

TASCAM

TEAC Professional Division

TM-D4000

Dynamic Mix Automation

OPERATIONS MANUAL

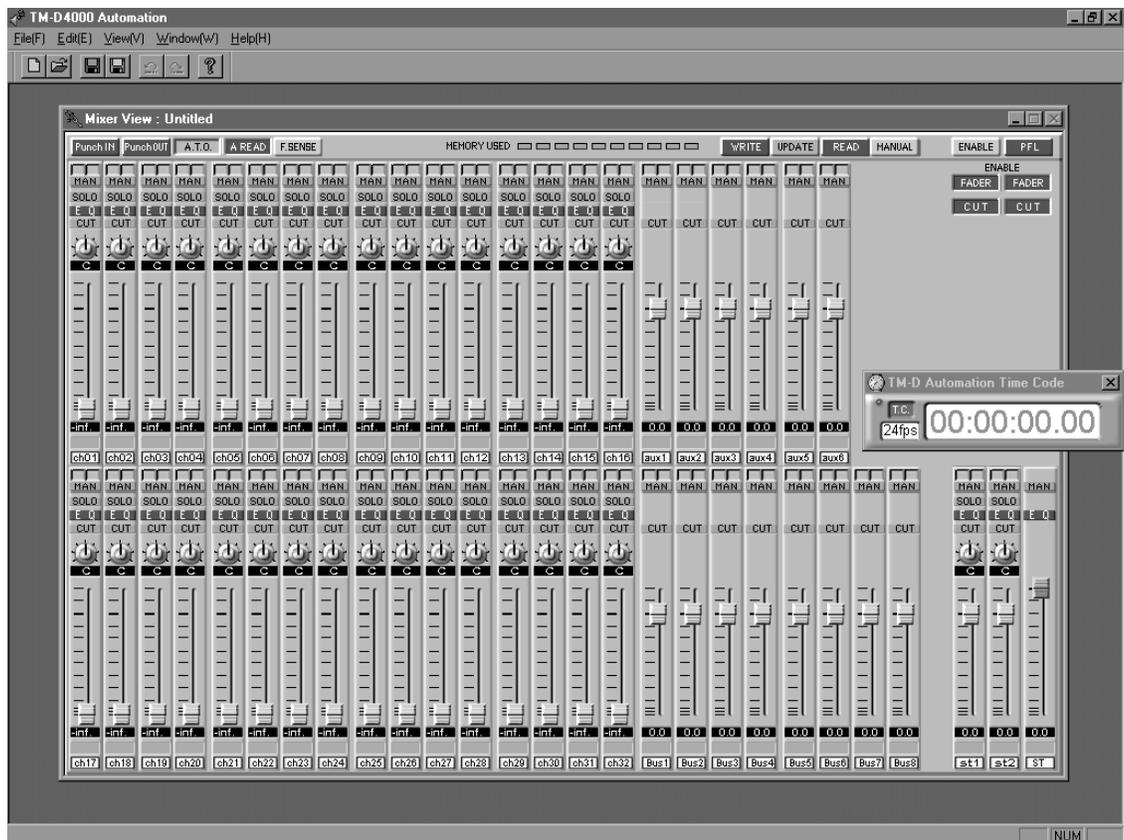


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TM-D4000 Automation - Introduction

The TM-D4000 Automation Software for PC (referred to in this manual as "the automation software", or simply "the software") is a sophisticated and powerful software package designed to automate the TASCAM TM-D4000 digital mixing console with a personal computer. This software provides time code synchronized write and read of many TM-D4000 features, including fader levels, panning, cuts, EQ and Aux. Send levels. Automated mixing is a powerful tool for creativity and is well suited for repetition of tedious mechanical tasks so that listening can be more productive.

A Mixer View shows the positions of the faders, knobs and switches, where you can see the mix as it happens as well as see the position of all the faders at a glance without switching fader layers on the mixer itself. A clear indication of channel names, edit modes, cut status and group assignment with a large time code display provide critical information at a glance.

The Equalization View provides a graphical view of the channels' EQ settings, which can be changed from the TM-D4000 or from the software.

Two Aux. Send Views show the Aux. Send levels (and pan setting for stereo linked sends) for 16 channels per view.

The TM-D4000's six Aux. Send masters, eight Buss masters, two stereo returns and stereo master fader are all automated and shown on screen.

Mixes are held in the computer memory and then saved to disk. The software allows you to create different mixes quickly, listen to them, compare them, retrieve and modify them.

1.1 About This Manual

The following naming conventions will be used in this manual:

ALL CAPS will be used to indicate physical buttons or keys on the TM-D4000.

ITALIC CAPS will be used to indicate buttons or check boxes in the LCD display of the TM-D4000.

First Letter Caps will be used for the names of functions and modes.

This manual is organized in a functional sequence so that later instructions are dependent upon the understanding of previous instructions. It is recommended that this manual be read in sequence while performing the actual functions on the TM-D4000 for better understanding.

1.2 Copyright

Windows, Windows 95, and Windows 98 are registered trademarks and Windows NT is a trademark of Microsoft Corporation in the U.S. and other countries. All other trademarks are owned by their respective owners.

Setup

2.1 Windows Skills Required

This manual assumes that you already possess basic Windows operating skills (pointing, clicking, dragging, menus, dialogs, etc.). If you have just purchased your first PC for the purposes of automating the TM-D4000, we recommend that you first read the introductory manuals that came with your computer before starting to use the automation system.

2.2 System Requirements

In order to use the TM-D4000 automation software, your system must meet the following requirements:

- Running Windows 95 or Windows 98
- 233 MHz or better Pentium II processor.
- 32 MB or more of RAM (64 MB recommended)
- Display of at least 1024 x 768 resolution
- Available ISA slot for the installation of the Moxa CI-132 card
- The Moxa CI-132 high-speed RS-422 board supplied with the TM-D4000 must be installed.

The software requires about 5 MB of disk space, in addition to any disk space you will use for storing mixes.

NOTE: The software does not run under Windows 3.1 or any version of Windows NT.

