RADAR

OPERATIONS MANUAL

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By purchasing this equipment you agree to abide by the terms of this warranty and the attached end user software license agreement.

The RADAR® and its accessories are warranted from the date of purchase to the original purchaser to be free from defects in material or workmanship for a period of one (1) year. All hard disk drives contained within the RADAR® chassis are warranted for a period of one (1) year. This warranty does not apply to damage resulting from improper or negligent use, inadequate or improper packaging for shipment, damage incurred during shipment, or unauthorized modification. The sole and exclusive remedy for breach of any warranty concerning the RADAR® system, and its accessories, and supplied internal hard disk drives shall be repair or replacement of defective parts at the discretion of iZ Technology Corporation™ (iZ™). Repair or replacement of RADAR® and its accessories will be preformed at no charge for parts or labour for one (1) year from date of purchase to the original purchaser at a designated iZ™ service center or at the factory, at the discretion of iZ™, with return shipping costs paid for by iZ™.

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WARNING: This warranty becomes null & void by use of any non iZ™ approved hard disk drives, hard disk drive assemblies, product accessories or by installation or repair of the product or its accessories by anyone other than an authorized iZ™ repair person at an authorized iZ™ service center.

Note: In order to validate your warranty, please be sure to complete and send in the warranty registration form that was shipped with your RADAR.

RADAR Safety Instructions

1. READ AND RETAIN INSTRUCTIONS

Read, understand and follow all safety instructions. Keep safety and operating instructions for future reference.

2. HEED WARNINGS

Heed all warnings for the use of the RADAR® 24 contained in the safety and operating instructions.

3. PREVENT OBJECT AND LIQUID ENTRY

To reduce the risk of electric shock, do not expose this device to dripping or splashing. No objects filled with liquids, shall be placed on the device.

4. ALLOW FOR VENTILATION

The device should be positioned so that it can maintain proper ventilation. There should be no objects or fabrics blocking any of the ventilation openings. Also, the device should not be placed inside a fully enclosed equipment rack or shelf unless the rack or shelf is well ventilated and the inside air temperature can be kept within the environmental conditions stated in the device specifications.

5. ABOUT SERVICING

The user should not attempt to service the device beyond what is described in the operating instructions. All other service should be referred to or under the guidance of qualified personnel.

6. REPLACING LITHIUM BATTERY (Motherboard CMOS Battery)

CAUTION: Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

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Section 1

Introduction

Welcome to RADAR®, the professional's choice for multitrack hard disk recording! Although you'll probably want to get started right away, we recommend that you take a few minutes and familiarize yourself with this manual. It will prove to be a valuable resource when you need answers quickly and it will help you to get the most out of your new RADAR®.

How to Use This Manual

The manual is broken into four sections entitled:

1. **Introduction**
2. **System Setup**
3. **Configuration**
4. **Operations**
5. **Reference**

The SYSTEM SETUP section takes you through the physical placement and connection of your unit and any configuration work that may be required to integrate RADAR® with the rest of your system.

The CONFIGURATION section includes the necessary details required to integrate RADAR® with the rest of your system.

The OPERATIONS section provides all of the information necessary to turn you into an instant RADAR® power user.

The REFERENCE section gives you detailed descriptions of the menu structure, menu functions and the direct access keys.

Additional resources are available from the Support section of our website at www.izcorp.com. While you're there make sure and join the iZ Forum. It's a dynamic group of RADAR® users and iZ technical support staff. You're sure to get some great information there!

Conventions

The following text conventions are used throughout this manual. This information applies to both the **Session Controller** and the **KC-24** remote keyboard.

Examples:

1. Remote keys: **ENTER**
2. Remote keys with a shifted function: **PASTE(LISTEN)**
3. Press and hold modifier keystroke: **SHIFT+PASTE(LISTEN)**
4. Menu paths: ***MAIN MENU / PROJ MENU / SAMPLE RATE***
5. Menu selections and dialogs: **SAMPLE RATE: 48 KHZ**
6. Object Names: **Session Controller**
7. Rear panel labels and connectors: **WORDCLOCK**
8. Manual references: OPERATIONS: ENTERING VALUES

Overview

RADAR® is a third generation, 24-track hard disk recorder known around the world for its reliability, ease of use and exceptional audio quality. Anyone with experience using a professional tape recorder will feel right at home using RADAR®. Both the **KC-24** keyboard and the **Session Controller** professional remote provide rugged transport controls and intuitive, one key access to most RADAR® functions.

Features:

- Superb analog I/O. Choose from the 24-channel Classic 48 kHz, Nyquist 96 kHz or S-Nyquist 192 kHz board sets.
- 24-channel digital I/O using the iZ Technology AES/EBU, TDIF or ADAT® Lightpipe cards.
- Seamless/ gapless punch in and punch out recording on all 24 tracks.
- Non-destructive audio recording and editing with up to 99 levels of undo.
- Degradation free copy and transfer of digital audio.
- Import and Export RADAR® audio to the industry standard BWF (Broadcast Wave) format.
- Integrated SVGA video output provides a heads up view of important project information, project timeline overview and high-performance real-time audio waveforms.
- Integrated Ethernet for server backup, export and file transfer.
- Factory installed backup device for archiving RADAR® projects.
- 2 channel AES/EBU, S/PDIF digital audio I/O.
- Full compliment of professional sync options including Wordclock/Video Sync, balanced LTC and Sony® 9-pin.

Front Panel

RADAR® has a simple front panel layout due to the products remote-centric design philosophy.

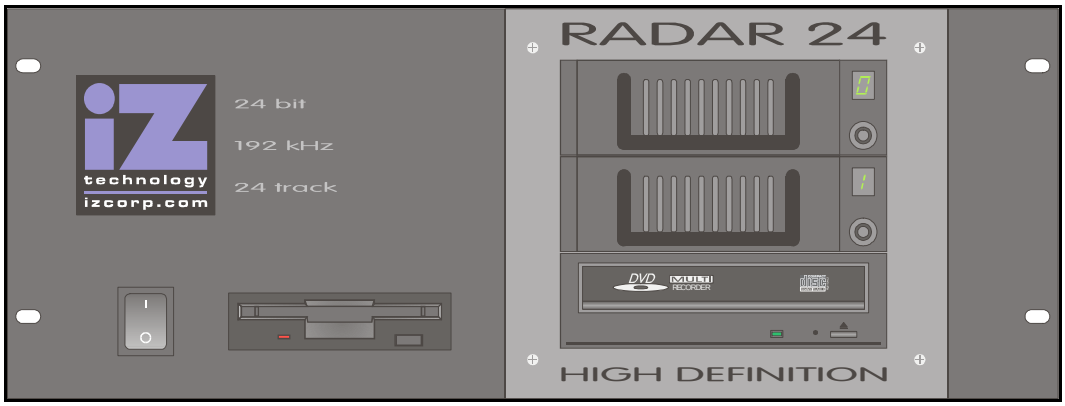


Diagram 1.0 – RADARâ Front Panel Controls & Indicators
(unit shown with DVD-RAM backup device installed)

POWER ON/OFF SWITCH

It is recommended that you choose **SHUTDOWN RADAR** from the ***MAIN MENU*** prior to powering down the system using the front panel power switch.

FLOPPY DRIVE

High-density 3.5” floppy disk drive for software upgrades and text file imports/exports.

DRIVE BAY 1

Holds a single high-capacity hard disk drive in a removable carrier.

DRIVE BAY 2

Holds a single high-capacity hard disk drive in a removable carrier or X-media receiver and disk.

DRIVE BAY 3

Holds a DVD Multi-Drive or optional approved backup device.

IMPORTANT NOTE: System software has been pre-installed on the internal hard disk. It is not necessary to put the supplied system software CD into the multidrive. Please keep the supplied CD in a safe place in case it becomes necessary to re-install the system software in the future.

Rear Panel

The rear panel of the RADAR® provides a wealth of professional sync and audio I/O options.

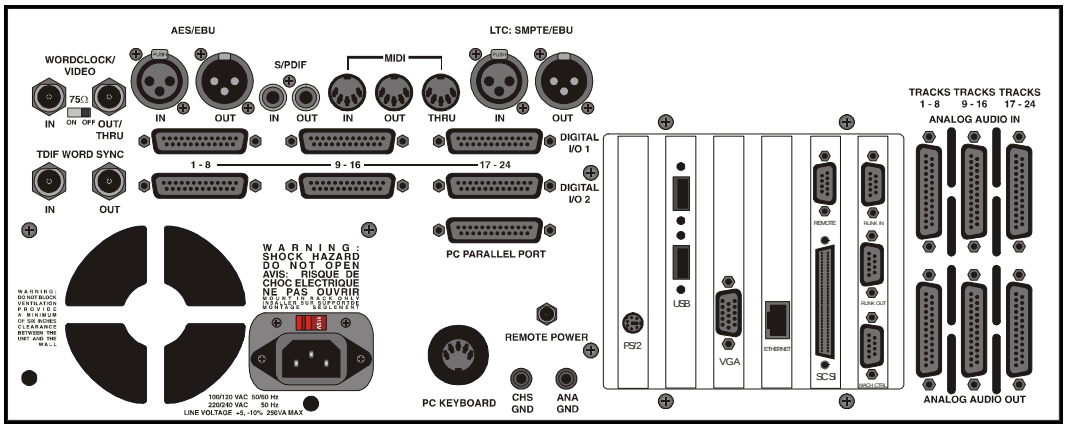


Diagram 1.1 RADAR® Rear Panel Labeling
(unit shown with optional multi-channel AES/EBU, TDIF and analog I/O boards)

SYNC REFERENCE

Sync reference signals are input via the **WORDCLOCK/VIDEO**, **TDIF WORD SYNC**, the 2-channel **AES/EBU** or **S/PDIF** connector or the connectors of any installed multi-channel digital I/O boards. See SYSTEM SETUP: CONFIGURATION: SYNC REFERENCE for detailed information.

DIGITAL I/O

All RADAR® units are equipped with 2 channels of digital audio I/O that can utilize either the **AES/EBU** or **S/PDIF** interface formats. Optional multi-channel I/O cards are available for the **AES/EBU**, **TDIF** and **ADAT® LIGHTPIPE** formats. See SYSTEM SETUP: CONFIGURATION: DIGITAL I/O FORMAT for detailed information.

POSITIONAL (TIMECODE) SYNC

Both **MTC** (MIDI Time Code) and **LTC** (SMPTE) can be used for positional synchronization. See OPERATIONS: CHASING TIME CODE for detailed information.

CARD CAGE

The card cage contains the Ethernet, SVGA, PS/2, USB, external SCSI, Remote, 9-pin and **RADARLink**™ connectors. See SYSTEM SETUP: MAKING CONNECTIONS for detailed information.

ANALOG I/O

The optional analog I/O boards use six female 25-pin D-Sub connectors to provide 24 channels of balanced audio I/O. See SYSTEM SETUP: MAKING CONNECTIONS for detailed information.

Section
2

System Setup

This section of the manual will help you get RADAR® up and running in your studio as quickly as possible.

Installation

Once you have unpacked the RADAR® please make sure to keep the box and all of the associated packaging materials. In the unlikely event that your unit needs to be returned for service or repair, using the original shipping box will ensure that it makes the return journey in good condition.

Make sure to consider the following before installation:

- Power supply fans and hard drives make a certain amount of noise, locating the main RADAR® unit outside of the control room is ideal.
- AES/EBU digital lines and the **Session Controller** extension cable can be run for about 33 meters.
- ADAT® optical and TDIF digital audio connections will limit the distance between RADAR® and the mixing console to approximately 10 meters.
- If you plan on using a monitor you will need an SVGA monitor and an SVGA extension cable if you are putting RADAR® in a machine room.
- Make sure that you have a reliable, properly grounded A.C. power source for the RADAR®. An Uninterruptible Power Supply (UPS) is highly recommended!

Making Connections

Now that you've decided on where to place RADAR® in your studio, it's time to get hooked up. The exact connections you'll need will vary depending on the configuration of your unit so we've listed them all! Wiring diagrams for interfacing RADAR® are available at our website at www.izcorp.com.

A.C. Power

Connect RADAR® to the A.C. mains using the supplied power cord. The power switch is located on the left side of the front panel. See SECTION 1:DIAGRAM 1.0.

IMPORTANT NOTE: Make sure the **VOLTAGE SELECTOR** switch on the rear panel is set to the appropriate setting before applying power to the unit. Incorrect voltage settings are an electrical and fire hazard and can cause irreparable damage to your unit.

SCSI

Insure that the **Active Terminator** is attached securely to the external SCSI connector on the rear of the unit. If additional external SCSI devices are used, remove the terminator, connect the devices and place the terminator on the last device in the chain.

IMPORTANT NOTE: Make sure that the last device in the SCSI chain is terminated using the supplied active terminator. Incorrect termination can produce unpredictable results leading to problems with current and previously recorded material.

Sync Reference

Sync reference is one of the keys to reliable digital audio interfacing and accurate positional synchronization. There are 11 possible formats (depending on what multichannel digital I/O card(s) is installed) that can be used as the clock source for the RADAR®.

The current selection in **MAIN / SYNC MENU / SYNC REFERENCE** determines which format will be used as the sync source.

WORDCLOCK

The **WORDCLOCK/ VIDEO IN** connector accepts either a wordclock or a video sync source.

Wordclock is a clock signal running at the same frequency as the sampling frequency of the digital audio being transferred or recorded. It enables multiple digital devices to be locked together so that audio can be reproduced, transferred and recorded without any digital noise or interference.

NOTE: The wordclock frequency value displayed in the **SYNC REFERENCE** dialog will depend on the sampling rate of the current project NOT the rate of the incoming wordclock signal.

Wordclock signal supplied to the **WORDCLOCK/VIDEO IN** can be passed on to other devices using the **WORDCLOCK/VIDEO OUT/THRU** connector. In situations where RADAR® should act as the clock master, wordclock can also be output from the **WORDCLOCK/VIDEO OUT/THRU** connector. The function of the **OUT/THRU** connector can be changed in the ***MAIN / SYNC MENU / SYNC REF OUTPUT*** setting.

To switch between wordclock out and thru:

1. Use the **MENU/PREV** key, arrow keys and **ENTER** key to go to the ***MAIN / SYNC MENU / SYNC REF OUTPUT*** and press the **ENTER** key.
2. Use the right and left arrow keys to select **OUT** or **THRU** and press the **ENTER** key.

VIDEO

Video sync, also known as house sync or black burst, is used to ensure a known and accurate synchronization relationship exists between RADAR® and all the other devices in the studio, especially video equipment.

If you require RADAR® to sync to video, connect a proper 75-Ohm cable from your video source output to the **WORDCLOCK/VIDEO IN** connector at the rear of the RADAR®.

The 75-Ohm switch provides video signal termination. This is only required **ON** if RADAR® is the last device in a video signal chain where a video signal and video sync are in use on the same cable. Termination does NOT affect the video sync signal. If termination is **ON**, it is active even when the RADAR® is powered off.

NOTE: The video sync frequency value displayed in the **SYNC REFERENCE** dialog will depend on the time code rate setting of the **SYNC MENU** NOT the rate of the incoming video sync signal.

SMPTE / MTC

Although SMPTE and MTC are primarily positional synchronization references, in some situations it is necessary for RADAR® to track less than ideal timing sources such as a 2" multitrack recorder or MIDI sequencer. In this instance RADAR® uses the incoming time code as a clock reference as well. When referenced to SMPTE or MTC the RADAR® will track any variations in the speed of the master flawlessly.

NOTE: The time code frequency value displayed in the **SYNC REFERENCE** dialog will depend on the time code rate setting of the **SYNC MENU** NOT the rate of the incoming time code signal.

AES 2 - CHANNEL

The AES/EBU connectors on the rear panel are available for transferring digital audio. They can also be used to receive a clock signal from a master clock or another digital audio device as well as transmit the master clock signal.

S/PDIF 2 - CHANNEL

The **S/PDIF** connectors on the rear panel are available for transferring digital audio. They can also be used to receive a clock signal from a master clock or another digital audio device as well as transmit the master clock signal.

AES/EBU MULTI-CHANNEL

The optional AES/EBU multi-channel connectors on the rear panel are available for transferring digital audio. They can also be used to receive a clock signal from a master clock or another digital audio device as well as transmit the master clock signal.

NOTE: If you do not have AES/EBU cards installed then you will get an alert dialog stating: **NO AES MULTI-CH CARDS INSTALLED**.

ADAT

The optional ADAT optical connectors on the rear panel are available for transferring digital audio. They can also be used to receive a clock signal from a master clock or another digital audio device as well as transmit the master clock signal.

NOTE: If you do not have ADAT cards installed then you will get an alert dialog stating: **NO ADAT CARDS INSTALLED**.

TDIF

The optional **TDIF** connectors on the rear panel are available for transferring digital audio. They can also be used to receive a clock signal from a master clock or another digital audio device as well as transmit the master clock signal. The clock embedded in the TDIF audio signal is a different clock than TDIF Word Sync.

NOTE: If you do not have TDIF cards installed then you will get an alert dialog stating: **NO TDIF CARDS INSTALLED**. You MUST use purpose built TDIF cables, pin-to-pin cables will **not** work!

TDIF WORD SYNC

The **TDIF WORD SYNC** 75-Ohm, BNC connectors on the rear panel are available to provide a more reliable clock source when transferring digital audio between devices using TDIF. This clock is similar to a wordclock but differs in its phase relationship to the data signal. It should not be confused with the embedded L/R data clock in the TDIF digital audio signal.

Audio Cabling

Please always use the highest quality cables with your RADAR®. The cables described below are available on our website and in most music and pro audio stores around the world. Additionally, wiring diagrams are available for the do-it-yourselfer at www.izcorp.com.

ANALOG

Analog cables for the RADAR® share the same wiring scheme as analog cables for the TASCAM DA-88 and other popular modular digital multitrack recorders. The RADAR® end of each analog cable is a 25-pin D-sub connector that carries eight independent, balanced, line level audio signals. Altogether there are six cables required, three for input and three for output, for 24 channels of ultra-high quality analog audio I/O.

The other end of each analog cable typically breaks out to individual XLR or TRS connectors for connection to a console's Tape Inputs and Buss Outputs. Another often-used approach is to wire directly into a patch bay for the ultimate in routing flexibility.

DIGITAL

There are several digital I/O options available for RADAR® and each one has different cabling requirements.

AES/EBU 2-CHANNEL

The cable required for the AES/EBU 2-channel interface is an XLR terminated 110-ohm digital audio cable. One cable is required for 2 channels of input and an additional cable is required for 2 channels of output.

S/PDIF 2-CHANNEL

The cable required for the S/PDIF 2-channel interface is an RCA terminated 110-ohm digital audio cable. One cable is required for 2 channels of input and an additional cable is required for 2 channels of output.

AES MULTI-CHANNEL

The optional RADAR® AES/EBU multi-channel I/O uses the same wiring scheme as the TASCAM DA-88 and other popular modular digital multitrack recorders. Both ends of each AES/EBU multi-channel cable are terminated with 25-pin D-sub connectors. Each cable carries eight channels of input and eight channels of output. Altogether there are three cables required for 24 channels of digital I/O. Another available cabling option breaks out to 4 male (8 outputs) and 4 female (8 inputs) XLR connectors. This type of cable is necessary for connecting to some types of mixers and certain digital audio workstations.

TDIF

Audio: The optional RADAR® TDIF I/O uses the same wiring scheme as the TASCAM DA-88 and other popular modular digital multitrack recorders. Both ends of each TDIF cable are terminated with a 25-pin D-sub connector. Each cable carries eight channels of input and eight channels of output. Altogether there are three cables required for 24 channels of digital I/O.

Sync: In addition to the TDIF audio cabling requirements there is a **TDIF WORD SYNC** connection that may be necessary for interfacing under certain circumstances. This connection can be made using a 75-Ohm, BNC terminated cable.

ADAT

Lightpipe connections can be made with any optical fiber that is approved for use with the Alesis ADAT® system. Each fiber carries eight channels of digital audio. Three input and three output Lightpipe fibers provide 24 channels of ADAT® I/O.

Time Code

You can use either SMPTE or MTC (MIDI Time Code) formats for positional synchronization reference with RADAR®. All the industry standard frame rates, 30 Non-drop, 30 Drop, 29.97 Non-drop, 29.97 Drop, 25 and 24 are supported.

SMPTE

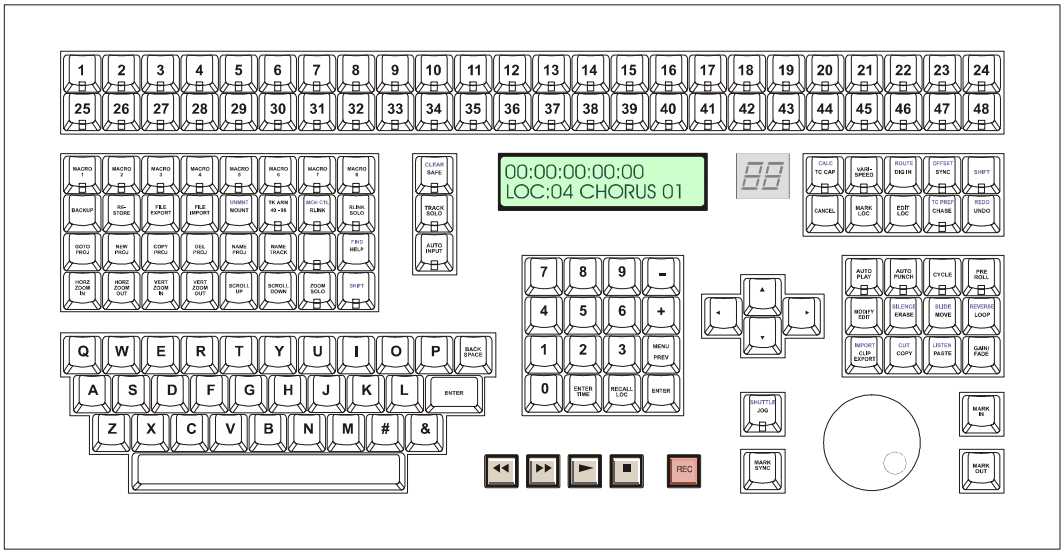
SMPTE, also known as LTC or Longitudinal Time Code, is connected using the XLR **LTC: SMPTE/EBU IN** and **OUT** connectors on the rear panel. The LTC inputs and outputs can be either balanced or unbalanced. The LTC input has a sensitivity ranging between 100mV and 20V. The output is 1V peak to peak. This will produce a –7 VU meter reading on a +4 device like a professional analog tape machine.

NOTE: When using unbalanced lines, pin 3 should be connected to the shield.

MTC

MIDI time code is input and output using the **MIDI IN** and **MIDI OUT** connectors on the rear panel of the RADAR®.

Session Controller

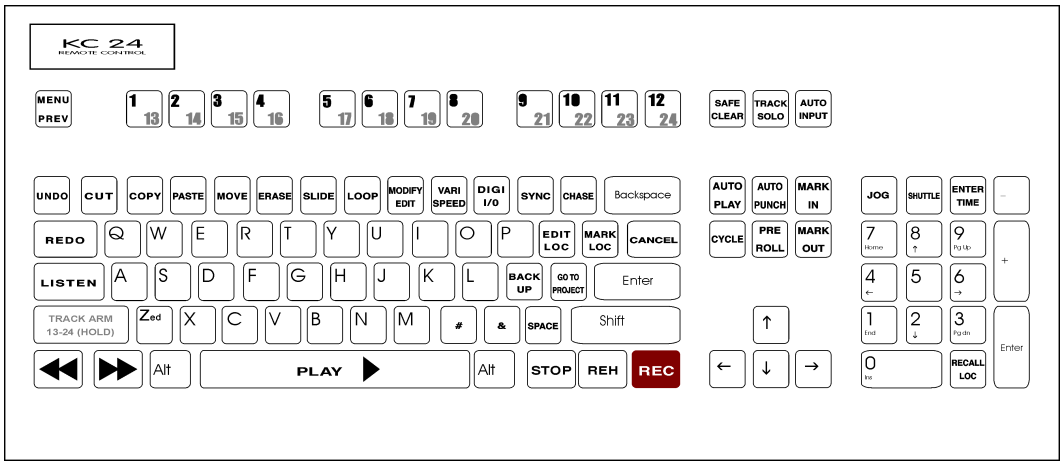


There are two connections required on the back panel of RADAR® to attach the Session Controller remote cable.

Power: Insert the barrel plug of the Session Controller cable into the power receptacle labeled remote power on the rear of the unit.

Data: Attach the 9-pin D-sub connector of the Session Controller cable to the 9-pin receptacle located directly above the SCSI terminator in the card cage section of the back panel.

KC-24



The KC-24 attaches to the RADAR® using the keyboard's connector plug and a 5-pin DIN adaptor. The keyboard receptacle, located just to the right of the A.C. power connector, is inset in a round hole labeled **PC KEYBOARD**.

Monitor (optional)

Any standard SVGA monitor capable of either 800x600 or 1024x768 resolution can be attached directly to the RADAR®. The monitor connection is a 15-pin D-sub connector located on the far left of the card cage section on the back panel.

NOTE: The default resolution is 1024x768. Anytime you switch the default resolution, you have to reboot the RADAR® for the change to take effect.

RADARLink™

RADARLink™ allows multiple RADAR® units to be synchronized so that they can be operated together as a single machine. The 9-pin D-sub **RLINK IN** and **RLINK OUT** connectors used for **RADARLink**™ are located on the far right hand side of the card cage section at the rear of the unit. Connection between two units can be made using the cable supplied with a multiple unit purchase or by using any 9-pin D-sub cable that is wired pin-to-pin. These can be purchased from iZ Technology or from an electronics or computer retailer in your area.

NOTE: Make sure that the cable is wired pin-to-pin! Some 9-pin cables have modified pin-outs and will not work for this application.

Ethernet

RADAR® ships with a 10/100 Base T Ethernet card that can be used for backing up, restoring, importing and exporting files. You can connect to a server-based network, LAN or directly to a PC or Mac. The Ethernet card is located in the card cage just to the left of the Adrenaline® card, which has the active SCSI terminator on it.

Machine Control

RADAR® supports two formats of machine control, Sony 9-pin (RS-422) and MMC (MIDI Machine Control). These control protocols allow RADAR® to be controlled from other equipment like video decks, mixers, computer workstations, etc.

Sony 9-pin uses a 9-pin D-sub terminated cable to transmit transport, record status and other control information. Use the **MACH CTRL** port located at the back of the RADAR® and directly below the **RLINK IN/OUT** connectors to connect a proper Sony 9-pin cable to.

MMC uses the standard 5-pin DIN connection and only requires the **MIDI IN** to be connected in order to receive MMC commands from the controller.

Section
3

Configuration

Now that you have your RADAR® hooked up and ready to go, we can help you make sure that the system settings are configured correctly for your situation.

Operating Level

You can match the input and output levels of RADAR® with the input and output levels of other pieces of equipment in your studio. Although the inputs and outputs can be adjusted independently, all inputs share the same operating level. The same holds true for all of the outputs.

Because a zero meter reading on a digital recorder represents the absolute maximum level (dBFS – decibel Full Scale) that can be recorded, a much lower nominal level should be specified. With analog VU meters, 0 VU (+4dBu) represents this nominal level and above that is "headroom", which allows for dynamic surges and peak transients. With today's digital recorders, a 0 VU analog signal level usually corresponds to a digital meter reading somewhere between –14 and –20 dBFS. This is where the operating level of the RADAR® comes in. There are four different settings for input level and four different settings for output level. They are:

+24 dBu = a digital meter reading of –20 dBFS when a 0 VU tone is applied

+22 dBu = a digital meter reading of –18 dBFS when a 0 VU tone is applied

+20 dBu = a digital meter reading of –16 dBFS when a 0 VU tone is applied

+18 dBu = a digital meter reading of –14 dBFS when a 0 VU tone is applied

To set the input and output operating levels:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / I/O MENU /*** **AUDIO I/O LEVELS** and press the **ENTER** key.
2. Use the right and left arrow keys to select either **AUDIO IN** or **AUDIO OUT**.
3. Use the up and down arrow keys to select the desired operating level and press the **ENTER** key.

Sync Reference

The sync reference setting will vary widely depending on the application and the configuration of your system. It will also depend on whether or not RADAR® is the master or slave in your particular setup. You can gain instant access to the sync settings using the **SYNC** key on the **Session Controller** and the **KC-24**.

To make RADAR ® the digital audio sync master using the wordclock output:

1. Ensure that a wordclock cable is connected to the **WORDCLOCK/VIDEO OUT/THRU** connector.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV** key, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **SYNC REFERENCE** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: INTERNAL** and press the **ENTER** key.
4. Use the **MENU/PREV** key, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **SYNC REF OUTPUT** and press the **ENTER** key.
5. Use the right and left arrow keys to select **WORDCLK** and press the **ENTER** key.

For digital audio transfers to a digital mixer or other digital audio device a reliable clock source is mandatory! Without proper data synchronization digital audio will exhibit pops, clicks and other unpleasant artifacts.

In a film or video post environment video sync is usually distributed to all the video, audio and clock devices in the studio to ensure that every thing is synchronous with the video signal right down to the sample level.

For synchronizing with analog tape decks that exhibit fluctuations in transport speed, RADAR® can even reference to the incoming SMPTE signal. In this configuration RADAR® will fluctuate right along with the analog master ensuring perfect synchronization at all times!

To slave RADAR ® to external wordclock:

1. Ensure that a wordclock source is connected to the **WORDCLOCK/VIDEO IN** connector.
2. Verify that your project sample rate in the ***MAIN MENU / PROJ MENU / SAMPLE RATE*** dialog matches the incoming wordclock frequency.
3. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV** key, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
4. Use the arrow keys to select **SYNC REFERENCE: WORDCLCK : XX KHZ** and press the **ENTER** key.

