TASCAM

TEAC Professional Division

MMR-8

Modular Multitrack Recorder

MMP-16

Modular Multitrack Player

MMR-8/MMP-16 Version 2.0
OWNER'S MANUAL UPDATE

MMR-8 Version 2.0 Update

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MMR-8 / MMP-16 Version 2.0 Update

This document details changes and new features in software Version 2.0 for the TASCAM MMR-8 and MMP-16 Modular Multitrack units and the MM-RC remote. This document only explains features and enhancements that have been made to the MMR/MMP since release version 1.27, the last official release software version prior to version 2.0. The reason for the jump from 1.27 to 2.0 in numbering this software version is due to the inclusion of a major new feature, the ability to natively record audio and edit decision list (EDL) data directly to the MMR-8 in the Digidesign Pro Tools Session file format. This new capability has been implemented in accordance with a license agreement with Digidesign, a division of Avid Technology, and with their full cooperation and support. We are grateful for their assistance in this endeavor. Because this release adds a new "native" file format for recording audio on the MMR-8 and for file format exports on the MMP-16, we feel the version 2.0 software release represents a major step forward in the technology of digital hard disk recorders and a substantial benefit for the users of these systems. This documentation presumes familiarity with basic operation of the MMR-8 and MMP-16.

Installing The MMR/MMP Software Update

To install software in an MMR-8 or MMP-16, first make sure the unit to be updated already has version 1.2 or higher software already installed (the Rescue Boot Disk is also acceptable). The most recent software update may be downloaded from the TASCAM web site at http://www.tascam.com. The software fits on a single floppy disk. To install the software update, insert the floppy disk into the front panel floppy drive while the unit is operating normally. Access Menu 995 (Load Software) and press STO. The system will ask "Are you sure?" Make sure the floppy is properly inserted and press STO again to confirm. After the software update is installed, the system will display a message that the update is complete to verify that the installation has been successful. Remove the floppy disk and recycle the power on the unit to operate it with the new software installed.

Overview of Changes in Version 2.0

The following functional changes have been made to the MMR-8/MMP-16 software in version 2.0. These changes are explained in detail in this document:

- Direct recording of Digidesign Pro Tools Session files on the MMR-8
- Export (file format conversion) of WaveFrame and OMF files to Digidesign Pro Tools Session format and export of Pro Tools Sessions to OMF on the MMR-8 and MMP-16
- AutoCleanup Record Mode removed

Formatting Macintosh Disks

The MMR-8 and MMP-16 cannot format disk drives as Macintosh HFS volumes, so a drive must first be formatted as a Macintosh HFS volume using a Macintosh computer before the drive can be used with the MMR-8 or MMP-16. If a non-Macintosh formatted drive is mounted, the MMR/MMP will not allow Pro Tools or OMF as a choice for recording, backup, or file export to that disk. Users are advised to follow the recommendations of Digidesign for formatting disk drives for use with the Pro Tools system and with the MMR-8 and MMP-16.

Macintosh File System Errors

Various types of file errors and inconsistencies can sometimes accumulate on a Macintosh drive. Although the MMR-8 and MMP-16 can read and write data on Macintosh HFS volumes, it is of critical importance that any Macintosh disk used be free of file and format errors. When the MMR/MMP unit scans the SCSI bus for available drives and sees a Macintosh volume, it will look for file errors on the disk. If errors are found, the volume may not load at all. In some cases, the volume may load but only a few files will show up in the drive directory. If a disk is found to have file system errors, the MMR-8 will not allow recording, backup, or export to that disk and track arming will be disallowed.

Fortunately, commercially available disk repair utilities such as Norton Disk Doctor can locate, and in many cases (although not all) can repair the disk and rectify the errors. If a Macintosh disk connected to an MMR-8 or MMP-16 has problems such as:

- disk volume will not mount
- files appear to be missing
- the MMR-8 will not go into record

then connect the disk to a Macintosh computer and use a Macintosh disk repair utility to locate and repair any errors. If the errors cannot be fixed by the disk repair program, then the drive will need to be re-formatted on a Macintosh computer before it can be used on the MMR/MMP. A list of possible Mac file system errors and their error codes is given at the end of this document.

Disk Cleanup for Macintosh Volumes

The Disk Cleanup function (setup menu 720) is not currently supported for Macintosh Volumes in version 2.0. This feature will be supported in a future version of the MMR/MMP software.

AutoCleanup

The AutoCleanup Record Mode (setup menu 200) has been removed for all formats. This Record Mode automatically performed a disk cleanup after every recording. It was originally developed to prevent buildup of unwanted files during repeated overdubbing of material during post-production recording of mix tracks to the MMR-8. A high processing overhead made it the least efficient Record Mode for punching in and out repeatedly over multiple tracks. The TapeMode style of recording was implemented subsequently to achieve the same goal without the added processing overhead and serves the purpose much more elegantly than AutoCleanup. There are now only two available Record Modes, Non-Destructive and TapeMode.

