

# **TASCAM**

**TEAC Professional Division**

## **MMR-8**

**Modular Multitrack Recorder**

## **MMP-16**

**Modular Multitrack Player**

**MMR-8/MMP-16 Version 3.0**  
**Tips For Pro Tools Users**

# TASCAM MMR-8/MMP-16 Version 3.0

## Tips For Pro Tools Users

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**NOTE: This document reflects features and capabilities of software Version 3.0 of the TASCAM MMR-8 and MMP-16. Future revisions of MMR/MMP software may impact some of the suggestions made in this document. The most recent version of this document can be found on the TASCAM web site at <http://www.tascam.com>.**

# Tips for Pro Tools and MMR/MMP Users

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## Formatting Macintosh Disks

The MMR-8 and MMP-16 cannot format disk drives as Macintosh HFS (Hierarchical File System) 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.

## Using Macintosh Disk Volumes with Partitions

Macintosh drives may be divided into logical partitions of various sizes sharing the same SCSI address on the SCSI bus. The MMR/MMP will find all valid Pro Tools Session files regardless of which partition they are on. Once a track is loaded on the MMR, any new audio recorded on that track will be stored to the same drive and partition as the loaded track. When the MMR is first booted, new MMR Projects (created by accessing Setup Menu 800 and storing a new Project name) recorded to a partitioned Macintosh disk will automatically be stored to the partition on that SCSI drive with the most available free space. This means the Project folder, Session file and all audio files will be stored to that partition. When a project is loaded from any partition, all subsequent new projects will be recorded to that partition until a project is loaded from either a different partition or a different drive. In other words, the MMR will record to the drive and partition from which the current project was loaded. Rebooting will return the MMR to its default record drive, and to the partition with the most available space on that drive.

## ***Recording To Partitioned Drives***

To create a new project on a partition other than the one with the most available space, load a project from the desired partition (thus making that partition the new record destination) and then create a new project. To create a Project on a partition other than the one with the most available space when no Project already exists there, it is first necessary to create (using Pro Tools) or copy (using a Macintosh) a Project (Session) to that partition. This will allow the Project to appear in the list of valid Projects when the Load Track key is pressed on the MMR and to be loaded as described above so that the new project can be recorded to that partition.

## ***Disk Cleanup and Exporting To Partitioned Drives***

The Disk Cleanup function (Setup Menu 720) requires the user to choose a specific SCSI drive, and will delete audio files only on the partition of that drive with the most available free space. Since they appear in the MMR's list of valid projects (accessed by pressing the Load Track key), Session files may be deleted from any partition, but audio files from a partition other than the one with the most available free space may be cleaned up (deleted from the disk) only by using a Macintosh computer. Backups, Exports, or TapeMode Conversions to a SCSI volume with partitions will be performed only to the volume with the largest amount of available free space. A future version of the MMR/MMP software will allow Recording, Disk Cleanup, Backup, Export, and TapeMode Conversion to any user-selected partition on a SCSI volume.

## **Pro Tools and MMR/MMP Hard Drive Compatibility**

The current list of disk drives that are qualified by Digidesign to work with Pro Tools is available on the Digidesign web site at [www.digidesign.com/compat/index.html](http://www.digidesign.com/compat/index.html). The current list of drives that are qualified by TimeLine/TASCAM to work on the MMR-8 and MMP-16 is available on the Tascam web site at [www.tascam.com/pages/dat/mmhmpg.htm](http://www.tascam.com/pages/dat/mmhmpg.htm) and also on the TimeLine web site at [www.digaudio.com/](http://www.digaudio.com/). Note that as of the date this is begin written (January 1999) only three drives are qualified by both Digidesign and TimeLine/TASCAM : Seagate ST39173W, ST19101W, and ST39102LW. Users should be aware that drives with the same model number may have different firmware versions. TimeLine/Tascam works to continually update the list of qualified drives as new drives become available from SCSI drive manufacturers. Because this list can change frequently, it is best to check the web site or ask TASCAM customer support for information on new drives that may have been qualified since this guide was published.

## ***Does the MMR/MMP work with Drives not on the approved list?***

Yes – many drives not on the list of qualified MMR/MMP drives will work to some degree. However these hard disks are not guaranteed to provide the record or playback performance of tested and approved drives. Some specific problems known to TimeLine/TASCAM from our testing are: Micropolis no longer exists, so we are unable to acquire their discontinued drives and therefore cannot guarantee their performance; Quantum Atlas drives drop drastically in performance when edits are introduced to a project. We are currently working with Quantum to resolve these issues.

