

RADAR I System Software - Version 1.68

Pre-Installation Checklist:

Before proceeding with the software upgrade, ensure that your RADAR unit meets the following requirements. Contact tech support if you need parts or further details.

- 1) If your RADAR unit is currently running a software version earlier than 1.46, you must first upgrade to version 1.46 before installing version 1.68. Refer to the Version 1.46 Release Notes for instructions.
- 2) Ensure that your RADAR system has sufficient memory (RAM) installed on the motherboard to support the disk drives that you have installed (or are planning to install). Refer to **Appendix I: System Memory Requirements** for details. A minimum of 32 Mb of RAM is recommended as drive capacities are increasing. See **Appendix II: Approved SCSI Disk Drives** for the list of available drives and their capacities.
- 3) If you have a 486-25MHz-SX processor on your motherboard, you may experience slow edits and sluggish performance. Upgrading to a 486-33MHz-DX processor will improve performance (for example, the edit time for slides will be 4 to 5 times quicker with a 486-33MHz-DX processor than with a 486-25MHz-SX). The recommended upgrade procedure is to replace the entire motherboard.
- 4) It is advisable that all power connectors be re-seated on your RADAR unit, and that the 5 volt power supply be measured. Sporadic read/write errors, and other unpredictable errors have been observed on units where the power supply measures below 5 volts. The recommended procedure if the power measures below 5 volts after reseating connectors is to replace the power supply.
- 5) In rare circumstances, certain Exabyte Eliant 820 tape drives experience a firmware fault that can cause a backup operation to fail. Should this occur, contact tech support for instructions on upgrading your tape drive or turning off the backup optimization feature. Refer to **Appendix III: Approved Tape Drives** for more information about tape drives.

Upgrade Procedure:

- 1) **Backup all audio on all drives.** In some situations, the upgrade process will require audio drives to be initialized, erasing all audio, so a backup is essential prior to beginning the upgrade.
- 2) Determine which type of Disk Configuration applies to your setup:
 - If you have **INTERNAL** drives only, go to Step 3 on the following page.
 - If you have **EXTERNAL** drives only, go to Step 3. If you have more than one set of external drives, you must repeat the remaining steps Upgrade Procedure for each set of drives.
 - If you have both internal and external drives and they are configured as "**INT + EXT**", you should disconnect the external drives during the software upgrade. You will see this instruction in Step 4 of the Upgrade Procedure.
 - If you have both internal and external drives and they are used separately as required by your session demands in either **INTERNAL** or **EXTERNAL** mode, then each set of disks must be upgraded separately to version 1.68 format. This is because the RADAR Operating System

Upgrade Procedure (cont'd):

resides on the first disk of each set of drives (for internal drives, it resides on Disk 0; for external drives, it resides on Disk 3). Begin by setting "DISK MODE" (in the "DISK CONFIG" section of the SYSTEM menu) to "EXTERNAL". Perform the remaining steps of Upgrade Procedure once for each set of external drives, and then again for the internal drives. As instructed in Step 4, you disconnect the external drive bay while you are upgrading the internal drives.

- 3) **Choose "UPGRADE SYSTEM" from the SYSTEM menu** and answer "YES". If the "UPGRADE FORMAT" prompt appears, choose "NEW (v1.50+up)" or "NEW (v1.92+up)". When you press the enter key, RADAR will convert the projects to a version-independent format. This operation will take approximately 10 seconds per project.
- 4) **Power off RADAR.** If your disk configuration is set to "INTERNAL" or "INT + EXT", disconnect any external drive bays and ensure that a SCSI terminator is plugged into the back panel of your RADAR unit.
- 5) **Insert the floppy disk** containing the Version 1.68 software and power up RADAR. The front panel and RE8 LCD should show the following status messages:

```
"RADAR DIGITAL 24 TRACK"  
"DRIVES FOUND: 3"  
"Booting from floppy ... "  
"CHECKING OPSYS"  
"LOADING FLOPPY"
```

- 6) The LCD prompt "**UPGRADE 1.46 TO 1.68?**" will appear when the the floppy has been loaded. Other possible prompts are "DOWNGRADE x.xx TO 1.68?" if you are reverting to 1.68 from a later version of software; "REINSTALL 1.68?" if the current version has already been installed; or "INSTALL 1.68?" if the disks have been freshly initialized. In any case select "YES" to proceed with the upgrade.