Digidesign Pro Tools Session Format Support

Version 2.0 of the MMR-8 software allows recording directly to a Macintosh HFS (Hierarchical File System) formatted disk drive in the Digidesign Pro Tools Session file format and also allows export of WaveFrame or OMF projects (compositions) as Pro Tools session files and backup of existing Pro Tools sessions. This means that Sound Designer II format audio files and a Pro Tools 4.0 session file will be created when using the Session record feature on the MMR-8. The MMP-16 does not record audio, and so does not allow direct recording of Pro Tools session files, but it does allow editing and backup of Sessions, and export to Pro Tools Session file format.

Recording Pro Tools Sessions

To record a new Pro Tools Session directly to the MMR-8, you must first set the Disk Encoding parameter in setup menu 700 to be either ProTools 16-Bit or ProTools 24-Bit.

01234567890123456789	20 position LCD character positions
700 Disk Encoding *** ProTools 16-Bit**	Top: (Menu Item) Bottom: (Encoding Type)

You may use the 24-Bit Disk Encoding setting for projects which will be edited using the 24-Bit Pro Tools 4.x system.

01234567890123456789	20 position LCD character positions
700 Disk Encoding *** ProTools 24-Bit**	Top: (Menu Item) Bottom: (Encoding Type)

Once a Macintosh formatted disk is mounted and the Disk Encoding type is set to ProTools, you may arm the tracks to be recorded and begin the record operation. The Session name is defined (before recording) by using setup menu 800 to name the Session , and setup menu 810 to set the track prefix. These may be changed later when editing the Session on a Pro Tools system.

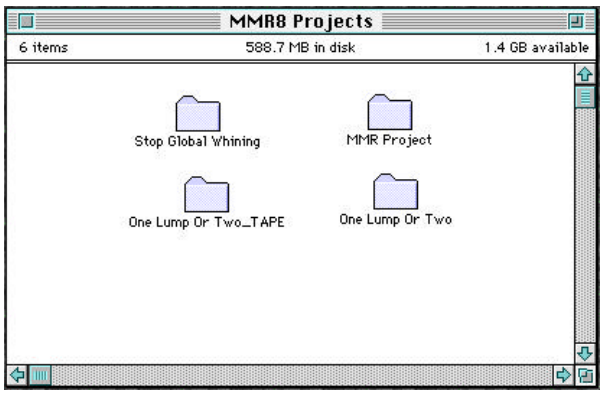
Macintosh Files Created by the MMR

Whenever a Macintosh disk is mounted on an MMR-8 or MMP-16, a series of file folders are created so that the system is ready to hold recordings, backup files, or edits made by the MMR-8 or MMP-16. These folders and files are created according to the hierarchy explained here.

A folder called MMR8 Projects is automatically created at the root level of the disk drive mounted on the MMR-8 or MMP-16.

The other files and folders created are stored within this folder. Any Pro Tools Sessions recorded on the MMR-8 (and their attendant sub-folders and audio files) will be automatically placed in this folder by the system.

Inside the MMR8 Projects folder, another folder is created with the name of the Project (as defined in setup menu 800 when the recording was first made). In the case of a Macintosh disk which is simply mounted on an MMR or MMP, a default Project folder called MMR Project is created. A new folder labeled with the name of the Project will be created for each new Session recorded on the MMR-8. Here is an example of several Project folders nested inside the MMR8 Projects folder:



Each of these folders contains the Pro Tools Session file and Audio File and Fade File folders for that Session, as explained on the following page. Note that Sessions created on the Pro Tools system may be placed elsewhere within the disk filing system. Sessions created on the MMR-8 will always be placed here. Inside the Session folders, the system automatically creates two new folders labeled Audio Files and Fade Files. If a Pro Tools Session has been recorded, there will also be a Pro Tools Session file. The contents of a typical project file folder created when a Session is recorded to an MMR-8 would look like this:

All sound designer II files recorded for this Session will be placed in the folder labeled Audio Files. The Fade Files folder is automatically created so that Pro Tools has a place to store any fade files the system may create. The MMR does not create Pro Tools fade files, but will play them back. The MMR does generate the proper fade file descriptor so that Pro Tools can later generate appropriate fade files. When opening a Session on Pro Tools that was created on the MMR, Pro Tools will alert the user that fades are missing. The user can then choose Skip All from the Pro Tools dialogue and Pro Tools will generate the missing fade files. The MMR-8 and MMP-16 will also perform default fades in real time according to the default fade settings in setup menu 510. If any fade files are missing from a Session created using Pro Tools, the MMR and MMP will simply play a real-time linear crossfade of the appropriate length in place of the missing fade file.

Pro Tools Features Supported

The MMR-8 and MMP-16 will recognize and play back Pro Tools Session files (and all Sound Designer II audio files referenced by the Session file) created as version 3.2 or 4.x Sessions on a 16-bit or 24-bit Pro Tools system. The name of all recognized Session files on all mounted volumes will appear in the list of projects shown in the LCD display after the Load Track key is pressed. If fade files are present, the MMR/MMP will play them. If fade files are missing, the unit will play back a linear fade of the correct duration in real time. Any playback mutes that are part of the Session will be followed by the MMR/MMP, and the audio material programmed to mute will not play back. If audio mutes have been applied in error, the material must be unmuted using the Pro Tools system before it will play back on the MMR/MMP.