If you will be passing wordclock through the RADAR® make sure that the function of the **OUT/THRU** connector is set to **THRU** in the ***MAIN MENU / SYNC MENU / SYNC REF OUTPUT*** dialog.

NOTE: The wordclock frequency value displayed in the **SYNC REFERENCE** dialog will depend on the **SAMPLE RATE** of the current project NOT the rate of the incoming wordclock signal.

To slave RADAR® to external video sync:

1. Ensure that a video sync source is connected to the **WORDCLOCK/VIDEO IN** connector. Make sure that your projects time code rate in the ***MAIN MENU / SYNC MENU / TC SETTINGS*** menu matches the incoming video sync frequency.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV** key, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: VIDEO: NTSC** and press the **ENTER** key.

NOTE: The video sync frequency value displayed in the **SYNC REFERENCE** dialog will depend on the **TC RATE** setting of the **SYNC MENU** NOT the rate of the incoming video sync signal.

To slave RADAR® to SMPTE time code or MTC:

1. Ensure that a valid SMPTE time code source is connected to the **LTC: SMPTE / EBU** connector using a balanced or unbalanced XLR terminated cable. Connect an MTC source to the **MIDI IN** using a MIDI cable.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS*** menu and make sure that the time code rate matches the incoming time code signal.
3. Press the **SYNC** key on the **Session Controller** or **KC-24** or go to ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** and press the **ENTER** key.
4. Use the arrow keys to select **SYNC REFERENCE: SMPTE 30** or **SYNC REFERENCE: MTC 30** and press the **ENTER** key.

NOTE: The time code frequency value displayed in the **SYNC REFERENCE** dialog will depend on the **TC RATE** rate setting of the **SYNC MENU** NOT the rate of the incoming time code signal.

To slave RADAR® to an external AES/EBU clock source:

1. Connect an AES/EBU source to the **AES/ EBU IN** connector using an XLR terminated digital audio cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: AES 2CH SYNC** and press the **ENTER** key.

To slave RADAR® to an external S/PDIF clock source:

1. Connect the S/PDIF source to the **S/PDIF IN** connector using an RCA terminated digital audio cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: S/PDIF 2CH SYNC** and press the **ENTER** key.

To slave RADAR® to an external AES/EBU multi-channel clock source:

1. Connect the AES/EBU multi-channel source to the desired 25-pin D-sub **AES/EBU IN** connector using the appropriate digital audio cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: AES MULTI-CH** and press the **ENTER** key.

NOTE: If you do not have AES/EBU cards installed then you will get an alert dialog stating: **NO AES MULTI-CH CARDS INSTALLED**.

To slave RADAR® to an external ADAT clock source:

1. Connect the ADAT source to the desired optical **ADAT IN** connector using a light pipe cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: ADAT** and press the **ENTER** key.

NOTE: If you do not have ADAT cards installed then you will get an alert dialog stating: **NO ADAT CARDS INSTALLED**.

To slave RADAR® to an external TDIF L/R clock source:

1. Connect the TDIF source to the desired 25-pin D-sub **TDIF** connector using the appropriate digital audio cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: TDIF L/R IN** and press the **ENTER** key.

NOTE: If you do not have TDIF cards installed you will get an alert dialog stating: **NO TDIF CARDS INSTALLED**. You MUST use purpose built TDIF cables pin-to-pin cables will not work!

To slave RADAR® to external TDIF Word Sync:

1. Connect the TDIF word sync source to the **TDIF WORD SYNC IN** connector using a 75-ohm, BNC terminated cable.
2. Press the **SYNC** key on the **Session Controller** or **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the **ENTER** key.
3. Use the arrow keys to select **SYNC REFERENCE: TDIF WORD SYNC** and press the **ENTER** key.

NOTE: If you do not have TDIF cards installed then you will get an alert dialog stating: **NO TDIF CARDS INSTALLED**.

DIG I/O

The digital I/O formats available for selection will depend on the type and number of digital interface options installed in your RADAR®. All units ship with built in AES/EBU and S/PDIF 2-channel interfaces. The 24 channel digital I/O options available include: AES/EBU, ADAT and TDIF.

It is important to note that once a digital format is selected an appropriate clock source must be selected as well. Many times they are one and the same thing, but not always. For instance, an AES transfer may be required but the sync reference for all digital devices in the studio may be a wordclock generator referenced to video sync. You may also have the RADAR® acting as clock master and all other digital equipment clocking to RADAR® in which case **SYNC REFERENCE** would be set to internal.

To select a digital I/O format:

1. Make sure that all your cabling is connected properly.
2. Press the **DIG IN** key on the **Session Controller** or **DIGI I/O** on the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / I/O MENU / DIG IN FORMAT*** menu and press the **ENTER** key.
3. Use the up and down arrow keys to select the digital format of your choice and press the **ENTER** key.

NOTE: When a digital input format is specified one track must always be set to digital. To return all 24 tracks to analog input select NONE. See the following.

NONE

This selection disengages the digital I/O and returns all 24 inputs to analog input.

AES/EBU 2-CH

This 2-channel format uses a single cable for 2 channels of digital audio transmission. It is unidirectional so one cable is required for input and one for output.

S/PDIF 2-CH

S/PDIF also uses a single cable for 2 channels of digital audio transmission. It is unidirectional as well so one cable is required for input and one for output. It is essentially a consumer version of AES/EBU.

AES MULTI-CH

With multi-channel AES/EBU each cable carries eight channels. This format is bi-directional so only three cables are required for 24 channels of digital audio I/O.

TDIF

This format also uses three bi-directional cables carrying eight channels of audio each, for a total of 24 channels of digital I/O.

ADAT

Lightpipe optical fibers carry eight channels of digital audio. This format is unidirectional so you'll need three input and three output Lightpipe "cables" for 24 channels of ADAT® I/O.

NOTE: If you do not have a particular card installed you will get an alert dialog stating: **NO _____ CARDS INSTALLED**.

To select tracks for digital input:

1. Press **SHIFT+DIG IN(ROUTE)** key on the **Session Controller** or **SHIFT** + **DIGI I/O** on the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / I/O MENU/ I/O ROUTING*** menu and press the **ENTER** key.
2. Use the up and down arrow keys to select **DIG IN TRKS** and press the **ENTER** key.
3. Use the right and left arrow keys to select **ALL** or **SELECT** and press the **ENTER** key.

To select source and destination tracks for the digital 2-channel I/O:

1. Press **SHIFT+DIG IN(ROUTE)** key on the **Session Controller** or **SHIFT** + **DIGI I/O** on the **KC-24** or use the **MENU/PREV,** arrow and **ENTER** keys to go to the ***MAIN / I/O MENU/ I/O ROUTING*** menu and press the **ENTER** key.
2. Use the up and down arrow keys to select **DIG 2CH ROUTING** and press the **ENTER** key.
3. Use the right, left, up and down arrow keys to select **IN L**, **IN R**, **OUT L** or **OUT R** fields, enter the desired track numbers in each one and press the **ENTER** key.

Time Code

There are two distinct protocols of positional time code that are supported by RADAR®: SMPTE/EBU and MIDI time code (MTC). Both support all industry standard frame counts and rates. While chasing time code it is normal practice to reference RADAR®'s clock either directly to the incoming time code signal or to an external wordclock or video sync source. These clock sources are set separately in the ***MAIN MENU / SYNC MENU /*** **SYNC REFERENCE** menu.

Because there are many variables when synchronizing devices in a recording studio or broadcasting facility RADAR® has been designed to be very flexible in this regard.

RADAR® can chase both SMPTE and MTC (MIDI time code) and synchronize its internal clock to video sync, wordclock, active digital I/O connections or even to an incoming SMPTE or MTC signal. This makes life a lot easier when trying to synchronize RADAR® with other audio recorders, video tape recorders and sequencers in the real world.

When slaved to an analog tape machine it is critical that RADAR® follow any deviation in speed introduced by the tape transport. In this scenario the incoming time code is smoothed and averaged to create a stable reference signal for the internal clock of the RADAR®. Because the internal clock will constantly match the incoming clock source in this configuration, RADAR® will follow the master exactly, even if you use vari-speed!

In other applications where all the devices in a system are referenced to video sync i.e. black burst or house sync, RADAR® can be referenced to video sync directly or to a wordclock generator that is in turn referenced to the video sync source. A system wide sync source is critical for video and film production and post-production work because it creates a known relationship between the positional time code and the timing information present in the video signal.

Offsets between RADAR® and other machines can be captured or set manually.

NOTE: For more information on sync reference, refer to CONFIGURATION: SYNC REFERENCE earlier in this manual.

SYNC

One of the keys to accurate positional synchronization is reference synchronization. The reference sync signal provides a clock that enables RADAR® to lock with other devices without drifting over time. Please refer to CONFIGURATION: SYNC REFERENCE for information on this important topic.

CHASE

The main function of this key is to enable or disable chase mode on the RADAR®. When **CHASE(TC PREF)** is pressed on the **Session Controller** or the **KC-24** the RADAR® will locate to the current incoming time code position, lock and then begin to play. Prior to using the chase function, make sure the proper **TC SETTINGS** have been set in the **SYNC** menu.

RECHASE

RECHASE MODE determines the chase behavior of RADAR®. When **ENABLED**, RADAR® will locate, lock and begin playback, continually comparing its position with that of the incoming time code. With **RECHASE MODE** set to **DISABLED** RADAR® will locate, lock, begin playback and immediately switch back to internal. Both your **SYNC REFERENCE** and **POSITION** reference will switch to **INTERNAL** (**CHASE** and **SYNC** LED will switch off) if set to **SMPTE** or **MTC**. If you are required to stop the RADAR® manually and rechase to the incoming timecode, you must press the **CHASE** button (and **SYNC** button if also using **SMPTE** or **MTC** as a **SYNC REFERENCE**) in order for RADAR® to rechase again (**SYNC** and **CHASE** led flashing). This lock and release behavior is sometimes required for transfers from media with poor/damaged time code or during a live recording etc.

To enable or disable **RECHASE MODE**:

1. Use the **MENU/PREV**, arrow and **ENTER** keys to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS /*** **RECHASE MODE** menu and press the **ENTER** key.
2. Use the right and left arrow keys to select either **ENABLED** or **DISABLED** and press the **ENTER** key.

TC SETTINGS

By pressing **SHIFT+CHASE(TC PREF)** you can access the time code preferences that have a direct effect on chase operation. These preferences can also be accessed using the ***MAIN / SYNC MENU / TC SETTINGS /*** **TC FORMAT** dialog.

To set RADAR® time code preferences for **CHASE**:

1. Press the **SHIFT+CHASE(TC PREF)** key on the **Session Controller** or the **SHIFT+CHASE** key on the **KC-24**. You can also access the preference settings in the ***MAIN / SYNC MENU / TC SETTINGS /*** **TC FORMAT** menu dialog.
2. Use the right and left arrow keys to select either **SMPTE** or **MTC** as the time code format and press the **ENTER** key.
3. Select a time code rate from the **TC RATE** dialog. The up and down arrows display the available rates on three pages:

24	25
29.97ND	29.97DF
30ND	30DF

   Use the right and left arrow keys to make a selection from the current dialog page and press the **ENTER** key.

SYNC DRIFT

When RADAR® is required to **CHASE** LTC or MTC, you can choose to display the amount of **SYNC DRIFT** between RADAR® and the external timecode. When enabled, you'll notice **DRIFT: X SMPLS** in the **OFFSET** window on RADAR View.

To enable/disable **SHOW SYNC DRIFT**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / SYNC MENU / TC SETTINGS /*** **SHOW SYNC DRIFT** dialog and press the **ENTER** key.
2. Use the left and right arrow keys to select **ENABLE** or **DISABLE** and press the **ENTER** key.

IMPORTANT NOTE: If you are in a unique session where RADAR® is required to chase LTC or MTC yet **SYNC REFERENCE** is set to **INTERNAL**, **SYNC DRIFT** will occur and, provided **RECHASE MODE** is **ENABLED**, RADAR® will eventually lose **CHASE** (play/record will stop), re-cue and begin chasing again. Therefore, it is important to establish a proper Master for both timecode and clock rate. If possible, have RADAR® act as master but, if the current setup doesn't allow for that, set both **SYNC REFERENCE** and **CHASE** to SMPTE or MTC.

SYNC THRESHOLD

The amount of sync drift that RADAR® can accommodate during **CHASE** mode, before dropping out and re-syncing, can be determined by the **SYNC THRESHOLD**. This is to accommodate extremely wild, fluctuating incoming time code. Normally, RADAR® can maintain chase mode if the incoming time code rate/position fluctuates between 0 and 128 samples relative to the sample clock rate.

To determine the sync drift threshold:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / SYNC THRESHOLD*** dialog and press the **ENTER** key.
2. Use the left and right arrow key to select **NORMAL** or **WILD** and press the **ENTER** key. **WILD** is 10x **NORMAL** mode.

OFFSET

When synchronizing machines that have differing time code positions, an offset can be calculated and set on the RADAR® to bring them into alignment. Offsets are in the HH:MM:SS:FF format and can be positive or negative.

To set an offset:

1. Press **SHIFT+SYNC(OFFSET)** on the **Session Controller** or **SHIFT+SYNC** on the **KC-24**.
2. Use the up and down arrow keys, the Jog/Shuttle wheel or the numeric keypad to enter the offset starting on the right hand side with the frames field. Use the right and left arrow keys to move between the fields.
3. Make the offset positive or negative using the + and – keys and press the **ENTER** key.

To clear an offset:

After pressing the **SHIFT+SYNC(OFFSET)** key, pressing the up and down arrow keys simultaneously will clear the offset.

NOTE: Regardless of the offset, RADAR® time code output will always reflect your actual project time.

TC CAPTURE (Session Controller Only)

Timecode Capture allows you to automatically calculate an offset for your project using the incoming time code.

NOTE: For exact calculations of offsets, it is important that the device supplying the incoming time code has the ability to generate a static frame location. A VITC reader, 9-pin machine control feed, static TC out from a non-linear video editor, DAW or other stand alone HDR will be required. For approximate offsets that will be tweaked, a static time code feed is not required.

To capture an offset using the **TC CAP(CALC)** key:

1. Locate the time code master to a specific time code location.
2. Use any transport or locate method to position the RADAR® at the desired point in your project.
3. Press the **TC CAP(CALC)** key on the **Session Controller**.
4. The offset is calculated and stored as a positive or negative number in the HH:MM:SS:FF format and displayed in the **RADARView™** offset window. It can also be displayed in the **Session Controller** display by pressing **SHIFT+SYNC(OFFSET)**.

Another feature that works well in conjunction with the **TC CAP(CALC)** key is the **INT/EXT SMPTE** display mode option. In this mode the display in the **Session Controller** will show your projects time on the top line and the external time code position on the second line in place of the current locate point. A + or – sign in the display indicates a positive or a negative offset.

On the **RADARView™** screen, only the incoming external time code will be shown on the positional display. All range and locate points will still be displayed using internal project times.

NOTE: The external time that is displayed is actually your project time plus the offset. This includes a sub-frame value that is not part of the incoming SMPTE signal. Since there is a small delay before RADAR® drops out of chase mode there may be a slight discrepancy between the times displayed on the master and slave units.

To change the display mode of a project to **INT/EXT**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJ MENU / DISPLAY MODE*** selection and press the **ENTER** key.
2. Use the up and down arrow keys to select the **INT/EXT** option and press the **ENTER** key.

CALCULATOR (Session Controller Only)

This key brings up an offset calculator that can be a big help if you need to calculate an offset from a predetermined set of time code locations like an EDL (Edit Decision List). For instance, if you know the time code location of a visual event on a VTR and the time code location of the corresponding audio event on RADAR® this feature can make it a breeze to calculate the offset.

To calculate and assign an offset using the **TC CAP(CALC)** key:

1. Press **SHIFT+TC CAP(CALC)** key on the **Session Controller** to display the following dialog.

   ```
   00:00:00:00:00
   00:00:00:00:00  EX
   ```

2. The top line will display the current position of the RADAR®. If you wish to enter a new time code location you may do so using the up and down arrows, the **Jog/Shuttle wheel** or the numeric keypad. Use the right and left arrow keys to move between the fields.
3. The bottom line, labeled **EX** will display an external time code value if one has been captured. This value can be modified or cleared and entered manually.
4. Press the **ENTER** key and the offset between the two positional values will be calculated and stored as the current offset. The offset is displayed in the **RADARView™** offset window and can also be displayed in the **Session Controller** display by pressing **SHIFT+SYNC(OFFSET)** key.

CHASE ON POWERUP

When this feature is enabled, RADAR® will automatically start chasing timecode when it is started up. As this feature isn't often required the default setting is **DISABLED**.

To set RADAR® to chase on powerup:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / CHASE ON POWERUP*** dialog and press the **ENTER** key.
2. Use the right arrow key to select **ENABLED** and press the **ENTER** key.

Machine Control

You can configure your RADAR® to be externally controlled via Sony 9-pin or MMC (MIDI Machine Control). **9-PIN SETTINGS** and **MMC SETTINGS** are available to help configure your RADAR® to seamlessly integrate with a wide variety of professional products that provide 9-pin and/or MMC control protocols.

To set the machine control format:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **MACHINE CONTROL** and press the **ENTER** key.
2. Use the up and down arrow keys to choose **SELECT TYPE** and press the **ENTER** key.
3. Use the left and right arrow keys to select **9-PIN** or **MMC** and press the **ENTER** key.

To enable or disable machine control:

1. Press **SHIFT+RLINK(MCH CTL)** on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **MACHINE CONTROL** and press the **ENTER** key.
2. Use the up and down arrow keys till **ENABLE/DISABLE** is displayed.
3. If machine control is disabled pressing the **ENTER** key will enable it. If machine control is enabled pressing the **ENTER** key will disable it.

Networking

The RADAR® ships with a 10/100 Base T Ethernet card. With the appropriate hardware and properly configured software RADAR® can backup, restore, export and import files using an Ethernet connection to a Windows, Unix, or Mac OS X (10.2 and later) CIFS (Common Internet File System) server OR by using a specially wired crossover cable for a direct connection with a personal computer. Once RADAR® is configured for networking, it can also be controlled by RADAR® Network Control software — a java runtime program that can be installed on any standard computer.

Networking is a very BIG topic and is far beyond the scope of this manual. Our goal is to get your RADAR® configured so that it can be integrated into an existing network or connected to a personal computer using peer-to-peer. For instructions on how to import/export files see OPERATIONS: FILE MANAGEMENT: EXPORT/IMPORT section of the manual.

DISCLAIMER: iZ Technology cannot offer advice on networking and security issues that do not directly pertain to the RADAR® system. For further assistance please consult a networking professional or make use of the extensive resource materials available on the Internet.

FTP

FTP stands for File Transfer Protocol. It is used to transfer data (files/folders) from one computer to another (via uploading and/or downloading). Windows OS 95 and up have FTP built into them. MAC OS 9.2.2 and earlier require third-party FTP client software.

RADAR® has a built in FTP (File Transfer Protocol) server. This feature enables you to transfer files between RADAR®'s internal IDE drive (e.g., **D:ARCHIVE**) and a network-connected computer via Ethernet. Any files on RADAR®'s audio drive must first be exported to the internal IDE drive (e.g., **D:ARCHIVE**). Once on the internal IDE drive, any Mac or PC FTP client software can be used to download/upload the files. For instructions on how to configure RADAR® for FTP refer to **CONFIGURE RADARâ FOR NETWORKING** below. For details on how to export/import files please refer to the OPERATIONS: FILE MANAGEMENT: EXPORT/IMPORT section of the manual.

FILE SHARING

CIFS (Common Internet File System), also known as SMB (Server Message Block), is a standard network protocol typically used for sharing files on a LAN (Local Area Network). This is the protocol RADAR® uses in order to **BACKUP** to and **RESTORE** from as well as **EXPORT** to and **IMPORT** from a shared folder on a computer/server.

For instructions on how to configure RADAR® for file sharing refer to the following **ENTERING FILE SHARING NETWORK INFORMATION** as well as **CONFIGURE RADARâ FOR NETWORKING** below. For details on how to export/import files please refer to the OPERATIONS: FILE MANAGEMENT: EXPORT/IMPORT section of the manual.

ENTERING FILE SHARING NETWORK INFORMATION

Before RADAR® can share files via Ethernet it must be configured with information about the computer/server it will be connected with. For instructions on how to export/import files, refer to the Operations: File Management: Export/Import section of the manual.

To enter the file sharing information of the computer/server you are connecting to:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to ***MAIN / PREFERENCES MENU / NETWORK PREFS /*** **SERVER PREFS** and press the **ENTER** key.
2. At the **SERVER PREFS:** dialog, use the up and down arrow keys to locate the **CIFS SERVER IP** menu item and press the **ENTER** key.
3. At the **CIFS SERVER IP:** prompt, use the numeric keypad and right and left arrow keys to enter the IP address of the computer you are connecting to and press the **ENTER** key.
4. At the **SERVER NAME:** dialog, use the QWERTY keys to enter the host name of the computer you want to export to and press the **ENTER** key. This is a cAsE sEnSiTiVe parameter!

Note: If you are connecting with a Mac OS X (10.2 or later) computer/server, the server name is the computer/rendezvous name listed under the Sharing System Preference.

5. At the **SERVER SHARE:** dialog, type the name of the shared folder you've created on the computer you are connecting to and press the **ENTER** key. This is a cAsE sEnSiTiVe parameter!

Note1: If you are connecting with a Mac OS X (10.2 or later) computer/server, the server share name is the short name listed under the current user account's short name.

Note2: If you are connecting with a Windows98 computer/server, you should be aware that Windows98 converts the case of any shared folder name to ALL CAPS.

Note3: If you are connecting to a Windows XP computer/server, the sharing properties must NOT be limited to the XP Shared Directory folder.

For more information on using Windows and Apple operating systems, please refer to the individual documentation or contact Microsoft or Apple for further assistance.

For Mac users, you may find the following link useful: http://docs.info.apple.com/article.html?artnum=107083

6. At the **CLIENT WORKGROUP** dialog, enter the workgroup name assigned to the computer you are connecting to and press the **ENTER** key.

CONFIGURE RADAR® FOR NETWORKING

RADAR® can connect to a PC or Macintosh via Ethernet with the appropriate cabling and software. For instructions on how to export/import files see OPERATIONS: FILE MANAGEMENT: EXPORT/IMPORT.

To setup RADAR® for FTP, file sharing and/or RADAR® network control:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to ***MAIN / PREFERENCES MENU / NETWORK PREFS /*** **INTERFACE PREFS** and press the **ENTER** key.
2. At the **INTERFACE PREFS:** dialog, use the up and down arrow keys to select **HOST NAME** and press the **ENTER** key.
3. At the **HOST NAME:** prompt, use the QWERTY keys to enter a unique name for your RADAR® and press the **ENTER** key.
4. At the **DHCP SERVER:** dialog, use the left and right arrow keys to **ENABLE** or **DISABLE DHCP** and then press the **ENTER** key. If **DHCP** is enabled then the following six steps will not apply and you may proceed to step 11. Do NOT enable **DHCP** if you are using a crossover cable to connect directly with a Mac or Windows-based computer.

5. At the **LOCAL IP ADDRESS** prompt, use the numeric keypad and the left and right arrow keys to enter a unique IP address and press the **ENTER** key. If you are using a crossover cable to connect directly with a Windows or Mac-based computer, the RADAR® IP address should have the same first three numbers but the last number has to be different! E.g., Windows XP computer IP is 192.168.1.1 therefore the RADAR® IP can be 192.168.1.2 or 192.168.1.3 or 192.168.1.4, etc.

   The Internet Assigned Numbers Authority has set certain IP address ranges for use in private networking applications:

   Class A 10.0.0.0—10.255.255.255

   Class B 172.16.0.0—172.31.255.255

   Class C 192.168.0.0—192.168.255.255

   In a self-contained peer-to-peer network that never sees the outside world you may use any IP address range you choose. However, care should be taken when assigning IP addresses to avoid potential security risks and IP address conflicts. For further information you can visit the Internet Assigned Numbers Authority site at http://www.iana.org.

6. At the **SUBNET MASK:** prompt, use the numeric keypad and right and left arrow keys to enter a **SUBNET MASK** value and press the **ENTER** key. The standard default is 255.255.255.0. The **SUBNET MASK** value **must** match the subnet mask value of the computer/server you're connecting to.

7. A **GATEWAY** entry is only required if you are connected to a WAN (wide area network) such as the Internet. At the **GATEWAY:** prompt, use the numeric keypad and right and left arrow keys to enter a gateway IP address and press the **ENTER** key.

8. The **DNS DOMAIN NAME** is only required if you are connected to a client-server network. At the **DNS DOMAIN NAME:** dialog, use the QWERTY keys to enter a domain name and press the **ENTER** key.

9. The **PRIMARY DNS** address for the server is only required for connecting to a client-server network. At the **PRIMARY DNS:** prompt, use the numeric keypad and right and left arrow keys to enter a **PRIMARY DNS** value and press the **ENTER** key.

10. The **SECONDARY DNS** address only applies if there is a secondary server on a client-server network. At the **SECONDARY DNS:** prompt, use the numeric keypad and right and left arrow keys to enter a **SECONDARY DNS** value and press the **ENTER** key.

11. At the **FTP SERVER:** dialog, use the left and right arrow keys to **ENABLE** or **DISABLE FTP SERVER** and then press the **ENTER** key. The following menu items will only appear if you choose to **ENABLE FTP SERVER**.

12. The **FTP LOGIN NAME** is required for accessing RADAR®'s internal system drive (e.g., **D:ARCHIVE**) via FTP. At the **FTP LOGIN NAME:** dialog, use the QWERTY keys and arrow keys to enter a login name and press the **ENTER** key. This login name will be required by the FTP client software installed on the computer networked to the RADAR®.

13. The **FTP PASSWORD** is also required for accessing the RADAR® via FTP. At the **FTP PASSWORD:** dialog, use the QWERTY keys and arrow keys to enter a **PASSWORD** and press the **ENTER** key. This password will be required by the FTP client software installed on the computer networked to the RADAR®.

IMPORTANT NOTE: If **FTP SERVER** is left enabled and your RADAR® is connected to another computer or network it is possible for someone to gain unauthorized access to your machine. This would give an intruder the ability to modify or delete files on your RADAR®.

Note: In a networked environment you must be very careful about the network settings you choose. There is a real risk of causing network conflicts and/or creating security issues. Please consult your network administrator for the appropriate network settings for your RADAR®.

Preferences

Every time a new project is created, there a number of settings that are required by the RADAR®: sample rate, bit depth, TC format etc. In order to save you time and effort, RADAR® assigns these values automatically using the current values selected in the **PREFERENCES MENU**.

To set the preferences for newly created projects:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU / PROJ PREFS*** and press the **ENTER** key.
2. Review and modify the settings in the sub-menus to your specifications.

Software

Although your RADAR® is shipped to you with the latest version of RADAR® software, you will want to make sure that you keep it up to date by downloading new versions of the software as they become available. We are constantly working to add new features and to improve the performance and reliability of our product so it is certainly worth the effort. Software updates and downloading instructions are available from our website at www.izcorp.com.

Note: If you decide to revert to version 3.26 or earlier, you must first select **UPGRADE SYSTEM** or **MAKE PORTABLE**. You must also do this with any drive that you want to load into any RADAR® running earlier software.

To install a new version of RADAR® software from floppy disk:

1. Make sure you have a backup copy of everything that is on your current recording drive! Upgrading software shouldn't affect the audio on the recording drive however, we feel this is a good time to remind those of you who like to live on the edge that you should have everything backed up.

2. Insert the first install floppy disk containing the new version of software and reboot the machine using the power switch.
3. When RADAR® has finished rebooting, the iZ logo will appear on the screen with the following message below it:

   INSTALL RADAR24
   VX.XX? ENTR/CNCL

   If you do not want to proceed with the upgrade, press the **CANCEL** key. If you press the **ENTER** key, RADAR® will begin reading the software from the floppy disk, and the message will change to:

   INSTALLING RADAR
   VX.XX DISK 1

   Insert additional disks as prompted to complete the install.

   Once the software is successfully installed RADAR® will then start up in the new version and all projects will automatically be upgraded to the new software version format if necessary. This operation may take a few seconds per project.
5. Now, power off RADAR® and reboot to complete the setup of new drivers.

To install a new version of RADAR® software from CD:

You must have ALL the following requirements in place in order for this type of install to be successful:

CD Install Requirements

- R24CDNET software loader upgrade. See the install procedure below for details.
- CD-R /DVD-R Multi drive (e.g. Panasonic SW-9571) installed in your RADAR®.
- RADAR® Software Install CD (obtained from your local dealer, direct from iZ Technology or via download from www.izcorp.com using your own computer, CD burner and software)

1. Make sure you have a backup copy of everything that is on your current recording drive! Upgrading software shouldn't affect the audio on the recording drive however, we feel this is a good time to remind those of you who like to live on the edge that you should have everything backed up.
2. If you have previously installed the R24CDNET software loader upgrade, load the vX.XX CD in the drive, reboot RADAR®, and proceed to step 3.
   a. To activate the CD install for the first time, insert the R24CDNET floppy and reboot RADAR®. You only need to do this once (unless you later downgrade to version 3.26 or below). For future releases, you will not need to use the floppy drive at all.
   b. When RADAR® has finished loading the R24CDNET image, you will be prompted to **REMOVE FLOPPY, INSERT CD, ENTER**. Once you've completed those instructions and pressed **ENTER**, **REBOOTING RADARâ24 – PLEASE WAIT** will be displayed briefly and then RADAR® will automatically reboot.