To use this software you must use the special 9-pin cable supplied with the TM-D4000. This cable is connected to one of the ports of the Moxa CI-132 RS-422 board also supplied with the TM-D4000. A standard serial cable will not work.

NOTE: You cannot use the standard RS-232 serial port of your PC. You must use a Moxa CI-132 board as supplied with the TM-D4000. If you are going to run the software on more than one computer, you must purchase another card from Moxa Technologies or their representatives in your country. See <http://www.moxa.com> for details

2.3 Upgrading the TM-D4000 Firmware

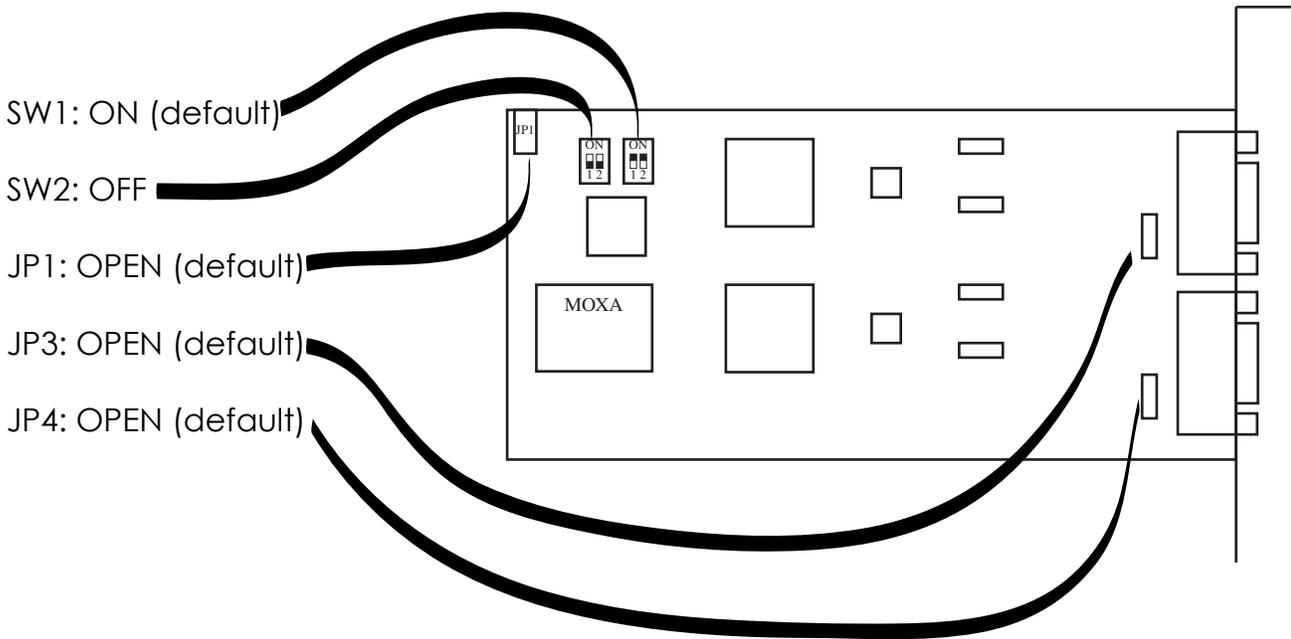
The TM-D4000 must be running system firmware version 1.10 or higher to run the automation software. To check the firmware version on your mixer, press OPTION until the Setup screen appears then press DIRECT.

Please refer to section 10-8 of the TM-D4000 Owner's Manual for complete instructions on upgrading the firmware which can be downloaded from the TASCAM web site at <http://www.tascam.com>

Setup

2.4 Computer Hardware Installation

Before installation of the Moxa CI-132 card into a PC, set switches and jumpers as shown in the diagram below.



1. Install the Moxa CI-132 card that was supplied with the TM-D4000 into an open ISA slot in your computer. Be sure the computer's power is turned off when you install the card!
2. Turn on the computer's power. Insert the Device Driver diskette that was included with the Moxa card. Make a folder labeled "MOXA" in the Program Files folder of your computer and copy the contents of the diskette into the MOXA folder you just created.
3. Remove the diskette from the computer and store it in a safe place.
4. Inside the MOXA folder on your computer double click the file "IO-IRQ.exe". The IO-IRQ screen will be displayed. Select "Smartio/Industio ISA Family" (it should already be selected with the other option being grayed out) and press Enter on the computer keyboard.
5. At the bottom of the screen you will be prompted to {Enter the "Configuration Access Port" in HEX:}. Type in 180 and press Enter.
6. The "CI-132 series" box should be displayed. Use the cursor keys on your computer to navigate through the parameters and set them as shown below. It is possible that nothing will need to be changed.

Port index		1		2
I/O address (HEX)		180		188
IRQ		10		10
Speed	<input type="checkbox"/>	High	<input type="checkbox"/>	High
INT vector (HEX)		1c0		1c0

7. Press the F10 key to save the settings and finish the hardware installation.

Setup

2.5 Computer Software Installation

1. Inside the MOXA folder on your computer run the program "Setup95" to install the device driver for the Moxa card. After the driver has been installed the "Moxa Configuration Panel" is displayed.
2. Click the "Add" button and the "Property" Window will appear. Set the parameters as shown below.

Board Type:		CI-132 Series
INT Vector:		1C0 (Check Box = Checked)
Interrupt No:	<input type="checkbox"/>	10
Base I/O Port Address:	<input type="checkbox"/>	180

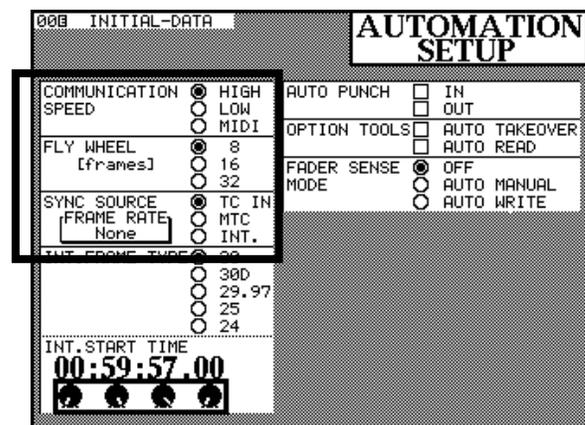
3. Leave everything else unchanged and click OK to close the Property window. Then click OK to close the Moxa Configuration Panel and display a window asking if you want to restart the computer. Click on the Yes box to restart.
4. When the computer has restarted insert diskette #1 of the TM-D4000 automation software and run setup to install. Insert diskette #2 when prompted.
5. The installation software will prompt you when the installation is finished. It is not necessary to restart the computer after installation of the TM-D4000 automation software.