In some circumstances, RADAR may prompt you to "**INIT x DRIVES?**". **Note that initializing drives will erase all audio on those drives.** Therefore, make sure that you backed up all data in accordance with the System Preparation before you answer "YES" to this prompt. Once all required drives are initialized, the following sequence of messages will appear as the new software is installed:

```
"CLEARING OPSYS"  
"COPYING BOOTLOAD.386 ..."  
"COPYING BOOTPART.386 ..."  
"COPYING KS1.ISP ..."  
"COPYING EM8B.BIN ..."  
"COPYING CM24.BIN ..."  
"COPYING RADARL.BIN ..."  
"COPYING RADARH.BIN ..."  
"COPYING LOADER"
```

- 7) When the load is complete, the LCD will say either:

```
"INSTALL COMPLETE. PRESS ANY BUTTON"
```

or

```
"REMOVE FLOPPY, POWER OFF & REBOOT".
```

In either case, when you perform this action, RADAR will mount the disks and convert your projects to 1.68 format. If an error message appears, contact technical support.

Upgrade Procedure (cont'd):

- If you have **INTERNAL** drives only, then the installation is complete.
- If you have **EXTERNAL** drives only, the installation is complete unless you have more than one set of drives. In this case, power off RADAR, remove the floppy, connect then next set of external drives, and repeat the Upgrade Procedure.
- If you have both internal and external drives and they are configured as "**INT + EXT**", power off RADAR, remove the floppy, reconnect the external drive bay, and reboot.
- If you use both **INTERNAL** and **EXTERNAL** drives separately, and you have just completed the installation for the external drives, set the "DISK MODE" (in the "DISK CONFIG" section of the SYSTEM menu) to "INTERNAL" to upgrade the internal drives. In this situation, the warning "WRONG OP SYS S/W" is expected since the system is running version 1.68, but the internal disks still contain the old version. Power off RADAR, remove the floppy, and reboot with the old software on the internal disks. Repeat the Upgrade Procedure.

Running 1.68 software from floppy without installing to hard drives:

If you select "NO" in answer to the prompt to install 1.68 in Step 6 above, RADAR will then ask you whether you want to "RUN 1.68 FROM FLOPPY?" If you select "NO", the install procedure will be aborted and you must reboot RADAR. However, if you select "YES", RADAR will run the software from the floppy without installing it, thereby allowing you to use version 1.68 while keeping the version 1.46 software on the hard disks. In this case, before rebooting from the internal drives, you must select "UPGRADE SYSTEM" from the SYSTEM menu and, choose "OLD (v1.46+down)" as the upgrade format.

New Features since Version 1.46:

Synchronous SCSI Support

RADAR now supports synchronous SCSI operation required by the current generation of hard disk drives. As always, be sure to use only drives that have been approved for use in RADAR. In addition, you must use only active SCSI terminators when operating in synchronous mode.

Distributed/Redundant Playlist Storage

In version 1.46 and earlier, the playlist file for each project was stored only on the 'A' drive (usually SCSI ID 0). If the A drive failed or became damaged, all audio on all disks was effectively lost.

This "Achilles heel" has been fixed in 1.68 with the addition of distributed playlist storage. Now, each drive has a copy of its own 8-track playlist, so if the A drive fails, you will at least have access to the B and C drives, operating as a 16-track recorder. You can even swap drives A, B, and C around (AFTER unmounting them first!) and the track configurations will change automatically when you remount the disks.

In addition to the distributed playlist storage, 1.68 also adds redundant playlist storage. Each playlist file is now always stored in two separate locations of the disk, so if the primary playlist file becomes inaccessible or corrupted, the system automatically switches to the secondary copy. If both copies are damaged, the system will report an error to the LCD.