3. When RADAR® has finished rebooting, the iZ logo will appear on the screen with the following message below it:

   INSTALL RADAR24
   VX.XX? ENTR/CNCL

   If you do not want to proceed with the upgrade, press the **CANCEL** key. If you press the **ENTER** key, RADAR® will begin reading the software from the floppy disk, and the message will change to:

   INSTALLING RADAR
   VX.XX DISK 1

   Once the software is successfully installed RADAR® will then start up in the new version and all projects will automatically be upgraded to the new software version format, if necessary. This operation may take a few seconds per project.

4. Now, power off RADAR® and reboot to complete the setup of new drivers.

To install a new version of RADAR® software from PC, Mac or Network via FTP:

You must have ALL the following requirements in place in order for this type of install to be successful:

FTP Install Requirements

- R24CDNET software loader upgrade. See the install procedure below for details.
- FTP client program running on your PC or Mac computer.
- Proper FTP-enabled network setup/configuration between your computer and RADAR®. Refer to the RADAR® manual for specific network setup instructions if necessary.
- RADAR® Net Install software zip file "RADAR24_vX.XX.X_net.zip" (obtained from a RADAR® software shipping CD or via the download section of our website www.izcorp.com).

1. Make sure you have a backup copy of everything that is on your current recording drive! Upgrading software shouldn't affect the audio on the recording drive however, we feel this is a good time to remind those of you who like to live on the edge that you should have everything backed up.

2. If you have previously installed the R24CDNET software loader upgrade, just power up RADAR® and proceed to step 3.

   a. To activate the FTP install for the first time, insert the R24CDNET floppy and reboot RADAR®. You only need to do this once (unless you later downgrade to version 3.26 or below). For future releases, you will not need to use the floppy drive at all.

   b. When RADAR® has finished loading the R24CDNET image, the following message will appear on the screen below the iZ logo:

   REMOVE FLOPPY
   INSERT CD, ENTER

   Since you are not installing from a CD, you need only remove the floppy. DO NOT press **ENTER**! Leave RADAR® in this state. while you proceed to step 3.

3. From your PC or Mac computer, transfer the Net Install software zip file **RADAR24_VX.XX.X_NET.ZIP** via FTP to the **/BOOT/INSTALL** directory on RADAR®.

IMPORTANT NOTE: You may see InstallCurrent and InstallPrevious directories under the boot directory but you MUST transfer the software into the **Install** folder.

4. Once the transfer is complete, you need to restart RADAR® to install the software.

   a. If you installed the R24CDNET floppy in step 2, and the RADAR® screen still shows **REMOVE FLOPPY, INSERT CD, ENTER,** then just press **ENTER**, and RADAR® will automatically restart and begin to install the software. Proceed to step 5.

   b. If you just powered up RADAR® in step 1, ensure that you **SHUTDOWN RADAR** (the last item in the main menu) and then reboot. Proceed to step 5.

5. When RADAR® has finished rebooting, the iZ logo will appear on the screen with the following message below it:

   INSTALL RADAR24
   VX.XX? ENTR/CNCL

   If you do not want to proceed with the upgrade, press the **CANCEL** key. If you press the **ENTER** key, RADAR® will begin reading the software from the floppy disk, and the message will change to:

   INSTALLING RADAR
   VX.XX DISK 1

   Once the software is successfully installed RADAR® will then start up in the new version and all projects will automatically be upgraded to the new software version format, if necessary. This operation may take a few seconds per project.

6. Now, power off RADAR® and reboot to complete the setup of new drivers.

RADARâ Network Control Software for PC

The RNC (RADAR® Network Control) program allows you to control one or more RADAR® machines over the Ethernet using a standard computer with java runtime environment installed (version 1.4.2 or higher). A 30 day trial version of the program is located on the software install CD included with your new RADAR®. Don't hesitate to contact your local dealer or our sales department, sales@izcorp.com or 1.800.776.1356, if you would like to purchase the full version.

Some of the RADAR® features included in RNC are:

RWD	**GOTO PROJECT**	**MARK IN/OUT/SYNC**	**SYNC REFERENCE**
FFWD	**NEW PROJECT**	**MARK/EDIT/RECALL LOC**	**TC PREFS**
PLAY	**NAME PROJECT**	**ENTER TIME**	**SYNC OFFSET**
STOP	**DELETE PROJECT**	**FILE MANAGEMENT BROWSE**	**CHASE**
RECORD	**TRACK NAME**	**FILE IMPORT**	**I/O ROUTING**
CUT	**TRACK SOLO**	**MOUNT/UNMOUNT**	**DIG IN FORMAT**
COPY	**TRACK MUTE/UNMUTE**	**RADARLINK**	**DIG IN TRACKS**
PASTE	**TRACK ARM**	**SHUTDOWN**	**ERASE ALL DISKS**
ERASE	**AUTO INPUT**	**SET TIME/DATE**	

For instructions on using the RNC software, please refer to the help files located within the RNC folder on the software install CD.

IMPORTANT NOTE: If you are using a **KC-24** connected to your computer to control RNC, the left-of-spacebar **ALT** key = **FFWD** and the right-of-spacebar **ALT** key = **STOP**.

To allow your RADAR® to be controlled via RADAR® Network Control software:

1. Configure the RADAR for networking using the **INTERFACE PREFS** within the **NETWORK PREFS** of the **PREFERENCES MENU**. Refer to CONFIGURATION:NETWORKING earlier in this section for detailed instructions.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / NETWORK PREFS /*** **NETWORK CONTROL** and press the **ENTER** key.
3. Use the right arrow key to move the cursor to **ENABLED** in the **NETWORK CONTROL** dialog and press the **ENTER** key.
4. You will see a confirmation prompt **NETWORK CONTROL SLAVE ID = X** to indicate that your RADAR® can now be controlled by using the slave id given.

To prevent your RADAR® from being controlled via RADAR® Network Control software:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / NETWORK PREFS /*** **NETWORK CONTROL** and press the **ENTER** key.
2. Use the left arrow key to move the cursor to **DISABLED** in the **NETWORK CONTROL** dialog and press the **ENTER** key.
3. You will see a confirmation prompt **NETWORK CONTROL SLAVE DISABLED** to indicate that your RADAR® will no longer be controllable by RNC (RADAR® Network Control).

Section
4

Operations

This section of the manual is dedicated to providing you with a quick reference that can answer questions you might have about displays, key functionality, menus, entering values, project management, backup and restore.

Overview

RADAR® is designed to be a robust and dependable replacement for analog multitrack tape machines or modular digital multitrack recorders. It is also designed to be easy to use. The remote interface is intuitive to anyone familiar with the operation of a tape recorder. Just arm a track and drop into record!

All aspects of RADAR® performance are designed to meet and exceed the performance requirements of a professional tape recorder. You will always be able to record, punch in and out, jog/shuttle and even vari-speed just like you would on a tape machine. In the section that follows, you will find all the details you require to become a qualified RADAR® user.

Work Flow

Without getting into details yet, the average RADAR® session follows a pattern similar to the following:

1. Create a new project or go to an existing one.
2. Locate your starting point.
3. Arm tracks and record audio.
4. Re-locate, arm tracks and overdub more audio.
5. Edit audio.
6. Play back the audio for mix down.
7. Archive audio to backup media.
8. Shut down RADAR® and go home (optional).

Display Overview

While most RADAR® users connect an SVGA monitor and make use of the **RADARView™** display, it is important to note that you don't *need* to use a monitor if you purchased the *optional* **Session Controller**. This makes RADAR® exceptionally portable and ideally suited for remote applications. It also lends itself to more artist focused tracking sessions! Having said that; **RADARView™** is very cool.

Both the **Session Controller** and the **RADARView™** display the current position within your project. This information can be viewed in several different ways:

FEET/FRAMES

This is used for specific film applications.

BARS/BEATS

The RADAR® tempo setting is used to calculate and display positions based on musical notation. This can be handy when working with a locked MIDI sequencer.

SMPTE

This is the default Hours:Minutes:Seconds:Frames plus sub-frames display.

INT/EXT SMPTE

While in chase, the Session Controller will display your projects current time above the master machines current time code position. The **RADARView™** display shows only the master machines time code position in this mode.

NOTE: RADAR® Sub-frames are not SMPTE bits. Each sub-frame is a 100th of a frame. Sub-frames are only accessible if the **SHOW SUB-FRAMES** preference is selected in the ***MAIN / PREFS MENU*** **/ SHOW SUB-FRAMES** dialog.

To change the display mode of a project:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PROJ MENU / DISPLAY MODE*** selection and press the **ENTER** key.
2. Use the up and down arrow keys to select the format you want and press the **ENTER** key.

RADARView™

With an SVGA monitor attached, RADAR® gives users a substantial display of the following information (clockwise from top):

- 24 channels of metering with status and clip LED's.
- Large, easy to read positional display.
- Sync Status Display:
  - Sample rate and bit depth.
  - Current time code rate and incoming TC rate.
  - Sync status and reference sync source.
  - Chase status and TC format.
  - Sync offset.
- Transport Status Display:
  - Vari-speed indicator and percentage display.
  - Cycle, Auto Input, Auto Punch and Auto Play indicators.
  - Pre-Roll status and current value.
  - Post-Roll current value.
- Edit Status Display:
  - Crossfade value.
  - Last Edit display.
  - Undo/Redo Level setting.
- RADAR Link/ Locator Display:
  - RADAR Link ID and status.
  - Start, Mark In, Mark Sync, Mark Out, Range values.
  - Display (counter) format.
- Project Name.
- Record time remaining.
- Disk Mode.
- SCSI activity indicator.
- Track display for audio waveform data.
- Track naming area, inputs, outputs.
- Current digital format display.

Session Controller Display

The Session Controller has a 2 x 16 character display that is used to display the current time code position in the project, all RADAR® menus and dialogs. The default display shows the current time code location in the standard Hours:Minutes:Seconds:Frames plus sub-frames format. When menu functions are accessed using the menu/prev key or by pressing a direct access key, the display becomes the central navigation system for RADAR®. The contents of this display are mirrored on RADARView™ with the exception of the default display.

Indicators

Metering and other indictors are provided on the RADARView™ display and also on the optional Meterbridge 24 and Meterbridge 48, either of which can be connected to the Session Controller professional remote.

METERING

Input signal is displayed on 20 segment LED meters with a scale ranging from below –55 to 0 dBFS (decibels Full Scale), which is the maximum input level. A clip LED with variable hold time is also provided to help warn of impending digital distortion. The clip LED hold time setting can be changed in the main / prefs MENU / clip hold time dialog.

STATUS

Additional LED indicators provided on each channel of the Meterbridge 24 and Meterbridge 48 include:

- **ARM**

  Red-flashing LED indicators identify tracks that are armed and ready for recording.

- **INPUT**

  Steady state yellow LED indicators identify tracks currently in input monitoring mode.

- **SOLO**

  Steady state green LED indicators identify tracks that are currently soloed.

- **EDIT**

  Red-flashing LED indicators identify tracks that are selected for the current editing operation.

Waveform Display

There are several options for controlling the current view of the waveforms displayed on **RADARView™**.

Session Controller

The **Session Controller** has dedicated buttons for horizontal zoom, vertical zoom, scrolling and a special function key called **ZOOM SOLO**.

- **HORZ ZOOM IN** and **HORZ ZOOM OUT**

  Control the amount of time currently displayed.

- **VERT ZOOM IN** and **VERT ZOOM OUT**

  Control the number of tracks currently displayed.

- **SCROLL UP** and **SCROLL DOWN**

  Used to adjust the current track(s) displayed when using **VERT ZOOM IN**.

- **ZOOM SOLO**

  Used to select viewable tracks using the track arming keys. The tracks will fill the track display in groups of one, two, four, eight, twelve or twenty-four, depending on the number of tracks that you have selected.

KC–24 Keyboard

The **KC-24** uses different keystrokes for horizontal zoom, vertical zoom and scrolling.

- **HORZ ZOOM IN** and **HORZ ZOOM OUT**

  Hold the **V** key and use the **+** and **–** keys to adjust.

- **VERT ZOOM IN** and **VERT ZOOM OUT**

  Hold the **ZED** key and use the **+** and **–** keys.

- For **SCROLL UP** and **SCROLL DOWN**

  Hold the **V** key and use the ↑ and ↓ keys to adjust.

NOTE: Zoom Solo is not available from the **KC-24**!

On Screen Help

The **HELP** key or the ***MAIN MENU / HELP*** menu launches the PDF viewer and loads either the manual or the latest release notes for viewing on the **RADARView™** display.

To launch the help viewer:

1. Press the **HELP** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / HELP*** menu and hit the **ENTER** key.
2. Select either the manual or the release notes and press the **ENTER** key.

The following table contains the keystrokes for controlling and navigating the RADAR® pdf viewer.

Action	KC24	Session Controller
Start Viewer	**H**	**HELP OR H**
Return to RADARView™	**REDO** (TO HIGHLIGHT IZ LOGO) THEN PRESS **PLAY** OR MOUSE CLICK IZ ICON	**CANCEL (1)**
Select different PDF file (in Viewer)	NONE, SELECT FROM RADARView™	**HELP**
Start Viewer (focus on find Control)	NONE	**SHIFT + HELP**
Change Focus (Bookmarks -> Text -> Bookmarks)	**REDO** or **SHIFT+REDO**	**MENU PREV**
Change items in Bookmarks	**UP** or **DOWN ARROW**	**UP** or **DOWN ARROW**
Change Views (Bookmarks -> Page Numbers -> None)	**ALT+B ALT+L ALT+H**	Track Arm **(3) (4) (5)**
Expand Bookmark	**REDO+RIGHT ARROW**	**ENTER**
Collapse Bookmark	**REDO+LEFT ARROW**	**ENTER**
Zoom in viewer	**ALT +**	**HORZ** or **VERT ZOOM IN** or **(18)**
Zoom out viewer	**ALT -**	**HORZ OR VERT ZOOM OUT** or **(19)**
Forward 10 pages	**NONE**	**FAST FORWARD** or **(8)**
Back 10 pages	**NONE**	**REWIND** or **(7)**

Action	KC24	Session Controller
Scroll page forward	**DOWN ARROW**	**DOWN ARROW**
Scroll page backward	**UP ARROW**	**UP ARROW**
Next Page	**MARK OUT**	**PLAY** or **(10)**
Previous Page	**MARK IN**	**STOP** or **(11)**
Last Page	**NONE**	**SHIFT + FAST FORWARD** or **(9)**
First Page	**NONE**	**SHIFT + REWIND** or **(6)**
Back in page History	**ALT LEFT ARROW**	Track Arm **(12)**
Forward in Page History	**ALT RIGHT ARROW**	Track Arm **(13)**
Fit to page width	**ALT SHUTTLE**	Track Arm **(14)**
Fit to page	**ALT ENTER TIME**	Track Arm **(15)**
Rotate document clockwise	**NONE**	Track Arm **(16)**
Rotate document counter clockwise	**NONE**	Track Arm **(17)**
Focus on Find Control	**REDO**	**QWERTY KEYS** or **(20)**
Focus on Goto Page Control	**REDO**	**NUMERIC KEYS** or **(22)**
Find – Search	**ENTER**	**ENTER** or **(21)**
Find – Search Again	**ALT F**	**ENTER** or **(21)**
About Dialog	NONE	Track Arm **(23)**
Goto Page	**ALT G**	**ENTER**
Dismiss dialogs or popup messages	**PLAY** (with focus)	**CANCEL**

Entering Values

Numeric Keypad

The numeric keypad has several key functions important to RADAR® operation.

- Single keystroke recall of locates 0-9 using the numeric keys **0-9**.
- **RECALL LOC** and numeric keys **0-9** for recall of locates 10-99.
- Numeric keys **0-9** and **ENTER** for entering times and values in menu dialogs.
- The **MENU/PREV** and **ENTER** keys for menu navigation and dialog selection.
- The **ENTER TIME** key, numeric keys **0-9** and **ENTER** key for entering an address and locating to it.
- The **+** and **–** keys for incrementing or decrementing times and values in RADAR® dialogs as well as selecting next or previous directories at a **SELECT FOLDER:** dialog.

Arrow Keys

The arrow keys are used for navigating the menu system. They also have special functions depending on the current state of the RADAR®.

WITHIN A MENU

- Select menus and subsequent sub-menus.
- Move between fields or selections in menu dialogs.

WITHIN A NAME FIELD

- Use ↑ and/or ↓ for entering the following symbols as well as scrolling through the numbers/letters.
- **/ . - , + *) (’ & % $ # ? ! *BLANK***
  { | } ? ? > = < ; :
- Use → and/or ← for moving the cursor to the next/previous adjacent character field.

IN CONJUNCTION WITH A DIRECT KEY

- Certain direct key and menu dialogs use ↑ and ↓ for incrementing and decrementing values.

AS AN EXTENSION OF THE TRANSPORT

- ← Locates directly to the **MARK IN** point.
- → Locates directly to the **MARK OUT** point.
- ↓ Auditions the audio between the selected **MARK IN** and **MARK OUT** points.

AS AN EXTENSION OF THE TRANSPORT WITH PRE ROLL ENGAGED

- ← Locates directly to the **MARK IN** point with pre roll.
- → Locates directly to the **MARK OUT** point with pre roll.
- ↓ Auditions the audio between the selected **MARK IN** and **MARK OUT** points **without** pre roll.

Jog/Shuttle Wheel

Above and beyond its obvious purpose of providing a means for manually jogging and shuttling audio, the **Jog/Shuttle wheel** can be used as an alternative to the numeric and arrow keys for navigation and data entry. This includes menu and sub-menu selection, selection of options and value entry.

Navigating Menus

For complete coverage of the menu system see the section of this manual entitled REFERENCE: MENU TREE OVERVIEW and REFERENCE: MENU ITEM QUICK REFERENCE.

Menu/Prev

The **MENU/PREV** key is used to enter **MAIN MENU MODE**, go to previous [**/PREV**] dialogs, menu and sub-menu selections and exit **MAIN MENU MODE.** The display on the **Session Controller** and/or the optional **RADARView™** screen will indicate the current menu selection.

Keyboard Shortcuts

Once in **MAIN MENU MODE** the QWERTY keyboard can be used to quickly select menu items based on the first letter of the menu name. For example, in the **MAIN MENU**, pressing the **S** key repeatedly will cycle between the **SYSTEM MENU, SYNC MENU** and the **SHUTDOWN RADAR** selections.

Canceling a Selection

While in the menu system, pressing the **CANCEL** key allows you to exit the current dialog you are in. The **Session Controller** LCD will return to the default time and locate display and the menu window in the **RADARView™** display will disappear.

Menus

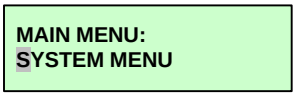
Once the **MENU/PREV** key is pressed and **MAIN MENU MODE** is active any of the navigation and/or short cut keys can be used to scroll through the available selections in the top level of the menu structure. This level is called the **MAIN MENU**. To exit the **MAIN MENU MODE**, press either the **MENU/PREV** or **CANCEL** keys. To make a selection, locate the desired menu item and press the **ENTER** key. This will take you another level down in the menu structure to the **SUB-MENUS**.

Sub-Menus

The **SUB-MENUS** are selected in a manner identical to the menus in the **MAIN MENU**. Each **MAIN MENU** item has a number of related **SUB-MENUS**. These **SUB-MENUS** may also have their own **SUB-MENUS** to choose from, depending on the selected item.

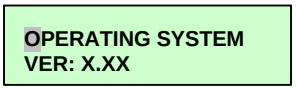
Example:

Press the **MENU/PREV** once



Then press the **ENTER** key to access the **SUB-MENUS** within **SYSTEM MENU**

Finally, press the **ENTER** key to access the **SUB-MENU** selection



Dialogs

At the end of any given menu tree you will ultimately arrive at a dialog that presents you with some sort of selection or a set of fields for entering values. Values can be entered using any of RADAR®'s data entry methods including the numeric keys, arrow keys and the **Jog/Shuttle wheel**.

Direct Access Keys

Both the **Session Controller** and the **KC-24** have a wide range of keys that offer one key access to a particular function. Most of the direct access keys are short cuts to menu items but there are a few that are only accessible using the direct access keys. For complete coverage of the direct access keys see the section of this manual entitled REFERENCE: DIRECT ACCESS KEYS.

Disk Management

RADAR® uses SCSI hard disks in removable drive carriers for audio recording. Hard disks are a fairly robust recording and storage medium, but just like tapes, proper care should be taken when handling, storing or transporting them.

Please take note of the following important points:

- Use only iZ approved drives and carriers! See the Support section of our website www.izcorp.com for an up-to-date listing.
- Newly purchased drives must be initialized using the **MAIN MENU / DISK MENU / INIT DISK** menu dialog before use.

NOTE: Initializing a disk erases any existing data permanently! Use with caution!

- Properly initialized external SCSI recording drives connected via the 68-pin SCSI connector on the Adrenaline®card must be connected and powered up before booting the system.
- Any valid recording drives will automatically be mounted upon boot up.

Mounting, Unmounting and Selecting Disks

The RADAR® mount and un-mount commands allow carriers containing recording drives to be exchanged, drives to be copied/cloned and selecting a different recording drive then the current mount volume. The later being especially true if you own a 3-bay RADAR® i.e., two recording drives and a backup drive.

To mount valid recording drives OR switch to a different valid recording drive:

1. Press the **MOUNT** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU/ MOUNT/*****UNMOUNT** dialog and press the **ENTER** key.
2. At the **FILESYSTEM:** dialog, use the left or right arrow key to select **MOUNT** and then press the **ENTER** key.
3. At the **SELECT DISK:** dialog, use the up and down arrow keys to choose the **X: !RADAR!** disk (SCSI) ID you wish to switch to and press the **ENTER** key.

NOTE: You can select a drive for recording by pressing the MOUNT key and selecting a drive ID from 0 to 6. If you have a SCSI DVD-RAM drive you can select it as a recording drive and record to it directly. The slower speed of the DVD-RAM drive allows a maximum of 2 tracks of audio recording. You cannot have data archives and audio on the same DVD-RAM disk, formatting for one will erase the other so BE CAREFUL!

To unmount the current recording drive:

- Press **SHIFT+MOUNT(UNMNT)** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / DISK MENU /*** **MOUNT/UNMOUNT** dialog and press the **ENTER** key.

CAUTION: Failure to unmount recording hard drives before removing them from the system may result in permanent data loss and damage to your RADAR® system. Always unmount before hot swapping drives!

Show Disk Space

This menu item displays the remaining recording time left on the currently mounted recording drives in the hours, minutes and seconds format. This information is also available on the **RADARView™** display but the calculated recording time remaining is displayed in minutes. These values are "track minutes"; in other words, the displayed time will vary depending on the number of tracks selected using the track arming keys.

To calculate the remaining time for a given number of tracks:

1. Press the **TRACK ARM** keys to select the number of tracks to be used in the remaining time calculation.
2. Consult the **REC TIME** display on **RADARView™** to view the minutes remaining or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU /*** **SHOW DISK SPACE** dialog and press the **ENTER** key to view the same information in the hours, minutes and seconds format.

NOTE: To display the remaining space in Mega Bytes, hold **SHIFT** and press **B** then **BROWSE** to the appropriate drive and press the **SPACEBAR** (**SPACE** key on the **KC 24**).

Reclaim Space

The **RECLAIM SPACE** function frees up disk space by deleting "orphaned" audio files that are no longer referenced by any RADAR® project play list. There is also an additional option that allows you to keep or delete any audio files that are referenced in the current undo lists.

RADAR® also has an **AUTO RECLAIM** feature. This feature differs from **RECLAIM SPACE** in that it only frees up orphaned files in a particular project. In other words it will not delete any audio files that were previously shared between projects. **RECLAIM SPACE** is a global function that will examine **all** projects and delete any audio files that are no longer in use for any reason. **AUTO RECLAIM** works automatically in the background to ensure the most efficient use of disk space. If you wish it can be disabled in the ***MAIN MENU / PREFERENCES MENU /*** **AUTO RECLAIM** dialog.

To reclaim disk space:

1. It would be wise to ensure you have every project on your recording drive backed up. Reclaim space is a global disk function and may affect audio in projects other then the current project.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU /*** **RECLAIM SPACE** dialog and press the **ENTER** key.
3. Select **YES** at the **RECLAIM SPACE?** prompt and press the **ENTER** key.

4. Select the **NO** or **YES** option to keep or lose your **UNDO LIST** audio references and press the **ENTER** key. If you select **YES**, you will lose all undo possibilities for every project currently on the drive! Proceed with CAUTION!
5. Select **YES** at the **ARE YOU SURE?** prompt and press the **ENTER** key.

Make Disk Portable

This feature should be used when an audio disk will be used on other RADAR® units running different versions of software or when using a RADAR® disk in a RADAR®II. **MAKE PORTABLE DISK** can also be a request each time you **UNMOUNT** a disk. This preference can be set in the ***MAIN MENU / PREFERENCES MENU /*** **UNMOUNT PORTABLE** dialog.

IMPORTANT NOTE: In order to allow audio disks to be accessible to RADAR®II and RADAR®24 units running 3.26 or older software, you must ensure that NO project exists above number 99. Projects numbered 100 or greater may be lost! Renumber all projects to a number less than 100 and/or BACKUP before proceeding.

To make a disk portable:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU /*** **MAKE PORTABLE** dialog and press the **ENTER** key.
2. At the **MAKE PORTABLE DISK?** prompt, select **YES** and press the **ENTER** key.

   If the audio disk you're about to make portable contains one or more projects greater than 99, the following dialog will be displayed:

   ```
   PROJ>99:USE ONLY
   IN 3.30 OR ABOVE
   ```

   If you see this display, press **ENTER** and the following will be displayed:

   ```
   MAY LOSE AUDIO
   IN 3.26 OR BELOW
   ```

   Press **ENTER** to continue or **CANCEL** to stop the process.
3. Depending on how many projects are on the audio disk, the **MAKE PORTABLE DISK** may take a while as this feature involves a conversion of each project to a RADAR® software independent format. During this time, you'll notice the display stating:

   ```
   FILESYSTEM:
   + CONVERT PROJXX +
   ```

   Once complete, the drive will be unmounted and the display will indicate **DISK IS NOW PORTABLE**. Press any key to continue.

To disable/enable **MAKE PORTABLE** on **UNMOUNT**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*****UNMOUNT PORTABLE** dialog and press the **ENTER** key.
2. At the **UNMOUNT PORTABLE NO ASK** prompt, use the left and right arrow keys to select the appropriate response and press the **ENTER** key.

Erase All Audio

The name says it all. Use **ERASE ALL AUDIO** to clear all of the recording drives connected to the system.

To erase all recorded audio:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU /*** **ERASE ALL AUDIO** dialog and press the **ENTER** key.
2. Select **YES** at the **ERASE ALL AUDIO?** prompt and press the **ENTER** key.
3. Select **YES** at the **LOSE ALL AUDIO?** prompt and press the **ENTER** key.
4. Select **YES** at the **ARE YOU SURE?** prompt and press the **ENTER** key.

Initialize Disk

INIT DISK is used to completely erase a recording drive and re-write the file allocation table (FAT). Since this menu item will erase audio it must be used with extreme caution!

Also, you can export and import wav and bwave files to/from drives in FAT32 or Mac HFS Standard formats connected to the RADAR® SCSI bus. For details on how to export/import files please refer to the OPERATIONS: FILE MANAGEMENT: EXPORT/IMPORT section of the manual.

If you prefer waveforms of the recorded audio to appear on the **RADARView™** display, the recording disk must be initialized for waves. This creates a special file on the disk that holds all of the waveform data for the recordings on the drive. If the disk is not initialized for waves **RADARView™** will display recorded segments as blue bars.

Once initialized, the drive can be used for recording audio, archiving (backup/restore) or export/import (FAT32 or MAC HFS Standard). This allows RADAR® to treat the drives differently and prevent accidental erasure or alteration of data.

To initialize a disk:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU /*** **INIT DISK** dialog and press the **ENTER** key.
2. Select the SCSI ID number of the disk that you wish to initialize or, select DVD if you want to initialize a DVD-RAM disk.
3. When prompted with the question **INIT DISK X?** use the right and left arrow keys to select **YES** and press the **ENTER** key.

4. At the **INIT VOLUME FOR:** dialog, use the up and down arrow keys to select one of the four options and then press the **ENTER** key.

AUDIO: !RADAR!	This is a proprietary RADAR® audio format for the recording drive.
BACKUP: !ARCHIVE!	This is a proprietary RADAR® archive format for backup/restore.
EXPORT: FAT32	This standard FAT32 format allows file export/import between RADAR® and a PC.
EXPORT: MAC HFS	The Mac HFS (OS Standard) format allows file export/import strictly with Mac computers.

   If you have selected to init your drive as **AUDIO: !RADAR!** proceed to step 5 otherwise, skip to step 7.

5. At the **INIT FOR CLUSTER SIZE:** dialog, you have the choice of initializing as **32, 64, OR 128K** cluster sizes. **128K** is the standard RADAR® cluster size.

   If you are using Open Session or DAMSEL software on your Mac computer you must select **64K** cluster size! This will allow your RADAR® audio drive to mount on your Mac desktop.

   Use the left and right arrow keys to select **32**, **64** or **128K** and then press the **ENTER** key.

6. At the **INIT FOR WAVES?** prompt, use the left and right arrow keys to select **NO** or **YES** and then press the **ENTER** key. If you wish to see waveforms displayed in **RADARView™** select **YES** otherwise select **NO**.

7. Before initializing proceeds the **ERASE OLD DATA?** prompt appears as a last warning to ensure that you really want to perform this operation. Select **YES** and press the **ENTER** key to proceed with the initialization.

Disk Mode

The **DISK MODE** menu is **potentially dangerous** and should only be used if you are absolutely sure you understand the feature completely. Use of this feature is ONLY necessary if you require spanning multiple drives during a recording (**SPAN ALL MODE**) and/or specifying the number of tracks that are recorded per hard disk (**CUSTOM MODE**).

SINGLE DISK mode uses 128k clusters and records 24 tracks per disk. This is the default mode for RADAR®.