2.6 TM-D4000 Connection and Configuration

1. Connect the special 9-pin cable supplied with the TM-D4000 to either port on the MOXA card on one end and connect the other end to the TO HOST port on the back of the mixer. You must use this supplied cable, a regular 9-pin cable will not work.
2. Connect a cable from the SMPTE time code output of your recording device to the TC In connector on the back of the TM-D4000.
3. In the Automation Setup screen of the TM-D4000 set *Communication Speed* to *HIGH* and *SYNC SOURCE* to *TC IN*.

If you are using external time code with the TM-D4000, especially if the time code source is unstable, you may want to increase the *FLYWHEEL* setting to allow the automation to proceed even when there is a timecode dropout of up to one second.

Alternatively, the internal timecode generator of the TM-D4000 may be used as the timecode source for the system. In this case MTC will be output from the MIDI OUT port on the back of the mixer which could be used by a sequencer or hard disk recorder without SMPTE capability. It will be necessary to select both the desired frame rate and start time.



MTC as a *SYNC SOURCE* is not supported in this version of the automation software.

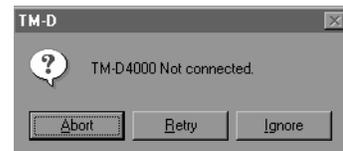
Software Overview

3.1 Launching the Software



1. Double click the TMD4000.exe icon (or the shortcut on the Desktop or Start Menu), and the program will launch. The program will automatically detect what port has been used.
2. When the TM-D4000 is detected, the program will show a graphical representation of the current status of the following components of the mixer:
 - Faders
 - Pan positions
 - Cut and fader groups
 - Solo status
 - Cut status

If the TM-D4000 is not connected correctly, or is not powered up, the program will display this dialog box to abort or try again.



3.2 Timecode Window

The Timecode window must be launched from the Mixer View by pressing <ctrl>T. When launched, the timecode window always floats above other screens allowing easy access at all times.

Timecode window floating can be disabled if desired from the drop-down menu accessed here.



The TimeCode.exe program cannot be launched independently of the TMD4000.exe file.

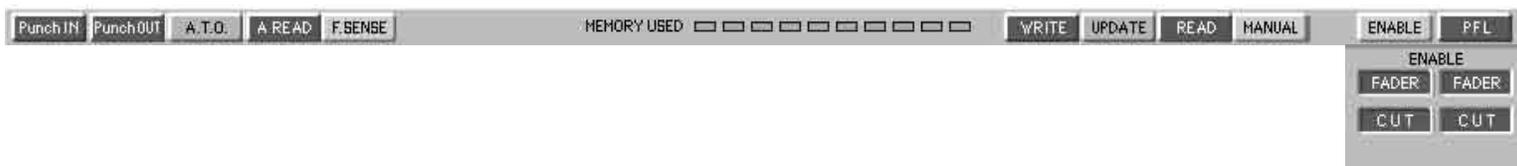
If you try to launch it independently, this error box will appear:



Software Overview

3.3 Control Bar

The Control Bar appears at the top of the main window, and contains controls and displays that are basic to the automated mix process. These controls appear "pushed in" when active, except for the F.SENSE button, which is a three-state button as described below.



Auto Punch In and Auto Punch Out are not supported in this version of the automation software.



Auto TakeOver allows the fader to automatically switch back to Read Mode after an update when the physical fader passes back through its original position, called the "Update Reference Point".



When Auto Read is active, any channel(s) in Write or Update Mode will automatically revert to Read Mode when the received timecode stops.



This three-state switch changes between the following three Fader Sense Modes which correspond to the equivalent settings made in the TM-D4000's *Automation Setup* screen:

Off: Shown by the gray F.SENSE mode.

Auto Manual: Shown by the gray "pushed in" A.MANUAL mode.

Auto Write: Shown by the red A.WRITE mode.

Please refer to the sections 5.2 and 5.3 on Auto Write and Auto Manual for detailed descriptions of these functions.



This "meter" shows the amount of RAM available on your computer for further mix moves. The indicators light in order from left to right (green to red). When the two right-most red indicators are lit, no further mix moves can be written.

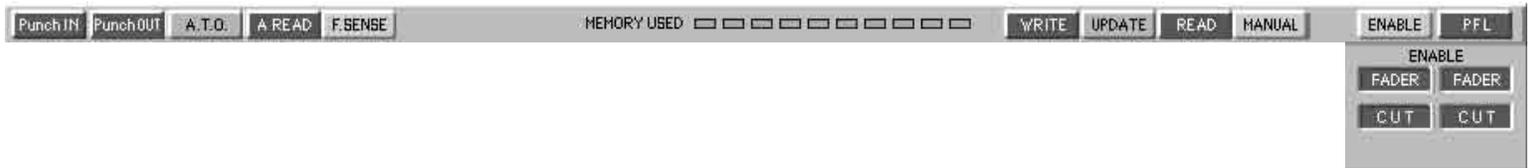


Activate this to enter Write Mode (the equivalent to pressing the WRITE key on the TM-D4000). Double click it to select Write Mode for all channels.



Activate this to enter Update Mode (the equivalent to pressing the UPDATE key on the TM-D4000). Double click it to select Update Mode for all channels.

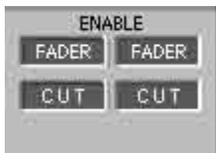
Software Overview



  Activate this to enter Read Mode (the equivalent to pressing the READ key on the TM-D4000). Double click it to select Read Mode for all channels.