Distributed/redundant playlist storage is automatic. There are no new operational modes required to learn. Systems upgraded from v1.46 are automatically converted into this new format. The tape backup format has not changed, so all existing Exabyte and Travan backup tapes are fully compatible. The additional disk space required for distributed file storage is minimal and had already been reserved for future expansion in v1.46 and earlier. Saving state takes an extra half second or so, so there is no significant performance tradeoff.

New Sync User Interface

The Sync Source menu has been enhanced to make it easier to synchronize to external devices while the time code format and rate are now set in the Project menu based on defaults from the Preferences menu. The complete menu structure is listed at the end of this section.

Illegal Sample Rate Detection

When syncing to AES or S/PDIF, a message will be displayed on the LCD when the incoming digital signal is encoded at a different sample rate than expected by RADAR. V1.46 would also detect this condition, but the only indication was a blinking SYNC led, which was often confused for "the cable isn't plugged in", rather than "my digital source is configured for the wrong rate".

Restore from RADAR II

Audio recorded in 16-bit mode on a RADAR II and backed up to Exabyte tape can now be restored on a RADAR I. Note that extra disk space is required to convert the audio data because it is stored in larger clusters on RADAR II. If all available disk space is used up during this

process, the conversion will stop, and the message “NO DISK SPACE: RECLAIM + RETRY” will appear.

At this point, the user must delete projects and/or ‘RECLAIM SPACE’ to free up some disk space, and then use the ‘CHECK PROJECT’ feature in the DIAGNOSTICS menu to complete the audio conversion. Unconverted audio will also be detected by the automatic error-checking feature described above.

Selective Backup and Restore

A new prompt appears in the backup menu when the user selects more than one project to be backed up:

**BACKUP GROUPING:
PROJECT SET**

The “**PROJECT**” option is an automated way of backing up the selected projects one by one. The benefit of this is that any individual project may later be restored without restoring the entire set.

The “**SET**” option is the old backup method in which all the selected projects are backed up as a single data set. The benefit of this option is that it keeps project groups together and requires less space on the tape if audio has been copied between projects.

Backup/Restore Progress Monitor

The “time remaining” display, shown during backup and restore, is continually estimating the time based on the current drive throughput. When backing up large amounts of data, the time estimation can remain unchanged for a few minutes at a time if the actual throughput falls below expected levels. In 1.68, this display will switch between the estimated time remaining, and a new “FILES xxxxx MB” display, showing exactly how much more data remains to be backed up or restored. Thus, even when the time estimate isn’t changing, the MB left display will continue to show progress.

Salvage Partially-restored Projects

If a restore operation has to be aborted (for example if the backup continued on a second tape and only the first tape is available), the following prompt will appear:

**SALVAGE PARTIAL
PROJ? NO YES**

Answering ‘YES’ will create a project containing the portion of the audio that was restored so far. Missing audio tracks will be labeled ‘Lost Trk x’ in the list of locate points. Answering ‘NO’ will invoke the ‘reclaim space’ utility to delete the partially restored project.

Default SMPTE Rate Preference

A default SMPTE rate preference was added. Now European users can set this once to 25 frames and all new projects will default to this setting.

Modified Undo/Redo

The “UNDO EDIT” and “REDO EDIT” functions have been split into two separate menu options in the Edit menu. The undo action is now remembered per project and can be performed even after a project has been archived and restored.

When undoing or redoing an edit where IN, OUT or SYNC markers apply, these points are restored to where they were during that edit. For example, if the last edit was a cut, and the user presses the UNDO button, the IN and OUT points are repositioned to show the range that was cut, and the following prompt appears:

<p style="text-align: center;">UNDO CUT? NO <u>YES</u></p>
--

Upon answering ‘YES’ to this prompt, the cut audio will reappear between the IN and OUT points. Answering ‘NO’ to the prompt is a way to reset the IN and OUT points to where they were during the edit without actually undoing the edit. Note that this feature does not apply when undoing (or redoing) a paste since the paste function doesn’t use the IN and OUT markers.

Rechase Mode Preference

There is a new preference called **RECHASE MODE** that can be found under **PREFERENCES**. This preference will affect how RADAR chases timecode.

