

Contents

Updates.....	1	Maintenance Items	7
Important items.....	1	V1.10 changes	7
External Drive Recommendations	1	V1.04 changes	8
Drive Formatting.....	1	V1.03 changes	8
Time Code.....	1	V1.02 changes.....	9
Display size	1	V1.01 changes.....	9
Manual Update.....	2	Known Issues	10
Manual Addendum.....	2	Known Issues in Version 1.10	10
Manual Corrections	4	Other Issues	10
New Features	5	V1.02 specification changes	10
V1.10 additions	5	Notes	11
V1.04 additions	5	Notes on V1.04 and others	11
V1.03 additions	6		
V1.02 additions	6		

Updates

Always use the most recent firmware for this device. Please visit the TASCAM web site at <http://www.tascam.com> to check for the latest firmware.

Important items

External Drive Recommendations

For optimal performance, it is strongly recommended that high RPM drives (7200 or greater) with large on-board caching (8MB or greater) are used. Always check your external drive with the X-48's Drive Benchmarking Utility under the File menu.

Drive Formatting

Since the X-48 is a hard drive intensive product, certain procedures must be followed to ensure expected error-free operation. These procedures are of particular importance on external FireWire drives due to their reduced bandwidth compared to the internal drive:

- If 3 – 5 projects have been recorded onto a drive, then deleted, the drive should be formatted without “Quick Format” checked.
- A drive used for a long record pass should be formatted first without “Quick Format” checked.

Time Code

To ensure proper recording while synchronized, the X-48 must now be in a locked state to external timecode and clock before entering record. This is consistent with previous TASCAM recorders (DTRS, MX-2424).

Display size

The X-48 display size can be changed to match various types and sizes of screen size, e.g. wide screen or other larger screens. Select “Display Settings” from the Windows menu to bring up a dialog that shows the available screen sizes.

Manual Update

Version 1.04

Manual Addendum

Supported Optical Media

- Supported:

DVD-R	Read/Write
DVD-RW	Read/Write/Rewrite
DVD+R	Read/Write
DVD+RW	Read/Write
- Not Supported:
 - DVD+RW rewrite
 - Dual Layer media
 - “For Audio Only” or “For Music Only” CD media

Clock Channels

Following are valid digital inputs for receiving digital audio clock:

Built-in TDIF	Port1 (Channels 1-8)
IF-AE24(X)	Slot 1 (Channels 1&2) or Slot 2 (Channels 25&26)
IF-AD24(X)	Slot 1 (Channels 1&2) or Slot 2 (Channels 25&26)

Mounting FireWire Drives

To mount a FireWire drive, it must be powered off when connected to the X-48. It will then mount when powered on. Once unmounted, it has to be powered off then on again to mount again.

OSX Networking Requirements

To connect via Ethernet to a Mac, the Mac must be running OSX 10.4.0 or higher.

Booting the X-48

When booting the X-48, do not leave a USB flash drive connected. If that occurs:

1. Press F1 To Continue when prompted
2. Remove the USB flash drive

It may be necessary for the machine to be booted a few times without a USB flash drive to clear the condition.

Drive Formatting

Since the X-48 is a hard drive intensive product, certain procedures must be followed to ensure expected error-free operation. These procedures are of particular importance on external FireWire drives due to their reduced bandwidth compared to the internal drive:

- If 3 – 5 projects have been recorded onto a drive, then deleted, the drive should be formatted without “Quick Format” checked.
- A drive used for a long record pass should be formatted first without “Quick Format” checked.

Project Transfer: MX-2424 to X-48

1. Mount a FAT-32 MX-2424 SCSI drive containing the

project to be transferred onto a computer.

2. Transfer the project to the X-48 by any of the following methods:
 - a. Copy it to a FireWire drive that can be mounted on the X-48
 - b. Share the X-48's drive with the computer via network then copy the project from the drive mounted on the computer to the X-48's drive.
 - c. Burn the project to CD or DVD, move that disk to the X-48, and copy the project to the X-48's drive.
3. Select Import from the X-48's File Menu and Import the OpenTL project.