  Activate this to enter Manual Mode (the equivalent to pressing the MANUAL key on the TM-D4000). Double click it to select Manual Mode for all channels.

 Brings up the Automation Items window which allows the selection of the different mixer parameters which may be automated.



Use these four buttons for the quick enabling/disabling of writing and reading for the faders and cuts. The red buttons on the left enable/disable writing while the green buttons on the right enable/disable reading.

  Toggles between PFL (Pre-Fader Listen) and IPS (In Place Solo).

3.4 Toolbar/Disk Operations



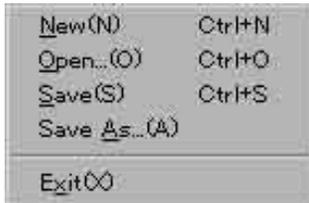
The Toolbar can be selected for viewing or hidden using the Show Toolbar command in the View Menu. This is a floating toolbar that can be dragged from the default position and re-anchored where most convenient. It contains standard icons which, when clicked, carry out file operations.

-  **NEW:** This clears the contents of the current mix and starts a new mix session.
-  **LOAD:** This opens the standard Windows dialog box for opening a previously saved mix session.
-  **SAVE:** This saves the current mix session to disk using the standard Windows dialog box.
-  **SAVE AS:** This saves the current mix under a new name.
-  **UNDO:** This discards the effects of the last mix pass.
-  **REDO:** This restores mix information discarded by an UNDO command.
-  **ABOUT:** Displays the automation software and TM-D4000 firmware versions.

Software Overview

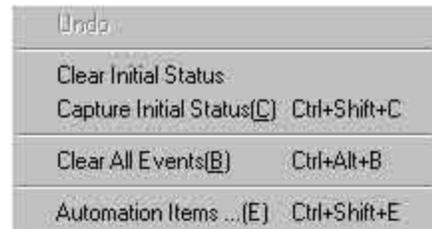
3.5 Menu Items

File Menu



Item	Meaning
New	Starts a new mix
Open	Opens an existing mix from disk
Save	Saves the existing mix to file, prompting for a file name if one has not been already given
Save as...	Saves the existing mix to another file
Exit	Quits the software

Edit Menu



Item	Meaning
Undo/Redo	Undoes the effects of the last timecode pass (or redoes them if undo has been carried out)
Clear Initial Status	Clears the Initial Status, but does not clear dynamic events
Capture Initial Status	Overwrites the current Initial Status with the current console status
Clear All Events	Clears all current dynamic events and Initial Status
Automation Items...	Brings up the dialog box where console parameters to be automated can be selected

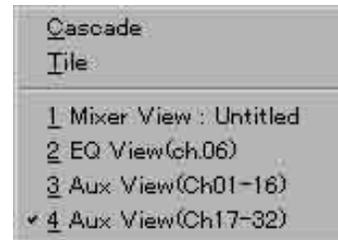
Software Overview

View Menu



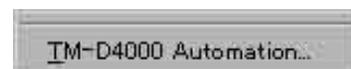
Item	Meaning
Toolbar	Shows or hides the toolbar
Status Bar	Shows or hides the standard Windows status bar at the bottom of the main window
Hide Physical Fader pos.	Shows or hides the physical faders
Timecode	Starts the Timecode program and brings up the Timecode controls
Automation Setup	Brings up the Automation Setup dialog (equivalent to the TM-D4000's Automation Setup screen)
Aux View (1-16)	Brings up the appropriate Aux View
Aux View (17-32)	

Window Menu



Item	Meaning
Cascade	Standard Windows "window cascade" function
Tile	Standard Windows "window tile" function
List of open windows inside the application (but not including the Timecode bar)	

About Menu

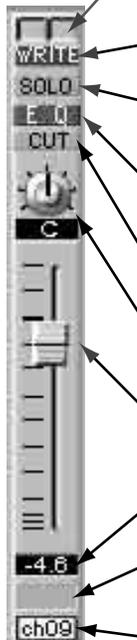


Item	Meaning
TM-D4000 Automation	Brings up a panel giving the version number of the automation software and the ROM installed in the mixer

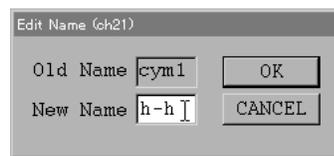
Software Overview

3.6 Mixer View

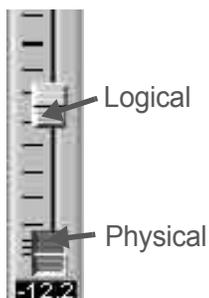
When the automation software is launched, the Mixer View is displayed showing key information about the automated mix including fader and knob positions, cuts, EQ status, etc.

	Group Indicators	If the channel is part of a fader and/or cut group, the group number is shown here along with the group's color (fader groups are shown in the left box, cut groups in the right)
	Mode Indicator	This shows the mode of the channel: Read, Write, Manual or Update.
	Solo control and indicator	Turns red when the channel is being soloed.
	EQ Control and Indicator	Turns the equalization on and off for the channel
	Cut Button	Turns red to indicate that the channel is cut.
	Panpot and Indicator	Sets and shows the channel's panpot position. The center position (as shown here) is represented by "C".
	Fader	Sets and shows the channel's fader position.
	Level Indicator	The level of the logical fader in dB relative to nominal is displayed here.
	Label	Channel label. Click here and type in up to four alphanumeric characters.
	Channel Number	The number under the fader corresponds to the number of the TM-D4000's channel.

Stereo linked faders are shown with a "gang bar" linking the two on-screen faders.



Click the gray label just below the level indicator to enter a 4-character name for the channel.



The Logical fader shows the true level of a channel at any moment. This is the fader that automatically moves during playback.

The Physical fader shows the position of the hardware fader on the TM-D4000. The physical fader only appears when the position of the fader on the mixer is different from the true audio level. When the two are in agreement, the physical fader is concealed and the fader is said to be "nulled".