Rechase Disabled: When RADAR is chasing timecode, it will attempt synchronize to the input timecode and once chase lock has been established the incoming timecode will be ignored. For example, if RADAR is syncing to VIDEO and chasing SMPTE, once chase lock has been established RADAR will continue playing locked to VIDEO but will totally ignore the incoming SMPTE timecode.

Rechase Enabled: In this mode, RADAR chasing operates in the same manner as it always has in the past. When RADAR achieves chase lock with the incoming timecode source, it will continue to read the incoming timecode. If the incoming timecode gets interrupted for any period of time longer than RADAR’s freewheel setting, RADAR will immediately stop and attempt a rechase.

Custom Disk Configurations

A new disk configuration mode was added, to support non-standard configurations. The CUSTOM mode has two parameters. TRACKS PER DISK is the number of tracks recorded per disk, while the GROUPING preference allows you to specify which SCSI devices are assigned to which tracks.

Hot Swap Detection

Some users have run into trouble using EDB-3 and removable hard drives, inadvertently swapping drives without first unmounting the drives. The software can now detect when this occurs and will display an error message.

Smart Disk Defect Management

Today's high performance SCSI drives provide intelligent ways of recovering from bad sectors (unreadable or unwritable sectors) by remapping these bad sectors (drive manufactures call these "defects") to spare sectors in a reserved area of the drive. Remapping a sector means that the drive capacity does not decrease, but the drive performance does degrade whenever that remapped sector is accessed.

RADAR now adds three new diagnostic tools to help deal with defects on SCSI disks.

- 1) The SHOW DEFECT LIST menu item will report how many sectors are defective and remapped.
- 2) The VERIFY DISKS menu item will perform a surface scan and test the integrity of each sector on the disk. This process does not overwrite any recorded data. It takes about 8 minutes per GB.
- 3) When a disk with remapped sectors is initialized, any cluster referencing a remapped sector is marked as bad, and will never be used to record audio. This allows RADAR to avoid accessing the areas of the disk with known performance problems.

Automatic Error-checking

RADAR has been enhanced to automatically check for errors whenever a project is loaded. If the user attempts to go to a damaged project, a warning will appear:

**PROJ HAS ERRORS
VIEW? NO YES**

If the user chooses not to view the errors immediately, they can use the "CHECK PROJECT" feature in the DIAGNOSTICS menu to view the errors at an appropriate moment.

If the user selects "YES" to the prompt shown above, then the following message will appear to show the number of errors (xx). At the same time, technical details of the errors will be written to the debug log. These details should be forwarded to technical support personnel for analysis.

**PLAYLIST ERRORS:
OVERALL: xx ERRS**

Upon pressing the enter key, the user will then be given the option to have the errors fixed. If the user chooses not to fix the errors at this time, they can be fixed later using the "CHECK PROJECT" feature in the DIAGNOSTICS menu.

Auto Reclaim

Auto Reclaim is an enhancement to RADAR's file management that automatically trims and reclaims audio files as they become inaccessible. Earlier versions of software would retain entire audio files, even only if a small clip was ever referenced by the playlists. With Auto Reclaim enabled, if you start out with a 10-minute recording and edit or repunch so that only 5 seconds of

the original recording is referenced, the system only retains the audible 5 seconds. The remaining 9 minutes and 55 seconds of inaccessible recording space is freed up for further use.

Users should expect to find that projects backed up under 1.68 take significantly less (20%-30% less) storage than the identical project created under v1.46.

Audio file storage is not trimmed or reclaimed unless the audio is no longer accessible by the current project, the UNDO memory, or the clipboard memory. The system automatically tracks which audio files are shared between multiple projects and does not automatically trim or delete any shared audio files.

Systems upgraded from v1.46 will be automatically trimmed down to the minimum size, with the resulting free space available for more recording. Similarly, any audio restored from tape is automatically trimmed.

The manual RECLAIM SPACE menu item is still required to trim or reclaim any audio space that was shared by multiple projects.