Pro Tools Features Not Supported in Version 2.0

The TASCAM MMR-8 and MMP-16 are designed to be able to play back edited audio files and fades from Pro Tools Session files and other workstation file types, but they do not have all of the complex DSP and routing/mixing capabilities of a full-fledged digital audio workstation. There are therefore some capabilities of such systems that do not translate when files are played back on the MMR/MMP. For post production sound editing, this need not pose a problem if these limitations are understood and material is prepared with the capability of the MMR/MMP in mind. This section details some features of the Pro Tools system and Session file format which are not directly supported on the MMR/MMP.

Gain Automation and Dynamic Voice Allocation

The Pro Tools system has special features for assigning gain automation to regions, and for dynamic voice allocation utilizing virtual tracks and track priority. The MMR-8 and MMP-16 Version 2.0 software does not recognize or respond to these parameters in a Session file. These capabilities will be added in a future MMR/MMP software release.

TDM Plug-Ins

One of the most impressive features of the Pro tools system is the number and variety of third-party DSP plug-in effects available for the system. These effects rely on special DSP hardware in the Pro Tools system to perform various digital audio processes in real time. These real-time effects are not supported by the MMR/MMP since there is no equivalent processing power or software. Another class of Pro Tools effects called AudioSuite plug-ins work by actually applying the effect and changing the audio data on the disk. In this case, the files will play back just as they have been processed, since the processing has been made part of the file.

Voice Output Assignments

Since Pro Tools has extensive mixing capabilities, it also allows tracks to be freely assigned to various outputs for playback. The MMR/MMP units are designed to assign Pro Tools tracks directly to audio output channels on the MMR/MMP unit on a one-to-one basis and do not follow the output mapping of Pro Tools session. When editing material on Pro Tools for eventual playback on an MMR/MMP, it is best to place the material on the track where it should play on the MMR/MMP. Track assignments can be changed locally on the MMR/MMP and any track can be assigned to play out of any MMR/MMP channel output, but the default assignment when loading a Session will be to the tracks as numbered in the Pro Tools Session, not the voice assignment patching.

Restrictions When Using the Pro Tools Session Format

Both the TASCAM MMR-8/MMP-16 and Digidesign Pro Tools have features for which there is no equivalent function in the other system. This leads to certain restrictions the user should be aware of when moving material between these two systems.

Pull Up / Pull Down

ProTools only supports a Pull Up from 30fps and a Pull Down from 29.97fps. The MMR/MMP supports these and other frame rates. If something other than the standard frame rates or the above mentioned pull-up / pull-downs are set in a recording made on the MMR-8, the ProTools Session file created will not save that property in the Session file since that format has no way to store this data.

Frame and Sample Rates in Tape Mode

When creating TapeMode ProTools projects, be sure to pick a supported frame rate/sample rate combination (see above) before recording. Once the TapeMode Session file has been created, altering the frame rate will cause the Session to be regarded as a regular Non-Destructive Session and not a TapeMode Session. This is due to the fact that the Session format does not store sample based start times, but frame based start times. TapeMode very much depends on the Project or Session start time, which cannot be altered if TapeMode capability is to be retained.

Limitations on Number of Tracks

ProTools 4.2 supports a maximum of 43 tracks per Session. This track number limitation affects how many times tracks may be unloaded on the MMR-8/MMP-16. Once the maximum number of tracks has been reached the unit will no longer be able to unload tracks for that Session. Note that this will also affect the Loop Mode (menu 211) when the Repeat w/Unload option is chosen. Once the unload limit is reached, the transport will stop with an error message indicating that the maximum number of tracks has been reached. The same restriction will prevent exporting WaveFrame Projects or OMF Compositions to ProTools if the maximum number of channels is exceeded. A future software revision of the MMR/MMP will use the alternate tracks feature of ProTools to permit unlimited unloading of tracks and eliminate this restriction.

Session Start Time Restrictions

When recording additional audio on existing projects created originally with ProTools, audio punch-in before the start time defined in the project is not allowed. Pro Tools has the same restriction. If it is necessary to punch in on a track before the Session start time, use the Pro Tools system to re-set the session start time as appropriate. The MMR-8 has no provision to set the start time, except for tape mode. Non-TapeMode ProTools sessions generated on the MMR-8 always use a start time of 0 and hence will have no punch in restriction. A TapeMode project has its own TapeMode start time for all formats, set in menu 230.

Using TapeMode with ProTools Sessions

The MMR-8 has two record modes, Non-Destructive and TapeMode. Non-Destructive Record Mode works the same way as Pro Tools in that each recording makes a new audio file on the disk and does not over-write any existing material. In TapeMode, each track is considered to be a single continuous audio file and successive recordings will destructively over-write any existing audio on the same track when a punch-in is made. This is a useful way to record on the MMR-8 because it makes the most efficient use of disk space when recording mix tracks that will have a lot of record punch-in and out passes over the same part of the track. It is also more efficient in operation and will make the MMR-8 much less susceptible to "media too slow" errors when punching in and out across many tracks simultaneously, particularly when recording 24-bit files.
Although Pro Tools has a destructive record mode, it does not work the same way as the MMR TapeMode, so some of the rules for using TapeMode on the MMR-8 do not have an equivalent on the Pro Tools system. It is important to understand some of the consequences of using TapeMode when recording in the Pro Tools Session file format, since there are differences between the way TapeMode recording works with WaveFrame files and how it works with Pro Tools Sessions.