SPAN ALL mode records 24 tracks per disk and allows audio to spill over to the next SCSI recording disk when the current recording drive is full.

CUSTOM mode is similar to the init audio disk function in that you choose between 32, 64 and 128k clusters but it also lets you specify the number of tracks per disk. This enables you to separate tracks across multiple disks. This was sometimes necessary in the past to get the required performance from slower hard disks. Given the high performance of today's hard disks it is no longer necessary to separate tracks across disks and it is recommended that you refrain from doing so unless you have a really good reason to do it.

NOTE: Smaller cluster sizes result in faster cueing times but may also reduce system performance.

To use disk mode:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU / DISK MODE*** dialog and press the **ENTER** key.
2. At the **CONFIGURE DISKS:** dialog, use the up and down arrow keys to select **SINGLE DISK**, **SPAN ALL** or **CUSTOM** and press the **ENTER** key.

   If you selected **CUSTOM**, proceed to step 3 otherwise skip ahead to step 6.
3. Choose the desired cluster size using the right and left arrow keys and press the **ENTER** key.
4. If you have additional drives connected, choose the number of tracks that you wish to group together on each disk and press the **ENTER** key.

NOTE: This number must equally divide into 24 e.g., 8, 12 etc.

5. Assign the grouped tracks to an individual disks SCSI ID by using the right and left arrow keys to select the SCSI ID and the up and down arrow keys or the QWERTY keyboard to select the group assignment letters. Once you've made your selection(s), press the **ENTER** key.

   The following example shows three groups of 8 tracks, A, B and C, assigned to disks on SCSI ID's 0,1, and 2. Use the letter X to denote un-assigned drive ID's.

   ```
   SCSI IDS:    0123456
   GROUPING: ABCXXXX
   ```

6. If you are really sure about the changes select **YES** in the **CHANGE MAY LOSE AUDIO** dialog and press the **ENTER** key.

Seamless 64K

This function allows users to have 24 tracks of seamless recording during punch ins/outs when using a 64k cluster initialized drive. This mode will prevent any time delay between recordings.

IMPORTANT NOTE: With **SEAMLESS 64K** enabled, recording and punching in/out without editing requires a minimum 7200 RPM drive whereas a heavily edited project requires a minimum 10,000 RPM drive!

To enable or disable seamless 64k mode:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU / SEAMLESS 64K*** dialog and press the **ENTER** key.
2. At the **SEAMLESS 64K:** dialog, use the left and right arrow keys to choose **ENABLE** or **DISABLE** and then press the **ENTER** key.

Clone RADAR Disk

This function provides an easy way to copy data from one hard drive to another.

To clone a disk:

1. You must first unmount your drives by pressing **SHIFT+MOUNT(UNMOUNT)** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU / MOUNT/UNMOUNT*** dialog and press the **ENTER** key.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DISK MENU / CLONE RADAR DISK*** dialog and press the **ENTER** key.
3. Use the right and left arrow keys to switch between the **SOURCE ID** and the **COPY ID** fields. Use the up and down arrows to select the desired SCSI ID for both the source and destination drives and press the **ENTER** key.
4. To clone a drive, select **YES** in the **SECTOR-BY-SECTOR COPY** dialog and press the **ENTER** key. Selecting **NO** will perform a file based disk copy.

> **!** **NOTE:** A sector-by-sector copy will copy the entire drive whether there is audio present or not. This may take a significant amount of time with large capacity hard drives. A file-based copy will duplicate the data and directory information to the new drive but will store the data in different physical sectors on the hard disk platters. This approach can be much faster for small amounts of data.

5. A final dialog will prompt **ARE YOU SURE?** Select **YES** and press the **ENTER** key to continue.

Disk Diagnostics

RADAR® has a variety of diagnostic tools to help you with trouble-shooting and configuration. If you are experiencing disk troubles, your first and best course of action is to call iZ Technical Support at 1-800-776-1356 or email us at support@izcorp.com.

NOTE: Repairing or altering a disk directory structure in any way may result in the loss of audio data! Many of the following functions should only be used under the guidance of iZ Technical Support. Exercise extreme caution when using them!

Scan SCSI Bus

The **SCAN SCSI BUS** menu item is not dangerous and will not alter your disk or data in any way. It simply displays all connected and recognized devices on the SCSI bus.

To scan the SCSI bus:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / SCAN SCSI BUS*** dialog and press the **ENTER** key.
2. Use the up and down arrow keys to view the list of detected devices.
3. Press the **MENU/PREV** or **CANCEL** keys to return to normal operation.

Check Disk

The **CHECK DISK** routine performs a check of the selected SCSI drive and reports any errors found in the file system including the FAT and directory structure of the disk. This function is safe and will not alter the data on the selected disk at all. The resulting report can be viewed in either the **Session Controller** or **RADARView™** displays and can also be output to a text file as a part of the debug file. See OPERATIONS: DISK DIAGNOSTICS: SAVE DEBUG for more details.

To check a SCSI disk:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CHECK DISK*** dialog and press the **ENTER** key.
2. Use the up and down arrow keys to select the SCSI ID that corresponds to the drive you wish to check and press the **ENTER** key.
3. Select **YES** to the **CHECK DISK X?** prompt and press the **ENTER** key.
4. The check will proceed. The disk will be un-mounted and re-mounted and a report will be generated and displayed in the **DISK ERRORS:** dialog. To view the details use the up and down arrow keys to scroll through the list. This information will be stored in the debug file that can be saved and sent to iZ technical support if required. See OPERATIONS: DISK DIAGNOSTICS: SAVE DEBUG for more details.
5. Press the **CANCEL** key to resume normal operation.

Repair Disk

The **REPAIR DISK** function will correct any inconsistencies that were found in the FAT and/or directory structure on the selected disk after using the **CHECK DISK** function. If you are experiencing trouble please call iZ Technical Support at 1-800-776-1356 or email us at support@izcorp.com before using this feature.

NOTE: Using this feature could result in audio data being lost so exercise caution!

To repair a SCSI disk:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / REPAIR DISK*** dialog and press the **ENTER** key.
2. Use the up and down arrow keys to select the SCSI ID that corresponds to the drive you wish to repair and press the **ENTER** key.
3. Select **YES** at the **REPAIR DISK X?** prompt if you are sure that you want to proceed and press the **ENTER** key.
4. The repair will proceed. The disk will be un-mounted and re-mounted and a report will be generated and displayed in the **DISK ERRORS:** dialog. To view the details use the up and down arrow keys to scroll through the list. This information will be stored in the debug file that can be saved and sent to iZ technical support if required. See OPERATIONS: DISK DIAGNOSTICS: SAVE DEBUG for more details.
5. Press the **CANCEL** key to resume normal operation.

Check Project

The check project function analyzes a selected RADAR® project and checks for play list errors.

To check a project for play list errors:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CHECK PROJECT*** dialog and press the **ENTER** key.
2. Use the up and down arrow keys to select the project you wish to check and press the **ENTER** key.
3. The resulting dialog will display the overall errors if any are found. Use the up and down arrows to scroll through the results for each individual track.
4. Press the **ENTER** or **CANCEL** key to resume normal operation.

Realtime Errors

There are several different types of realtime errors that can occur during recording and playback:

READ

Indicates that requested data was not retrieved from the disk.

WRITE

Indicates that data was not written successfully to the disk.

PLAY

Indicates that a playlist error occurred during playback.

RECORD

Indicates that a playlist error was experienced during recording.

486

Indicates that the host CPU is not responding fast enough. May indicate a large quantity of error messages.

ASSERT

Indicates that a condition expected to be true is found to be false while RADAR® is running. These Assert errors are stored in the debug file and can be of great help to iZ Technical Support while trying to diagnose a problem. See Operations: Disk Diagnostics: Save Debug for more details on saving the debug file.

The causes of these errors can vary greatly and if they are experienced they should be diagnosed immediately by iZ Technical Support staff. Critical errors will be indicated by a red flashing SMPTE counter in **RADARView™** and/or a flashing **!ERR!** message in the **Session Controller** display.

Verify Hard Disks

The **VERIFY DISKS** function does a check of all of the sectors on the selected hard disk(s). This diagnostic procedure can be very time consuming and **cannot be cancelled** so make sure you have lots of time for it to complete before your session starts!

To verify hard disks:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU /*** **VERIFY HARD DISKS** dialog and press the **ENTER** key.
2. Select **ALL** or the SCSI ID number of the connected disk you wish to verify using the up and down arrow keys and press the **ENTER** key to begin.
3. The changing sector address display and the percentage indicator on both the **Session Controller** and the **RADARView™** display will indicate this functions progress. Any errors will be displayed as they are encountered.

4. If one or more errors are detected during the verify this indicates that RADAR® is unable to read and/or write to one or more sectors of the hard drive. If you encounter errors, we recommend that you backup all the data on the defective drive and replace it with a new one. This will avoid any problems during a critical recording.
5. Press the **CANCEL** key to resume normal operation.

RADAR® Debug

RADAR® creates a new debug log every time it is turned on. This log contains a significant amount of user and system information and is very useful when diagnosing a (highly unlikely) problem with the RADAR®.

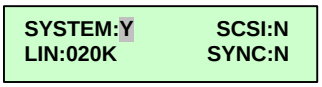
During the operation of the RADAR®, the debug log can be displayed in **RADARView™** by holding the **SHIFT** key down and pressing the **BACKSPACE** key. This will switch the waveform view to a text view displaying the debug lines. To scroll through the debug line by line, hold the **SHIFT** key down and press the up and down arrow keys. To scroll through the debug page by page, hold the **SHIFT** key down and press the **+** and **–** keys. Hold the **SHIFT** key down and then press the **BACKSPACE** key to return to the waveform view.

The debug file is also being written, updated and stored in the **DEBUG LOGS** folder on the internal system drive (**D:ARCHIVE**). If you need to retrieve a previous debug, the **DEBUG LOGS** folder contains the previous 99 debug logs with a date and time stamp in the name. You can use the **FILE MANAGEMENT BROWSE/COPY/PASTE** features to copy the appropriate debug file to floppy disk, CD-R, DVD-R, DVD-RAM or, if your RADAR® is connected via ethernet, to a computer/server. At which point you can then email the debug file to support@izcorp.com. Don't forget to include the necessary contact information and any details of the problem.

CONFIGURE DEBUG

The **CONFIGURE DEBUG** dialog allows you to filter the data that is output to the **DEBUG.OUT** file. Filtering is provided because without it the information you want to examine may be buried in a deluge of potentially unnecessary information that is logged during normal operation. SCSI data is the worst offender in this regard so only enable SCSI logging once you are sure you want to examine this information or on the recommendation of iZ technical support.

The available filtering options are:



SYSTEM – Include or exclude system data (recommended).

SCSI – Include or exclude SCSI data (lots of data!).

LIN:020K – Set the maximum number of lines in the debug file. The default setting is 20,000 lines.

SYNC – Include or exclude sync data (optional).

To configure the debug output:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CONFIGURE DEBUG*** dialog and press the **ENTER** key.
2. Use the right and left arrows to move between the fields and the up and down arrows to change the field's value. Selecting **Y** for a filtering field includes that data in the debug file output.
3. Press **ENTER** or **CANCEL** to resume normal operation.

SAVE DEBUG

There are two options available for saving a debug in osrder to email it to iZ Technical Support. The first option is via **SAVE DEBUG** under the **DIAGNOSITICS MENU**. This option saves the current debug file to a floppy disk. The second option requires the **FILE MANAGEMENT BROWSE/COPY/PASTE** functions to copy the current and/or previous 99 debug files from the **DEBUG LOGS** folder on the internal system drive (e.g., **D:ARCHIVE**) to floppy disk, CD-R, DVD-R, DVD-RAM (Archive or FAT32 formatted) or, if your RADAR® is connected via ethernet, to a computer/server.

To save the current debug file to floppy:

1. Insert a formatted 1.44 MB PC floppy disk in the floppy disk drive.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / DIAGNOSTICS MENU / SAVE DEBUG*** dialog and press the **ENTER** key.
3. Name the file using the QWERTY keyboard or the arrow keys or accept the default, **DEBUG.OUT**, file name and then press the **ENTER** key.
4. You may now transfer the floppy disk to your computer and email the debug file as an attachment to support@izcorp.com

To copy a previous debug file:

1. Hold the **SHIFT** key and press the letter **B** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and then press the **ENTER** key.
2. Use the up and down arrow keys to select **D:ARCHIVE** and then press the **ENTER** key.
3. Use the up and down arrow keys to navigate to the **DEBUG LOGS** folder and then press the **ENTER** key.
4. Use the arrow keys to navigate to and view the appropriate debug log you wish to copy and then hit the **COPY** key.
5. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+, –** and **ENTER** keys to navigate to the drive/directory you wish to paste to and then hit the **PASTE** key.

   If you are wanting to burn the debug log to a DVD-R or CD-R, **PASTE** the debug into a new folder at the **<ROOT DIRECTORY>** of the **D:ARCHIVE** drive and then use the **MAKE DVDCD IMAGE** and **BURN DATA CD/DVD** option under the file menu. Refer to the FILE MANAGEMENT: FILE MANAGER and FILE MANAGEMENT: BURN A DATA DVD-R/CD-R sections of this manual for further details.

Project Management

RADAR® uses projects as a way to manage audio recordings. You can store up to 999 projects depending on the available hard disk storage in your system. The way you use projects is up to you. Some like to think of a project as a song or performance. Others like to think of a project as a roll of tape. You decide.

NOTE: Since the **Session Controller** only has a 2-digit LED display for the project number, it will show the last two digits, or you can enable the **SCROLL PROJ LED** option in the **PREFERENCES** menu.

To set the **SCROLL PROJ LED** preference:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU / SCROLL PROJ LED*** selection and press the **ENTER** key.
2. At the **SCROLL PROJ LED** prompt, use the left and right arrow keys to select **3X** or **CONTINUOUS** and then press the **ENTER** key. **3X** will scroll a project number, 100 or higher, three times before remaining fixed on the last two digits and is the factory default.

Audio data can be freely copied and pasted between projects. This opens up a lot of creative possibilities, for example, a powerful implementation of *virtual* or *comp* tracks:

To create project based virtual tracks:

1. Create a stereo or mono sub-mix of the tracks in a project.
2. Copy and paste the sub-mixed tracks into a brand new project.
3. Record multiple takes of vocals, guitars or whatever using the sub-mix as a reference.
4. Edit together a comp (composite track) of all the best overdub performances.
5. Copy the composite track or tracks back into the original project.

IMPORTANT NOTE: Older versions of RADAR software are not able to access projects beyond 99. If you need to downgrade software, or use your audio drive on RADAR®II and RADAR®24 units running 3.26 or older software, you should first renumber all projects to a number less than 100. Higher number projects may be lost when using pre-3.30 software.

GoTo Project

To go to a new project:

1. Press the **GOTO PROJ** key on the **Session Controller**, the **GOTO PROJECT** key on the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / GOTO PROJECT*** menu item and press the **ENTER** key.
2. Select the project number you wish to go to using the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** and press the **ENTER** key.

New Project

To create a new project:

1. Press the **NEW PROJ** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / NEW PROJECT*** selection and press the **ENTER** key.
2. A new project will be created at the next available location. Type in a name for the new project and press the **ENTER** key. Change the sample rate and bit-depth of the project if required. See REFERENCE: PROJECT MENU for further information.

Copy Project

To copy a project:

1. Press the **COPY PROJ** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / COPY PROJECT*** selection and press the **ENTER** key.
2. At the **COPY PROJ XX TO XX?** prompt, name the file using the QWERTY keyboard or the arrow keys or accept the default file name and then press the **ENTER** key. If an identical project name already exists, the project name will automatically receive a version number at the end of the name (e.g., **SONG1 V-2**)

Delete Project

To delete a project:

1. Press the **DEL PROJ** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / DELETE PROJECT*** selection and press the **ENTER** key.
2. Select the project number of the project you wish to delete using the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** and press the **ENTER** key.
3. Choose **YES** at the **DEL PROJ?** prompt and press the **ENTER** key.

4. If you really want to do this then select **YES** at the **ARE YOU SURE?** prompt and press the **ENTER** key.

CAUTION: This function cannot be undone! Triple check that you have the necessary backups!

Name Project

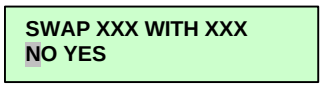
To name or rename a project:

1. Press the **NAME PROJ** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / NAME PROJECT*** selection and press the **ENTER** key.
2. Use numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** to select the project number you wish to rename.
3. Use the right arrow key to switch to the name field and type in a new name and press the **ENTER** key.

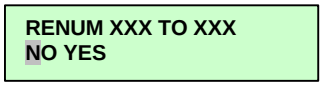
Renumber Project

To renumber a project:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / RENUMBER PROJECT*** selection and press the **ENTER** key.
2. Use the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** to select the new project number and press the **ENTER** key
   a. If the new project number is already used for an existing project you will get a prompt similar to the following:



   b. If the new project number is unused you will get this prompt:



3. Use the **N** / **Y** keys on the keyboard or the right and left arrow keys to make your selection and press the **ENTER** key.

I/O Management

RADAR® allows the input-track-output routing assignment to be user defined. Aside from the default routing of one to one, you may choose to route an input to a different track or multiple tracks, as well as routing a specific track to a different output. However, routing multiple inputs to one track or multiple tracks to an output is not an option yet as the internal mixing feature has yet to be added.

The I/O routing feature is saved on a per project basis so, as a result, the following menu options are also available through the ***PROJECT MENU.***

Input Routing

To assign a specific input to a track(s):

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / I/O MENU / IO ROUTING /*** **INPUT ROUTING** and press the **ENTER** key.
2. Use the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** to select the input (source) number.
3. Use the **TK ARM** key(s) to select the destination track(s) and then press the **ENTER** key.

NOTE1: Flashing Red on the **RADARView™** track and meter LEDs as well as the **Session Controller TK ARM** and **Meterbridge EDIT** indicators reveal the designated track for the current selected input.

NOTE2: Solid Red on the **RADARView™** track and meter LEDs as well as the **Session Controller TK ARM** and **Meterbridge EDIT** indicators signify that a track has a different source input than the default – 1:1.

NOTE3: You can override a previous track input routing designation simply by pressing the **TK ARM** key. This will reassign the track to the current selected input.

Output Routing

To assign a track to a specific output:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / I/O MENU / IO ROUTING /*** **OUTPUT ROUTING** and press the **ENTER** key.
2. Use the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** to select the track (source) number.
3. Use the **TK ARM** key(s) to select the destination output and then press the **ENTER** key.

NOTE1: Flashing Red on the **RADARView™** track and meter LEDs as well as the **Session Controller TK ARM** and **Meterbridge EDIT** indicators show the designated output for the current selected track.

NOTE2: Solid Red on the **RADARView™** track and meter LEDs as well as the **Session Controller TK ARM** and **Meterbridge EDIT** indicators illustrate that an output has a different source track than the default – 1:1.

NOTE3: You can override a previous track output routing designation simply by pressing the **TK ARM** key. This will reassign the output to the current selected track.

Reset Routing

To reset the I/O configuration back to the default – 1:1:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / I/O MENU / IO ROUTING /*** **RESET ROUTING** and press the **ENTER** key.
2. Use the left and right arrow keys to select **IN**, **OUT** or **BOTH** and then press the **ENTER** key.

Track Management

Each RADAR® project contains 24 discrete tracks for recording audio. Each track has its own user-defined input and output with the default set to 1:1. There is no need to assign voices or assign recording directories. In fact none of the track management chores required by digital audio workstations apply at all! RADAR® takes care of all the details so you can get your work done quickly and easily.

Naming Tracks

If you wish you can name your tracks when using the RADAR View display.

To name a track:

1. Press the **NAME TRACK** key or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PROJ MENU /*** **NAME TRACK** selection and hit the **ENTER** key.
2. Use the track arming keys or the up and down arrow keys to select a track.
3. Use the right or left arrow keys to move to the name field and type in a name using the keyboard and press the **ENTER** key.

File Management

File management is available to manage **BACKUP**, **RESTORE**, **EXPORT**, **IMPORT**, **MOVE**, **COPY**, **PASTE** and **ERASE** of files and projects.

File Compatibility

RADAR® uses a proprietary file format during the **BACKUP** of projects and therefore is NOT compatible with any third-party systems for the purpose of **RESTORE**.

RADAR® can **IMPORT** and **EXPORT** WAV, BroadcastWave and Red Book (CD-DA) files. BroadcastWave is an extension of the standard audio WAV file format in that additional information is embedded within the file such as the SMPTE time stamp. Red Book (CD-DA) is the Sony/Philips ECMA-130 standard that defines the CD Audio disc format.

Sample Rate/Bit Resolution Conversion

RADAR® incorporates sample rate and bit resolution conversion via reformat quality when importing files as well as exporting stereo cdaudio files. A **REFORMAT QUALITY** file preference enables a user to select the default conversion quality/speed. The three possible settings are **Q1**, **Q2** or **Q3**. **Q1** represents the fastest processing time and lowest quality conversion while **Q3** is the slowest and highest quality conversion. Regardless of the quality selected, dithering is always performed if bit reduction is required.

Backup

PREPARING TO BACKUP

If you need to know how long a backup will take or how much space it will use, you can choose to display either the backup time or the backup size in the ***PREFS MENU/ FILE PREFS/*** **SHOW SIZE** dialog. With this dialog activated, RADAR® will prompt just before it begins the backup in case you need to make adjustments for the backup to fit into the time or space available.

If you need to reduce the size or time required for a backup you can either clear the RADAR® undo list or group your projects in a set. The undo list must be cleared **before** you begin backing up your project to achieve a reduction in backup size. This undo list may still reference audio that you have deleted from your project. When you remove the undo list references to deleted audio, the RADAR® archiving engine will ignore it. This will save you back up time and disk space. If you're backing up several projects that share a lot of the same audio, you can also save space and time by backing them up as a set. This is actually a part of the backup sequence. By grouping projects as a set any shared audio is only backed up once instead of being copied fresh for each individual project. Follow the backup instructions later in this section for more details on grouping projects.

To reduce project size by clearing the undo list:

1. Make sure that you will **never** want to undo any records or edits on the material you are about to backup again!
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to select the ***MAIN MENU / PROJ MENU /*** **UNDO LEVEL** and press the **ENTER** key.
3. Use the up and down arrow keys to set the undo level to zero and press the **ENTER** key. This will instantly wipe out all undo information and reduce the project size accordingly.
4. Use the **MENU/PREV**, arrow keys and **ENTER** key to immediately reselect the ***MAIN MENU / PROJ MENU /*** **UNDO LEVEL** and press the **ENTER** key.
5. Use the up and down arrow keys to set the undo level back to your usual setting and press the **ENTER** key. This will make sure you have an undo when you really need one!

BACKING UP A PROJECT

RADAR® archives projects in a high performance, proprietary storage format on a variety of industry standard media types. Once archived, RADAR® projects must be restored on another RADAR® system with a similar backup device. Archive compatibility between RADAR® systems is as follows:

- 16-bit - 44.1 and 48 kHz RADAR® projects can be restored on RADAR®I, RADAR®II and RADAR®24 systems.
- 24-bit - 44.1 and 48 kHz RADAR® projects can be restored on RADAR® II and/or RADAR®24 systems.
- 24-bit – 96 kHz and 192 kHz RADAR® projects can be restored only on RADAR®24 systems.

For the greatest level of flexibility and compatibility you can have multiple backup devices connected to the RADAR® simultaneously. This allows you to restore from one format and archive to another if you need to. Follow the backup instructions below for details on choosing the current archival device.

To backup one or more projects:

1. Insert the archive media if necessary and press the **BACKUP** key on the **Session Controller** or **KC 24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **BACKUP** selection and hit the **ENTER** key.
2. Use the up and down arrow keys to select the device you wish to use for backup in the **BACKUP TO:** dialog and press the **ENTER** key. This list will include D:Archive (RADAR® internal system drive partition), network shares, B:DVD (DVD-RAM only!) and any SCSI backup devices connected to the RADAR®.
3. Select a destination folder in the **SELECT FOLDER** dialog using one of the following methods:
    a. Use the up and down arrow keys to select **<ROOT DIRECTORY>** and press the **ENTER** key.
    b. Use the up and down arrow keys to select an existing folder name and press the **ENTER** key.

c. Use the up and down arrow keys to select **<NEW FOLDER>** and press the **ENTER** key to create a new one. You will be presented with a **FOLDER NAME** dialog. Use the QWERTY keyboard to type in a name for your folder and press the **ENTER** key. You will be returned to the **SELECT FOLDER:** dialog with your new folder name as the current selection. Press the **ENTER** key to accept this folder as a destination.

IMPORTANT NOTE1: RADAR®II and older versions of RADAR® software CANNOT restore backups within folders on DVD-RAM, Magneto Optical and SCSI disks. If these backups need to be restored on a RADAR®II or RADAR®24 running older software, you should backup to the **<ROOT DIRECTORY>**.

IMPORTANT NOTE2: You must select **<ROOT DIRECTORY>** at the **SELECT FOLDER:** dialog within the **BACKUP** menu if you are using removeable media (DVD-RAM or Magneto Optical) and the backup size is larger then one side of the chosen media.

4. At the **BACKUP PROJ:** dialog, use the up and down arrow keys to select **ALL PROJECTS**, **CURRENT PROJECT** or **SELECTED PROJS** and press the **ENTER** key.

   If the **SELECTED PROJS** option is chosen, you can select the individual project or projects you wish to back up using the up and down arrow keys and the **+** and **–** keys on the numeric keypad. Pressing the + key adds the selected project to the archiving list and places a **+** sign to the right of its name. It also increments the number of selected projects in the upper right hand corner of the menu display. Pressing the **–** key removes the selected project from the archiving list and removes the **+** sign to the right of its name. It also decrements the number of selected projects in the upper right hand corner of the menu display.

5. When using either the **SELECTED PROJS** or **ALL PROJECTS** option you must also choose how the projects are organized within the backup.

   - Grouping archives by **PROJECT** means that each project will be backed up separately and can therefore be restored separately.
   - Grouping by **SET** means that all the projects you selected will be backed up as a data set. This will speed things up if you are backing up a number of projects that share a lot of audio, and it's also helpful to group projects that you want to restore as a set.

   At the **BACKUP GROUPING:** dialog, select **PROJECT** or **SET** and press the **ENTER** key.

6. When using the **SET** option you must also choose a name for your data set. At the **DATA SET NAME:** dialog, use the keyboard to enter a new name in the name field or accept the default name and press the **ENTER** key.

7. If you are backing up to a data tape, SCSI drive, MO or DVD, the **BACKUP MODE:** dialog will appear asking if you want to **APPEND** or **OVERWRITE**. **APPEND** will add your new backup data to the existing archive. **OVERWRITE** will erase existing archive data and replace it with the new backup. If you choose to **OVERWRITE** the **ERASE EXISTING TAPE?** or **ERASE EXISTING DISK?** prompt will appear just to make sure. This prompt will also appear with **APPEND** if the tape or DVD has been used for some other purpose e.g. if it was used as an export DVD. Use the left and right arrow keys to select **APPEND** or **OVERWRITE** from the **BACKUP MODE:** dialog and press the **ENTER** key.

IMPORTANT NOTE: When you see the ERASE EXISTING DISK? prompt it means that the disk that you have chosen for backup is formatted as an archive disk and may contain archived data. When you see the ERASE AUDIO DISK? prompt it means that the disk that you have chosen for backup is formatted as an audio drive and may contain audio data. When you see the ERASE EXPORT DISK? prompt it means that the disk that you have chosen for backup is formatted as an export drive and may contain BWF (Broadcast Wave) or .wav format files. Answer yes only if you are absolutely sure that you want to erase everything that is currently on the disk. The overwrite option will reformat the disk and there is no way to recover previous data once it has been done.

8. The **BACKUP TO DISK** dialog will appear while RADAR® processes the files. Next, a confirmation dialog displaying either the backup time required or the size of the export in megabytes may appear asking if you wish to proceed. This estimate is based on the typical throughput of the backup device you chose. As the backup progresses, RADAR® monitors the actual throughput and continuously updates the time and the number of megabytes remaining. If you choose yes the backup will proceed. When it is finished the **BACKUP COMPLETE PRESS ANY BUTTON** dialog will appear. Press any key to dismiss the dialog and return to normal operation.

NOTE: You may cancel a backup at any time by pressing the **CANCEL** key.

Restore

Restoring projects from DVD-RAM, DVD-R, CD-R, tape, IDE/SCSI disk or the network couldn't be easier.

IMPORTANT NOTE: MAKE SURE THAT THE DVD-R OR CD-R YOU WISH TO RESTORE FROM HAS BEEN WRITTEN AS AN ISO 9660 FORMAT!

To restore a RADAR® project :

1. Press the **RESTORE** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / RESTORE*** selection and press the **ENTER** key.
2. At the **RESTORE FROM:** dialog, use the up and down arrow keys to select the device you wish to restore from and press the **ENTER** key. This list will include D:Archive (RADAR® internal system drive partition), network shares, B:DVD (DVD-RAM, DVD-R or CD-R) and any SCSI backup devices connected to the RADAR®.
3. Use the up and down arrow keys to select the folder containing the backup(s) you want to restore and press the **ENTER** key.
4. Use the arrow keys to select **ALL** or **SELECTED** from the restore menu and press the **ENTER** key.
5. If the **SELECTED** option is currently selected you can use the up and down arrow keys in conjunction with the **+** and **–** keys on the numeric keypad to add or remove individual projects from the restore list.
6. Press the **ENTER** key. If the restore cannot fit into the remaining disk space, the **HARD DRIVE FULL** prompt will alert you.