Auto Reclaim is enabled by default, but can be disabled in the PREFERENCES menu. There are no new operational modes to learn. Auto Reclaim happens in the background with no performance delays.

Customized Screen Saver

The screen saver now has a few preferences that can be set: The SAVER DELAY is the delay (in seconds) before screen saver kicks in. A value of zero disables the screen saver. IMAGE EFFECTS are enabled by default, and cause the "squishy" effect as the screen saver image travels around the screen. SELECT IMAGE allows the user to choose either the DEFAULT image (one of the product logos picked at random) or a CUSTOM image supplied by the user. The SET CUSTOM IMAGE menu allows any 256-color PCX bitmap to be loaded as the screen saver.

RE-8 II Support

The RE-8 II controller can now be used with RADAR I (although some buttons only perform functions on RADAR II).

Record While in Cycle

Recording while in Cycle mode has been enabled.

New Features since Version 1.52:

New Option to Show Backup Size

An option to "SHOW BACKUP SIZE" has been added to the PREFERENCES menu:

```
SHOW BACKUP SIZE  
OFF MBYTES TIME
```

When Version 1.68 is installed, this option will be "OFF", so the backup menu tree will be the same as before. Users who want to see the size of the backup before it commences can set this preference to "MBYTES". This will cause a new prompt to appear after the user selects files to be backed up. For example:

```
720 MEGABYTES  
PROCEED? NO YES
```

For users who are more concerned with the amount of the time required to perform the backup, the preference can be set to "TIME". In this case the prompt will appear as:

```
12 MI NUTES REQD  
PROCEED? NO YES
```

The time is estimated based on the typical throughput of the backup device installed in the RADAR unit. For example, using an Exabyte Eliant tape drive which has a typical throughput of 1.2 megabytes per second, a 720 MB backup will take about 600 seconds or 10 minutes. Allowing a minute each for loading and rewinding the tape, the total time estimate is 12 minutes.

New Features since Version 1.58:

Multi-Level Undo

After performing a series of recordings and edits, you now have the ability to undo them one at a time beginning with the most recent edit. After undoing an edit or sequence of edits, you can also redo as many of those edits as required. The redo action is performed either via the edit menu or by pressing the *Shift* and *Undo* keys on the RE-8 or RE-8 II remote controller (you cannot redo via RADAR's front panel).

The **DEFAULT UNDO** level in the Preferences menu may be set to any number between 0 and 10. This is the number of undo levels that will be allocated to new projects at the time they are created. The "**Undo/Redo Level**" box on the RADARview screen shows the number of these levels that are in actually in use for the current project.

The amount of disk space used will, of course, increase as the number of undo levels increases, especially when punching in large blocks of audio over top of previously-recorded material. By reducing the number of undo levels for such projects, you can free up some disk space. You can change the **UNDO LEVEL** for the current project in the Project menu.

New Menu Structure

The menu structure has changed since version 1.46. The full menu tree is listed on the following pages. Changes are indicated in **BOLDFACE**, along with a brief description.

Note: The Sync Source menu is accessed by pressing the 'SYNC' button on the RE-8 remote controller or the 'EXT SYNC' button on the front panel. All other menus are accessed by pressing the 'MENU / PREV' button on either the RE-8 remote or the front panel.

SYNC SOURCE:

EXT TIME CODE	Sync to external SMPTE or MTC (MIDI Time code)
VIDEO	
TC REF:	
WORDCLK	
TC REF:	
DIG 2 CH FORMAT	Sync to either AES/EBU or S/PDIF
CLOCK REF:	Select DIG (digital), INT, WD (word clock), or VID (video)
TC REF:	Select INT or EXT time code reference
ADATLINK	Sync to ADAT
CLOCK REF:	Select DIG (digital), INT, WD (word clock), or VID (video)
TC REF:	Select INT or EXT time code reference
INTERNAL	Don't sync to any external device

MAIN MENU:

MAIN/SYS MENU:

SYSTEM VERSION	
SHOW DISK SPACE	
../DIGITAL I/O	
DIG 2 CH OUTPUT:	
DIG I/O ROUTING:	
../ DISK CONFIG:	Replaced CONFIGURE DISKS with new DISK CONFIG submenu
DISK MODE	Same as old CONFIGURE DISKS, but added CUSTOM config mode
CUSTOM: TRACKS	Set the CUSTOM mode tracks per disk setting
CUSTOM: GROUPING	Set the CUSTOM mode SCSI ID grouping
RADARLINK	
RADARLINK SOLO	
MACHINE CONTROL	
SET TIME & DATE	
UPGRADE SYSTEM	

MAIN/PROJ MENU:

../BACKUP MENU:	
ALL PROJECTS	
CURRENT VERSIONS	
CURRENT PROJECT	
SELECTED PROJS	
../RESTORE MENU:	
ALL DATA SETS	
SELECTED SETS	
GOTO PROJECT	
CREATE PROJECT	
NAME PROJECT	

FFWD & REW RATE	
PEAK HOLD TIME	
CLIP HOLD TIME	
SAVE STATE DELAY	
../SCREEN PREFS:	New sub-menu for screen saver settings
SAVER DELAY	
IMAGE EFFECTS	Turn screen saver image effects on or off
SELECT IMAGE	Choose between default and custom screen saver images
SET CUSTOM IMAGE	Load a custom screen saver image from floppy disk
AUTO RECLAIM	ENABLE or DISABLE new automatic reclaim feature
RADARLINK ID	
SHOW BACKUP SIZE	Display an extra prompt before starting a backup

MAIN/DIAG MENU:

SCAN SCSI BUS	
MOUNT / UNMOUNT	
INIT DISK	
CHECK DISK	
REPAIR DISK	
STRESS TEST MODE	Enable the stress test for qualifying SCSI disks
SHOW DEFECT LIST	Show the grown defect (bad sector) list of a SCSI drive
VERIFY DISKS	Verify the entire surface of a SCSI disk (SLOW!)
COPY HARD DISKS	
SHOW FREE RAM	
CHECK PROJECT	
REALTIME ERRORS	
SYNCHRONOUS SCSI	ENABLE or DISABLE synchronous SCSI mode
CONFIGURE DEBUG	
SHOW DEBUG	
SAVE DEBUG	
METER TEST	Tests the individual meter segments on the front panel
KEY TEST	Tests the individual keys on the RE-8
LED TEST	Tests the individual LEDs on the RE-8

Bugs Fixed From Version 1.46:

Booting From External Drives Shows Odd Messages

When booting from external drives (drive 3), the system would boot correctly, but erroneous messages (EM8 Error, CM24 Error, Initializing Hardware) are shown in rapid succession on the LCD. This bug has been fixed.

Can't Mount Disks

Some users encountered problems where the system appeared to be mounting the disks correctly, then at very end would report CAN'T MOUNT DISKS, often followed by WRONG OP/SYS. These problems were tracked down to corrupted playlist files, usually due to a bad sector on the disk. If the playlist file for the current project was damaged, the disks would be mounted correctly, but the automatic load of the current project would fail, causing the misleading error messages and leaving the disks in an unmounted state.

This bug has been fixed. Now, if the disks mount successfully but the current project's playlist file cannot be loaded, a message is shown on the LCD (CAN'T LOAD PROJECT, SELECT ANOTHER) and you can switch to a different project. The current project may still be inaccessible, but at least the rest of the projects are available and they can be backed up before the diagnosis process begins.

The new distributed and redundant playlist storage feature described earlier should also help to minimize the chance of a damaged playlist file ever appearing.

Syncing

RADAR would not stay referenced to wordclock after going into shuttle mode. This bug has been fixed.

Better Fault Reporting

In place of the 'ONE MOMENT PLEASE' message that used to be displayed if the main processor crashed, detailed CPU register messages will scroll on the LCD. The user can then contact technical support with this information.

Extra Restore Space Message

When attempting to restore from tape and not enough disk space was available, the message was reported as "20 TK MIN REQD", but that meant 20 extra track minutes beyond what was already available. This message was confusing, since many users thought it meant 20 total track minutes. The message now reads as "20 XTRA MIN RQD".