If the Record Mode (menu 200) is set to TapeMode when recording a Pro Tools Session, the MMR will automatically allocate all disk drive space between the TapeMode Start Time (menu 230) and the time where audio is recorded in each track. For example, in a TapeMode Session with a TapeMode Start time of 01:00:00:00, if audio is recorded beginning at one hour, then only the audio actually recorded will take up space on the disk. If the TapeMode start time is set to one hour and the current time location of the MMR-8 is set to two hours and recording begins, the system will automatically allocate one track-hour of disk space for each track in record. It is possible to verify that this is so by checking the Free Time on the disk (press Shift + 3). This behavior is different from the way WaveFrame TapeMode projects work. The WaveFrame file system allows continuous files to have "holes" in them but still be considered a single file. The Macintosh Hierarchical File System has no way to do this, so a recording made after the start time of a TapeMode Session will cause the system to automatically see all disk space between the TapeMode start time and the last bit of audio recorded on a particular track as being allocated to that audio file. This means that it is very important to set an appropriate start time when using TapeMode to make sure disk space is not wasted or used unnecessarily. For example, successive reels of a film will quite often carry a time code hour number that is the same as the reel number. If this method is being used and reel 3 is being recorded (mixed) to an MMR-8, be sure the time code for the TapeMode start time is set to 03:00:00:00 and not to 01:00:00:00, or the disk may show that it is full immediately as soon as recording is started at the beginning of the reel (at the 03:00:00:00 time code) since all space between one hour and three hours is allocated for the recording on all armed tracks. If this happens in error, you must take the disk to a Macintosh computer and delete the audio files to regain use of the allocated disk space. A future version of the MMR-8 will allow these files to be deleted by the MMR-8 using the Disk Cleanup function, but this does not yet work for Macintosh disks in version 2.0.

Another distinction between the file system of Macintosh disks versus WaveFrame disks is that Mac disks make different data block sizes on different volumes, depending on the capacity of the disk, whereas the WaveFrame file system has a fixed data block size. One effect of this is that when a backup is made of a Pro Tools TapeMode Session, the Session created will only be a TapeMode Session if made to a disk which is formatted with exactly the same data block size, otherwise it will be backed up as a Non-Destructive Record Mode project.

File Backup, TapeMode Conversion, and Export

The MMR-8 and MMP-16 Version 2.0 software has expanded file Backup, Export and TapeMode Conversion capabilities. The following chart shows the Export/Conversion/Backup paths that are permitted on both the MMR-8 and MMP-16:

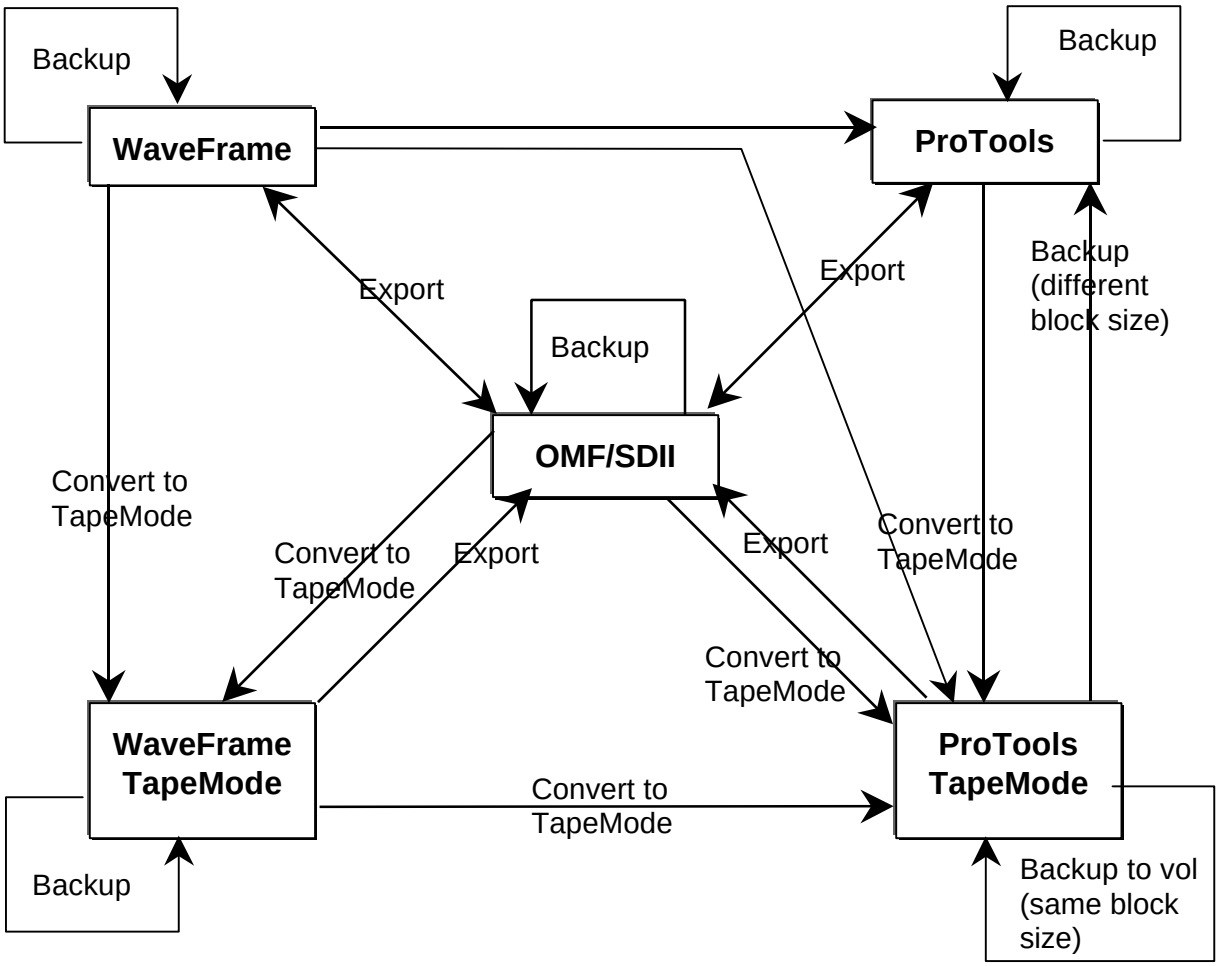


Chart of Backup, Conversion, and Export Paths

The following table shows the paths allowed and the process used to Export/Convert/Backup the various file formats which are used by the MMR-8 and MMP-16.

File Conversion Chart	WaveFrame	WaveFrame TapeMode	OMF / SDII	Pro Tools	ProTools TapeMode
WaveFrame	Backup	Convert to TapeMode	Export	Export	Convert to Tape Mode
WaveFrame TapeMode	[Change Record Mode Setting]	Backup	Export	Convert to Tape Mode	Export
OMF / SDII	Export	Convert to TapeMode	Backup	Export	Convert to Tape Mode
Pro Tools	***No***	***No***	Export	Backup	Convert to TapeMode
Pro Tools TapeMode	***No***	***No***	Export	[Change Record Mode Setting]	Backup

Table of Backup, Conversion, and Export Paths

Using the Backup, TapeMode Conversion, and Export Functions

The MMR-8 and MMP-16 are capable of Backing up files, Converting Projects or Sessions created in Non-Destructive Record Mode into TapeMode Projects or Sessions, and Exporting some formats as other formats. To Backup, Convert, or Export a file using the MMR-8 or MMP-16, first press the Load Track key and scroll (using the up/down arrow keys or wheel) to the name of the WaveFrame Project, OMF Composition, or Pro Tools Session to be backed up, converted, or exported. Next, press the Shift key followed by the Track Slip key. The shifted function of the Slip key is labeled Backup. Pressing Shift+Slip brings up a series of menus that allow setting the parameters for file Backup, Convert, or Export. Choose a process by scrolling to the appropriate menu and then press the Trim key to select the SCSI ID number of the drive to which the file is to be backed up, converted, or exported. Press the STO (YES) key to initiate the process. The menu will ask if you are sure. Press STO (YES) again to initiate the process, or CLR (CANCEL) to cancel the process and return to the previous menu.

Exporting Pro Tools Sessions

Pro Tools files may be Backed up to a Macintosh disk, Converted to Pro Tools Tape Mode Sessions, or may be exported to a Macintosh disk as an OMF Composition referencing Sound Designer II audio files. Export directly from Pro Tools Session format to the WaveFrame file format is not supported, although you may export a Pro Tools Session as an OMF file and then export the OMF file to the WaveFrame format. As explained elsewhere in this document, you may also Export OMF or WaveFrame files as ProTools Sessions. Exporting a Pro Tools Session as an OMF file to the same disk is a very fast operation since it will only rewrite the Session EDL as an OMF Composition, but will not rewrite the audio data files.

Backup

Both the MMR-8 and MMP-16 can make a backup copy of any WaveFrame Project, OMF Composition, or Pro Tools Session, either to the same disk as the original file or to an external disk volume. This provides a convenient way to make a safety or archive copy of a project, including the EDL (Project, Composition, or Session) and the audio files. The Backup process will copy the EDL and audio data to the drive specified. If any of the audio files already exist on the target disk, they will not be copied again. The backup menu is accessed by pressing the Load Track key to find the file to be backed up, then pressing Shift + Slip to access the Backup menu:

01234567890123456789	20 position LCD character positions
Begin Backup to: *** Disk 0**	Top: (Menu Item) Bottom: (Drive SCSI ID #)

Press the Trim key to select the SCSI ID number of the drive to which the file is to be Backed Up. Press the STO (YES) key to initiate the Backup process. The menu will ask if you are sure. Press STO (YES) again to initiate the Backup process, or CLR (CANCEL) to cancel the process and return to the previous menu.

The MMR/MMP Version 2.0 software Backup process will back up all Pro Tools data created on the MMR/MMP but will not copy Pro Tools fade files or preserve Session data such as automation and TDM bus data. If it is necessary to back up Pro Tools files which have this type of data, it is best to use the Pro Tools system to perform the backup. This will be changed in a future MMR software release so that such data is retained during the Backup.