## ***Does the Iomega Jaz drive work with the MMR/MMP?***

Yes, the MMR/MMP will work with the Iomega Jaz drive, but users should understand that the Jaz unit does not have the same performance specifications as a hard disk drive and is not rated to reliably allow 8 channels of audio recording with punch in and out. Playback of 8 channels of audio will work fine in most cases (depending on edit density). In our experience, the 2 GB Jaz drives have noticeable better performance than the 1 GB capacity units.

## **Optimizing Hard Disk Mounting**

To optimize the Mounting Volumes procedure so the MMR/MMP will mount SCSI disk volumes in the shortest possible time, delete unnecessary Pro Tools sessions or OMF files.

## **Empty Project Folders on Mac Volumes**

To eliminate Pro Tools files from a Macintosh volume in order to gain more free space on a hard disk it is necessary to first delete the Project (Session file) and then perform a Disk Cleanup (using Setup Menu #720). Deleting the Project will remove the Session file, and Disk Cleanup will delete the audio files, but the Project folders are not removed. When mounting the hard disk onto your Pro Tools System you will notice that previously deleted Projects have empty folders on the disk. This is normal - the Project folders contain no audio files and therefore take up no space on the disk. If you don't want to keep these empty folders, drag the empty Project folders to the trash and empty the trash.

## **Pro Tools Features Not Supported**

The MMR/MMP have no digital audio mixing or effects processing functions. Therefore Pro Tools TDM plug-ins, Gain and Pan Automation, as well as Dynamic Voice Allocation are not supported. However, non real-time effects that are applied (rendered) within Pro Tools, such as Audiosuite plug-ins, will play back correctly. Playback mutes that are part of the Session will also 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.

## **Using 24 Bit and 16 Bit Files in a Project**

The MMR/MMP can play 24-bit and 16-bit audio tracks simultaneously in the same Project (and even on the same track). However, Pro Tools 24 only supports sessions with a common word length (16 or 24 bit) throughout and will perform a word length conversion if mixed word lengths are encountered in a Session. In order to avoid this problem, refrain from using both 16 bit and 24 bit audio files in the same Project.

## **File Compatibility with AudioVision**

Version 3.0 of the MMR/MMP software only reads Pro Tools 3.2 and 4.x sessions. The MMR/MMP cannot read AudioVision sessions directly. However, AudioVision can export a project as a Pro Tools 3.2 Session. This exported file can be played by the MMR/MMP, and this is the recommended path to move projects from AudioVision to the MMR/MMP.

## **OMF with Avid AudioVision and Media Composer**

The original design goal of the current OMF implementation was to handle the output of Digidesign's OMF Tool Version 1.12. This implementation works well with that specific type of OMF file, but not with the other "flavors" of OMF exported by other Avid/Digidesign products. Avid's AudioVision and Media Composer systems produce OMF output (export) files that contain frame accurate audio data which cannot currently be read directly by the MMR (which looks for sample accurate files). In our experience, Avid Media Composer and AudioVision OMF exports exhibit other problems because they are not created by using the OMF toolkit. These files will show errors when analyzed with the OMF Toolkit's OMF Dump utility. This Avid OMF utility parses OMF files and shows their contents. Typically, these exports do not show correct Composition MOB's (Media Objects) with files produced by Avid products.

For the present, the best solution for moving projects from AudioVision to the MMR is to use Pro Tools export from AudioVision. A future version of the MMR/MMP software will have improved OMF support to directly handle frame accurate OMF exports from Avid AudioVision and Media Composer products.

## **Pro Tools Fade Files**

When a Pro Tools Project (Session) is created on the MMR, a Fade Files folder is automatically created as a place for the Pro Tools system to store any fade files that system may create. When edits or new recording are made on the MMR-8 and MMP-16, they always generate the proper fade file descriptor (according to the default fade settings in setup menu 510) in the Session file so that a Pro Tools system can later generate appropriate fade files.

Although the MMR does not create Pro Tools fade files, if Pro Tools fade files are present in the Fade Files folder, the MMR/MMP will play them. The exception is that for linear Pro Tools fades, the MMR/MMP will perform the fade in real time instead of locating and playing the linear fade file from the disk. If a Pro Tools fade file is missing, the MMR/MMP will simply play a real-time linear crossfade of the appropriate length in place of the missing fade file.