7. When the restore is complete the display will read **RESTORE COMPLETE PRESS ANY BUTTON**.

NOTE: You may cancel a restore at any time by pressing the **CANCEL** key. If you cancel when a project is partially restored you have the option to **SALVAGE PARTIAL PROJECT.** If you choose **NO**, RADAR will automatically reclaim the disk space.

Export

RADAR® has the capability of exporting Wave, Broadcast Wave or Red Book (CD Audio) files or pieces of files (clips) to a variety of destinations. These include D:Archive (RADAR® internal system drive partition), a shared folder on a network, DVD-RAM, DVD-R, CD-R, floppy disk, HFS (Mac OS Standard) and FAT 32 formatted drives.

If you are wanting to create a Red Book audio CD you can choose to **EXPORT** directly to the CD as a one-time burn or you can choose to **FINALIZE** later consequently allowing you to add additional tracks over time before closing (finalizing) the CD. Another option you have is to **EXPORT STEREO CDAUDIO** files to a folder on the internal IDE system drive (e.g., **D:ARCHIVE**). You can then use this folder of **CDAUDIO** files as the source for burning and finalizing an audio CD.

Exporting for the purpose of creating an audio CD requires you to select **STEREO** as your export format in order to access the **CDAUDIO** option. Also, if the project you are exporting from has a sample rate and/or bit resolution other than 16 bit/44.1kHz, you will be able to select a **RESAMPLE QUALITY**. The three **Q** settings determine the speed and quality of the conversion with **Q3** representing the slowest speed but highest quality.

There are two ways to initiate a file export from the RADAR®:

- Using the **EXPORT MENU**, which is available using both the **Session Controller** and the **KC-24**.
- Using the **FILE EXPORT** or **CLIP EXPORT** keys on the **Session Controller**.

To export one or more files (tracks):

1. First, you must have the project you want to export from as your current project. Use the **GOTO PROJECT** key to load the project.
2. Press the File export key or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **EXPORT** selection and press the **ENTER** key.
3. At the **EXPORT:** dialog, use the left and right arrow keys to select **MONO** or **STEREO** and press the **ENTER** key.

4. At the **FILE FORMAT:** dialog, use the left and right arrow keys to select **WAV**, **BWAV** or **CDAUDIO** (**CDAUDIO** will only be available if **STEREO** was selected in the previous step) and press the **ENTER** key.

   If you find you are always using **WAV** or **BWAV** when you export, you can set the **FILE FORMAT** preference to avoid this prompt each time you export.

   To set the file format preference:

   a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT FORMAT** selection and press the **ENTER** key.

   b. At the **FILE FORMAT:** prompt, use the left and right arrow keys to select **WAV** or **BWAV** and then press the **ENTER** key. The factory default setting is **ASK**.

5. If you selected **WAV** or **BWAV**, skip to step 7.

6. If you selected **CDAUDIO** and your project sample rate and/or bit resolution is **NOT** 16 bit/44.1kHz, you'll be prompted with a **REFORMAT QUALITY** dialog. Use the left and right arrow keys to select **Q1**, **Q2** or **Q3** and press the **ENTER** key.

   To set the **REFORMAT QUALITY** preference:

   a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **REFORMAT QUALITY** selection and press the **ENTER** key.

   b. Use the left and right arrow keys to select **Q1**, **Q2** or **Q3** and then press the **ENTER** key. The factory default setting is **Q3**.

NOTE: **Q3** represents the slowest speed but highest quality.

6. At the **EXPORT TO:** dialog, use the up and down arrow keys to select the device you wish to export to and press the **ENTER** key. This list will include D:Archive (RADAR® internal system drive partition), network shares, B:DVD (DVD-RAM, DVD-R or CD-R) and any Fat32 or HFS Standard formatted SCSI drives connected to the RADAR® SCSI bus.

IMPORTANT NOTE: If you are exporting to DVD-RAM, you must have the disk initialized for FAT32! Any other DVD-RAM format will produce an **INVALID DISK FORMAT** prompt once you attempt to export to it!

If you select **B:DVD BLANK DISK**, proceed to step 9.

8. Use one of the following methods to select a destination folder in the **SELECT FOLDER:** dialog:

   a. Use the up and down arrow keys to select an existing folder name and press the **ENTER** key.

   b. Select **NEW FOLDER** and press the **ENTER** key to create a new one. You will be presented with a **FOLDER NAME** dialog. Type in a name for your folder and press the **ENTER** key. You will be returned to the **SELECT FOLDER** dialog with your new folder name as the current selection. Press the **ENTER** key to accept this folder as a destination.

   You can create a folder within a folder by following these steps:

   - At any **SELECT FOLDER:** dialog, select **<NEW FOLDER>** and press the enter key.
   - You will be presented with a Folder name: dialog. Type in a name for your folder (e.g., **EXPORTS**) and press the **ENTER** key.
   - You will be returned to the **SELECT FOLDER:** dialog with your new folder name as the current selection. Using the previous example, the display would look like this:

     SELECT FOLDER:
     EXPORTS/

   - Use the **+** key to access the next level of folders. This will put you inside the new folder you just created.
   - Repeat the previous four steps. For example, if your second new folder was Song 1, the display would look like this:

     SELECT FOLDER:
     SONG 1/

   - Press the left arrow key to display the complete **SELECT FOLDER:** directory. Using the previous examples, the display would look like this:

     SELECT FOLDER:
     EXPORTS/SONG 1/

9. At the **TIME RANGE:** prompt, use the right and left arrow keys to select either **ALL** or **MARK IN/OUT** and press the **ENTER** key. Selecting **ALL** selects the entire project from the project start time to the end of recorded audio. **MARK IN/OUT** uses the **MARK IN** and **MARK OUT** location markers to select a range of audio for export.

   If you are exporting for the purpose of burning an audio CD, proceed to step 11.

10. Select a **FILL SILENCE** option. **FILL SILENCE** is a method that allows a track with gaps (blank spaces between recorded sections) to be exported as a single file. This is accomplished by filling the gaps with zero data thus creating a file that spans the length of the current project. This increases conversion and transfer time but it reduces effort when the files are imported in a DAW application as there will only be one file per track to *spot* to a start time. Most workstations have a *strip silence* option that can be used to remove any unwanted silence between recordings. If you choose **NO** for the **FILL SILENCE** option, the directory will contain the individual recording files ordered by track and start time. Once you've made your selection press the **ENTER** key.

    You can avoid the fill silence option by setting the preference to **NO** or **YES** depending on which option is more appropriate for your needs.

    To set the **FILL SILENCE** preference:

    a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT SILENCE** selection and press the **ENTER** key.

    b. At the **FILL SILENCE** prompt, use the left and right arrow keys to select **NO** or yes and then press the **ENTER** key. The factory default setting is **ASK**.

11. At the **EXPORT: TRACKS** dialog, select the tracks you wish to export using **TRACK ARM** keys 1 through 24 or choose the **ALL** option and then press the **ENTER** key.

    If you are exporting a stereo file for the purpose of burning an audio CD, use the **EXPORT:TRACKS LEFT:00 RIGHT:00** dialog to define the two tracks you'd like to use to create the stereo [interleaved] audio track. If you want to burn a mono track, select the same track for both left and right. Once you've finished selecting the track(s), press the **ENTER** key.

    If you are exporting for the purpose of burning an audio CD, proceed to step 13.

12. The **EXPORT TO DISK** dialog will appear while RADAR® marks the files. Next, a confirmation dialog displaying the size or estimated time of the export may appear asking if you wish to proceed, depending on the **SHOW SIZE** setting in the **FILE PREFS** menu. Select **YES** and press the **ENTER** key to proceed.

    To set the **SHOW SIZE** preference:

    a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **SHOW SIZE** selection and press the **ENTER** key.

    b. Use the left and right arrow keys to select **OFF**, **MBYTES** or **TIME** and then press the **ENTER** key. The factory default setting is **MBYTES**.

13. The final stages of the **CDAUDIO** export will contain the following:
    a. If you are burning directly to the CD, you will arrive at the **FINALIZE CD** dialog. If you choose to finalize now, you will **NOT** be able to add additional tracks at a later time! Use the left and right arrow keys to select **NO** or **YES** and then press the **ENTER** key.
    b. If you are exporting to a folder/directory for the purpose of burning an audio CD at a later time, you'll arrive at the **FILE NAME:** dialog. Use the keyboard to type in a name and then press the **ENTER** key. The default file name given consists of **PROJECT NAME-STEREO.WAV**. For example: **THE DRUDDS-STEREO.WAV**.
    If the same file name exists within the folder/directory, the **OVERWRITE FILE? NO YES** dialog will appear. If you select **NO**, you'll be returned to the **FILE NAME:** dialog where you can then change the name in order to export the file. If you select **YES**, the previous file will be overwritten and you will **NOT** be able to recover that file!

NOTE 1: You can finalize (close) the CD at any time by using the **FINALIZE CD** option within the **FILE MENU**.

NOTE 2: Anytime you attempt to **BROWSE:** or **EXPORT TO:** a CD that hasn't been finalized but has had one or more tracks burned to it the display will indicate **B:DVD OPEN CD**.

NOTE 3: Once CD burn begins the procedure becomes a background task and cannot be canceled! However, you are now free to use the RADAR® for record/playback/edit.

14. The export is complete once the **EXPORT COMPLETE PRESS ANY BUTTON** dialog appears or CD burn is finished. If you chose to finalize CD, the CD will eject once the burn completes. If you didn't choose to finalize the CD, the CD will remain in the drive.

NOTE: You may cancel a folder/directory export at any time by pressing the **CANCEL** key.

Clip Export

This feature is only available via the **Session Controller** and was designed to create a more efficient process for those who are exporting quite often while working within one project. For example, during the comp of a lead vocal where pitch correction is being added via third-party software on a different workstation. After completing the first export, each subsequent clip export will bypass the **FILE FORMAT:**, **EXPORT TO:** and **SELECT FOLDER:** dialogs thereby eliminating redundant parameter selections.

To export a clip (region) of audio:

1. Press the **CLIP EXPORT** key on the **Session Controller**. If this is your first export since powering up your RADAR®, proceed to step 2 otherwise, skip ahead to step 5.
2. At the **FILE FORMAT:** dialog, use the left and right arrow keys to select **WAV**, **BWAV** or **CDAUDIO** and press the **ENTER** key.

   If you find you are always using **WAV** or **BWAV** when you export, you can set the **FILE FORMAT** preference to avoid this prompt each time you export.

   To set the **FILE FORMAT** preference:

   a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT FORMAT** selection and press the **ENTER** key.

   b. At the **FILE FORMAT:** prompt, use the left and right arrow keys to select **WAV** or **BWAV** and then press the **ENTER** key. The factory default setting is ask.
3. At the **EXPORT TO:** dialog, use the up and down arrow keys to select the device you wish to export to and press the **ENTER** key. This list will include D:Archive (RADAR® internal system drive partition), network shares, B:DVD (DVD-RAM, DVD-R or CD-R) and any Fat32 or HFS Standard formatted SCSI drives connected to the RADAR® SCSI bus.

   IMPORTANT NOTE: If you are exporting to DVD-RAM, you must have the disk initialized for FAT32! Any other DVD-RAM format will produce an **INVALID DISK FORMAT** prompt once you attempt to export to it!

   If you select **B:DVD BLANK DISK**, proceed to step 5.
4. Use one of the following methods to select a destination folder in the **SELECT FOLDER:** dialog:

   a. Use the up and down arrow keys to select an existing folder name and press the **ENTER** key.

b. Select **NEW FOLDER** and press the **ENTER** key to create a new one. You will be presented with a **FOLDER NAME** dialog. Type in a name for your folder and press the **ENTER** key. You will be returned to the **SELECT FOLDER** dialog with your new folder name as the current selection. Press the **ENTER** key to accept this folder as a destination.
5. Select a **FILL SILENCE** option. **FILL SILENCE** is a method that allows a track with gaps (blank spaces between recorded sections) to be exported as a single file. This is accomplished by filling the gaps with zero data thus creating a file that spans the length of the current project. This increases conversion and transfer time but it reduces effort when the files are imported in a DAW application as there will only be one file per track to *spot* to a start time. Most workstations have a *strip silence* option that can be used to remove any unwanted silence between recordings. If you choose **NO** for the **FILL SILENCE** option, the directory will contain the individual recording files ordered by track and start time. Once you've made your selection press the **ENTER** key.

You can avoid the fill silence option by setting the preference to **NO** or **YES** depending on which option is more appropriate for your needs.

To set the **FILL SILENCE** preference:

a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT SILENCE** selection and press the **ENTER** key.

b. At the **FILL SILENCE** prompt, use the left and right arrow keys to select **NO** or **YES** and then press the **ENTER** key. The factory default setting is **ASK**.

6. At the **EXPORT: TRACKS** dialog, select the tracks you wish to export using **TRACK ARM** keys 1 through 24 or choose the **ALL** option and then press the **ENTER** key.

7. The **EXPORT TO DISK** dialog will appear while RADAR® marks the files. Next, a confirmation dialog displaying the size or estimated time of the export may appear asking if you wish to proceed, depending on the **SHOW SIZE** setting in the **FILE PREFS** menu. Select **YES** and press the **ENTER** key to proceed.

   To set the **SHOW SIZE** preference:

   a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **SHOW SIZE** selection and press the **ENTER** key.

   b. Use the left and right arrow keys to select **OFF**, **MBYTES** or **TIME** and then press the **ENTER** key. The factory default setting is **MBYTES**.

8. The export is complete once the **EXPORT COMPLETE PRESS ANY BUTTON** dialog appears or CD burn is finished.

Import

RADAR® has the capability of importing Wave and/or Broadcast Wave files into the current project or into a new project from a variety of devices. These devices include D:Archive (RADAR® internal IDE system drive), network shares, DVD-R, CD-R, Red Book audio CD, Fat 32 formatted DVD-RAM and any Mac HFS or FAT 32 drives internally and/or externally connected to the RADAR® SCSI bus.

If your project sample rate and bit resolution does **NOT** match the incoming file(s), you have the option to convert the audio to the bit depth and sample rate of the current project based on the **REFORMAT QUALITY** setting under the **FILE PREFS**. If your project sample rate and bit resolution match the incoming file(s) you won't be required to reformat.

There are two ways to initiate a file import from the RADAR®:

- Using the ***MAIN MENU / FILE MENU / IMPORT***, which can be accessed using both the **Session Controller** and the **KC-24**.
- Using the **FILE IMPORT** or **CLIP IMPORT** keys on the **Session Controller**.

IMPORTANT NOTE: MAKE SURE THAT THE DVD-R OR CD-R YOU WISH TO IMPORT FROM HAS BEEN WRITTEN AS AN ISO 9660 FORMAT!

To import audio into a new project:

1. Press the **FILE IMPORT** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / IMPORT*** selection and press the **ENTER** key.
2. At the **IMPORT FROM:** dialog, use the up and down arrow keys to select the device you wish to import from and press the **ENTER** key.
3. At the **SELECT FOLDER:** dialog, use the up and down arrow keys to locate the folder or **<ROOT DIRECTORY>** you wish to import from. Move in and out of a folder/directory using the + and – keys. Press the **ENTER** key to select the folder/directory you wish to import from.

NOTE: When importing from a Red Book audio CD, you'll discover two folders in the list to choose from, **CDDA** and **WAV**. Select the **WAV** folder.

4. If you used the **FILE IMPORT** key on the **Session Controller**, skip to step 6.
5. If you started this import by selecting **IMPORT** from the **FILE MENU**, use the arrow keys to select **PROJECT** from the **IMPORT TO:** dialog and press the **ENTER** key.
6. Use the up and down arrow keys to select either **ALL FILES** or **SELECTED FILES** from the **IMPORT FILES:** dialog and press the **ENTER** key.

7. When using either the **ALL FILES** or **SELECTED FILES** option you will be presented with one of the following dialogs (the numbers and file names used are strictly for example):

PCM 48/24 FORMAT **REFORMAT ACCEPT**	This prompt will follow the **ALL FILES** selection provided every file contains the same sample rate/bit resolution format.
MULTIPLE FORMATS **REFORMAT VIEW**	This prompt will follow the **ALL FILES** selection when the folder/directory contains varying sample rate/bit resolution formats.
PCM 48/24 TRK: **T01-KICK-00H01M32S2**	This prompt will follow the **SELECTED FILES** selection from step 6 as well as the **VIEW** selection from the **MULTIPLE FORMATS** prompt.

PCM 48/24 indicates the format (PCM stands for Pulse Code Modulation), sample rate and bit resolution for the files found in the selected directory. When scrolling through a list of files, the **??? FORMAT** will be displayed if one or more of the parameters aren't compatible.

REFORMAT allows you to define a new sample rate and bit resolution along with the conversion quality to be used during the import process.

Note: you are importing into a new project thus you are in essence defining the sample rate and bit resolution for the new project!

ACCEPT will import the file(s) into a new project using the original file(s) sample rate/bit resolution to define the project settings.

VIEW will allow you to scroll through the list of files you've selected for importing and deselect any file(s) that isn't appropriate for the current import.

a. Use the arrow keys to select **REFORMAT**, **ACCEPT** or **VIEW** and then press the **ENTER** key.

b. Use the up and down arrow keys in conjunction with the **+** and **-** keys, or the **MARK IN** and **MARK OUT** keys, to add or remove individual files from the **PCM ??/?? TRK:** dialog. The **TRACK ARM** keys 1 through 24 may also be used to select which track the file will import to. Once you've finished making your selection(s) press the **ENTER** key.

NOTE: When importing stereo files RADAR® will split the file into two mono files to be placed on two adjacent RADAR® tracks.

7. The **IMPORT** dialog will appear while RADAR® processes the files. When the operation is finished the **MAKING WAVES** dialog will appear while RADAR® processes the waveform files. When it is finished the **IMPORT COMPLETE** dialog will appear. Press any key to dismiss the dialog and return to normal operation.

NOTE: You may cancel an import at any time by pressing the **CANCEL** key.

To import audio into an existing project:

1. Press **SHIFT+CLIP EXPORT(IMPORT)** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / IMPORT*** selection.
2. At the **IMPORT FROM:** dialog, use the up and down arrow keys to select the device you wish to import from and press the **ENTER** key.
3. At the **SELECT FOLDER:** dialog, use the up and down arrow keys to locate the folder or **<ROOT DIRECTORY>** you wish to import from. Move in and out of a folder/directory using the **+** and **–** keys. Press the **ENTER** key to select the folder/directory you wish to import from.
4. If you used the **SHIFT+CLIP EXPORT(IMPORT)** key on the **SESSION CONTROLLER**, skip to step 6.
5. If you started this import by selecting **IMPORT** from the **FILE MENU**, use the arrow keys to select **CLIP** from the **IMPORT TO:** dialog and press the **ENTER** key.
6. Use the up and down arrow keys to select either **ALL FILES** or **SELECTED FILES** from the **IMPORT FILES:** dialog and press the **ENTER** key.
7. When using either the **ALL FILES** or **SELECTED FILES** option you will be presented with one of the following dialogs (the numbers and file names used are strictly for example):

PCM 48/24 FORMAT REFORMAT ACCEPT	This prompt will follow the **ALL FILES** selection provided every file contains the same sample rate/bit resolution format.
MULTIPLE FORMATS REFORMAT VIEW	This prompt will follow the **ALL FILES** selection when the folder/directory contains varying sample rate/bit resolution formats.
PCM 48/24 TRK: T01-KICK-0H01M32S2	This prompt will follow the **SELECTED FILES** selection from step 6 as well as the **VIEW** selection from the **MULTIPLE FORMATS** prompt.

PCM 48/24 indicates the format (PCM stands for Pulse Code Modulation), sample rate and bit resolution for the files found in the selected directory. When scrolling through a list of files, the **??? FORMAT** will be displayed if one or more of the parameters aren't compatible.

REFORMAT allows you to define a new sample rate and bit resolution along with the conversion quality to be used during the import process.

ACCEPT will import the file(s) into a new project using the original file(s) sample rate/bit resolution to define the project settings.

VIEW will allow you to scroll through the list of files you've selected for importing and deselect any file(s) that isn't appropriate for the current import.

CAUTION: You are importing to an existing project so you must select the sample rate and bit resolution that matches the current project!

a. Use the arrow keys to select **REFORMAT**, **ACCEPT** or **VIEW** and then press the **ENTER** key.

b. Use the up and down arrow keys in conjunction with the **+** and **-** keys, or the **MARK IN** and **MARK OUT** keys, to add or remove individual files from the **PCM ??/?? TRK:** dialog. The **TRACK ARM** keys 1 through 24 may also be used to select which track the file will import to. Once you've finished making your selection(s) press the **ENTER** key.

NOTE: When importing stereo files RADAR® will split the file into two mono files to be placed on two adjacent RADAR® tracks.

7. The **IMPORT** dialog will appear while RADAR® processes the files. When the operation is finished the **MAKING WAVES** dialog will appear while RADAR® processes the waveform files. When it is finished the **IMPORT COMPLETE** dialog will appear. Press any key to dismiss the dialog and return to normal operation. All of the imported files will be placed into the clipboard of the current project.

NOTE: When importing BWF(Broadcast Wave) format audio to the clipboard, if all the files are the same length and time stamp you may paste to the original time using the **ORIGINAL TIME PASTE** function. For more detailed information on using this feature see OPERATION: EDITING: EDITING FUNCTIONS: PASTE.

File Manager

The **FILE MANAGEMENT** section of the **FILE MENU** has been created to give you extensive control over files on all drives connected to your RADAR®. In addition, you can **COPY**, **MOVE** and **PASTE** files from one drive to another*. For example, you can backup to the internal system drive and later, use the **COPY** and **PASTE** features to create a second copy of the backup on an Archive-formatted DVD-RAM disk.

* Some restrictions apply. Use the File Management Quick Chart provided to determine specific drive capabilities.

Let's begin at viewing and navigating around the various drives and directories.

To browse files and folders:

1. Hold the **SHIFT** key and press the letter **B** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and hit the **ENTER** key.

2. Use the up and down arrow keys to select the drive you wish to browse and hit the **ENTER** key.

NOTE: As you scroll through the list of drives, the size of the disk (if available) will be displayed. For example:

```
BROWSE:    4.3 GB
B:DVD    !ARCHIVE!
```

3. Use the up and down arrow keys to select the folder you wish to browse and hit the **ENTER** or **+** key. Use the **MENU/PREV** or **–** key to go to the previous directory level.

NOTE 1: If a folder name is shown, it will be followed by a / and **#=MB** will appear. This means you can press the # key on the **Session Controller** or **KC-24** to calculate the size of the folder (this may take several seconds). Pressing the # key a second time will indicate the number of files in the folder. If a file name is shown, the size will automatically be displayed. If the file contains wav or bwav PCM audio, then pressing the # key will display the format, sample rate and bit resolution. The size will be remembered until you exit the main menu in case you wish to scroll back to that folder or file.

NOTE 2: Use the right and left arrow keys to view names that are too long to fit in the **Session Controller** LCD display and/or the menu window of **RADARView™**.

NOTE 3: RADAR®'s proprietary file system creates DSET folders when backing up hence "e.g., **DSET00**" will appear along with the project name or data set name of the backup.
For example, a backup of an unnamed project would appear as:

```
BROWSE D:    #=MB
DSET00:UNTITLED/
```

4. Once you are at the file level (lowest directory), the following will be evident:
   a. The keyboard and numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** will browse the individual file(s).
   b. Pressing the **ENTER** key or **+** key will return a **NO MORE LEVELS, PRESS ANY BUTTON** prompt.

NOTE: Pressing the **SPACE BAR** on the **Session Controller** or the **SPACE** key on the **KC-24** will indicate space available on the current drive.

To copy and paste files and/or folders:

1. Hold the **SHIFT** key and press the letter **B** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and hit the **ENTER** key.
2. Use the up and down arrow keys to select the drive you wish to browse (copy from) and hit the **ENTER** key.
3. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+**, **–**and **ENTER** keys to navigate to the file or folder you wish to copy and then hit the **COPY** key. The top right corner of the **Session Controller** LCD and/or menu window of the **RADARView™** display will specify the size. The **+** symbol indicates that it has been selected. For example:

4. To add additional files and/or folders to the copy list, navigate to the file and/or folder and hit the **COPY** key. The additional files and/or folders **must** reside within the current directory!

NOTE: Pressing the **#** key on the **Session Controller** or **KC-24** will toggle between the following:

a) number of files and size of the current folder or, file format, sample rate and bit resolution of the current file
b) number of files/folders and size of the current copy selection(s)

5. When you have finished selecting the file(s) and/or folder(s) you wish to copy, press the **ENTER** key to complete the process. This will transfer the items to a clipboard at which point you'll see the number of files and size along with the prompt browse to paste before returning you to the browse display.

NOTE: If you've selected only one folder with one file inside to copy, the display will indicate **2 FLS** at the **PROCEED?** dialog since you're copying the folder and the file within.

6. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+, –** and **ENTER** keys to navigate to the drive/directory you wish to paste to and then hit the **PASTE** key.

7. You will then see a confirmation prompt demonstrating the number of files/folders and the total size. Use the arrow keys to select **YES** and then press the **ENTER** key to proceed. For example:

NOTE: The display shows the drive that the file(s) are being copied from and to. For example, if you are copying from D:Archive to a DVD-RAM, the display would show **COPY FILES D -> B.**

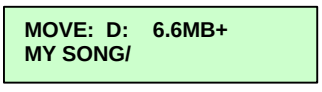
This process does not remove the file(s) and/or folder(s) from their original location. You can still paste them to another location if you wish. The files will remain on the copy clipboard until you either select a different file/folder to copy or shutdown your RADAR®.

To move files and/or folders:

1. Hold the **SHIFT** key and press the letter **B** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and hit the **ENTER** key.

2. Use the up and down arrow keys to select the drive that contains the file(s) and/or folder(s) you wish to move and hit the **ENTER** key.

3. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+, –** and **ENTER** keys to navigate to the file or folder you wish to move and then hit the **MOVE** key. The top right corner of the **Session Controller** LCD and/or menu window of the **RADARView™** display will specify the size. The **+** symbol indicates that it has been selected. For example:



4. To add additional files and/or folders to the move list, navigate to the file and/or folder and hit the **MOVE** key. The additional files and/or folders **must** reside within the current directory!

NOTE: Pressing the # key on the **Session Controller** or **KC-24** will toggle between the following:

a) number of files and size of the current folder or, file format, sample rate and bit resolution of the current file

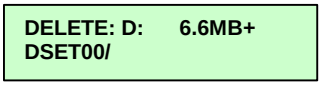
b) number of files and size of the current copy selection(s)

5. When you have finished selecting the file(s) and/or folder(s) you wish to move, press the **ENTER** key to complete the process. This will transfer the items to a clipboard at which point you'll see the number of files and size along with the prompt **BROWSE TO PASTE** before returning you to the browse display.
6. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+, –** and **ENTER** keys to navigate to the drive/directory you wish to move to and then hit the **PASTE** key.
7. You will then see a confirmation prompt demonstrating the number of files/folders and the total size. Use the arrow keys to select **YES** and then press the **ENTER** key to proceed. This completes the move process. For example:

NOTE: This process **removes** the file(s) and/or folder(s) from their original location!

To delete files and/or folders:

1. Hold the **SHIFT** key and press the letter **B** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and hit the **ENTER** key.
2. Use the up and down arrow keys to select the drive that contains the file(s) and/or folder(s) you wish to delete and hit the **ENTER** key.
3. Use the keyboard and numeric keys, up and down arrow keys, **Jog/Shuttle wheel** as well as the **+**, **–** and **ENTER** keys to navigate to the file or folder you wish to delete and then hit the **ERASE** key. The top right corner of the **Session Controller** LCD and/or menu window of the **RADARView™** display will specify the size. The **+** symbol indicates that it has been selected. For example:



4. To add additional files and/or folders to the erase list, navigate to the file and/or folder and hit the **ERASE** key. The additional files and/or folders **must** reside within the current directory!
5. When you have finished selecting the file(s) and/or folder(s) you wish to erase, press the **ENTER** key.
6. You will then see a confirmation prompt demonstrating the number of files/folders and the total size. Use the arrow keys to select **YES** and then press the **ENTER** key to proceed. For example:

1 FLS/108MB PROCEED? NO YES	**PRESS ENTER =**	CANNOT BE UNDONE proceed? No Yes

7. The next prompt warns you that this process cannot be undone! Once you've double checked, better yet, triple checked the file(s) and/or folder(s) you've selected to erase are ok to be destroyed i.e. gone forever (is the point clear yet?), use the arrow keys to select **YES** and then press the **ENTER** key to proceed.
8. The process is complete once the display reads:

XX ITEM(S) DELETED PRESS ANY BUTTON

NOTE: The deletion **cannot** be undone!

There is no way to recover file(s) and/or folder(s) once they have been erased!

File Management Functions Quick Chart

		RADAR FEATURES							
Disk Type/Format		**BACKUP TO**	**RESTORE FROM**	**IMPORT FROM**	**EXPORT TO**	**DELETE**	**COPY**	**PASTE**	**MOVE**
RADAR Initialized HDD									
	AUDIO						•		
	ARCHIVE	[1]•	[1]•	•		•	•	•	•
	FAT 32			•	•	•	•	•	•
	HFS Standard			•	•	•	•	•	•
DVD-RAM									
	AUDIO						•		
	ARCHIVE	[1, 2]•	[1, 2]•	•		•	•	•	•
	FAT 32			•	•	•	•	•	•
	[3] **HFS Standard**			•					
ISO 9660 DVD-R & CD-R			•	•	•		•		
FLOPPY		•	•	•	•	•	•	•	•
D: ARCHIVE		•	•	•	•	•	•	•	•
Be VOLUME		•	•	•	•	•	•	•	•

[1]If there's a potential that a restore will occur on a RADAR®II or RADAR®24 with 3.26 or older software, you must backup to the **<ROOT DIRECTORY>**. DO NOT backup within a folder!