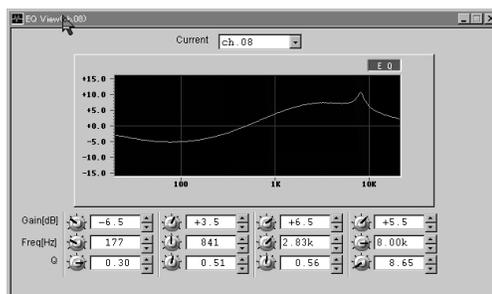
Software Overview

3.7 EQ View

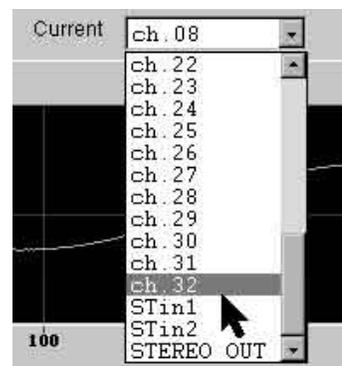
This is a view which allows you to view and adjust the EQ parameters for a channel.



Right-click in the fader area of a channel. The word "Equalizer" will appear in a pop-up menu.



Click on this pop-up to bring the window shown above to the front. The EQ button at the upper right of the response curve can be used to turn the EQ on or off for the selected channel.



Alternatively, use the pull-down list at the top of the window to change between channels.

The on-screen rotary controls or the small up/down arrows to the right of the text boxes may be used to make the gain, frequency and Q settings for the four EQ bands. The graphic EQ response curve will change as the values are changed. The desired values could also be typed in directly. The software will round the values to the nearest valid value used by the TM-D4000. Changing the EQ settings on the mixer itself will also change the on-screen settings and the response curve.

NOTE: Some of the controls may be disabled under certain conditions. The Q setting has no meaning when an HPF or LPF setting is selected in the Gain section of bands 1 and 4.

3.8 Aux Views

Settings for the TM-D4000's six Aux. Sends may be viewed and adjusted from this screen. These on-screen controls are available in two different views: Aux View (Ch01-16) and Aux View (Ch17-32). The Aux settings for the two ST IN inputs are shown in both views.

Use the View menu to select either of these two views. Note that both views may be on the screen at the same time.

Click any of the PRE/POST or ON/OFF buttons to change these settings.

The automation mode indicators show the current automation mode of the channels.

The Aux. Send levels may be adjusted using the on-screen controls. Channel labels entered in the Mixer View are shown but may not be edited here.

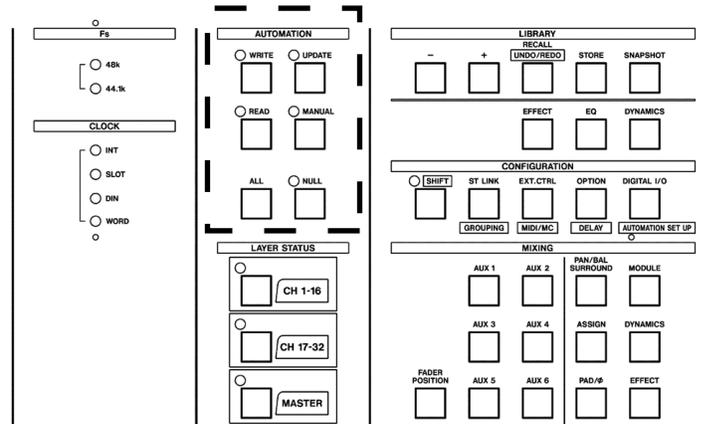


Software Overview

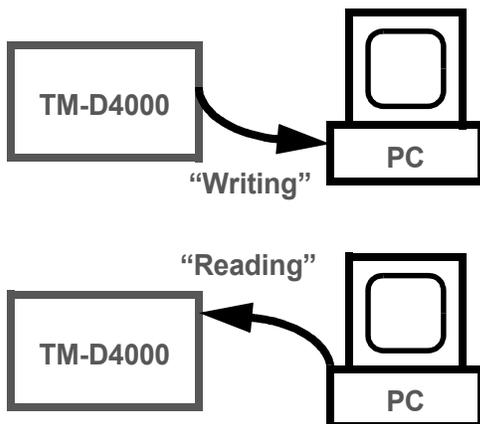
3.9 Automation Modes

The four automation mode keys (WRITE, UPDATE, READ and MANUAL) on the TM-D4000 are used in conjunction with the software to provide access to the automation modes described on the next page.

Automation modes can be selected for all channels by pressing the desired mode key then pressing ALL. Automation modes can also be selected on a per channel basis by pressing a mode key then pressing ENTER to confirm your selection. The indicator for the selected mode key will blink and individual channels can then be assigned to that mode with their SEL key. When a mode indicator is blinking, another mode key can be selected at any time. It is possible to have some channels assigned to one mode while other channels are assigned to a different mode. A single channel can only be assigned to one mode at a time.



In addition to selecting these modes from the TM-D4000, you can also select them from the main Control Bar (See 3.3 Control Bar) by double-clicking the desired mode button to assign all the channels to that mode. The appropriate indicators will light on the TM-D4000 when the mode is selected from the software.



Remember that the terms "write" and "read" are relative to the mixer: "Writing" transfers mix moves from the mixer to the automation software and "reading" transfers mix moves from the automation software to the mixer.

Software Overview

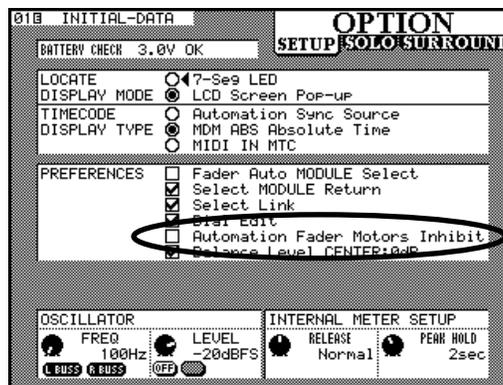
Write Mode:

Channels in Write mode are armed and ready to write automation moves whenever time code is received by the automation software. A channel can be punched into write mode in real time by pressing its SEL key (with the master mode in Write), then punched out by pressing the STOP button. Any time a channel is writing mix moves, switch events or POD adjustments it is erasing previously written information during the time the channel is actually in write mode, the appropriate parameters are write-enabled and the automation software is receiving time code.