Theater Play Mode

The X-48 can be set to a special mode where it steps through location points as a series of “cues”. This can be useful when triggering material and sound effects for Theater, Radio Stations, etc.

To enter this mode, select Theater Play as the Control Mode in either the LCD or VGA user interface.

In this mode, it is possible to play and navigate through a series of “cues”. Each cue is defined by the times contained in a pair of memory locations. Cue number 1 starts at the time in Memory location #00, and finishes at the time specified by Memory #01. Cue #2 goes from Memory #02 to Memory #03, and so on.

The desired locate points must already exist in the project before using Theatre Play mode.

To begin, select “Theatre Play” mode then load the appropriate project (with the desired locate points already stored within that project). Theatre Play mode may be selected after loading the desired project.

These actions will result in the X-48 locating automatically to the start of the first cue, the location contained in Memory #00. The project must contain an even number of memory locations, ie. #00 through #07 (#00 counts as one). If the project contains an odd number of memory locations, the transport will not move beyond the last one.

Pressing PLAY will cause the X-48 to play from the start of the first cue (Memory #00) to its end (Memory #01), and then immediately locate to the beginning of the next cue and stop, (Memory #02) awaiting another Play command.

When a footswitch is inserted into the back panel “Footswitch” jack, each cue can be triggered, one at a time, by pressing on the footswitch. In other words, in “Theatre Play” mode, a footswitch is another PLAY key.

BUSY Indications

When the front panel BUSY LED is illuminated and/or the VGA cursor is shown as an hourglass, the X-48 is processing CPU or disk intensive operations. During this time, important operations such as Save should not be performed.

Removing The Top Panel

When removing the X-48's top panel to install optional I/O cards (Owner's Manual Pages 13 & 14), please note that the top panel screws are not all the same. The center and rear top panel screws are different from the four corner screws. Set them aside separately to be replaced in their same positions to avoid stripping the screw holes or screws.

ADR Mode

When in ADR Mode, the front panel Auto Input LED will flash. It is possible to disable ADR Mode by pressing the front panel Auto Input key, but it is only possible to enable ADR Mode from the LCD or VGA interfaces.

Chase Freewheel

An Infinite setting as available as a Chase Freewheel choice to allow the X-48 to continue to play or record regardless of incoming timecode.

Audio Pool

The X-48's VGA UI includes an Audio Pool window, which is accessed by pressing CTRL+P or by selecting Audio Pool under the Windows menu. The Audio Pool will also automatically be presented when a project references any audio files that it cannot find. The Audio Pool supports the following utility functions:

- **Relink:**
If a Region in a project references an audio file that cannot be found, click on the Region then click on Relink to navigate to the missing audio file and re-establish the link between the region and the audio file. This can occur if audio data is manually moved from its original location, or if audio data exists on an external drive that is not currently mounted, or if audio data is renamed while its drive is not connected to the X-48.
- **Rename:** This allows an audio file within a project to be renamed without causing a file that would need manual relinking.
- **Remove:** This allows a project's reference to an audio file to be permanently removed if it is known that the audio file will no longer be needed.

Manual Corrections

Typos

- The Read & Surf section on Page 9 refers to “Quick Start Guide”. This should be “Quick Reference Guide”.
- Item #8 on Page 12 incorrectly omitted Tri Level sync in addition to the stated blackburst.
- On Page 37, the paragraph describing Pre/Post Roll is a duplicate of the previous section on Rehearse. The Pre/Post Roll description should be:

Pre Roll and Post Roll are used during Loop and Auto Punch operations to have the specified amount of transport motion before the In point and/or after the Out point.

- On Page 52, the paragraph describing Audio File Naming may be confusing. It should be:

The X-48 can auto-name new audio files either based on the project name or the track name. This setting can only be changed from the GUI. Since there are no track names visible when using the LCD, it defaults to naming audio files based on the project name.

- On Page 59, the paragraph under DSP View describing the Track section refers to an Input Routing pulldown that does not exist in this location. The Input Routing pulldown is per-track in the Track View.
- Page 19 of the X-48 Owner’s Manual incorrectly refers to the pre-installed version of TASCAM Mixer Companion software as 1.30. X-48 Version 1.00 includes Version 1.50 of TASCAM Mixer Companion.