Note that Backups must be made to a disk of the same type (WaveFrame to WaveFrame or Macintosh to Macintosh).

TapeMode Convert

The TapeMode Convert process will copy the audio data to the drive specified and will "flatten" the EDL so that each track consists of a single audio file. If the same TapeMode audio files already exist on the target disk, they will not be copied again. The Convert to TapeMode menu is accessed by pressing the Load Track key to find the file to be backed up, then pressing Shift + Slip to access the Backup menus and then pressing the up/down arrow keys or wheel until the TapeMode Convert menu appears:

01234567890123456789	20 position LCD character positions
TapeMode Convert to: *** Disk 0**	Top: (Menu Item) Bottom: (Drive SCSI ID #)

Press the Trim key to select the SCSI ID number of the drive to which the file is to be TapeMode Converted. Press the STO (YES) key to initiate the Backup process. The menu will ask if you are sure. Press STO (YES) again to initiate the TapeMode Convert process, or CLR (CANCEL) to cancel the process and return to the previous menu.

Export

The Export feature of the MMR-8 and MMP-16 allows files in one format to be exported as files of a different format. There are three Export menus available, which allow exporting the chosen file as a WaveFrame Project, OMF Composition with Sound Designer II audio media, or as a Pro Tools Session. The Export menu is accessed by pressing the Load Track key to find the file to be exported, pressing Shift + Slip to access the Backup menus, and then pressing the up/down arrow keys or wheel until the appropriate Export menu appears.

Press the Trim key to select the SCSI ID number of the drive to which the file is to be Exported. Press the STO (YES) key to initiate the Export process. The menu will ask if you are sure. Press STO (YES) again to initiate the Export process, or CLR (CANCEL) to cancel the process and return to the previous menu.

WaveFrame Export

Use this menu to Export an OMF Composition with Sound Designer II media to a WaveFrame formatted disk as a WaveFrame Project with WaveFrame audio media. Pro Tools Sessions may not be exported as a WaveFrame Project.

01234567890123456789	20 position LCD character positions
WaveFrame Export to: *** Disk 0**	Top: (Menu Item) Bottom: (Drive SCSI ID #)

OMF Export

Use this menu to Export a WaveFrame Project (with WaveFrame audio media), or a Pro Tools Session file (with Sound Designer II audio media) to a Macintosh formatted disk as an OMF Composition referencing Sound Designer II audio media files.

01234567890123456789	20 position LCD character positions
OMF Export to: *** Disk 0**	Top: (Menu Item) Bottom: (Drive SCSI ID #)

Pro Tools Export

Use this menu to Export a WaveFrame Project, or an OMF Composition with Sound Designer II media to a Macintosh-formatted disk as a Pro Tools Session file with Sound Designer II audio media.

01234567890123456789	20 position LCD character positions
ProTools Export to: *** Disk 0**	Top: (Menu Item) Bottom: (Drive SCSI ID #)

Macintosh File System Error Messages

There are a number of possible file system errors that can occur when attempting to load a Macintosh formatted disk drive. In this case, the top part of the display will be the standard display for the particular mode or state of the MMR/MMP when the error occurred. Some of these messages are longer than the 20 character width of the LCD screen. In this case, to read the rest of the error message, press the right arrow key to scroll the message. Here is a list of error messages that can be displayed by the MMR-8 or MMP-16 and the cause of the error. If any of these error messages occur, check the drive on a Macintosh computer by using a disk repair utility such as Norton Disk Doctor.

01234567890123456789	20 position LCD character positions
Standard State Display **Mac Disk at ID *N* has Errors, set to Read-Only. Repair on your Mac first please**	Top: (Mode Display) Bottom: (Error Message) Cause: MMR detects file system errors on Mac SCSI target ID *N* while mounting

01234567890123456789	20 position LCD character positions
Standard State Display **MacOpen (exists) failure**	Top: (Mode Display) Bottom: (Error Message) Cause: Error opening existing project file. Record or playback.

01234567890123456789	20 position LCD character positions
Standard State Display **MacOpen (create) failure**	Top: (Mode Display) Bottom: (Error Message) Cause: Error creating new project file.

01234567890123456789	20 position LCD character positions
Standard State Display **MacCommit Err: *N***	Top: (Mode Display) Bottom: (Error Message where *N* is Mac error code) Cause: Error while recording data. Record did not complete. Possible file system errors.

01234567890123456789	20 position LCD character positions
Standard State Display **MacRead Err: *N***	Top: (Mode Display) Bottom: (Error Message where *N* is Mac error code) `Cause: SCSI Read Error on drive N`

01234567890123456789	20 position LCD character positions
Standard State Display **MAC project creation failure**	Top: (Mode Display) Bottom: (Error Message) Cause: Could not create project folders for current project.

01234567890123456789	20 position LCD character positions
Standard State Display **MAC audio folder creation failure**	Top: (Mode Display) Bottom: (Error Message) Cause: Could not create audio folder for current project.

01234567890123456789	20 position LCD character positions
Standard State Display **MAC folder creation failure**	Top: (Mode Display) Bottom: (Error Message) Cause: Could not create Fade Files folder for curren project.