Read Mode:

Channels in Read mode will play back previously written mix moves. While in Read mode any fader moves, switch events or POD adjustments made will not be written by the automation software, nor will they affect the channel audio.

When reading mix moves and listening at low volumes, it can be helpful to turn off the motorized faders. The mix moves will still be read and displayed on the automation software screen but the faders will not move.



Update Mode:

Update mode has three functions. 1) Changing EQ, Aux or Pan settings for a channel while it is reading fader automation. 2) Adding switch events (Cuts, EQ insertion and Aux On/Off/Pre/Post) to already existing switch events without replacing them. 3) Changing the overall level of a channel for the entire mix or a portion of it without replacing existing mix moves.

Manual Mode:

Channels in Manual Mode will not read or write automation data. While adjustments made to a channel in Manual Mode will change the setting for that channel, as soon as the channel is put into Read Mode any changes made during Manual mode will be lost as they will be overridden by the automation software.

Building An Automated Mix

4.1 Getting Started

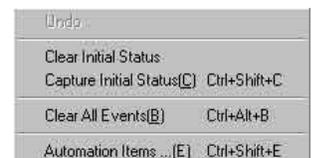
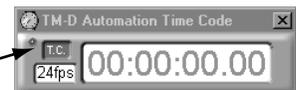
This section introduces important concepts and techniques relating to writing and editing fader moves, cuts, and other automated mix events in real time (while program material is playing and time code is being received). Please read this section carefully as there are details to building an automated mix that, if skipped, will cause mix moves to be lost or limit the power of dynamic mix automation.

NOTE: We will be dealing with two types of automation data: 1) Static data (settings that will not change during the length of the mix) and 2) Dynamic data (settings that will be changed by the mix moves written into the automation software during the mix).

You should become familiar with the Automation Items window available under the Edit Menu of the automation software. It is in this window that it is possible to write enable some parameters (like faders or EQ) while leaving other parameters untouched. Think of this as arming one track of a multitrack recorder for an overdub while leaving others in playback.



1. □ Launch the automation software and the Time Code Window. Turn off time code reception in the Time Code Window by clicking on the T.C. icon in the upper left corner.
2. □ Set all mixer channels to Manual Mode and set up the basic mix as much as possible without automation. (Basic levels, panning, EQ, effects, etc.)
3. □ Save your mix as a snapshot in the TM-D4000 as a backup.
4. □ Turn on time code reception in the Time Code Window and select Write Mode for all channels by pressing WRITE then ALL on the Automation section of the TM-D4000. Be sure that all parameters are write-enabled in the Automation Items window of the automation software.
5. □ Under the Edit Menu of the automation software, select Clear Initial Status and confirm your action by clicking OK in the alert window that is displayed.
6. □ Also under the Edit Menu, select Capture Initial Status and confirm your action by clicking OK in the alert window that is displayed.
7. □ Play the time code from the beginning of your recording 5 to 10 seconds before the start of audio until the readout in the time code window turns black. This sets the initial static position of all settings on the mixer within the automation software. Do not make any adjustments during this short pass.
8. □ Stop the recording and select manual mode for all channels.



Building An Automated Mix

4.2 Adjusting Static Settings

1. □ Make the adjustments to the desired channels with those channels set to manual mode. When you like the new settings, stop the recording, set the desired channels to write mode and select Capture Initial Status from the automation software Edit Menu. (NOTE: Only parameters that have been write-enabled in the Automation Items window will be saved.)
2. □ The channels with new static settings can now be returned to manual mode for the possibility of further adjustments, or they can be placed into read mode to ensure that the new settings won't get accidentally changed. (NOTE: You will always be able to make adjustments to a channel that is in manual mode, but those adjustments will not be saved until the above step is carried out.)

4.3 Creating Dynamic Mix Moves

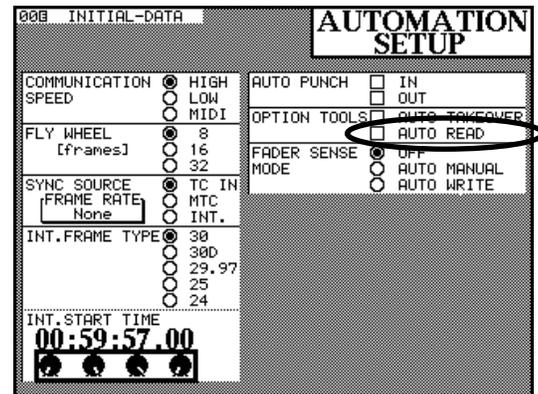
1. □ Put desired channels into write mode, make the dynamic mix moves, then put the newly automated channels into read mode to play back the dynamic mix automation.
2. □ If you wish to perform the moves again, the previous pass can be undone by selecting Undo from the Edit Menu in the automation software before attempting another pass. Any time old mix moves are replaced by new ones, those channels should be in read mode before making the new moves to ensure starting from the same settings as before the old mix moves were made. Please refer to the following section on Real Time Mix Editing.

Real Time Mix Editing

5.1 Manual Write

This will be the most common way to edit previously written mix moves. This technique is similar to punching in and out of record on a multi-track when doing an overdub.

- Channels will already be in read mode since they will be reading mix moves from the automation software.
- Be sure *AUTO READ* is checked in the Automation Setup screen of the TM-D4000. This will automatically switch write-enabled channels to read mode when the recording is stopped.



