Each of these channels has a compressor, 4-band parametric EQ and 6 aux sends.
- Our MIDI sound module outputs are plugged in to line inputs 9-16 on the slave and assigned to channels 9-16. Each of these channels has a gate, compressor, 4-band parametric EQ and 6 aux sends.

- Use AUX 1-2 to feed the internal effect processors.
- Use AUX 3-6 as 4 mono cue mixes or 2 stereo cue mixes. Use the assignable sends to feed headphone amplifiers. This is how the talent will monitor the cue mixes.
- Change AUX 1-2 to POST fader.
- We are always monitoring the tape return path, so bring up channels 17-32 on the master and 17-24 on the slave. We also need to monitor the effect returns so bring up channels 25-28 on the slave too. Make sure the control room source is the stereo buss.
- Use the vocal tape return channel to send to AUX 2. This is a TC Works reverb. You should immediately hear reverb in the control room.
- For the vocalist to hear the reverb you need to turn up the proper aux send level (the aux send which feeds the vocalist's cue mix) on channels 27-28.

This allows you to record and monitor 24 tracks simultaneously. As well as monitor effects and MIDI sound modules and have access to four cue mixes with effects. Each track can be recorded with gating, compression and EQ and monitored with additional compression and EQ. This is serious power!

Cascading two DM-24s provides:

- 32 mic pres
- 64 channels (120 inputs to stereo buss w/ AUX 1-2 and direct to ST)
- 48 channels of TDIF I/O
- 16 channels of ADAT lightpipe I/O
- 4 AES/EBU 2 channel digital I/O
- 4 S/PDIF 2 channel digital I/O
- 8 Assignable sends and returns
- 4 Internal effects processors (2 in each)
- 33 Touch sensitive, motorized faders
- The ability to run a 24 track, 24-bit, 96kHz, 5.1 mixing environment!



Cascading also works at 96kHz!

Operating @ 96kHz

In Hi Sampling mode the DM-24 is a 16 channel console.

Only the first 8 mic pres can be used in this mode.

The outputs are configured very intelligently.

TDIF 1- Buss outs 1-4/Direct out 1-4 or Aux 1-4

TDIF 2- Buss outs 5-8/Direct out 5-8 or Aux 1-4

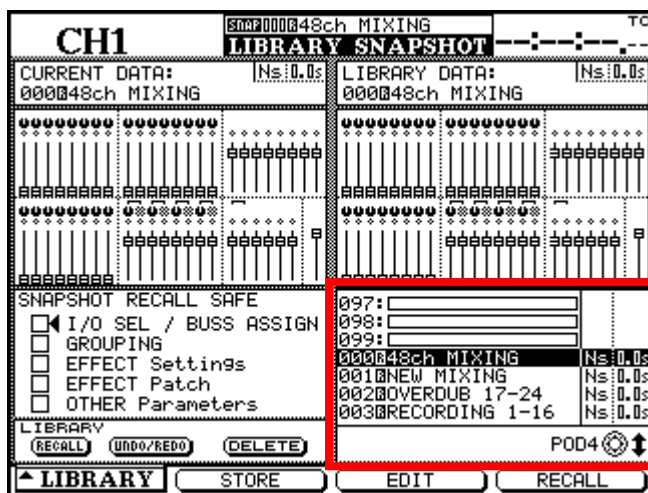
TDIF 3- Buss outs 1-4/Direct out 1-4, Buss outs 5-8/Direct out 5-8 or Aux 1-4.

Having the ability to use the 8 busses allows you to mix in 5.1.

- There is only one 2-channel digital I/O in 96K mode. Assignment choices are: Stereo outputs, Buss 1-2, 3-4, 5-6, 7-8, Aux 1-2, 3-4 or the control room outputs.
- There are only 2 assignable sends and returns available.
- The Master Compressor Insert Matrix is limited to one stereo compressor assignable to the stereo buss, buss 1-2, 3-4, 5-6, 7-8 or Aux 1-2, 3-4.
- Expander/Gates are only available on channels 1-8.
- All channel EQ and compressors are exactly the same as 48K operation.
- AES/EBU can be input or output in either HIGH SPEED or DUAL LINE.
- HIGH SPEED can send 2 channels of data at 96K on one AES/EBU cable. The DM-24 has two AES/EBU I/Os built in. DUAL LINE requires both jacks to send two channels. Some machines only use one format or the other. Some machines do not call these modes HIGH SPEED and DUAL LINE. For instance, the MX-2424 refers to DUAL LINE as ½ SPD, 2 Line.

Snapshots

You can store 95 user snapshots in the DM-24. As mentioned earlier in this document there are four ROM snapshots in the DM-24:



These snapshots cannot be deleted. These snapshots will always be there for you to use as a template for your own snapshots.