[2]You must select **<ROOT DIRECTORY>** at the **SELECT FOLDER:** dialog within the **BACKUP** menu if the backup size is larger then one side of a DVD-RAM disk.

[3]The DVD-RAM HFS Standard format will only be recognized in conjunction with the multi drive.

Burn a Data CD-R/DVD-R

This feature has been added in order to allow the user the ability to burn backups and/or exports that have been stored on the internal system drive (e.g., D:Archive) to a DVD-R or CD-R. You must have the multi drive installed in your RADAR® in order to make use of this feature!

IMPORTANT NOTE: MAKE SURE THAT YOU PLACE ALL PROJECTS/FILES YOU WANT TO BURN INTO THE SAME FOLDER ON THE INTERNAL HARD DRIVE!

To burn backups and/or exports to DVD-R or CD-R:

Backup and/or export projects/files to the internal system drive (e.g., **D:ARCHIVE**). Refer to the OPERATIONS: FILE MANAGEMENT: BACKUP AND/OR EXPORT sections of the manual for the specific steps.

NOTE: If your internal system drive is <80 GB, you'll backup and/or export to the **C:RADAR24BE** selection. If your internal system drive is 80 GB or larger, you'll backup and/or export to the **D:ARCHIVE** selection.

2. Create the ISO image file for burning.
    a. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **MAKE DVDCD IMAGE** and press the **ENTER** key.
    b. Use the up and down arrow keys and the **+** and **–** keys to navigate to the folder that contains the backup and/or export file(s) and press the **ENTER** key.
    c. At the **XX MB CONTINUE? NO YES** prompt, confirm that the image MB size will fit your destination DVD-R or CD-R and then select **YES** and press the **ENTER** key. If the image file is too large, you can use the **FILE MANAGEMENT BROWSE:** feature along with **CUT**, **COPY**, **MOVE** and/or **PASTE** in order to create a folder that contains the appropriate projects/files that fits your destination DVD-R or CD-R.
    d. At the **NAME IMAGE FILE** prompt, create an image name or use the default **UNTITLED** and then press the **ENTER** key.

NOTE1: A **CREATING XXXX.IMG ISO FILE** background window will appear at the bottom of **RADARview™** indicating the progress of the ISO image creation.

NOTE2: A **DISK IMAGES** folder is automatically added to the internal system drive the first time an **.IMG** file is created. Subsequent **.IMG** files will be stored in the same folder.

NOTE3: This process works in the background. You can return to using the RADAR® during this operation.

3. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **BURN DATA CD/DVD** selection and press the **ENTER** key.
4. Press the **ENTER** key at the **BURN TO: B: DVD BLANK DISK** selection.

NOTE: Regardless of whether you have a blank DVD-R or CD-R inserted, this prompt will always display **BURN TO: B: DVD BLANK DISK** because the **B:** refers to the drive ID and the **DVD** refers to the physical drive.

5. At the **SELECT DVD IMAGE** prompt, use the up and down arrow keys to navigate to the **.IMG** file you want to burn and press the **ENTER** key.
6. At the **XX.IMG PROCEED? NO YES** prompt, verify that this is the image file you want to burn by selecting **YES** and pressing the **ENTER** key. The burning process will begin and cannot be stopped until the image is written and the media finalized.

NOTE: A background window will appear at the bottom of **RADARView™** indicating the burn progress. During the finalizing process, the task bar doesn't indicate progress but may take up to 15 minutes to complete. Finalizing time is dependant on the image file size and media format (DVD-R or CD-R). You can now safely continue working with RADAR® while the DVD-R or CD-R image is written and finalized.

Burn an Audio CD

If you have a multi drive installed, you can burn one or more stereo exports as a Red Book CD-DA file that can be played in any CD player. RADAR® will automatically convert the audio to 16 bit / 44.1 KHz when you choose **CDAUDIO** at the **FILE FORMAT:** dialog during an export. The quality of the conversion is based on the **REFORMAT QUALITY** option under the **FILE MENU / FILE PREFS**.

The order of the tracks will be determined by one of the following:

a. The sequence that the **CDAUDIO** files were exported[1] directly to the CD.

b. The sequence that the **CDAUDIO** files were exported[1] into the destination folder/directory.

c. The list created at the **SELECT FILES:** submenu of **BURN AUDIO CD**.

[1]See the OPERATIONS: FILE MANAGEMENT: EXPORT section of this manual for specific details.

The length of time between audio tracks is currently fixed at two seconds.

To create an audio CD:

1. Insert a blank CD-R into the multi drive.
2. Use one of the following methods:
   a. Export directly to **B:DVD BLANK DISK** (a blank CD-R). Do **NOT** proceed to step 3. Instead, refer to the OPERATIONS: FILE MANAGEMENT: EXPORT section of this manual for specific details.
   b. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **BURN AUDIO CD** dialog and press the **ENTER** key. Proceed to step 3.

   Either method allows you to finalize the CD immediately after the burn is complete or at a later time. If you choose **NO** at the **FINALIZE CD** prompt, RADAR® will display the CD as **B:DVD OPEN CD**.
3. At the **BURN FROM:** dialog, use the up and down arrow keys to select the drive that contains the folder/directory of **STEREO CDAUDIO** files and hit the **ENTER** key.
4. At the **SELECT FOLDER:** dialog, use the up and down arrow keys and the **+** and **–** keys to locate the folder or **<ROOT DIRECTORY>** you wish to burn from and then press the **ENTER** key.
5. At the **BURN FILES:** dialog, use the up and down arrow keys to select **ALL FILES** or **SELECTED FILES** and press the **ENTER** key. This step will determine the order of the tracks on the CD. If you choose **ALL FILES**, the CD track order will reflect the sequence that the files were exported. If you choose **SELECTED FILES**, the track order will be based upon the selected list you create under the **SELECT FILES:** dialog.

   If you chose **ALL FILES**, proceed to step 7.
6. At the **SELECT FILES:** dialog, use the up and down arrow keys in conjunction with the **+** and **-** keys, or the **MARK IN** / **MARK OUT** keys, to add or remove individual files. The track order will be displayed in the top right corner of the LCD. The first track of the CD would look like the following:

   Once you've finished making your selection(s), press the **ENTER** key.
7. At the **FINALIZE CD** dialog, you can choose to finalize now or later. If you select **YES**, you will **NOT** be able to add additional tracks at a later time! If you select **NO**, use the ***MAIN MENU / FILE MENU /*** **FINALIZE CD** option to close (finalize) the disk once you've finished exporting/burning all the audio tracks you want onto the CD. Use the left and right arrow keys to select **NO** or **YES** and then press the **ENTER** key.
8. The background progress will begin and be displayed on **RADARView™**. You are now free to use RADAR® for recording/playback/edit! The process is complete once the background task, CD burn, is finished. If you chose to finalize CD, the CD will eject once the burn completes. If you didn't choose to finalize the CD, the CD will remain in the drive.

Finalize an Audio CD

This feature allows you to close (finalize) an audio CD in order for the disk to be played in a standard CD player. RADAR® allows you to **EXPORT STEREO CDAUDIO** (CD-DA) files for the purpose of creating a Red Book (audio) CD. If you decide to add **CDAUDIO** files over time to a CD, you'll need to use the **FINALIZE CD** option once you are finished adding tracks (**CDAUDIO** files) to the disk.

To finalize a CD:

1. Insert a CD into the multi drive that already has **CDAUDIO** files exported/burned to it.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **FINALIZE CD** dialog and press the **ENTER** key.
3. At the **FINALIZE:** dialog, use the **B:DVD OPEN CD** display to verify that the correct disk is inserted and then press the **ENTER** key. If there is anything other than an **OPEN CD** inserted, the disk will be ejected and the error message **INSERT OPEN CD-R DISK** will be displayed.
4. The **FINALIZE CD?** prompt is your last chance to ensure that you want to run this task. Once the finalizing begins, you **CANNOT** cancel! Use the left and right arrow keys to select **NO** or **YES** and then press the **ENTER** key.
5. The background progress will begin and be displayed on **RADARView™**. You are now free to use RADAR® for recording/playback/edit! The process is complete once the background task, CD burn, is finished and the CD is ejected.

Delete an Image File

DEL IMG FILE allows you to permanently delete old and/or unwanted ISO image files from the internal system drive that had been created for the purpose of burning a DVD-R and/or CD-R.

To delete an image file:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **DEL IMG FILE** dialog and press the **ENTER** key.
2. At the **DELETE DVD IMAGE** prompt, select the .IMG file you wish to remove from the internal system drive and press the **ENTER** key.

CAUTION: This function cannot be undone! Be careful!

Macros (Session Controller only)

If you make use of the powerful RADAR® macro keys then these macro management features are bound to be helpful.

LOAD

The **LOAD** feature allows you to import macros from a file on a floppy disk, the internal hard drive or a connected SCSI drive.

To load a macro:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **MACROS** menu item and press the **ENTER** key.
2. Use the right and left arrow keys to select **LOAD** from the **MACRO KEYS:** dialog and press the **ENTER** key.
3. Use the right and left arrow keys to select **FLOPPY**, **HARD** or **SCSI** in the **LOAD FROM:** dialog and press the **ENTER** key.
4. Use the arrow keys to select the macro file you wish to load in the **LOAD MACROS:** dialog and press the **ENTER** key.
5. When the load is complete the display will read **MACROS LOADED PRESS ANY BUTTON**.

SAVE

The **SAVE** feature allows you to export macros to a file on a floppy disk, the internal hard drive or a connected SCSI drive.

To save a macro:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **MACROS** menu item and hit the **ENTER** key.
2. Use the right and left arrow keys to select **SAVE** from the **MACRO KEYS:** dialog and press the **ENTER** key.
3. Use the right and left arrow keys to select **FLOPPY**, **HARD** or **SCSI** in the **SAVE TO:** dialog and press the **ENTER** key.
4. Use the keyboard to type a name for the macro file you wish to save in the **NAME THE MACRO:** dialog and press the **ENTER** key.
5. When the save is complete the display will read **MACROS SAVED PRESS ANY BUTTON**.

DELETE

The **DELETE** feature allows you to delete macro files on a floppy disk, the internal hard drive or a connected SCSI drive.

To delete a macro:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU /*** **MACROS** menu item and press the **ENTER** key.
2. Use the right and left arrow keys to select **DELETE** from the **MACRO KEYS:** dialog and press the **ENTER** key.

3. Use the right and left arrow keys to select **FLOPPY**, **HARD** or **SCSI** in the **DELETE FROM:** dialog and press the **ENTER** key.
4. Use the up and down arrow keys in the **DELETE MACROS:** dialog to select the macro file you wish to delete and press the **ENTER** key.
5. When the save is complete the display will read **MACROS DELETED PRESS ANY BUTTON**.

Mix Automation Settings

This option allows you store Sony DMX-R100 mixer automation settings with a RADAR® project from a floppy disk, or restore those same settings to a floppy to get them back into the DMX-R100.

To save automation settings with a project:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / MIX AUTOMATION /*** **DMXR100** menu item and press the **ENTER** key.
2. Insert a floppy disk with your automation settings and use the **ENTER** key to select **PROJECT**.
3. When the save is complete the display will read **AUTOMATION FILE COPIED TO PROJECT**.

To copy automation settings to a floppy:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / MIX AUTOMATION /*** **DMXR100** menu item and press the **ENTER** key.
2. Insert a floppy disk and use the **ENTER** key to select **FLOPPY**.
3. When the save is complete the display will read **AUTOMATION FILE COPIED TO FLOPPY**.

File Prefs

SHOW SIZE

This preference allows you to choose the information displayed during a backup or export procedure.

To modify the information displayed during a backup:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **SHOW SIZE** and press the **ENTER** key.
2. Use the right and left arrows to select **OFF**, **MBYTES** or **TIME** in the **SHOW SIZE:** dialog and press the **ENTER** key.

EXPORT FORMAT

This preference allows you to choose the default setting for the file format that will be used for exporting from the RADAR®.

To select the default file format setting for export:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT FORMAT** and press the **ENTER** key.
2. Use the right and left arrows to select **WAV**, **BWAV** or **ASK** in the **FILE FORMAT:** dialog and press the **ENTER** key. If you select the **ASK** option then RADAR® will prompt you to choose the file format each time you export.

EXPORT SILENCE

This preference allows you to choose the default setting for **FILL SILENCE**, which determines whether or not non-audio regions are filled with zeros to create contiguous files for export.

To select the default setting for **EXPORT SILENCE**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to ***MAIN MENU / FILE MENU / FILE PREFS /*** **EXPORT SILENCE** and press the **ENTER** key.
2. Use the right and left arrows to select **NO**, **YES** or **ASK** in the **FILL SILENCE:** dialog and press the **ENTER** key. If you select the **ASK** option then RADAR® will prompt you to choose the **FILL SILENCE** option each time you export.

REFORMAT QUALITY

This preference allows you to choose the default setting for **REFORMAT QUALITY**, which determines the speed and quality of any sample rate/bit resolution conversion required during import or export.

To select the default setting for **REFORMAT QUALITY**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to ***MAIN MENU / FILE MENU / FILE PREFS /*** **REFORMAT QUALITY** and press the **ENTER** key.
2. Use the right and left arrows to select **Q1**, **Q2** or **Q3** in the **REFORMAT QUALITY:** dialog and press the **ENTER** key. **Q3** is the slowest but highest quality conversion hence the choice as the factory default setting.

WRITE VERIFY

WRITE VERIFY is used during **BACKUP** or export to removable media (e.g. DVD-RAM or MO). This preference determines whether or not the backup process verifies the data after it is written. We highly recommend that you keep this preference set to **ENABLED** (factory default setting). However, the downside to **WRITE VERIFY ENABLED** is that backup time takes twice as long. If you want to create a backup that may or may not be written properly (do you feel lucky?) in order to decrease the backup time, set this preference to **DISABLED**.

To select the default setting for **WRITE VERIFY**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to ***MAIN MENU / FILE MENU / FILE PREFS / WRITE VERIFY*** and press the **ENTER** key.
2. Use the right and left arrows to select **DISABLED** or **ENABLED** in the **WRITE VERIFY** dialog and press the **ENTER** key.

Transport Operations

For the most part, RADAR® operation is indistinguishable from a professional tape recorder. We've taken the best features of the time-honored tape machine auto-locator and combined them with the incredible power of non-linear digital recording. Record and playback alignment, azimuth adjustments, wow and flutter, fast-forwarding and rewinding times are all a thing of the past. Let's get started!

Transport Keys

RADAR® uses industry standard transport keys for both the **Session Controller** and the **KC-24** keyboard:

REWIND

Simulates the transport rewind function of a tape machine. Double keying the **REWIND** key enters a super-fast mode that is 3 times the current rewind speed. The default speed for rewind is 8 times normal playback speed. Fast-forward and rewind speeds can be changed in the preferences menu (see below).

FAST-FORWARD

Simulates the fast-forward transport function of a tape machine. Double keying the **FAST-FORWARD** key enters a super-fast mode that is 3 times the current fast-forward speed. Default fast-forward speed is 8 times playback speed. Fast-forward and rewind speeds can be changed in the preferences menu.

To change fast wind speeds:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU / FFWD &RWD RATE*** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select a value and press the **ENTER** key.

PLAY

Begins audio playback from current location. Pressing **PLAY** while recording cancels record without stopping playback. Pressing **PLAY** and **REWIND** together enters reverse play mode.

STOP

Cancels all transport operations including record and puts RADAR® into ready mode.

REC

Drops all record enabled tracks into record mode. The default mode requires both the **PLAY** and **REC** keys to be pressed simultaneously to enter record mode. If the **1-BUTTON RECORD** mode is enabled, pressing the **REC** key is all that is required.

To change the operation of the transport controls for recording:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **1-BUTTON RECORD** and press the **ENTER** key.
3. Use the left and right arrow keys to select either **DISABLED** or **ENABLED** and press the **ENTER** key.

NOTE: This menu also contains the **TRACK ARM ACTION** preference setting for the track arming keys. See the OPERATIONS: RECORDING: RECORD MODE section of this manual for more information on this feature.

Jog/ Shuttle Wheel

Besides its function as an intuitive data entry device, the RADAR® **Jog/Shuttle wheel** provides a solid, responsive control suitable for professional audio editing.

Jogging is the equivalent of rocking recorded audiotape back and forth across the playback head of an analog tape machine to locate an edit point. Shuttling is similar but once the audio is set "in motion" with the wheel, playback will continue at its current playback speed and direction indefinitely. Try it, you'll like it!

To engage the wheel for jogging audio simply press the **JOG(SHUTTLE)** key located to the upper left of the jog wheel. To engage the wheel for shuttling audio press **SHIFT+JOG(SHUTTLE)**.

Mouse Jog (KC-24 Only)

Because the **KC-24** lacks a **Jog/Shuttle wheel** our engineers got creative and came up with mouse jogging! To jog or shuttle with the mouse press either the **JOG** or **SHUTTLE** keys located in the numeric keypad grouping on the **KC-24** keyboard.

Auto Locate Markers

One of the greatest features of a professional tape recorder is the so-called Auto-Locator. The Auto-Locator provides the usual transport controls, a time code based positional display and a number of preset locations that can be cued up automatically with a couple of key strokes.

SETTING AND RECALLING

RADAR® provides 99 location markers that can be set or "dropped" using the **MARK LOC** key on both the **Session Controller** and the **KC-24**. Once set, these location markers can be recalled, allowing you to cue instantly to various points in your project. Location markers can be set and recalled regardless of the transport function. Locates cannot be set or recalled when the RADAR® is in **MENU MODE**.

The first ten locates can be accessed with a single keystroke using the numeric keypad digits **0** through **9.** Locate **0** is always the project start time. The other ninety, two-digit locate points are addressable by using the **RECALL LOC** key, numeric keys **0-9** and the **ENTER** key.

To mark and recall a location using the **MARK LOC** key:

1. Press the **MARK LOC** key on the **Session Controller** or **KC-24**.
2. To recall the first ten locate markers use the **0** to **9** keys on the numeric keypad.
3. To recall locate markers 10 through 99, use the **RECALL LOC** key and the **0** to **9** keys on the numeric keypad to input the desired two-digit locate number. Press the **ENTER** key.

Editing Locate Markers

Once a locate marker has been set it can be edited in several ways using the **EDIT LOC** key on the **Session Controller** or the **KC-24**.

EDIT

This option is used to select the location marker you wish to edit and change its name or position.

To select a location marker for editing:

1. Press the **EDIT LOC** key on the **Session Controller** or **KC-24**.
2. Use the right or left arrow keys to select **EDIT** and press the **ENTER** key.
3. Use the numeric keys, the up and down arrow keys, the **MARK IN** key, the **MARK OUT** key, the **MARK SYNC** key or the **Jog/Shuttle wheel** to select a location marker for editing.

4. At this point each attribute of the location marker can be modified. The right and left arrow keys move the cursor from field to field and any of the data entry methods can be used to change the values. For example: A new **LOC** point will only have a number attached to it. To name the locate point, follow the previous three steps then hit the right arrow once. The cursor should now be flashing in the field beside the **LOC** number. Type the name that you want for the **LOC**. Press the **ENTER** key to complete the edit.
5. You will be returned to the main **EDIT LOC** dialog. To exit, press **CANCEL**, **MENU/PREV** or press the **EDIT LOC** key again.

DEL

The **DEL** option can be used to delete a single marker, a range of markers or all of the markers in a project.

To delete a single location marker:

1. Press the **EDIT LOC** key on the **Session Controller** or **KC-24**.
2. Use the right and left arrows to select **DEL** and press the **ENTER** key.
3. Use the right and left arrow keys in the **SELECT LOCATES** dialog to select **ONE** and press the **ENTER** key.
4. Use the numeric keys, the up and down arrow keys, the **MARK IN** key, the **MARK OUT** key, the **MARK SYNC** key or the **Jog/Shuttle wheel** to select a location marker for deleting.
5. Press the **ENTER** key to permanently delete the selected location marker.
6. You will be returned to the main **EDIT LOC** dialog. To exit, press **CANCEL**, **MENU/PREV** or press the **EDIT LOC** key again.

To delete a range of location markers between the **MARK IN** and **MARK OUT** locate points:

1. Press the **EDIT LOC** key on the **Session Controller** or **KC-24**.
2. Use the right and left arrows to select **DEL** and press the **ENTER** key.
3. Use the right and left arrow keys in the **SELECT LOCATES** dialog to select **RANGE** and press the **ENTER** key.
4. A dialog will ask if you wish to delete all the markers between the **MARK IN** and **MARK OUT** points. Select **YES** and press the **ENTER** key to continue.
5. You will be returned to the main **EDIT LOC** dialog. To exit, press **CANCEL**, **MENU/PREV** or press the **EDIT LOC** key again.

To delete all of the location markers in a project:

1. Press the **EDIT LOC** key on the **Session Controller** or **KC-24**.
2. Use the right and left arrows to select **DEL** and press the **ENTER** key.
3. Use the right and left arrow keys in the **SELECT LOCATES** dialog to select **ALL** and press the **ENTER** key.
4. A dialog will ask if you wish to delete all the markers in your project. Select **YES** and press the **ENTER** key to continue.
5. You will be returned to the main **EDIT LOC** dialog. To exit, press **CANCEL**, **MENU/PREV** or press the **EDIT LOC** key again.

NOTE: The deletion of location markers is a permanent operation and cannot be undone!

NEW

This option can be used to create location markers for your project. Location markers can also be set on the fly using the **MARK IN**, **MARK OUT**, **MARK SYNC** and **MARK LOC** keys on the **Session Controller** or the **KC-24**. See AUTO LOCATE MARKERS: SETTING AND RECALLING for more information.

To create a new location marker:

1. Press the **EDIT LOC** key on the **Session Controller** or **KC-24**.
2. Use the right and left arrows to select **NEW** and press the **ENTER** key.
3. Use the numeric keys, the up and down arrow keys or the **Jog/Shuttle wheel** to enter a time for the new location marker.
4. Use the right or left arrow keys to move the cursor to the blank name field and type in a name using the keyboard. Press the **ENTER** key.
5. You will be returned to the main **EDIT LOC** dialog. To exit, press **CANCEL**, **MENU/PREV** or press the **EDIT LOC** key again.

Auto Play

When the **AUTO PLAY** key is depressed RADAR® automatically goes into play after a locate marker is recalled. Auto play can be used in conjunction with the **PRE ROLL** key for automatic playback with the additional amount of pre and post roll you specify.

Auto Punch

The **AUTO PUNCH** key is used to enable automatic recording between the **MARK IN** and **MARK OUT** location markers. In this operational mode recording will only occur once the **MARK IN** location has been reached. When the **MARK OUT** point is reached recording is automatically terminated. For more detailed information on using this feature see RECORDING: AUTO PUNCH.

NOTE: When **AUTO PUNCH** is enabled manual recording is not possible.

Cycle

When the **CYCLE** key is enabled, RADAR® automatically locates to the **MARK IN** location marker and goes into play until the **MARK OUT** location marker is reached. After a small pause this cycle will be repeated indefinitely until cancelled by pressing one of the other transport keys. Cycle can be used in conjunction with the **PRE ROLL** key for automatic playback with the amount of pre and post roll you specify.

Pre Roll

The operation of the **PRE ROLL** key is somewhat unique because you must press it twice to engage its function. The first key press prompts you to enter the pre and post roll values you desire. Once modified, or if no change is required, a second key press will enable both pre and post roll. You can use this function in conjunction with the **AUTO PLAY**, **AUTO PUNCH** and **CYCLE** functions.

Foot Switches

Foot switches can be used in conjunction with the **Session Controller** for hands free play/stop, last locate and punch in and punch out operation. The foot switches should be of the normally open, momentary type.

Diagram 2.0
Foot switch plugs showing tip/sleeve wiring for Session Controller operation.

Recording

With RADAR® recording is as easy as using a professional tape recorder. Arm a track and press **PLAY** and **RECORD** — it's that easy! Use the following information on recording with RADAR® to help you get the most out of your system. You'll become a power-user in no time.

Record Prefs

Because RADAR® is used in many different professional applications we have added several recording options to help you customize RADAR® operation for your specific needs.

ONE-BUTTON RECORD

With this feature disabled, you must hold **PLAY** and then press **RECORD** on the **Session Controller** or the **KC-24** in order to begin recording. If this feature is enabled, you only need to press **RECORD** in order to start recording.

To change the operation of the transport controls for recording:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **1-BUTTON RECORD** and press the **ENTER** key.
3. Use the left and right arrow keys to select either **DISABLED** or **ENABLED** and press the **ENTER** key.

TRACK ARM ACTION

The track arming keys on the **Session Controller** or the **KC-24** can engage either record **READY** or instant **RECORD** status per track. Instant **RECORD** allows you to drop into and out of **RECORD** by pressing the **TRACK ARM** keys during playback.

To enable and disable instant **RECORD** via the **TRACK ARM** keys:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **TRACK ARM ACTION** and press the **ENTER** key.
3. Use the left and right arrow keys to select either **READY** or **RECORD** and press the **ENTER** key.

RECORD MK IN/OUT

This preference allows the **MK IN/OUT** locate points to constantly be updated to the last record drop-in/out. This can be especially useful during overdubs in order to provide a very fast playback method of the last punch. Once you've finished the overdub, simply press the down arrow key to audition the performance!

To enable and disable **RECORD MK IN/OUT**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **RECORD MK IN/OUT** and press the **ENTER** key.
3. At the **UPDATE MK IN/OUT ON RECORD:** dialog, use the left and right arrow keys to select either **NO** or **YES** and press the **ENTER** key.

LOW DISK WARNING

This preference determines the amount of recording minutes remaining in order to produce the **LOW DISK WARNING**.

To set the threshold for the **LOW DISK WARNING**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **LOW DISK WARNING** and press the **ENTER** key.
3. At the **LOW DISK LEVEL WARNING:** dialog, use the up and down arrow keys to set the number of recording minutes remaining and press the **ENTER** key. The factory default setting is **05** minutes.

WRITE VERIFY

This preference determines whether or not RADAR® will operate in a **WRITE VERIFY** mode when recording.

To enable or disable **WRITE VERIFY** during recording:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** menu selection and press the **ENTER** key.
2. Use the up and down arrow keys to select **WRITE VERIFY** and press the enter key.
3. At the **WRITE VERIFY:** dialog, use the left and right arrow keys to select either **DISABLED** or **ENABLED** and press the **ENTER** key. The factory default setting is **DISABLED**.

Monitoring and Track Status

During tracking and overdubbing there are two sources of audio that must be referenced and managed: input and the recorded signal, also referred to as repro (reproduce) mode. RADAR® uses the **TRACK ARM** keys, the **AUTO INPUT** key and the **TRACK SOLO** key to create an easy to manage system for monitoring audio.

TRACK ARM KEYS

These keys are used extensively in RADAR® operations as track selection keys. While recording and overdubbing they are used to record enable and disable tracks 1-24 and switch them in and out of input monitoring mode.

NOTE: The **KC-24** uses a shift key to record enable and disable tracks 13-24.

To monitor and adjust an input signal using input mode:

1. Press the desired **TRACK ARM** keys on the **Session Controller** or **KC-24**.
2. Adjust the input level to the RADAR® using the **Meterbridge 24/48** or **RADARView™** as a visual reference.

AUTO INPUT

AUTO INPUT allows the RADAR® to automatically switch between monitoring the input signal and the recorded audio when playback begins and ends. This feature should be used when performing overdubs and punches.

To enable auto input:

1. Press the **AUTO INPUT** key on the **Session Controller** or **KC-24**.
2. While stopped, the RADAR® will monitor the input signal on all tracks that are readied.
3. When playback begins monitoring switches to reproduce mode and all tracks playback audio from the disk.
4. Entering record mode begins recording on all armed tracks. RADAR® switches back to input mode for monitoring the source signal that's being recorded.

TRACK SOLO

TRACK SOLO mutes the output of all tracks except the ones selected using the **TRACK ARM** keys. **TRACK SOLO** can also be automatically engaged in tandem with the **ZOOM SOLO** (Session Contoller only) function, which is used to visually solo a track or group of tracks on the RADAR View display. This preference can be set in the *main menu / preferences MENU /* zoom solo audio dialog.

To use **TRACK SOLO** mode:

1. Press the **TRACK SOLO** key on the **Session Controller** or **KC-24**.
2. Use the **TRACK ARM** keys to select the tracks to solo.

SAFE (CLEAR)

SAFE(CLEAR) puts all tracks into safe mode. In this state no recording can take place under any circumstances. By pressing **SHIFT+SAFE(CLEAR)** all tracks with record ready status can be cleared.

To use the **SAFE(CLEAR)** key:

1. Press the **SAFE(CLEAR)** key on the Session Controller or KC-24.
2. To clear record ready status on all tracks press **SHIFT+SAFE(CLEAR).**

Auto Punch

The **AUTO PUNCH** key is used to enable automatic recording between the **MARK IN** and **MARK OUT** location markers. In this operational mode recording will only occur once the **MARK IN** location has been reached. When the **MARK OUT** point is reached recording is automatically terminated.

To use **AUTO PUNCH** mode:

1. Press the **AUTO PUNCH** key on the Session Controller or KC-24.
2. Use any locate or transport function to move to a position in the project prior to the current **MARK IN** point.
3. Enter record mode using the **PLAY** and **RECORD** or **RECORD** keys. To enable the **1-BUTTON RECORD** function, use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PREFERENCES MENU /*** **RECORD PREFS** dialog, select **1-BUTTON RECORD** and press **ENTER** and then select **ENABLED** and press **ENTER**.

NOTE: When **AUTO PUNCH** is enabled manual recording is not possible.

Undo/Redo

The **UNDO** and **REDO** functions are a good example of the new features that non-linear digital recorders have to offer. If you accidentally erase that precious vocal take, **UNDO** can save the day! The undo level value set in the **PROJECT MENU** determines how many levels of undo are available in a project. This value may be set anywhere from 0 (**no** undo levels at all!!) to 99.