RADARLink

If a Fast Rewind command is quickly followed by another Sony transport command, the Fast Rewind was occasionally missed by the RADARLink slave. This bug has been fixed.

If only a RADARLink slave is recording and then the RADARLink master is stopped, the master didn't wait for the slave to finish updating its playlists. This bug has been fixed.

AES Does Not Work After RADARLink

After a RADAR was used as a RADARLink slave unit, AES would no longer work on that unit, even after RADARLink was disabled. The only fix was rebooting the unit. This bug has been fixed.

AES Sample Delay

The AES left and right output channels were delayed by one sample. This bug has been fixed.

Erase All Disks Ignores Default Sample Rate

After erasing all disks, the current project was always set back to 48 KHz, even if the default sample rate was set to another rate. This bug has been fixed.

Jog Before Time 0 hrs

When jogging backwards, it was possible to jog before time 0 and wrap to 23:59:59, but you could never wrap back. This bug has been fixed.

Bugs Fixed from Beta 2.02:

831 Phantom Sync Source Menu Selection

Entering the sync menu after 'EXT TIME CODE' was previously selected as the sync source brings up a phantom (non-existent) sync source selection. This can result in garbage characters appearing in the LCD, or even a general protection fault. This bug has been fixed in version 1.68.

Bugs Fixed from Beta 2.03:

203A/B 837 RADAR Won't Sync to Digital Input (AES/EBU or S/PDIF)

When attempting to sync to 2-channel digital input with 'CLOCK REF' set to 'DIG', there was no audio and no sync lock. This bug has been fixed in version 1.68.

Bugs Fixed from Beta 2.04:

828 Copied Audio Disappears

When attempting to go to a project in which audio has been copied and edited a number of times, the time code on the RADARview screen would begin to flash, and the message "PROJECT HAS ERRS" would appear. After fixing the errors, some of the audio tracks would be erased. This bug has been fixed in version 1.68.

Bugs Fixed from Version 1.50:

722 Custom disk configuration

In the DISK CONFIG MENU, it was not obvious whether the custom disk configuration was being changed or not. A new prompt "CHANGE CUSTOM CONFIG?" will now appear, and if the answer is 'NO', the message "CONFIG CANCELLED" will be displayed.

845 Transport controls don't work properly in Paste edit

When pasting audio from the clipboard, one of the ways to set the paste point is by using the transport control keys to locate the transport to the desired point. In version 1.50, the Play key had to be pressed twice to get the transport moving from within the paste dialog. In version 1.68, it works the first time.

849 Allow long recordings to be dissected into small segments

When a recording made in version 1.50 or earlier is split into several separate projects, the backup for each individual project takes as long as backing up the entire recording. Recordings made in version 1.68 will not have this problem.

Bugs Fixed from Version 1.52:

150B / 867 Divide Error

Occasionally, RADAR was crashing with "Divide Error" diagnostics appearing on the LCD and in the upper left corner of the RADARview display. This error has been corrected in Version 1.68

150C / 872 Solo mode set to ADDITIVE reverts to INTERLOCK

After changing the "TRACK SOLO MODE" in the PREFERENCES menu from "INTERLOCK" to "ADDITIVE", and rebooting RADAR, the track select mode would behave as if it were in interlock mode. This has been corrected in version 1.68.

877 Can't "INSERT TAPE" until previous tape ejects

When a tape becomes full during a backup, RADAR prompts for a new tape to be inserted to continue the backup. The problem was that the prompt appeared before the existing tape ejected from the tape drive. In Version 1.68, the LCD will say "UNLOADING" until the existing tape ejects, then prompt to "INSERT TAPE".

Bugs Fixed from Version 1.54:

547 RADARlink slave won't copy projects

When attempting to copy, create, delete, renumber or name a project, it only works on the RADARlink master. The slave ignores the command unless it is done in slave solo mode. In Version 1.68, all of these functions will be done on both the master and the slave without requiring solo mode.