Backup

1. On page 35 of the Owner’s Manual, it incorrectly states that data may be backed up to a network. The only valid backup destinations are optical media and hard drive.
2. Only one project may be backed up at a time.

Operating Environment

The X-48 can be used in most areas, but to maintain top performance and prolong operating life, observe the following operating conditions:

- The nominal temperature should be between 5°C and 40°C.
- Relative humidity should be 30% (5°C) to 80% (32°C).

Installing Plug-Ins

On page 61 of the Owner’s Manual, the plug-in installation instructions are incomplete. Please follow the steps below:

1. Insert the plug-in installer CD
 - a. You will see the installer CD’s AutoRun splash screen
2. Follow the on-screen instructions for installing the plug-in.
 - a. Accept all defaults.
 - b. If you are prompted to quit the x48.exe application

because the installer is attempting to modify it, click Ignore.

3. The installer will prompt you to restart the X-48
4. Shutdown and restart and allow the installer to complete its operations
5. Shut down the X-48
6. Insert the iLok dongle
7. Power on the X-48

- Your plug-ins will be available under the Inserts pulldown menu of the Mixer’s DSP view.

Supported Plug-ins

Please note that only the following plug-ins are officially supported at this time:

- Waves 5
- Antares Auto-Tune 4
- Antares Auto-Tune 5

Footswitch Operation

Pages 12 and 16 describe footswitch usage for general transport control and punching into & out of record. In all versions from V1.00, the footswitch implementation is restricted to issuing Play commands for use with Theater Play mode.

New Features

V1.10 additions

- The Big Meter Screen, which allows meters for all 48 tracks to be seen at the same time, has been added. Select this from the Big Meters under Windows Menu.
- Fail Safe Recording. The X-48 now constantly checkpoints the audio files every 5 seconds during recording. If power is lost, a dialog appears after power is turned back on asking whether to restore the lost audio. This fixes the newly recorded audio clips up to the last checkpoint.
- Disk Cleanup and Undo History. From the edit menu, the history list has a Clear button. This button brings up a dialog that now also allows unused and unnecessary audio files to be deleted from the drive.
- Files can now be automatically named based on the project name and track name.
 - Select “Take#_Track#_ProjectName_TrackName” for the “Audio File Naming” setting on the Settings Window, Prefs tab.
- When opening a project from the LCD, files other than project files had been shown, but now only project files (.ndr) are shown, making it easier to choose them.
- An automation WRITE switch has been added to the screen and the function has been made easier to use.
- Indication for the Destructive mode has been added to the top center of the VGA screen, making monitoring of its status easier.

NOTE
This shows the same state as the Destructive LED (SYSTEM-DEST REC) on the X-48 operation panel.
- By adding a drive benchmark test function, it is now possible to display data transfer capacity as an equivalent number of tracks at each sample rate.

NOTE
Although the X-48 cannot physically record more than 48 simultaneous tracks, benchmarking allows you to determine whether a disk will handle heavy punch ins which can require up to double the number of disk accesses at the instant of the punch in and out point.

 - Choose “Drive Benchmarking...” from the File menu and select a drive to execute this test.
- Previously, only Open Loop MMC control was supported. X-48 V1.10 now supports closed loop MMC control as well.

V1.04 additions

- To ensure proper recording while synchronized, the X-48 must now be in a locked state to external timecode and clock before entering record. This is consistent with previous TASCAM recorders (DTRS, MX-2424).
- New keyboard shortcuts have been added:
 - “I” sets a punch-in point.
 - “O” sets a punch-out point.
- In the I/O tab of the Settings window, it is now possible to select “Professional” or “Consumer” mode for the S/PDIF output.
- It is now possible to use the CTRL+C (copy) and CTRL+V (paste) shortcuts from a QWERTY keyboard to copy/paste text in the Track Screen’s track naming fields.