A small indicator window on the right hand side of the **RADARView™** display gives you a heads up view of the current **UNDO/REDO** level. Beware of high values for the undo level settings. This could cause previously deleted audio to be saved and backed up with your project. This will cause your backup files to be larger than necessary and may add significantly to your archive time. Temporarily setting this value to 0 will erase all of the undo information. In certain instances this can save significant time when archiving a project. See FILE MANAGEMENT: BACKUP: PREPARING TO BACKUP for more information.

NOTE: The redo levels are lost when switching to another project or creating a new one. This does not affect the undo levels, which are stored with your project.

To change the number of levels of undo:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJECT MENU / UNDO LEVEL/*** **UNDO LEVEL:** dialog and select the number of undo levels that suits your needs.
2. Enter your preferred number of undo levels and press the **ENTER** key.

Using **UNDO(REDO)**:

1. Press the **UNDO(REDO)** key to undo the last record or editing operation.
2. Press **SHIFT+UNDO(REDO)** to redo the last record or editing operation.

NOTE: Not all operations are undoable! Only recording and editing operations can be undone and redone with the **UNDO(REDO)** key.

Foot Switch (optional)

A foot switch can be used in conjunction with the **Session Controller** for hands-free punch in and punch out. The foot switch should be a normally open momentary switch. See OPERATIONS: TRANSPORT OPERATIONS: FOOTSWITCHES for more information.

Vari-Speed

VARI-SPEED is used to change the pitch of recording and playback by altering the sample clock. There are many uses for this feature including:

- Lowering the pitch of bed tracks during an overdub session so that a vocalist can sing in a more comfortable range.
- Thickening sounds by recording multiple tracks in altered pitches.
- Matching the tuning of recorded tracks with difficult to tune instruments such as a piano.

The RADAR® **VARI-SPEED** control can be adjusted by a percentage of deviation from normal speed or by Cents, which are equal to one hundredth of a semitone. The range is variable from minus 50% or 1199 Cents to a maximum of plus 6.25% or 105 Cents at a sample rate of 48 kHz. The **VARI-SPEED** feature can be used in all transport modes including record.

USING VARI-SPEED WITH DIGITAL I/O

If you are using Lightpipe, TDIF or AES/EBU digital audio interfaces in your setup there are some limitations when using the **VARI-SPEED** feature. Since RADAR® actually modifies its sample clock frequency to produce pitch changes with **VARI-SPEED** it is not possible to use this feature when slaved to another devices sample clock. If RADAR® is made the clock master however, any devices slaved to the system should slew their clock rates accordingly. **VARI-SPEED** with digital audio I/O can be a little tricky depending on your setup so be sure you're careful.

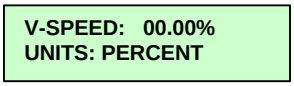
Sample Rate	Plus		Minus	
	%	Cents	%	Cents
192	+6.25%	105 Cents	-50.00%	1199 Cents
191.808	+6.35%	107 Cents	-49.91%	1197 Cents
176.4	+15.64%	252 Cents	-45.57%	1052 Cents
176.224	+15.76%	253 Cents	-45.50%	1051 Cents
128	+59.37%	807 Cents	-25.00%	497 Cents
96	+6.25%	105 Cents	-50.00%	1199 Cents
95.904	+6.35%	107 Cents	-49.91%	1197 Cents
88.2	+15.64%	252 Cents	-45.57%	1052 Cents
88.112	+15.76%	253 Cents	-45.50%	1051 Cents
64	+59.37%	807 Cents	-25.00%	497 Cents
48	+6.25%	105 Cents	-50.00%	1199 Cents
47.952	+6.35%	107 Cents	-49.91%	1197 Cents
44.1	+15.64%	252 Cents	-45.57%	1052 Cents
44.056	+15.76%	253 Cents	-45.50%	1051 Cents
32	+59.37%	807 Cents	-25.00%	497 Cents

Please note that this key is somewhat different due to its double keystroke operation.

- With **VARI-SPEED** off, the first press displays the **VARI-SPEED** dialog for entering a value. Immediate changes to the pitch of playback audio can be made from this dialog using either the **Jog/Shuttle wheel** or the up and down arrow keys. The numeric keys and the + and – keys can also be used to enter a value but the change will not be reflected in the playback audio until the **ENTER** key is pressed.
- The second keystroke returns the RADAR® to ready mode with **VARI-SPEED** engaged.
- With **VARI-SPEED** on, once again the first press displays the **VARI-SPEED** dialog for entering or changing a value. At this point you can return to ready mode with **VARI-SPEED** on using the **CANCEL** key or you can terminate **VARI-SPEED** operation by pressing the **VARI-SPEED** key once again.

To enter a value for **VARI-SPEED**:

1. Press the **VARI-SPEED** key on the **Session Controller** to display the following dialog:



2. If you wish to change the units displayed use the right and left arrow keys to move to the **UNITS** field and use the up and down arrow keys to select either **PERCENT** or **CENTS**.
3. Use the right and left arrow keys to return to the **V-SPEED** field and use the up and down arrows, the **Jog/Shuttle wheel** or the numeric keypad to enter a **VARI-SPEED** value. Use the + and – keys on the numeric keypad to toggle between positive and negative speed change values.
4. Press the **VARI-SPEED** key to return to ready mode with **VARI-SPEED** enabled.
5. To disable press the **VARI-SPEED** key twice.

NOTE: The up and down arrow keys and/or **Jog/Shuttle wheel** will provide instant speed change. If you use the numeric keypad the speed change will only occur upon pressing the **ENTER** key.

Editing

RADAR® provides a powerful array of non-linear editing capabilities. All of the editing functions are laid out in a similar way making editing both easy to learn and easy to use.

RADAR® editing differs from many digital audio workstations as it is based on a tape paradigm and not mouse driven. With RADAR® you can even edit without the **RADARView™** display! While some users used to workstation style editing might find the approach a little foreign at first, once you get your bearings you'll find that editing can be done quickly and efficiently, even in the middle of a tracking session!

Overview

Generally RADAR® edits follow a similar pattern:

- Mark a time region for editing using the **MARK IN** and **MARK OUT** keys.
- Select an editing function using one of the editing keys or the **EDIT MENU**.
- Select the tracks to edited using the **TRACK ARM** keys.
- Follow the specialized prompts for each type of edit.

The Clipboard

The clipboard is a temporary storage area for digital audio that is used extensively in the editing process. Material on the clipboard does not take up extra disk space and it is not retained after the system is shutdown. New selections placed on the clipboard will replace any previously stored material.

Audio can be placed on the clipboard using the **CUT**, **COPY** or **IMPORT** editing commands. Once stored in the clipboard, audio can be auditioned, reversed and pasted in place or to a new location.

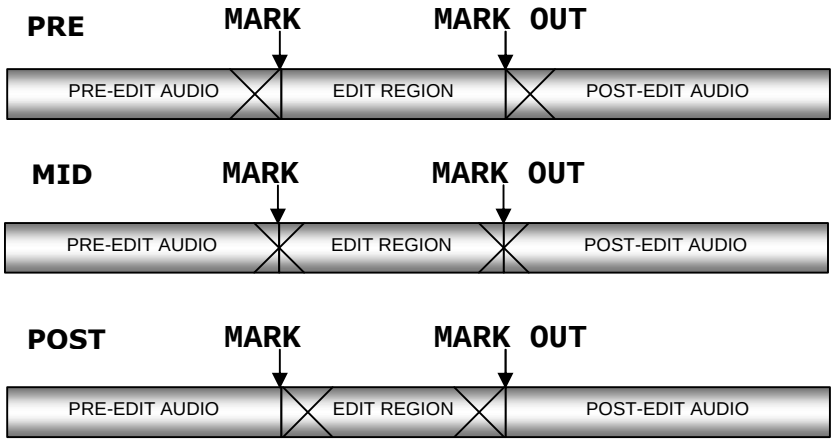
To audition the contents of the clipboard:

- After defining a track-region and using **CUT** or **COPY**, press **SHIFT+PASTE(LISTEN)** on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to select **LISTEN** from the **EDIT MENU**. The clipboard material will be played back and displayed in the **RADARView™** display.

Editing Crossfades

When punch-ins, punch-outs and edits are performed on RADAR® small crossfade files are created to prevent clicks and pops from occurring at the punch/edit boundaries. The default setting is 5 milliseconds for recording and editing crossfades, but this value can be changed. The maximum crossfade time for recording and editing crossfades is 9 seconds and 999 milliseconds.

In addition to the crossfade time settings there is a menu for setting the crossfade type. There are three options for crossfade type: **PRE**, **MID** or **POST**. These options set the location of the crossfade point relative to the edit boundary. The default setting is **MID**. With this setting the crossfade straddles edit boundaries and affects audio equally on both sides. The **PRE** and **POST** settings position the crossfade before or after edit boundaries. Only **MOVE**, **ERASE** and **SLIDE** are affected by the **CROSSFADE TYPE** setting. These options were created to allow edits to be more accurate in relation to the mark points.



Example: Sometimes when doing an erase with the crossfade set to **MID**, the mark in point would have a tiny slice of audio waveform after it, which represented the last half of the **MID** crossfade. This can now be avoided by setting an erase edit to **PRE**.

To modify the record crossfade:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **REC XFADE TIME** menu item and press the **ENTER** key.
2. Use the right and left arrow keys to select the **IN** crossfade time. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to set the **IN** crossfade time.
3. Use the right and left arrow keys to select the **OUT** crossfade time. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to enter the desired value and press the **ENTER** key.

To modify the edit crossfade:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **EDIT XFADE TIME** menu item and press the **ENTER** key.
2. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to set the edit crossfade time and press the **ENTER** key.

To modify the crossfade type:

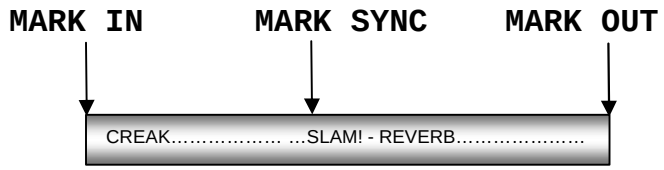
1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU / CROSS FADE TYPE*** menu item and press the **ENTER** key.
2. Use the right and left arrow keys to select the crossfade type and press the **ENTER** key.

NOTE: Only **MOVE**, **ERASE** and **SLIDE** are affected by the **CROSSFADE TYPE** setting.

Marking A Time Region

Time regions are selected for editing using the **MARK IN** and **MARK OUT** keys on the **Session Controller** or the **KC-24** keyboard. You may also specify a **SYNC** marker that defines a particular event in the audio. This **SYNC** marker can be used as the anchor to paste a track-region. This is very useful for pasting sound effects to spotted video locations.

Example: A door creaks as it slams and is followed by reverberation.



To mark a region for editing:

1. Locate the **IN** point for your edit. Use the **Jog/Shuttle wheel** or other transport/locate functions to locate and press the **MARK IN** key on the **Session Controller** or the **KC-24**.
2. If required, locate the **SYNC** point for your edit. Use the **Jog/Shuttle wheel** or other transport /locate functions to locate and press the **MARK SYNC** key on the **Session Controller** or the **KC-24**.
3. Locate the **OUT** point for your edit. Use the **Jog/Shuttle wheel** or other transport/locate functions to locate and press the **MARK OUT** key on the **Session Controller** or the **KC-24**.

   The time region you have just defined can now be edited using RADAR®'s powerful editing tools.

Selecting Tracks

While linear regions of project time are selected using the **MARK IN** and **MARK OUT** keys, tracks that will be affected by the edit are selected using the **TRACK ARM KEYS**.

To select the tracks that will be included in the edit:

1. After marking a time region, press the appropriate direct access key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU*** and select an editing function from the **EDIT MENU**.
2. Use the right and left arrow keys to select either **ALL**, which includes all tracks or **TRACK ARM**, which allows you to select individual tracks to be edited using the **TRACK ARM** keys.

   The time region and track selection that you have defined can now be used to perform an edit.

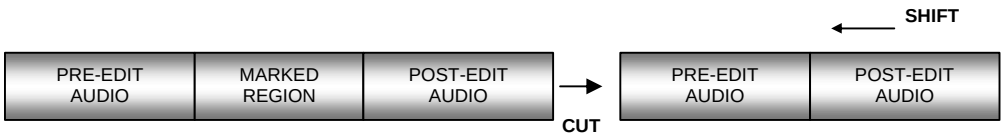
Editing Functions

Once a track selection and time region (track-region) have been established, RADAR® editing tools can be used to modify your project. The following editing functions are available:

CUT

CUT removes the defined track-region in the same manner as cutting a section of tape and removing it completely. Audio following the cut section will be pulled ahead to join the audio that preceded it.

NOTE: Edits occur on a track-by-track basis so you must use caution when cuts done on fewer than 24 tracks.



To cut audio:

1. After marking a time region, press the **CUT** key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU / CUT*** menu item and press the **ENTER** key.
2. Select the tracks you wish to cut. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks.
3. Press the **ENTER** key to remove the track-region from the project and place it on the clipboard where it may be modified or pasted to another location.

COPY

Duplicates the defined track-region and places it on the clipboard.

To copy audio:

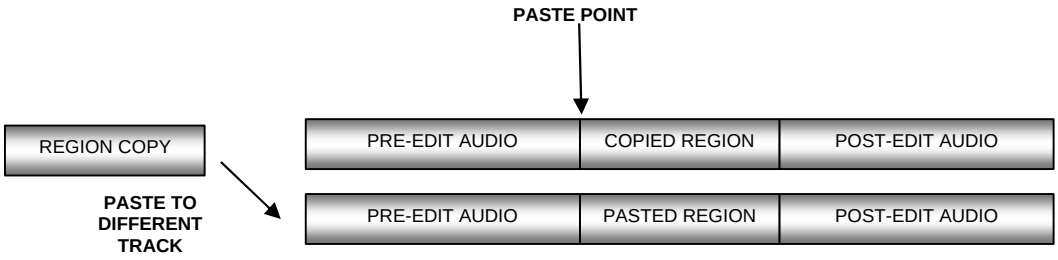
1. After marking a time region, select the **COPY** function by pressing the **COPY** key on the **Session Controller** or the **KC-24** or by selecting **COPY** from the **EDIT MENU**.
2. Select the tracks you wish to copy. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks.
3. Press the **ENTER** key to copy the track-region from the project and place it on the clipboard where it may be modified or pasted to another location.

PASTE

This editing function pastes the defined track-region from the clipboard into the project. As a default, the clipboard audio will be pasted at the current transport location. Use the transport keys, locate functions or the **Jog/Shuttle wheel** to cue to the desired paste location or enter the paste position directly using the numeric keypad and press the **ENTER** key. Alternatively you can mark a paste point or points using the **MARK IN** and **MARK OUT** keys. See **MULTIPLE PASTE** and **BACK TIME PASTE** below.

There are many pasting options including:

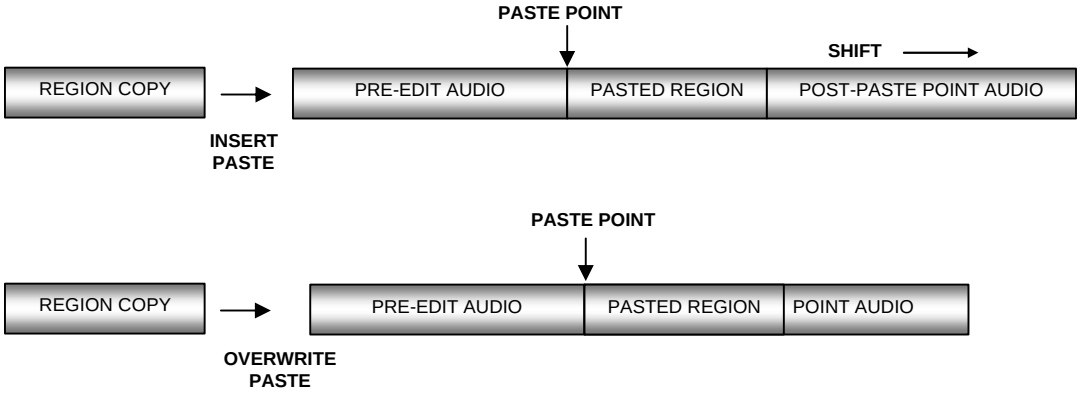
- Paste to the same tracks or different tracks



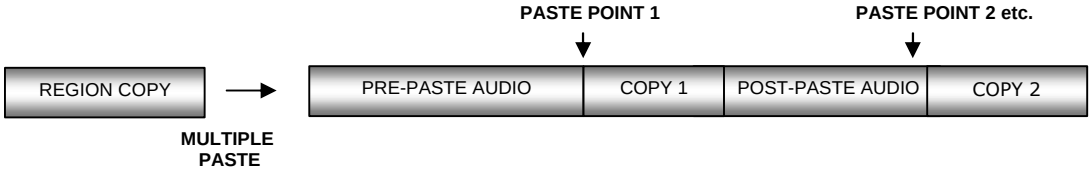
If the clipboard contains multiple tracks you must select a corresponding number of destination tracks. The destination tracks do not need to be adjacent but the pasted tracks will always be mapped to their target tracks in a lowest-to-lowest, highest-to-highest order.

Example: Track-region copies from tracks 1 and 2 can be pasted to 7 and 13. Note that you cannot paste track 1 to track 13 and track 2 to track 7 in a single operation.

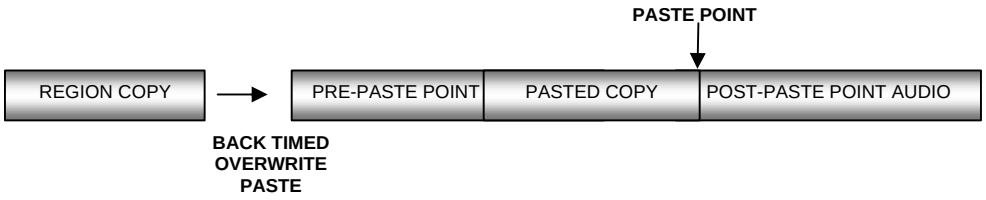
- Insert the paste or overwrite existing data



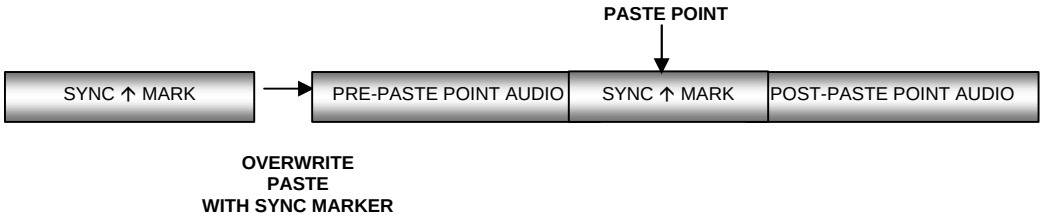
- Multiple paste points



- Back Time pasting



- Sync Marker pasting (pasted region must have sync marker)



To paste audio:

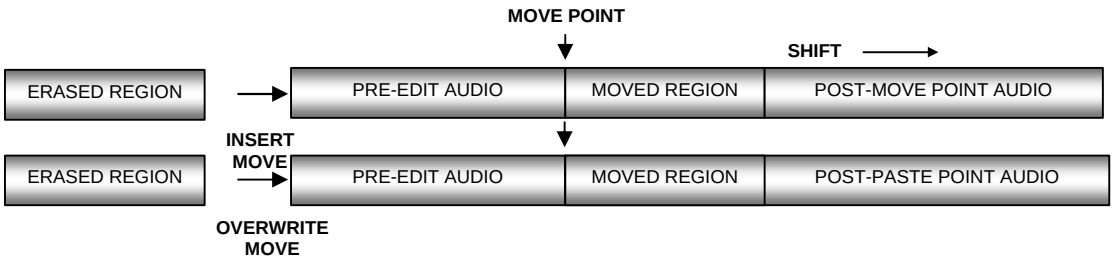
1. Press the **PASTE** key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /* PASTE** menu item and press the **ENTER** key.
2. Select the tracks you wish to copy. Use the right and left arrow keys to select either **ALL** or **TRACK ARM.** Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Use the right and left arrow keys to select either the **INSERT** or **OVERWRITE** paste modes and press the **ENTER** key.

4. To set a **PASTE TO:** point (s) and paste the track-region select one of the following methods:
    - Use any of the transport/locate functions or the **Jog/Shuttle wheel** to move to the desired location. Press the **ENTER** key to paste.
    - For an **ORIGINAL TIME PASTE**, press the **RECALL LOC** key while you are in the **PASTE TO:** dialog and select **ORIG TIME**. Press the **ENTER** key to paste. The audio will then be pasted back to its original time location.
    - For a **BACK TIME PASTE**, use any of the transport/locate functions or the **Jog/Shuttle wheel** to move to the desired location and press the **MARK OUT** key to place a **PASTE TO:** point. Press the **ENTER** key to paste. The audio will be pasted so that the end of track-region lines up with the **PASTE TO:** point.
    - For **MULTIPLE PASTES**, use any of the transport/locate functions or the **Jog/Shuttle wheel** to move to the desired location and press the **MARK IN**, **MARK OUT** or **MARK SYNC** key to place an initial **PASTE TO:** point. Reposition the transport and place additional **PASTE TO** points by pressing the **MARK IN**, **MARK OUT** and/or **MARK SYNC** key. Press the **ENTER** key to execute the multiple paste.
    - For a **SYNC MARKER PASTE**, use any of the transport/locate functions or the **Jog/Shuttle wheel** to move to the desired location and press the **MARK SYNC** key to place a **PASTE TO:** point. Press the **ENTER** key to paste. Any clipboard material that contains a **MARK SYNC** point will automatically use it for reference and the **MARK SYNC** point will be aligned to the **PASTE TO** location.

NOTE: Multiple paste markers can be set during playback!

MOVE

MOVE repositions the audio defined by the track-region and it can also be used to move it to other tracks. The original audio location(s) of the track-region will be left blank just like in an erase procedure. Audio is not transferred to the clipboard during a **MOVE**, so clipboard material will not be replaced. Audio following the moved track-region will be affected differently depending on whether insert or overwrite is used to perform the move.



To move audio:

1. After marking a time region, pressing the **MOVE** key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **MOVE** menu item and press the **ENTER** key.
2. Select the tracks you wish to move. Use the right and left arrow keys to select either **ALL** or **TRACK ARM.** Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Select the destination tracks. Use the right and left arrow keys to select either **SAME** or **OTHER**. Use the **TRACK ARM** keys to select tracks if you choose **OTHER**. Press the **ENTER** key.
4. Select either the **INSERT** or **OVERWRITE** move modes using the right and left arrow keys and press the **ENTER** key.
5. Use any of the transport/locate functions or the **Jog/Shuttle wheel** to specify the **MOVE TO:** location.
6. Press the **ENTER** key to move the track-region to the new location.

ERASE

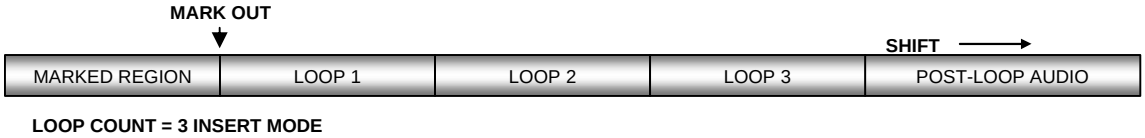
The **ERASE** function completely erases the audio defined by a track-region. Audio following the moved section will not be affected by this operation.

To erase audio:

1. After marking a time region, press the **ERASE** key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **ERASE** menu item and press the **ENTER** key.
2. Select the tracks you wish to erase. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks.
3. Press the **ENTER** key to erase the track-region from the project.

LOOP

The **LOOP** function repeatedly pastes the selected track-region relative to the **MARK OUT** point. Audio following the looped section will moved later in time using **INSERT** mode (shown below) and erased when using **OVERWRITE** mode.

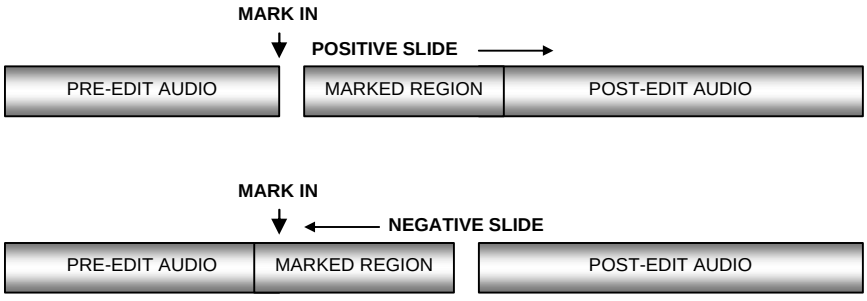


To loop audio:

1. After marking a time region, press the **LOOP** key on the **Session Controller** or the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **LOOP** menu item and press the **ENTER** key.
2. Select the tracks you wish to loop. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Use the right and left arrow keys to select either the **INSERT** or **OVERWRITE** loop modes and press the **ENTER** key.
4. Use the up and down arrow keys or the numeric keypad to enter the number of loops of the track-region that you would like to create.
5. Press the **ENTER** key to create the loops and return RADAR® to transport mode.

SLIDE

SLIDE repositions the audio defined by the track-region. Although similar to **MOVE**, **SLIDE** is designed for nudging audio in millisecond or SMPTE frame increments. **SLIDE TIME UNITS** can be set in the **PREFERENCES MENU**. **SLIDE** overwrites any previous audio data as it moves forward and backward and leaves empty space behind in its wake.



To slide audio:

1. After marking a time region, press the **SHIFT+MOVE(SLIDE)** key on the **Session Controller** or **SLIDE** on the **KC-24** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU / SLIDE*** menu item and press the **ENTER** key.
2. Select the tracks you wish to move. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to set the slide time and press the **ENTER** key.
4. Press the **ENTER** key to nudge the track-region to the new location.

INSERT SILENCE

The **INSERT SILENCE** function inserts a blank region into selected tracks. Audio following the moved section will be pushed out in time like any other insert type edit.

To insert a section of silence:

1. After marking the insert start point using the **MARK IN** key, press the **SHIFT+ERASE(SILENCE)** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU / INSERT SILENCE*** menu item and press the **ENTER** key.
2. Select the tracks you wish to insert silence on. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Use the numeric keys to enter the amount of silence you wish to insert in the HH:MM:SS:FF format.
4. Press the **ENTER** key to insert the region of silence into the selected tracks.

REVERSE

Audio placed on the clipboard can be reversed before being re-pasted into the project. This makes "pre-verb" and reversed solo effects very easy to accomplish.

To reverse clipboard audio:

1. After marking a time region, **COPY** or **CUT** the track-region to be reversed on to the clipboard.
2. Press the **SHIFT+LOOP(REVERSE)** key on the **Session Controller** or select **REVERSE** from the **EDIT MENU**.
3. **PASTE** the reversed audio to the desired location in the project.

GAIN/FADE

The **GAIN/FADE** functions allow you to modify the gain of recorded audio. Individual start and end values allow for flexible gain manipulation including the creation of fade ins and fade outs.

To change the gain of recorded audio:

1. After marking a time region, press the **GAIN/FADE** button on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **GAIN/FADE** menu item and press the **ENTER** key.
2. Select the tracks you wish to modify. Use the right and left arrow keys to select either **ALL** or **TRACK ARM**. Use the **TRACK ARM** keys to select individual tracks. Press the **ENTER** key.
3. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to set the **START** gain and press the **ENTER** key.
4. Use the up and down arrow keys, the numeric keys or the **Jog/Shuttle wheel** to set the **END** gain.
5. Press the **ENTER** key to calculate the new gain and return the system to **READY MODE**.

UNDO

Lets you undo an edit or record. Undo levels can be set anywhere from 0 to 99. For more information see to OPERATIONS: RECORDING: UNDO/REDO

REDO

Allows you to redo edits or records that were undone using the **UNDO** function. You may **REDO** as many times as you performed the **UNDO** function. The ability to **REDO** will be lost upon performing new edits entering record or switching to another project. For more information see OPERATIONS: EDITING: UNDO/REDO

MODIFY EDIT

This function provides a quick way to tweak the parameters of the previous edit without having to **UNDO** and **REDO**. In addition, **MODIFY EDIT** gives you the ability to change the crossfade time of certain edits for an even greater degree of control. Parameters available for modification include:

- **MARK IN**
- **MARK OUT**
- **CROSSFADE TIME**
- **ORIGINAL TRACK (S)**
- **DESTINATION TRACK (S)**
- **INSERT OR OVERWRITE**
- **SLIDE TIME**
- **LOOP COUNT ETC.**

To modify an edit:

1. Press the **MODIFY EDIT** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / EDIT MENU /*** **MODIFY EDIT** menu item and press the **ENTER** key.
2. Adjust the first parameter of the edit if desired and press the **ENTER** key to proceed to the next parameter. Pressing the **ENTER** key repeatedly steps through all of the remaining parameters for the edit.
3. Press the **ENTER** key to re-calculate the edit and exit so that you can audition the modified edit.

Macro Keys

The macro keys (**Session Controller** only) provide a way to memorize multiple keystrokes and recall them at the touch of a button. Macro sets can be stored and exported so you can use them on other RADAR® units. See OPERATIONS: FILE MANAGEMENT: MACROS for more information.

To store multiple keystrokes as a macro:

1. Press **SHIFT** and then press the **MACRO** key you wish to program on the **Session Controller**. The **MACRO** key will begin to flash.
2. Perform the sequence of keystrokes you wish to store and press the **MACRO** key once again.
3. The **MACRO** you stored is now ready for use.

QWERTY Keyboard

Both the **Session Controller** and **KC-24** remotes have keyboards that can make managing tracks and projects a lot easier. In addition to naming tracks, projects and other data entry tasks, the keyboard keys provide handy shortcuts to menu items. You can cycle through menu items starting with a particular letter by pressing the corresponding key on the QWERTY keyboard. This can be a real time-saver once you get used to it.