Macintosh File System Error Codes

The following error codes are used to indicate the various types of Apple Macintosh file system errors. This list is given here to provide information which may be useful in resolving a Macintosh file system error using standard Macintosh file repair utilities. The MMR-8 and MMP-16 do not format Macintosh disks and cannot repair Macintosh file system errors. Please contact the vendor or manufacturer of the disk drive exhibiting the problem for technical assistance with drive problems.

Volinfo errors

Error Name	Error #	Comment
READVIFAILED	-1	Failed to read volume info block
WRITEVIFAILED	-2	Failed to write volume info block
READVIOUTOFMEM	-3	
WRITEVIOUTOFMEM	-4	
NOTHFSDISK	-5	

Readwrite errors

Error Name	Error #	Comment
READSECTFAILED	-10	Couldn't read *any* sectors
WRITESECTFAILED	-11	Couldn't write *any* sectors
INITREADWRITEFAILED	-12	Couldn't init read/write pkg.
INVALIDSTATEREC	-13	Trying to read/write a mountrecord which has not had initreadwrite sucessfully run on it.
CLOSEREADWRITEFAILED	-14	Could not shutdown read/write
WRITESECTUNBUFFAILED	-15	could not perform unbuffered write or sync mount record

Volume Bitmap errors

Error Name	Error #	Comment
READVBMCANTREAD	-30	Can't read volume bit map
READVBMOUTOFMEM	-31	ran out of mem reading vol bmap
WRITEVBMCANTWRITE	-32	can't write volume bit map
CHKVBMAPBADVIBINFO	-33	Volume bitmap is inconsistent
FREECSBADRANGE	-34	Trying to contiguously allocate a bad range
ALLOCSOUTOFMEM	-35	Contiguous allocation ran out of memory
The following result from allocation failing and not being able to rollback the changes that have already been done		
ALLOCSCANTDEALLOC1	-36	Deallocation failed at stage 1
ALLOCSCANTDEALLOC2	-37	Deallocation failed at stage 2
ALLOCSCANTDEALLOC3	-38	Deallocation failed at stage 3
ALLOCSOUTOFBOUNDS	-39	Internal error happened – the allocator returned more space than asked for

Mac ReadWrite Errors

Error Name	Error #	Comment
MACREADEXTNOTFOUND	-80	Could not find an extent
GENEDLISTOUTOFMEM	-81	Generate Extent List ran out of memory
GENEDLISTINTERNALERR	-82	Gen extent list had internal err
GENEDLISTBLOCKNOTFOUND	-83	Gen extent list could not a logical block of the file
MACREADOUTOFMEM	-84	read ran out of memory
CANTREADALLOCBLOCK	-85	readsects failed to read a block
MACREADOUTOFBOUNDS	-86	Internal problem - macread discovered that it read more blocks than were requested
MACREADNOTENOUGHEDS	-87	there weren't enough extents on the edlist to complete the read
MACWRITECANTGROWFILE	-88	macwrite couldn't expand the file
MACWRITEOUTOFMEM	-89	macwrite ran out of memory
MACWRITECANTREAD	-90	macwrite couldn't read a block
MACWRITECANTWRITE	-91	macwrite couldn't write a block
FILEISNOTWRITABLE	-92	you're trying to write a file that was not opened writeable
FILEISNOTREADABLE	-93	you're trying to read a file that was not opened readable
BADWHENCE	-94	macseek was passed a bad whence
MACWRITEOUTOFBOUNDS	-95	
CANTWRITEALLOCBLOCK	-96	

BTREE ERRORS

Error Name	Error #	Comment
BT_MANYEXTENTS	-100	Btree has more than 3 extents
BT_NODENOTFOUND	-101	Looking for an inexistent node
BT_BADCATALOGTYPE	-102	
BT_UNIMPLEMENTED	-103	
BT_BADKEY	-104	
BT_FOUNDLESS	-105	The Btree is empty
BT_NOTFOUND	-106	The key was not found
BT_BADTREE	-107	A data structure error
BT_BIGTREE	-108	Don't want to extend the tree
BT_BADRECORD	-109	
BT_BUG1	-110	
BT_NOTALLOC	-111	
BT_BADNODE	-112	
BT_BUG2	-113	
BT_TOOHIGH	-114	The Btree is higher than BT_MAX_DEPTH
BT_WRITE_NODE_FAILED	-115	
BT_BADHEADER	-116	
BT_CHECK	-200	CheckBTree