860 / 861 RADARlink slave misalignment during jog/shuttle with vari-speed

When using the jog wheel in shuttle mode in a RADARlink setup with vari-speed enabled, the slave RADAR would drift out of sync with the master. This could cause further problems, including General Protection Faults. The misalignment has been eliminated in Version 1.68.

868 RADARlink slave error during undo

In certain situations, when the RADARlink master is syncing to an external SMPTE source, attempting to undo a record causes the RADARlink slave to go into "ERR!" mode. When this happens, the record cannot be undone on the slave, and checking the realtime errors on the slave shows an "ASSERT" error. This problem has been fixed in Version 1.68.

873 RADARlink slave solo mode: cannot use jog/shuttle

After about two seconds of using the jog wheel in slave solo mode, the LCD would report "LOST RADARLINK COMM" and the slave machine would say "RADARLINK DISABLED" In Version 1.68, the jog wheel will work properly in any RADARlink mode.

881 Can't Reclaim Space after initializing disks

Attempting to "RECLAIM SPACE" after initializing disks resulted in an error message: "ERRS IN PROJ 01 REPAIR & RETRY". This error will not occur in Version 1.68.

886 Choosing EXTERNAL mode causes GPF

When attempting to configure disks for external only on a RADAR system that had both internal and external drives connected, a general protection fault would occur. This will not occur in Version 1.68

887 Assert errors occur when restoring a RADAR II backup to RADAR I

In some cases, when attempting to restore a RADAR II backup to a RADAR I system, the counter would begin flashing red due to ASSERT errors. These errors have been eliminated in Version 1.68.

Bugs Fixed from Version 1.56:

156A General Protection Fault during install of Version 1.56

When attempting to install Version 1.56 software, some RADAR units would crash unless additional memory was installed on the motherboard. Version 1.68 will install successfully provided the System Memory Requirements set out in Appendix I are met.

Outstanding Bugs in Version 1.68:

Moving Audio Outside 0 - 24 Hours

Using the editing functions to force audio outside the normal 0 - 24 hour range may cause !ERR! messages or odd audio playback to occur. For example marking from 1 minute to 1 hour and moving it OUT-aligned to time 0 (which should move the audio to -59 minutes to time 0) will cause errors.

Appendix I: System Memory Requirements

Your minimum RAM requirement can be determined from the chart below based on a combination of your maximum total drive capacity.

Internal Only or External Only (3 Hard drives)		Internal + External (6 Hard drives)	
1 Gb (Total 3 Gb)	8 Mb	1 Gb (Total 6 Gb)	8 Mb
2 Gb (Total 6 Gb)	8 Mb	2 Gb (Total 12 Gb)	8 Mb
4 Gb (Total 12 Gb)	8 Mb	4 Gb (Total 24 Gb)	16 Mb
9 Gb (Total 27 Gb)	16 Mb	9 Gb (Total 54 Gb)	32 Mb
18 Gb (Total 54 Gb)	32 Mb	18 Gb (Total 108 Gb)	32 Mb

Note: If your Internal and External hard drive capacities are different, add up the total size of all drives and choose the first value from the table above that is greater than or equal to your total drive capacity.

Appendix II: Approved SCSI Disk Drives

The following drives are approved for use in RADAR

#	Manufacturer (Name)	Size (Gb)	Model Number	Mfg. Part Number	Mfg. Status
1	Seagate Barracuda	4 Gb	ST34573N	9J4001-010	Current
2	Seagate Barracuda	2 Gb	ST32272N	9J6004-010	Discontinued
3	Seagate Barracuda	2 Gb	ST32171N	9C6002-026	Discontinued

Appendix III: Approved Tape Drives

#	Manufacturer (Name)	Size (Gb)	Model Number	Mfg. Part Number	Mfg. Status
1	Exabyte Eliant 820	7 Gb (160m)	Eliant 820S	270001-23	Current
2	Exabyte 8505XL	7 Gb (160m)	EXB-8505XLS	870013-000	Discontinued
3	Exabyte 8505	5 Gb (112 m)	EXB-8505S	870010-000	Discontinued

For more information see: www.exabyte.com/home/products.html