V1.03 additions

- The File Manager now displays file and folder sizes. File sizes are displayed automatically. Click on a folder to display its size.
- The network name of the X-48 can now be changed. This is the name that appears in your computer's network UI when connected to the X-48. To change this name, select Set X48 Name under the File menu in the VGA UI.
- Clip names are now displayed in the upper left corner of audio regions in the Edit Window of the VGA UI.
- It is now possible to specify a name for audio files resulting from a Consolidate operation. When selecting Consolidate from the Process menu, a dialog will prompt for the desired file name.
- Informative progress bars are now presented for OpenTL export and File Manager copy operations.
- It is now possible to perform AAF exports as either embedded AAF files or non-embedded AAF projects. When selecting Export Project from the File menu, the Export Filter will present the new AAF choices along with the already existing OpenTL choice.
 - Embedded AAF files contain all the project information and audio files in one single file. Such a file cannot exceed 2GB in size.
 - Non-embedded AAF projects contain an AAF file and separate copies of the original audio files, all in one folder that can easily be copied or moved to another system without affecting the original source data. While any single audio file within a project is subject to the same 2GB file size limit, the total size of a Referenced AAF export is not limited.

V1.02 additions

- There is now a Remaining Disk Space indicator at the top of the VGA UI, next to the CPU meter.

Maintenance Items

V1.10 changes

- When snapping was set to subframe and looping was on, locating with the I-beam between the Loop In and Out points could cause the unit to freeze. This has been fixed.
- When three continuous audio clips were lined up on one track, they might not playback as expected. This has been fixed.
- When set to double speed sample rates (88.2k, 96k) and when no audio clips were on a track, external timecode could not be followed. This has been fixed.
- Keyboard shortcuts did not work when the Caps Lock key was ON. This has been fixed.
- During loop playback, the MTC time output would not loop and would continue linearly. This has been fixed.
- If a project had been created and recorded using the X-48 front panel without connecting a mouse or keyboard, connecting a mouse or keyboard later could cause application errors. This has been fixed.
- When “Snapping” was active and set to “Subframes,” putting data from the copy buffer into an already existing clip could cause the transport to move strangely and eventually freeze. This has been fixed.
- Audio clips would not play back correctly where they overlapped. This has been fixed.
- Drop timecode output by the X-48 was incorrectly flagged as non-drop timecode by external devices. This has been fixed.
- AES double speed settings could not be made from the X-48 LCD or using key operations. This has been fixed.
- Sometimes the X-48 froze during startup if an AES card was in Slot1. This has been fixed.
- When Load Last Project was ON and Auto Input was OFF, recording 48 tracks at 96 kHz and then playing back from the start of a project caused freezing about two seconds from the start. This has been fixed.
- Formatting the hard disk volume currently in use had been possible from the front panel. This is now disabled.
- When Load Last Project was ON, if a project were opened after start-up, markers that were set to times after 12:00:00 would all move to exactly 12:00:00. This has been fixed.
- If you tried to export an Open TL file of a project that was 2 GB or greater, a message related to AAF files appeared erroneously. (“The exported file will exceed the maximum file size allowed. Try a non-embedded export.”) Now there is no limit on OpenTL project export size.
- If a TASCAM ID REQUEST was made using a Sony P2 command, a response would be sent using an MMR8 ID even though it is an X-48. This has been fixed and responses are made correctly with the X-48 ID.
- The X-48 Sony P2 function was replying with an ACK for all commands, including unsupported commands. Now unsupported commands generate a NAK reply.
- The speed of shuttle/jog Sony P2 commands and the actual playback speed of the X-48 did not match. This has been fixed.
- The EXT MNT LED turned off when a project was opened and operations were conducted. This is been fixed.
- The TC CHASE key LED sometimes flashed unexpectedly. This has been fixed.
- When copying a project using front panel operations, if the “XProjects” folder did not exist as a copy destination, the copy function failed. This has been fixed.
- Unmounting an external drive could cause the LCD display to go blank. This has been fixed.
- When the clock setting was something other than WORD, there was a problem with the BNC IN multiplier (/2,x2) becoming effective. This has been fixed.
- Some types of operations caused recorded audio clips to be erased. This has been fixed.
- The Relock Threshold setting could not be made from the LCD screen. This has been fixed.
- Even when all tracks were not armed, setting the transport to REC would cause the REC LED to light solid. This has been fixed, so now it flashes.
- In theater mode, when marker #0 was at 00:00:00:00, pressing the REW key would not cause playback to return to marker #0. This has been fixed.
- AAF Files exported by the X-48 could not be imported by ProTools 7.2-7.3, but this issue has been resolved with ProTools 7.4.
- Even if audio clips were locked, Crop, Insert time and Delete time operations could be used on them. This has been fixed.
- If the current project was backed up and then immediately restored, this could cause a freeze. This has been fixed.
- During recording, changing the Mixer Bypass setting caused a beeping sound and recordings were interrupted. This has been fixed.
- Pressing the power button during recording caused the unit to shut down, but now the power button has been set to not respond during recording to prevent accidental loss of data.