When a Session that was created on the MMR is opened on a Pro Tools system, Pro Tools will alert the user that fades are missing. To generate the missing fade files, simply choose Skip All from the Pro Tools dialogue and Pro Tools will create them.

The Disk Cleanup function (Setup Menu 720) will automatically delete linear fade files on a Pro Tools disk or partition, but will not affect other (non-linear) fade files.

## **Recording Pro Tools Sessions**

To record a new Pro Tools Session directly to the MMR-8, you must use a Macintosh HFS formatted disk and set the Disk Encoding parameter in setup menu 700 to be either Pro Tools 16-Bit or Pro Tools 24-Bit. Once a Macintosh formatted disk is mounted and the Disk Encoding type is set to Pro Tools, 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.

## **Recording more than 8 tracks in a single Project**

Although the MMR-8 can only record eight tracks at one time, more than eight tracks can be recorded to a single Project (Pro Tools Session). To record new tracks in an existing Project, unload existing tracks so that new tracks can be recorded as part of same Project or Session. To unload a track press the (View) Track button and select a track (press the desired track's Select key or use the up/down arrows or jog/shuttle wheel). Next, press Shift and then the Track button, and the selected track will be unloaded. The track name will now show as "Blank" when viewed using the View Track function. Arming this track and recording new audio will create a new track in the Project (Session). When this Session is opened in Pro Tools, all of the tracks recorded will show up as tracks in the same Project or Session. This method can also be used to record more than eight tracks in the same Session for playback on a TASCAM MMP-16.

## **Session With More Than 8 Audio Tracks**

When loading a Pro Tools session containing 9 or more tracks onto the MMR-8, only the first 8 audio tracks of the Session will load. The other tracks still exist in the Project, they have simply not been loaded. To load tracks other than those automatically loaded when the Project is loaded, press the Load Track key once to view and select the desired Project, then a second time to look at the list of Tracks in the selected Project. Any track from the Project can be loaded into any channel of the MMR or MMP, and doing so will automatically unload any existing track. For more detailed information on this subject, refer to page 62 in the MMR or MMP manual.

## **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***

Pro Tools only supports a Pull Up from 30fps and a Pull Down from 29.97fps. The MMR/MMP supports these and other frame/sample 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 Pro Tools Session file created will not save that property in the Session file since that format has no way to store this data.

### ***Limitations on Number of Tracks***

Pro Tools 4.2 supports a maximum of 43 tracks per Session. This track number limitation affects how many tracks may be created in a Session on the MMR-8. 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 Pro Tools if the maximum number of channels is exceeded. A future software revision of the MMR/MMP will use the alternate tracks feature of Pro Tools to permit unlimited unloading of tracks and eliminate this restriction.

## ***Session Start Time Restrictions***

When recording additional audio on existing projects created originally with Pro Tools, 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 Pro Tools sessions generated on the MMR-8 always use a start time of 00:00:00:00 and hence will have no punch-in restriction. A TapeMode project has its own TapeMode start time (Setup menu 230) for all formats.

## **Time Stamp support**

Whenever a recording is made on the MMR/MMP, a time code stamp is recorded as an attribute of the SDII audio file. Time stamps are retained when files are backed up, exported, or converted. To use the time stamp in Pro Tools, use the Spot option along with the “hand” cursor.

## **Using TapeMode with Pro Tools Sessions**

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 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.

## ***What is TapeMode?***

TapeMode is a method of recording audio with the MMR-8 that directly overwrites any previously existing audio material whenever a recording is made. This saves disk space when the unit is being used to record mixes, since it is only the most recent recording that mixers want to keep. This exactly emulates the way mixers have worked for years with analog or digital tape machines, hence the term TapeMode. TapeMode is also more efficient in its use of system processing resources and makes repeated seamless punch operations extremely reliable. 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 will also 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.

## ***Creating A TapeMode Project in Pro Tools***

TapeMode Projects can be created on the MMR via menu 200 or TapeMode Convert. However, the only way to create an MMR/MMP-readable TapeMode destructive session within the Pro Tools environment, is by recording at time 00:00:00:00 and not using any breaks or edits. It is not possible to create a valid TapeMode project on Pro Tools which has a start time other than 00:00:00:00.