1. Write enable the channel parameters you wish to write in the Automation Items window of the software.
 2. Press the WRITE key in the Automation section of the TM-D4000, then confirm the selection by pressing ENTER. The Write indicator on the mixer should be flashing.
 3. Play the recording a comfortable amount of time before the place you wish to edit mix moves. The moving faders of the TM-D4000 will be following the mix moves previously written.
 4. When it is time to begin writing new mix moves, put the desired channel(s) into write mode by pressing the channel's SEL key. As soon as the SEL key is pressed, the channel will begin writing mix moves, erasing moves that were previously written during that section of the recording.
 5. When the end of the section to be edited is reached, simply stop the recording to "punch out". All channels will automatically switch to read mode when the recording is stopped since the Auto Read function is selected.
 6. Another way to punch out is to press the READ key in the Automation section of the mixer, then press All to select read mode for all channels. This way you can continue to listen to the mix after the automation edit.
 7. It is also possible to select read mode by pressing the READ key, then pressing an individual channel's SEL key to switch it to read mode. This allows some channels to be punched out while other channels continue writing. As long as a master mode indicator is flashing it is possible to switch between modes in this way with a single key press, then use the channel SEL keys to punch into write or out to read modes.
- As many channels as you need can be put into the Write or Read modes in this way with more channels added at any time during a mix pass. However, remember that this is a dynamic mix automation system and you have the ability to concentrate on a few channels or just one channel at a time, then going on to other channels. Just like overdubbing.

Real Time Mix Editing

5.2 Auto Write

This mode automatically puts a channel into Write Mode when a fader is moved. Auto Write mode is best used for gradual fader movements while Manual Write is better suited for drastic or quick fader movements.

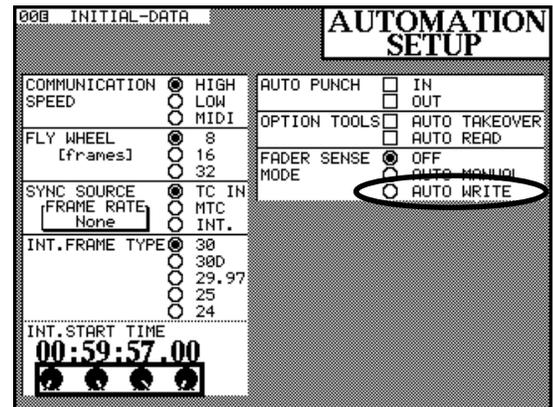
- Channels will already be in read mode since they will be reading mix moves from the automation software.
- Be sure *AUTO READ* is checked in the Automation Setup screen of the TM-D4000. This will automatically switch write-enabled channels to read mode when the recording is stopped.
- Write mode does not need to be selected in the Automation section of the mixer.

1. Select *AUTO WRITE* in the Fader Sense Mode section of the Automation Setup screen on the TM-D4000.
2. Play the recording a comfortable amount of time before the place you wish to edit mix moves. The moving faders of the TM-D4000 will be following the mix moves previously written.
3. Begin slowly moving the desired fader(s) when you wish to edit mix moves. The fader will automatically switch to write mode and begin writing new mix moves.
4. When the end of the section to be edited is reached, simply stop the recording to "punch out". All channels will automatically switch to read mode when the recording is stopped since the Auto Read function is selected.

• Another way to punch out is to press the Read key in the Automation section of the mixer, then press All to select read mode for all channels. This way you can continue to listen to the mix after the automation edit.

• It is also possible to select read mode by pressing the Read key and confirming the selection with the Enter key, then selecting read mode on the desired channels by pressing the SEL key. This allows some channels to be punched out while other channels continue writing.

• Since the read mode stays selected it is possible to punch into write mode on a channel by moving its fader, then punch out to read mode simply by pressing the channel's SEL key. This can be repeated as many times as necessary on as many channels as necessary.



Real Time Mix Editing

5.3 Auto Manual

This mode automatically puts a channel into manual mode when a fader is moved. This can be useful for experimenting with new mix moves without erasing previous ones. Remember, manual mode does not write mix moves, so these experiments will not be written to the automation software. Also, when a channel is switched to manual mode, all the parameters of that channel will stop reading mix moves. So if you experiment with fader moves on a channel that has panning moves written, the panning moves will stop playing back.

• Channels will already be in read mode since they will be reading mix moves from the automation software.

1. Select *AUTO MANUAL* in the Fader Sense Mode section of the Automation Setup screen on the TM-D4000.

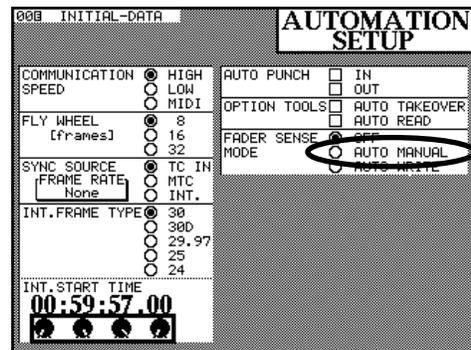
2. Play the recording a comfortable amount of time before the place you wish to experiment with mix moves. The moving faders of the TM-D4000 will be following the mix moves previously written.

3. Begin moving the desired fader(s) when you wish to begin experimenting with mix moves. The channel will automatically switch to manual mode.

4. When the end of the experiment is reached, simply stop the recording or switch back to read mode using the READ and ALL keys for all channels or the READ and SEL keys for individual channels.

• In this mode Auto Read will not switch all channels to Read Mode when the recording is stopped, allowing further experimentation when the recording is started again. It is necessary to manually switch back to Read Mode when desired.

NOTE: Since Auto Write and Auto Manual will cause a channel to go into Write or Manual mode when a fader is moved, turn these functions off before the final mixdown. If a fader is accidentally moved with one of these functions on, that channel will stop playing back mix moves, and in the case of Auto Write, that fader will begin erasing mix moves.



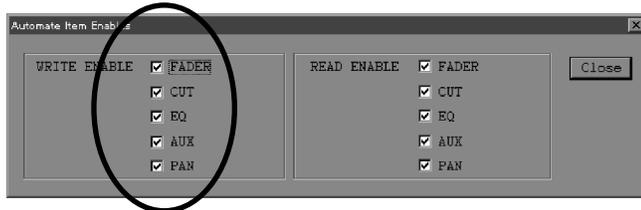
Updating Mix Moves

Update mode provides access to some of the more powerful and important features in the dynamic automation software. Using Update Mode it becomes possible to adjust POD settings for a channel while reading fader moves, add switch events without replacing existing ones and change the overall level of a channel for a section of the recording or the entire mix while retaining already written mix moves.