- AUX pre/post switching mixer functions and some Aux 2, 4 and 6 functions did not work properly. This has been fixed.
- In 2x sample mode, if the master clock was set to AES, the left and right AES audio signals were reversed. This has been fixed. However, if the master clock is set to AES in 2x sample mode, TDIF left and right signals will be reversed. Set the master clock to WORD to avoid this.

V1.04 changes

- Optimizations have been made to reduce CPU resources used by the VGA user interface while recording.
- Previously, rare cases were reported of tracks playing out of time. This has been fixed in 1.04.
- Previously, destructive recording mode would leave files on the hard drive beyond the expected one audio file per track. This has been corrected in 1.04.
- Previously, mixer automation data was incorrectly being written whenever a fader was moved while the transport was in motion. From Version 1.04, automation data must be drawn in the track screen.
- Previously, the X-48 would incorrectly output a timecode burst upon locate when the Timecode Output Muting parameter was set to Play Only. This has been corrected for consistency with the MX-2424.
- The status indicators and meters on the VGA UI are now brighter for improved visibility.

V1.03 changes

- Changes have been made to reduce or eliminate instability when creating/loading/saving a project, or when editing.
- Previously, automation playback was not functional. This has been fixed in 1.03.
- Previously, files created on the X-48 had permissions set such that they could not be copied to certain Windows OS configurations. This has been fixed in 1.03. In order for these changes to affect existing data, the following steps must be followed:
 - a. Update to 1.03
 - b. Copy all data to another drive (or back up the data)
 - c. Format the source drive using Disk Management from the File menu
 - d. Copy all the data back to the original source drive (or perform a Restore)
- Previously, when set to 2X sample rates, the X-48 would not chase time code unless audio data already existed in the project. This has been fixed in 1.03.
- Previously, imported audio would incorrectly reference the source media upon playback until the source media was unmounted. This has been fixed in 1.03.
- In very rare cases, the X-48 could lose lock when resolved to video and chasing time code.
- Previously, multiple-DVD backups could cause instability. This has been fixed in 1.03.

V1.02 changes

- Previously, the X-48 could not chase incoming MTC (MIDI Time Code). This has been corrected in Version 1.02.
- Previously, broadcast wave audio files did not correctly spot to their original time code location when importing into an X-48 project. This has been corrected in Version 1.02.
- Previously, the front panel timecode rate LED would not illuminate when the X-48 was powered on. This has been corrected in Version 1.02.
- Previously, some audio files could not be directly imported from a data CD or DVD. This has been corrected in Version 1.02.
- Previously, it was not possible to disable Track Key Punch. This has been corrected in Version 1.02.

V1.01 changes

- Previously, I/O cards installed would not appear in the I/O tab of the Settings window, even though the I/O cards were functional. This has been corrected.
- Previously, the OL indicator time out was not functional. This has been corrected.