200 --> 300 reserved for BT_CHECK

Catalog Support Errors

Error Name	Error #	Comment
OPENROOTNOSUCHFILE	-450	Opening the root failed–there is a serious problem with the FS
PCROUTOFMEMORY	-451	The path resolver ran out of memory
PCRBADPATHELEMENT	-452	path has a bad element in it
PCRNOSUCHPATHELEMENT	-453	path has a nonexisting element
PCRGOTFILENOTDIR	-454	path resolver encountered a file when it was expecting a dir
PCRCWDNOTDIR	-455	relative path search with a non directory current working dir was attempted
PCRUNEXPECTEDTYPE	-456	path resolver encountered a thread record
CLOSEFAILED	-470	Unable to close file
MACDIROUTOFMEM	-473	mdirentries ran out of memory
MACDIRTRYDECLOWESTFN	-474	Internal error in m/macdirentries
MACCREATEFILEOUTOFMEM	-475	create file ran out of mem
MACCREATEFILECANTDEALLOC	-476	create file failed and then rollback failed
MACCREATEFILENOSPACE	-477	no available space to create file
MACCREATEFOLDOUTOFMEM	-478	create folder ran out of mem
MACCREATEFOLDCANTDEALLOC	-479	create folder failed and then
NOSUCHFOLDER	-480	function could not find folder
MACDELFILEFAILED	-490	macdel couldn't delete a file
MACDELNOSUCHFOLDER	-491	macdelfolder on nonexistent fold
MACDELNOTAFOLDER	-492	macdelfolder on nonfolder
MACDELBADFOLDER	-493	Folder without thread record
MACDELCANTDELTHREADREC	-494	Couldn't delete thread record
MACDELCANTDELFOLDER	-495	Couldn't delete folder
MACDELNOSUCHFILE	-496	macdelfile on nonexisting file
MACDELNOTAFILE	-497	macdelfile on non-file
MACDELNOTHREADREC	-498	macdelfolder couldn't find thread thread record

CANTCREATEINNONDIR	-499	try to create a file in someplace that is not a folder

Error Name	Error #	Comment
BADFILEORFOLDERNAME	-500	Illegal file or folder name
MACDELFOLDERNOTEMPTY	-501	try to del nonempty folder
NAMETOOLONG	-502	bad name - too long
MOVENOTFOLDER	-503	movefolder on nonfolder
MOVENOTHDREC	-504	movefolder couldn't find thread record
MOVECANTMODIFYTHDREC	-505	movefolder couldn't modify thread record
MOVECANTDELFOLDREC	-506	movefolder couldn't del old folder record
MOVECANTPUTNEWFOLDREC	-507	movefolder couldn't put new folder record
MOVECANTDELFILEREC	-509	movefile couldn't del file rec
MOVECANTPUTNEWFILEREC	-510	movefile couldn't put new file rec
MOVENOTFILE	-511	movefile on non file
MOVEWOULDOVERWRITE	-512	move would overwrite something
MOVENOTFILEORFOLDER	-513	move on nonfile/nonfolder
TOOMANYOPENFILES	-514	open failed because catrectable is full
MOVEPARENTINTOCHILD	-515	Try to move parent folder into child folder failed
MOVEINTERNALERROR	-516	Move encountered internal error
MOVEFAILDURINGFAIL	-517	Move failed, then failed during rollback – bad
CANTFINDTHDREC	-518	Couldn't find a thread record
MGROWDOESNTTRUNC	-519	Trying to truncate using mgrowfile
MGROWNOTENOUGHSPACE	-520	mgrowfile could not find enough space to grow to desired size
MGROWCANTFINDLASTER	-521	mgrow could not find last extent record of the file
MGROWCANTWRITELASTER	-522	mgrow couldn't write the last extent record of a file
MGROWGREWTOWRONGSIZE	-523	mgrowfile internal error file grew to incorrect size
FILEISGONE	-524	This means that you are trying to read, write, or close an open file which someone deleted/moved out from under you.
CANTUPDATEDIR	-525	Could not update directory times and valence
BADPATH	-526	was given a bad path
CANONLYOPENFILES	-527	Try to macopen a non-file
TRUNCTONONZEROSIZE	-528	Tried to truncate to nonzero size
CANONLYTRUNCFILES	-529	Tried to truncate a nonfile
CANTOVERWRITEDIR	-530	Tried to overwrite a folder
CREATEFOLDWOULDOVERWRITE	-531	Creating the folder would overwrite an existing item
MACREADCANTREAD	-550	macreadblocks failed in mread
FILEISNOTOPEN	-551	Tried to close nonopen file
INVALIDMFILE	-552	The MFILE you passed is garbage
CANTSETNONFILEFINDERINFO	-553	We only do files right now...
CANTGETNONFILEFINDERINFO	-554	We only do files right now...
CANNOTCREATEFILE	-555	Only create files with absolute path
FILEISINUSE	-556	Cannot delete open files

Partition Errors

Error Name	Error #	Comment
PARTOUTOFMEM	-600	Ran out of memory

PARTCANTREADSECTZERO	-601	Couldn't read the device map
UNRECOGNIZEDTYPE	-603	Doesn't have valid device map
PARTCANTREADPARTMAPSECT	-604	Couldn't read partition map
BADPARTITION	-605	Asked to mount a non MAC HFS partition

Error Name	**Error #**	**Comment**
NOTMACHFSPART	-606	It looked like a MAC HFS part, but after reading vib, we don't think so
ALLOCSBITMAPFULL	-607	No more room left on disk
FOLDERNAMETOOLONG	-608	safeguard in create/delete folder routines
INVALIDOFFSET	-609	offset not madgetsector too big.
NOTSECTORALLIGNED	-610	offset to macgetsector not sector aligned
SECTOR_SIZE_MISMATCH	-611	Sector size gotten from device does not match sector size in partition table

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TASCAM

TEAC Professional Division

MMR-8/MMP-16

Version 2.0 update

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