6.1 Adjusting POD Settings

During the process of mixing it is common practice to make adjustments to EQ, Aux. Sends, Panning, etc. while listening to other mix parameters being read. In this way we can more accurately make the critical sonic judgements required during a mixdown. (NOTE: Update Mode must be used for this purpose since Read Mode accepts mix moves only from the automation software, not from the mixer's controls.)

By following the steps below it is possible to make changes to the static settings of one parameter (EQ for example) while listening to dynamic moves being read by other parameters (fader, panning, etc.)



1. In the Automation Items window of the automation software, uncheck WRITE ENABLE for all parameters.
2. In the case of EQ it can be useful to store the pre-adjustment setting in an EQ library in case the original setting is preferred over the adjusted setting.
3. Select Update Mode for the channel(s) you wish to make adjustments to by pressing UPDATE in the AUTOMATION Section of the TM-D4000, then selecting the desired channels using their SEL key. Update mode for a channel can also be selected while the recording is playing.
4. While in Update Mode it is possible to freely adjust the desired parameter while the recording is playing. If the recording ends or is stopped and the adjustment has not been completed, it is then necessary to WRITE ENABLE only the adjusted parameter in the Automation Items window of the software, select Write Mode on only the adjusted channels with the recording stopped, then select Capture Initial Status under the Edit menu of the automation software. If it is more desirable to begin the adjustment again from the original setting, simply play the recording again and it will be restored. However, once Capture Initial Status has been performed it will be necessary to recall the original setting from your stored library.

Updating Mix Moves

6.2 Adding Switch Events

There may be times during a mix that it is needed to add a switch event or events (a Cut, EQ switch or Aux Send switch) so close to an existing good switch event that Write Mode might accidentally erase the good switch event. In these instances Update Mode may be used to add the new switch event(s) without the danger of erasing existing ones. Or you may simply wish to experiment with some different cuts.

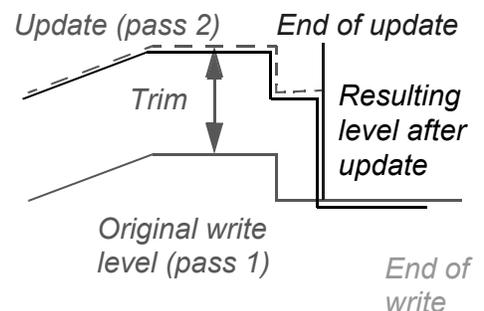
1. In the Automation Items window of the automation software WRITE ENABLE only the parameters where switch events are to be added. (CUT, EQ and/or AUX) NOTE: EQ and AUX also have dynamic controls in addition to switches that will be write-enabled. Update Mode will not erase previously written mix moves on the dynamic controls. However, if they are adjusted during Update Mode the result will be the same as if the adjustment were made during Write Mode.
2. Select Update Mode for the channel(s) you wish to add switch events to by pressing UPDATE in the AUTOMATION Section of the TM-D4000, then selecting the desired channels using their SEL key. Update Mode for a channel can also be selected while the recording is playing.
3. Add switch events as desired. If you wish to try again, select Undo from the Edit Menu of the automation software before playing the recording again.

The status of the dynamic processor insertion switch can be freely changed in Update Mode and will remain on or off as selected since this switch event is not written or read by the automation software.

6.3 Making Relative Offsets to Fader Moves

During a mix there may be sections where there are good mix moves on a channel but the overall volume of the section needs to be raised or lowered. In these instances Update Mode can be used to make relative offsets to fader moves without erasing the existing mix moves.

1. In the Automation Items window of the automation software check the box to WRITE ENABLE faders. You may wish to uncheck the WRITE ENABLE boxes for the other parameters to avoid writing an unwanted mix move or switch event.
2. Select Update Mode for the channel(s) you wish to make relative offsets to by pressing UPDATE in the AUTOMATION Section of the TM-D4000, then selecting the desired channels using their SEL key. Update Mode for a channel can also be selected while the recording is playing.



Updating Mix Moves

3. □ Play the recording a comfortable amount of time before the place you wish to begin offsetting fader moves. The faders on the TM-D4000 will be following the mix moves previously written. When a channel is placed into Update Mode, its fader will stop moving and be represented by the Physical fader on the automation software screen. The Logical fader on the software screen will continue to move, reading mix moves and controlling the actual volume of the channel.

4. □ As soon as a channel is placed into Update Mode an Update Reference Point (a small yellow arrow) will appear next to the Physical fader on the automation software screen. When the physical fader is moved above the Update Reference Point, you are increasing the level of previously written moves. When the Physical fader is moved below the Update Reference Point, you are decreasing the level of the previously written moves.

5. □ When the section needing the relative offset is finished, punching out of update can be done in any of the ways described in section 5.1,

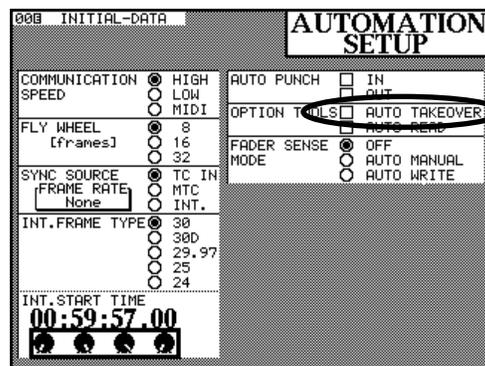
Manual Write.

□ To create a seamless transition from the relative offset to the section of the recording that comes after, return the physical fader to match the Update Reference Point before punching out. This will also only add the relative offset to the actual edited section of the recording.

□ If the physical fader is left above or below the Update Reference Point when punching out of Update, then the relative offset will be kept from the beginning of the offset until the end of the recording.

6.4 Auto Takeover

Auto Takeover is a convenient feature that is used within Update Mode for a seamless transition from the offset to the remaining portion of the recording. With a standard Update it is possible to offset mix moves above and below the Update Reference Point in one pass. With Auto Takeover enabled the relative offset can only be added above or below the Update Reference Point in one pass. The channel will automatically switch back to Read Mode when the Physical fader passes back through the Update Reference Point.



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