## ***Frame and Sample Rates in Tape Mode***

When creating TapeMode Pro Tools projects, be sure to pick a supported frame rate/sample rate combination before recording. Sample rates supported in Pro Tools are 48kHz and 44kHz, plus their pull-up and pull-down modifications. Once the TapeMode Session file has been created, altering the frame rate attribute of the Session 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 - if this start time is altered, the Project (Session) will not remain a TapeMode Project, and will be converted to a non-destructive mode Project. Use the Convert to TapeMode function in the Backup menu to turn a non-destructive Project into a TapeMode Project.

## ***Setting Proper Tape Mode Length and Start Times***

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.

## ***Punch In before Tape Start - The Two Minute Zone***

TapeMode allocates approximately two minutes of disk space (an approximation because it is based on a number of samples, so the time varies according to sample rate and bit depth) before the defined start time to allow space for reference test tones, a cue, or an intro to the recording in this “buffer zone” before the actual start time. Punch-in is allowed within this “buffer zone”, but not before it. Thus, if a TapeMode Project has a start time of one hour (01:00:00:00) a punch in cannot be executed before about 00:58:00:00. If one has no need for this two minute zone and is concerned about saving disk space, set the TapeMode Start time (menu 230) to about two minutes after the actual desired start of the Project.

## ***Backing Up Tape Mode Projects***

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. For example, if a 4340 MB disk requires backing up in Tape Mode onto a 9 Gig drive, be sure to use a formatting software package aboard the Macintosh to segment the drive to have one partition of that size(4340 MB). Note that even drives of the same make and model may sometimes have a different data block size. When Pro Tools and the MMR/MMP become compatible with Apple's HFS+ format, this will no longer be an issue, since that format uses a consistent data block size.

## **Using Backup, TapeMode Conversion, and Export**

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. See the Version 3.0 update documentation for more information on using these features.

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

## **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 of Projects directly from Pro Tools Session format to the WaveFrame file format is not allowed (this is a restriction imposed by Digidesign as a condition of their format license, not an inherent limitation of the MMR/MMP system). There is however a way to do this export. First, export the Pro Tools Session as an OMF file (to the same disk as the Pro Tools Session). 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. Next export the newly created OMF Project to a WaveFrame disk. The audio files will be converted from Sound Designer II format to WaveFrame format and the EDL will be converted from OMF to WaveFrame format.

## File Compatibility Chart

One of the most powerful features of the MMR-8 and MMP-16 units is their support for multiple Digital Audio Workstation formats. The following chart shows the Matrix of formats supported and the various Backup, Export, and TapeMode™ Conversion operations available in Version 3.0 of the MMR and MMP.

File Compatibility Chart	TO	WaveFrame	WaveFrame TapeMode™	OMF / SDII	Pro Tools	Pro Tools TapeMode™
<b>FROM</b>						
<b>WaveFrame</b>		Backup	Convert to TapeMode	Export	Export	Convert to TapeMode
<b>WaveFrame TapeMode™</b>		[Change Record Mode Setting]	Backup	Export	Export	Convert to TapeMode
<b>OMF / SDII</b>		Export	Convert to TapeMode	Backup	Export	Convert to TapeMode
<b>Pro Tools</b>		<i>Not permitted</i>	<i>Not permitted</i>	Export	Backup	Convert to TapeMode
<b>Pro Tools TapeMode™</b>		<i>Not permitted</i>	<i>Not permitted</i>	Export	[Change Record Mode Setting]	Backup*
<b>AKAI DD-8</b>		Export	Convert to TapeMode	Export	Export	Convert to TapeMode
<b>DEVA</b>		Export	Convert to TapeMode	Export	Export	Convert to TapeMode

**Table of Backup, TapeMode™ Conversion, and Export Paths**

Any file format that can be played on the MMR/MMP can also be written (exported) to any written format supported by the MMR. Written formats are WaveFrame, Pro Tools, and OMF/SDII. The sole exception is that Digidesign Pro Tools files may be written as OMF files, but not as WaveFrame files (shown as *Not Permitted* in the chart above). To convert Pro Tools to WaveFrame, first export Pro Tools to OMF on the same disk, then use that OMF file for export to WaveFrame (one extra step).

*\*This is true only if the Mac HFS disk being copied to is formatted identically (same block size), otherwise Backup to a Mac volume with a different block size will yield a non-destructive project. In this case, use Convert to Tape Mode to insure the project remains a TapeMode project after being copied to the new disk.*

# TASCAM

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# MMR-8/MMP-16

## Tips for Pro Tools and MMR/MMP Users

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