Known Issues

Known Issues in Version 1.10

- “Drive sharing...” can be selected from the menu to permit disk access from a network, but it might not function depending on the environment. Most such cases can be resolved by launching the Windows file manager from “Disk Management” in the X-48 menu and setting it to allow sharing of the relevant folder.
- If ADR is selected and Auto Input is active, with punch in and out, when punching out, the audio monitoring sound will be cut off temporarily. However, this does not affect the recording when punch out is used.
- When you turn Mixer Bypass OFF, the audio playback will be slightly delayed by a fixed amount compared to the actual time code time. Set Mixer Bypass to ON to playback with strict timing with another device.
- The following operations have been found to not leave an UNDO option in the History List when an audio clip is moved (dragged). Please use caution if you want to use the UNDO function.
 - When the left button of the mouse is used to select any audio clip
 - When a selected audio clip is dragged to any position while the left button is held down
 - When playback is conducted by pressing the PLAY button or the space bar
- It has been reported that a problem with Panasonic/Canopus SONY P2 commands causes some operations from the Canopus to make the X-48 enter PLAY mode unexpectedly.

Other Issues

V1.02 specification changes

The following corrections to Theater Play Mode operations have been made:

- While in Theater Play mode, the FF and REW buttons locate to the beginning of the next or previous cue.
- Pressing STOP in the middle of a cue will cause the X-48 to stop as expected. The PLAY is subsequently pressed, the X-48 will locate back to the top of the current cue and begin playing.
- Recording is not possible in Theater Play Mode.
- When Theater Play Mode is selected and a project is loaded with markers, the X-48 will automatically locate to the first marker and stop, awaiting a play command.
- The LCD will display the name of the currently loaded project in the top line of the LCD and the current cue in the bottom line.

Notes

Notes on V1.04 and others

- The US-2400's Scrub/Shuttle wheel is not currently compatible with the X-48's transport engine.
- 4X sample rates (ie. 192k) are not supported
- Closed Loop MMC (MIDI Machine Control) is not supported in Version 1.00. Open Loop MMC may be used in place of Closed Loop MMC.
- The X-48's front panel DISK LED illuminates based on audio record/playback. It will not illuminate during drive to drive copy or network operations.
- Stereo Aux Returns cannot be unlocked for dual mono operation.
- When installed in the X-48, an IF-AD24(X) does not support S/MUX functionality.
- Using the Consolidate command under the Edit menu is not supported on selected time lengths greater than eight hours.
- Project names that contain a period "." will not display correctly in the front panel LCD.
- The I/O Operating Level should be set to 20dB when doing digital transfers from the X-48 to ensure correct transfer level.
- After unmounting an external drive, the LCD will go blank. Press a front panel shortcut key, such as SYNC, then CLEAR/HOME to return the LCD to normal operation.
- The 24.975 video reference rate is untested.
- Dual line output from the IF-AE24(X) at 2X sample rates is not supported.
- The X-48 supports 1080p Tri Level Sync. It does not support 720p Tri Level Sync. 1080i is untested.
- Destructive mode attempts to estimate the amount of disk space needed to record and consolidate the audio files any time the machine enters record. This process contains some conservative assumptions which may produce overly large estimates resulting in not enough disk space. Please ensure you have plenty of disk space before doing heavy punching into a destructive mode project.
- When recording high track counts, just after transport motion begins, there is a slight UI/playhead pause. This does not affect recorded audio.
- OpenTL project exports from the X-48 cannot be opened in Steinberg's Nuendo. Use AAF instead.
- An OpenTL project created on an MX-2424 then imported into an X-48 does not properly export to a Pro Tools compatible AAF. Projects that originate on the X-48 are not affected.
- AAF exports that result in destination audio file sizes greater than 2GB are not supported.
- If an error occurs while importing a project, causing the error dialog to appear, the mouse cannot be used to dismiss the error dialog. The workaround is to press ESC.
- OpenTL volume automation is not supported.
- Only the currently open project may be exported to OpenTL or AAF.
- A progress bar is not shown during an OpenTL export.
- An AAF export from the X-48 will not import into Pro Tools 7.3, but will import into previous versions of Pro Tools. An update to Pro Tools is expected to correct this.

Import / Export

- OpenTL project exports from Apple Logic Pro do not import into the X-48 since the referenced audio files are Sound Designer II.
- OpenTL project exports from Nuendo 3 may not import into the X-48.