RADARLink™

RADARLink™ allows multiple RADAR® units to be linked together and controlled from a single **Session Controller**. All slaved RADAR® units are locked to the internal clock of the Master RADAR® so that all recordings made across multiple machines maintain a sample accurate relationship.

While in **RADARLink**™ Mode, the following operations are available:

- All transport functions including **PLAY**, **RECORD**, **STOP**, **FFWD**, **RWD** and **JOG/SHUTTLE**
- Cue functions including **LOCATE** and **ENTER TIME**
- Synchronization
- Editing
- System parameters and preferences
- Mount/Unmount of Record drives
  - When you select **MOUNT** or **UNMOUNT** on a **RADARLink™** master, the slave unit will also **MOUNT** or **UNMOUNT**.
- Shutdown/power up of master and slave
  - When you select **SHUTDOWN RADAR** from the **MAIN MENU** on the **RADARLink™** master, both the master and slave will be prepared for shutdown. When a **RADARLink™** master is restarted, it will wait 30 seconds (for the slave to be ready) then automatically attempt to go back into **RADARLink™** mode.

RADARLink™ hookup requires standard 9-pin, male to female cables, which are available at most computer stores.

Connect units together with the 9-pin cable running from the master unit's **RLINK OUT** connector to the **RLINK IN** connector on the slave RADAR®. If more slave connections are required connect the **RLINK OUT** on the first slave unit to the **RLINK IN** connector on the second slave and so on. The **RLINK** connectors are located on the right side of the back panel.

NOTE: The entire length of cabling between the RADAR® units must be less than 10 meters (30 feet).

Software Versions

All units in a **RADARLink**™ configuration should be running identical versions of software. It is always recommended that you use the latest versions of RADAR® software. You can download the latest software releases from the SUPPORT section of our website at *www.izcorp.com*.

NOTE: RADAR® and RADAR® II units can be linked together but due to changes and improvements in the **RADARLink**™ protocol there may be compatibility issues between certain versions of software. Use only the latest versions of software for both machines. RADAR® and RADAR® II software can be downloaded from our website *www.izcorp.com*.

ID Numbers

All units connected using the **RADARLink**™ protocol must have an ID number. The unit that initiates **RADARLink**™ communication is automatically designated the master machine and assigned **M** as its **RADARLink**™ ID. Each slave must be manually assigned a unique ID.

To assign a RADARLink ID number to a slave machine:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **RADARLINK** menu and press the **ENTER** key.
2. Use the up and down arrow keys to select the **RADARLINK ID** dialog from the menu and press the **ENTER** key.
3. Use the up and down arrow keys to select a unique **RADARLink™** ID between 1 and 7 and press the **ENTER** key.

RADARLink™ Enable/Disable

To enable or disable **RADARLink**™:

1. Press either the **RLINK** or **L** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU /*** **RADARLINK** menu and press the **ENTER** key.
2. Use the up and down arrow keys to locate the **ENABLE DISABLE** dialog and press the **ENTER** key.
3. Use the left and right arrow keys to select **ENABLE** or **DISABLE** and press the **ENTER** key.
4. Select **YES** at the prompt and press the **ENTER** key.

The system will respond by automatically assigning an ID of **M** to the master unit and scanning for the ID numbers of any connected slave units. You will be notified of any ID conflicts between slave units. ID conflicts must be resolved by changing slave ID numbers on each unit. See OPERATIONS: RADARLINK™: ID NUMBERS for more information.

If **RADARLink™** has just been established, all slave units will cue to the current location of the master machine. If **RADARLink**™ is re-established following a **SOLO MODE** operation all slaves will be cued to the current position of the last soloed unit.

NOTE: If there is an ID conflict you must re-enter **RADARLink™** mode after changing the conflicting slave ID number.

It is possible to remove just one machine from **RADARLink™** but it requires that a remote be connected to the unit you wish to unlink. Pressing the **CANCEL** key on the connected remote will initiate the **CANCEL RADARLINK** dialogue. Note that disabling **RADARLink**™ on a slave machine in this way only applies to that specific unit and has no effect on the rest of the chain.

Link Mode

In **LINK MODE**, the main mode of operation when using **RADARLink™**, the master RADAR® has control over all other RADAR® units in the configuration. **LINK MODE** commands are sent from the master unit to all slave units for simultaneous execution.

When this mode is engaged the master unit forces all slave units to conform to its current settings and system parameters including:

- Sample Rate
- TC Rate
- Crossfade Time
- Pre/Post Roll Time
- Auto-Input, Auto-Play, Auto-Punch, Cycle, Record Safe
- System Preferences, Time/Date
- Project Number
- Locate Points and Labels

Solo Mode

SOLO MODE allows you to select any single RADAR® unit in the **RADARLink™** chain and operate it independently from all of the others.

The following functions will only operate on slave machines when **SOLO MODE** is engaged:

- Disk functions (diagnostic operation, upgrade system, reclaim space etc.)
- Backups and Restores
- Importing and Exporting
- Digital I/O parameter adjustment

IMPORTANT NOTE: Unmounting in **RADARLink**™ will NOT automatically unmount all of the slave units hard disks. To hot swap drives while in **RADARLink**™ mode, you must solo each slave and unmount its' hard disk independently before unmounting the master system hard disk and swapping drives.

To solo a **RADARLink**™ slave:

1. Press either the **RLINK SOLO** or the **S** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / RADARLINK /*** **RADARLINK SOLO** dialog and press the **ENTER** key.
2. Use the up and down arrow keys or the numeric keys to select the desired **RADARLINK ID** number and press the **ENTER** key. The master can also be selected by pressing the **M** key on the QWERTY keyboard.

NOTE: The display will indicate if any machines are offline.

During **RADARLink**™ solo operation the ID number of the soloed unit flashes in the upper right hand corner of the display.

To exit **SOLO MODE**:

1. Press either the **RLINK** or **L** key on the **Session Controller** or use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / SYNC MENU / RADARLINK /*** **ENABLE DISABLE** dialog and press the **ENTER** key.
2. Use the right and left arrow keys to select **ENABLE** and press the **ENTER** key.
3. Select **YES** at the prompt.

Project Numbers Must Match

In **LINK MODE** all units must be set to the same **PROJECT NUMBER** at all times. Because of this you may have to manually renumber projects on the slave machines to match the master.

To renumber a project on a slave unit:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN MENU / PROJ MENU /*** **RENUMBER PROJECT** menu and press the **ENTER** key.
2. Use the up and down arrow keys to select a project number that matches the current project number of the master RADAR®.
3. If the new project number is already assigned to an existing project you will be asked if you want to swap project numbers. Use the right and left arrows to select **YES** if you want to go ahead and swap the project numbers. Press the **ENTER** key.

NOTE: You can renumber a project on a slave RADAR® by entering solo mode if **RADARLink™** is already enabled.

Synchronization

When synchronizing a **RADARLink**™ configuration to an external source such as SMPTE time code, only the master RADAR® is involved. The master in turn sends its clock data to each of the slave units providing accurate synchronization information to the entire system. Because the sample clock is sent through the **RADARLink**™ cabling, no extra cabling is required between the master and connected slave units.

Editing in Link Mode

When in **LINK MODE**, connected RADAR® units act as a single multitrack recorder. There are a few exceptions though. Because the **Session Controller** only has 48 track-arming keys, performing edits using more than 48 tracks requires that you enter solo mode.

To edit in **LINK MODE**:

1. Select your **MARK IN** and **MARK OUT** points.
2. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the **MAIN / EDIT MENU** or use the direct access keys on the **Session Controller** or the **KC-24** keyboard to select the desired editing function.
3. Use the **TRACK ARM** keys to select the tracks you wish to include in the edit. For RADAR Link configurations with more than 48 tracks you must solo each additional RADAR® to select the tracks that will be included in the edit.

NOTE: It is not possible to move or paste audio from one RADAR® to another.

Section 5

Reference

Menu Tree Overview

This section provides an overview of the RADAR®24 menu structure.

- MAIN MENU MENU >
  - SYSTEM MENU >
    - SYSTEM VERSION
      - OPERATING SYSTEM
      - SYSTEM DATE
      - INSTALLED RAM
      - X CHIP
      - S CHIP
      - F CHIP
    - SET TIME & DATE
    - UPGRADE SYSTEM
  - DISK MENU >
    - MOUNT/UNMOUNT
    - SHOW DISK SPACE
    - RECLAIM SPACE
    - MAKE PORTABLE
    - ERASE ALL AUDIO
    - INIT DISK
    - DISK MODE
    - SEAMLESS 64K
    - CLONE RADAR DISK
  - SYNC MENU >
    - TC SETTINGS >
      - TC FORMAT
      - TC RATE
      - SMPTE LOCK SPEED
      - FREEWHEEL TIME
      - STATIC TC OUT
      - RECHASE MODE
      - SHOW SYNC DRIFT
      - SYNC THRESHOLD
      - CHASE ON POWERUP
    - SYNC REFERENCE
    - RADARLINK >
      - ENABLE/DISABLE
      - RADARLINK SOLO
      - RADARLINK ID
    - MACHINE CONTROL >
      - ENABLE/DISABLE
      - SELECT TYPE
      - 9-PIN SETTINGS >
        - DEVICE ID
        - CHASE MODE
        - TRACK ARM MODE
        - VARISPEED MODE
        - SHUTTLE-0 MODE
        - TC OUT MODE-CUE
        - TC OUT MODE-PLAY
      - MMC SETTINGS
        - DEVICE ID
    - SYNC REF OUTPUT >
  - I/O MENU >
    - I/O ROUTING
      - INPUT ROUTING
      - OUTPUT ROUTING
      - RESET ROUTING
      - DIG 2-CH ROUTING
      - DIG IN TRACKS
      - 8-BUS MODE
    - AUDIO I/O LEVELS
    - DIG IN FORMAT
    - DIG I/O SDQ
    - DIG 2-CH OUTPUT
    - AES SETTINGS > (IF AES CARD PRESENT)
      - SAMPLE RATE IN
      - EMPHASIS IN
      - EMPHASIS OUT
      - MULTI-CHNL TYPE
    - ADAT SETTINGS > (IF ADAT CARD PRESENT)
      - ADAT IN CLOCK
      - ADAT IN WIDTH
      - ADAT IN SMPL PT
      - ADAT OUT WIDTH
      - ADAT OUT USERBIT
      - FACTORY DEFAULTS
    - TDIF SETTINGS > (IF TDIF CARD PRESENT)
      - IN SAMPLE POINT
      - SAMPLE RATE IN
      - EMPHASIS IN
      - EMPHASIS OUT
      - CARD TYPE
  - FILE MENU >
    - BACKUP
    - RESTORE
    - EXPORT
    - IMPORT
    - FILE MANAGEMENT
    - MAKE DVDCD IMAGE
    - BURN DATA CD/DVD
    - BURN AUDIO CD
    - FINALIZE CD
    - DEL IMG FILE
    - MACROS
    - MIX AUTOMATION
    - FILE PREFS >
      - SHOW SIZE
      - EXPORT FORMAT
      - EXPORT SILENCE
      - REFORMAT QUALITY
      - WRITE VERIFY

- PROJECT MENU >
  - GOTO PROJECT
  - NEW PROJECT
  - COPY PROJECT
  - DELETE PROJECT
  - NAME PROJECT
  - RENUMBER PROJECT
  - SAMPLE RATE
  - BIT RESOLUTION
  - TC FORMAT
  - TC RATE
  - START TIME
  - SYNC OFFSET
  - DISPLAY MODE
  - MIDI TEMPO MAP
  - VARISPEED
  - UNDO LEVEL
  - WAVE NOISE FLOOR
  - NAME TRACK
  - RENUMBER LOCATES
  - REBUILD WAVES
  - I/O ROUTING
  - PROJ PREFS >
    - NEW PROJ SETTINGS
    - DEF SAMPLE RATE
    - DEF BIT RES
    - DEF TC FORMAT
    - DEF TC RATE
    - DEF START TIME
    - DEF UNDO LEVEL
    - DEF WAVE NS FLR

- EDIT MENU >
  - UNDO EDIT
  - REDO EDIT
  - MODIFY EDIT
  - CUT
  - COPY
  - PASTE
  - MOVE
  - ERASE
  - LOOP
  - SLIDE
  - INSERT SILENCE
  - REVERSE
  - GAIN/FADE
  - LISTEN
  - EDIT XFADE TIME
  - REC XFADE TIME
  - CROSSFADE TYPE
  - MUTE TRACKS
  - RECORD SAFE

- PREFERENCES MENU >
  - DEF SMPTE FIELD
  - SHOW SUBFRAMES
  - SCROLL PROJ LED
  - TRACK SOLO MODE
  - ZOOM SOLO AUDIO
  - SLIDE TIME UNITS
  - FFWD & REW RATE
  - PEAK HOLD TIME
  - CLIP HOLD TIME
  - SAVE STATE DELAY
  - SCRN-SAVER MENU >
    - SAVER DELAY
    - IMAGE EFFECTS
  - AUTO RECLAIM
  - TRK ARM GROUPING
  - IGNORE AES FLAGS
  - UNMOUNT PORTABLE
  - DAMSEL MODE
  - RADARVIEW RES

- PREFERENCES MENU > (CON'T)
  - RECORD PREFS>
    - 1-BUTTON RECORD
    - TRACK ARM ACTION
    - RECORD MK IN/OUT
    - LOW DISK WARNING
    - RECORD VERIFY
  - FILE PREFS >
    - SHOW SIZE
    - EXPORT FORMAT
    - EXPORT SILENCE
    - REFORMAT QUALITY
    - WRITE VERIFY
  - PROJ PREFS >
    - NEW PROJ SETTINGS
    - DEF SAMPLE RATE
    - DEF BIT RES
    - DEF TC FORMAT
    - DEF TC RATE
    - DEF START TIME
    - DEF UNDO LEVEL
    - DEF WAVE NS FLR
  - NETWORK PREFS >
    - INTERFACE PREFS >
      - HOST NAME
      - DHCP SERVER
      - LOCAL IP ADDRESS
      - SUBNET MASK
      - GATEWAY
      - DNS DOMAIN NAME
      - PRIMARY DNS
      - SECONDARY DNS
      - FTP SERVER
      - FTP LOGIN NAME
      - FTP PASSWORD
    - SERVER PREFS >
      - CIFS SERVER IP
      - SERVER NAME
      - SERVER SHARE
      - CLIENT WORKGROUP
    - NETWORK CONTROL>

- DIAGNOSTICS MENU >
  - SCAN SCSI BUS
  - INIT DISK
  - CHECK DISK
  - REPAIR DISK
  - CHECK PROJECT
  - REALTIME ERRORS
  - VERIFY DISKS
  - CONFIGURE DEBUG
  - SAVE DEBUG
  - RESTART DESKTOP
  - FACTORY SETTINGS

- HELP MENU!>
  - RELEASE NOTES
  - MANUAL

- SHUTDOWN RADAR

Menu Item Quick Reference

Main Menu

Pressing the **MENU/PREV** key on the **Session Controller** or **KC-24** keyboard accesses the **MAIN MENU MENU**. To enter the sub-menu structure of the currently selected menu item or to accept a selection or value in a menu dialog press the **ENTER** key. To exit from any level of the menu system, press the **MENU/PREV** key repeatedly or press the **CANCEL** key.

System Menu

MAIN/SYS MENU:
SYSTEM VERSION

- **OPERATING SYSTEM VERSION: X.XX**
- **SYSTEM DATE: YY-MMM-DD HH:MM**
- **INSTALLED RAM: XXXXXX KBYTES**

Displays the current version and the installation date of system software and the amount of installed RAM.

Other included menu items display the firmware versions of the X-chip, S-chip and F-chip. These version numbers are useful to iZ Technical support staff.

MAIN/SYS MENU:
SET TIME & DATE

Allows the user to specify local time and date. The time defaults to GMT (Greenwich Meridian Time) and should be set upon receiving the RADAR®.

MAIN/SYS MENU:
UPGRADE SYSTEM

Converts files on an audio disk for use on other RADAR® units running different versions of software or when using a RADAR® disk in a RADAR®II. You can also use the **MAKE PORTABLE** feature which does the same function.

Disk Menu

MAIN/DISK MENU:
MOUNT/UNMOUNT

This feature is necessary for a number of situations. E.g., Exchanging carriers containing recording drives, copying/cloning a drive and switching the current recording drive to a different drive on the SCSI bus to name a few.

MAIN/DISK MENU:
SHOW DISK SPACE

Displays the remaining recording time left on the currently mounted recording drives in hours, minutes and seconds.

MAIN/DISK MENU:
RECLAIM SPACE

Frees up disk space by deleting "orphaned" audio files that are no longer referenced by any RADAR® project play list

MAIN/DISK MENU:
MAKE PORTABLE

Converts files on an audio disk for use on other RADAR® units running different versions of software or when using a RADAR®24 disk in a RADAR®II

MAIN/DISK MENU:
ERASE ALL AUDIO

Clears all of the recording drives connected to the system.

MAIN/DISK MENU:
INIT DISK

This function selects and initializes DVD-RAM and SCSI hard disks as one of the four following options: See OPERATIONS: DISK MANAGEMENT: INITIALIZE DISK for more information.

AUDIO (!RADAR!)	RADAR® audio format for the recording drive.
BACKUP (ARCHIVE)	RADAR® archive format for backup/restore.
EXPORT (FAT32)	FAT32 format for import/export to a PC and/or Mac.
EXPORT (MAC-HFS)	HFS format for import/export to a Mac computer.

MAIN/DISK MENU:
DISK MODE

This feature is ONLY necessary if you require spanning multiple drives during a recording (**SPAN ALL** mode) and/or specifying the number of tracks that are recorded per hard disk (**CUSTOM** mode).

MAIN/DISK MENU:
SEAMLESS 64K

Allows users to have 24 tracks of seamless recording during punch ins/outs when using a 64k cluster initialized drive.

MAIN/DISK MENU:
CLONE RADAR DISK

Provides an easy way to copy data from one hard drive to another.

Sync Menu

MAIN/SYNC MENU:
TC SETTINGS

The tc settings menu provides a full suite of synchronization options that allow RADAR® to easily integrate into any studio, post or broadcast environment.

TC SETTINGS:
TC FORMAT

Shortcut keys (sets format and rate):

Session Controller **SHIFT+CHASE (TC PREF)**

KC-24 Keyboard **SHIFT+CHASE**

The **TC FORMAT** dialog lets you select either **SMPTE** or **MTC** as a time code format. **SMPTE** is input and output via the **LTC** connectors on the back panel. **MTC** is input and output using the **MIDI IN** and **OUT** connectors on the rear panel.

TC SETTINGS:
TC RATE

Shortcut keys (sets format and rate):

Session Controller **SHIFT+CHASE (TC PREF)**

KC-24 Keyboard **SHIFT+CHASE**

RADAR® supports all standard time code rates including:

- 30 fps
- 30 fps drop frame
- 29.97 fps
- 29.97 fps drop frame
- 25 fps
- 24 fps

Use the **TC RATE** dialog to select a frame rate for the current project.

TC SETTINGS:
SMPTE LOCK SPEED

This dialog lets you choose a fast or slow lock time when chasing time code. In most situations the **FAST** setting will be the best choice. With jittery or poor quality time code however the **SLOW** setting provides smoother tracking of the incoming time code at the expense of lock time.

TC SETTINGS:
FREEWHEEL TIME

SMPTE **FREEWHEEL** time is the number of frames of bad or missing timecode that will be tolerated before dropping out of chase mode. The possible values for this dialog range between 0 and 10 frames.

TC SETTINGS:
STATIC TC OUT

This dialog enables and disables the output of a static time code value when the machine is stopped. This is useful in certain situations where other machines need to know the position of the RADAR® at all times.

TC SETTINGS:
RECHASE MODE

The **RECHASE MODE** setting determines the chase behavior of RADAR®. When **ENABLED**, RADAR® will locate, lock and begin playback, continually comparing its position with that of the incoming time code. With **RECHASE MODE** set to **DISABLED** RADAR® will locate, lock, begin playback and release. This lock and release behavior is sometimes required for transfers from media with poor or damaged time code etc.

TC SETTINGS:
SHOW SYNC DRIFT

The number of samples of drift between RADAR's clock and the incoming timecode can be displayed within the offset window of **RADARView™**

TC SETTINGS:
SYNC THRESHOLD

This feature determines the default amount of sync drift that RADAR® can accommodate during **CHASE** mode, before dropping out and re-syncing. **WILD** is 10X **NORMAL** mode.

TC SETTINGS:
CHASE ON POWERUP

Enables RADAR® to automatically start chasing timecode once the start up procedure is complete.

MAIN/SYNC MENU:
SYNC REFERENCE

Shortcut keys:

Session Controller **SYNC**

KC-24 Keyboard **SYNC**

Digital devices need a clock to operate. For stand-alone operation the device itself usually derives the clock signal from an internal master clock. However, when interconnecting with other digital devices it becomes necessary to have a master clock that provides timing information to all the connected devices so that they can communicate properly. RADAR® provides a wealth of digital synchronization options to cover just about any application imaginable.

Possible reference sources are:

- **INTERNAL**
- **WORDCLOCK**
- **VIDEO**
- **SMPTE**
- **MTC**
- **AES 2-CH SYNC**
- **S/PDIF 2-CH SYNC**
- **AES MULTI-CH**
- **ADAT**
- **TDIF L/R IN**
- **TDIF WORD SYNC**

One of these options can be selected in the sync reference dialog and will remain selected until the unit is powered down or rebooted. For further information refer to CONFIGURATION: SYNC REFERENCE.

MAIN/SYNC MENU:
RADARLINK

A 9-pin cable allows two or more RADAR® units to be connected and operated as a single unit. See OPERATIONS: RADARLINK™ for further information.

RADARLINK:
ENABLE/DISABLE

Shortcut keys:

Session Controller **RLINK** or **L**

KC-24 Keyboard **L**

This dialog is used to enable or disable RADAR Link operation.

RADARLINK:
RADARLINK SOLO

Shortcut keys:

Session Controller **RLINK SOLO** or **S**

KC-24 Keyboard **S**

RADAR LINK SOLO operation is required for editing with more than 48 tracks and certain other machine specific functions like backup, restore, mount and unmount. This dialog allows you to select a particular slave machine by entering its **RADAR LINK ID** number.

RADARLINK:
RADARLINK ID

Each slave unit in a **RADARLink™** configuration must have a unique ID number between **1** and **7**. The **RADARLink™** master is automatically assigned an ID of **M**.

MAIN/SYNC MENU:
MACHINE CONTROL

RADAR® supports both 9-pin serial (RS-422) and MMC, which is the MIDI implementation of machine control. These menus configure RADAR® for use as a machine control slave in a variety of applications.

MACHINE CONTROL:
ENABLE/DISABLE

Shortcut keys:

Session Controller **SHIFT+RLINK (MCH CTL)**

KC-24 Keyboard **N/A**

This dialog is used to enable or disable **9-PIN** or **MMC**, depending on which type of machine control is selected and whether it is currently enabled or disabled.

MACHINE CONTROL:
SELECT TYPE

You can easily switch between **9-PIN** and **MMC** using this dialog.

MACHINE CONTROL:
9-PIN SETTINGS

These settings can be used to adjust for the multitude of 9-pin variations implemented by various manufactures.

9-PIN SETTINGS:
DEVICE ID

The device ID setting allows RADAR® to appear as one of the following to the machine control master:

- **RADAR 24**
- **RADAR**
- **DVR-1000**
- **APR-24**
- **BVU-950**

With these various emulations it is possible to control RADAR® from virtually any 9-pin controller.

9-PIN SETTINGS:
CHASE MODE

This dialog determines whether the time code source for chase lock will be derived from the **LTC/MTC** inputs (**LOCAL**) or from a machine control master via the machine ctrl (RS-422) port (**9-PIN**).

9-PIN SETTINGS:
TRACK ARM MODE

This dialog determines whether track-arming commands will be derived locally or from a machine control master via 9-pin (RS-422).

9-PIN SETTINGS:
VARISPEED MODE

This dialog determines whether vari-speed commands will be derived locally or from a machine control master via 9-pin (RS-422).

9-PIN SETTINGS:
SHUTTLE-0 MODE

If you are controlling RADAR® from an SSL console, set this mode to **STOP**

9-PIN SETTINGS:
TC OUT MODE-CUE

This setting allows the time code output while cueing to respond differently for different applications.

In **NORMAL** mode, RADAR® will cue to a new location and begin outputting time code upon playback, based on the new position in the project. The small gap in time code output that occurs when a hard disk system like RADAR® is cueing can cause problems with some older synchronization systems that are expecting an immediate ramp up in time code output from a slave machine (i.e. tape machine) when a machine control **PLAY** command is sent.

In **TAPE** mode, RADAR® will immediately begin sending time code even before the cueing operation is complete. This emulates the behavior of a tape machine and prevents confusion with certain machine control systems.

9-PIN SETTINGS:
TC OUT MODE-PLAY

This setting is almost identical to **TC OUT MODE-CUE** in that it allows the time code output on playback to respond differently for different applications.

In **NORMAL** mode, RADAR® will begin outputting time code only when RADAR starts to play, based on the new position in the project and will reflect any delay introduced by cueing audio. This delay may cause problems with some older synchronization systems that are expecting a ramp up in time code output from a slave machine (i.e., tape machine) immediately after a machine control **PLAY** command is sent.

In **TAPE** mode, RADAR® will immediately begin sending time code even if cueing is required. This emulates the behavior of a tape machine and prevents confusion with older machine control systems.

MACHINE CONTROL:
MMC SETTINGS

These settings can be used to adjust the MMC parameters implemented by various manufactures.

MMC SETTINGS:
DEVICE ID

This feature allows a RADAR® to have a specific **DEVICE ID** for MIDI Machine Control. RADAR® will then respond to MMC commands that contain this **DEVICE ID**. The default setting is **127** (**7F** in Hex) which is the broadcast setting (all call). If you are running a studio/system where multiple devices are being controlled via MMC, you will need to set your RADAR® to a **DEVICE ID** other than **127** (**7F**).

MAIN/SYNC MENU:
SYNC REF OUTPUT

The **SYNC REF OUTPUT** dialog determines whether the **WORDCLOCK/ VIDEO – OUT** connector on the rear of the unit functions as a thru connector for any incoming wordclock signal or as an output for wordclock generated by the internal clock of the RADAR®. If you wish to use the clock of your RADAR® to drive other devices in your studio you must choose the **WORDCLK** option in this dialog.

I/O Menu

MAIN/I/O MENU:
I/O ROUTING

This allows the analog and digital input-track-output routing assignment to be user defined. Aside from the default routing of one to one, you may choose to route an input to a different track or multiple tracks, as well as routing a specific track to a different output. You are also able to define which inputs are analog and which inputs are digital.

I/O ROUTING:
INPUT ROUTING

Select which track(s) you want to route the current input to

I/O ROUTING:
OUTPUT ROUTING

Select which output you want to route the current track to

I/O ROUTING:
RESET ROUTING

Resets input, output or both configurations to the standard default of 1:1

I/O ROUTING:
DIG 2-CH ROUTING

Here you can independently assign the ins and outs of the 2-channel digital I/O to tracks 1 through 24. The inputs don't have to be the same as the outputs.

DIG IN L: 01 R:02
OUT L: 03 R:04

I/O ROUTING:
DIG IN TRACKS

This dialog allows you to select which tracks will be fed by the multi-channel digital I/O card defined in the **DIG IN FORMAT** menu.

I/O ROUTING:
8-BUS MODE

Disables inputs 9-24 and mirrors inputs 1-8 to tracks 9-16 and 17-24 while overriding the input routing option.

MAIN/I/O MENU:
AUDIO I/O LEVELS

This setting determines the digital dBFS equivalent when working with analog (+4dBu) I/O.

+24 dBu results in a digital meter reading of –20dBFS when a 0 VU tone is applied

+22 dBu results in a digital meter reading of –18dBFS when a 0 VU tone is applied

+20 dBu results in a digital meter reading of –16dBFS when a 0 VU tone is applied

+18 dBu results in a digital meter reading of –14dBFS when a 0 VU tone is applied

MAIN/I/O MENU:
DIG IN FORMAT

Shortcut keys:

Session Controller **DIG IN**
KC-24 Keyboard **DIGI I/0**

This dialog determines if RADAR® will use digital or analog audio inputs and also lets you choose the digital I/O format. The currently selected digital I/O format is displayed above the track numbers in the RADARVIEW display. The selections in this dialog are:

- **NONE (ANALOG)**
- **AES/EBU 2-CH**
- **S/PDIF 2-CH**
- **AES MULTI-CH**
- **ADAT**
- **TDIF**

MAIN/I/O MENU:
DIG I/O SDQ

SDQ is an acronym for Single, Dual, and Quad wire. It refers to the way RADAR® handles high sample rate digital audio going to and from external sources via the digital multi-channel I/O. The choices in this menu will vary depending on the sample rate of the current project. At a sample rate of 192 kHz the selections will be:

- **SINGLE**
- **DUAL**
- **QUAD**

It is important to select the appropriate SDQ setting so that RADAR® will display and reproduce the recorded audio correctly.

IMPORTANT NOTE: Selecting **DUAL** or **QUAD** disables the RADAR®'s analog I/O. Once the audio is recorded however the project can be played back using the analog outputs by selecting an SDQ setting of **SINGLE**.

NOTE: This only applies when recording from external dual or quad wire sources at 96 or 192 kHz.

MAIN/I/O MENU:
DIG 2 CH OUTPUT

RADAR® supports both the AES/EBU and S/PDIF 2-channel I/O formats. Use this dialog to switch between the two formats.

MAIN/I/O MENU:
AES SETTINGS

(IF AES CARD PRESENT)

These settings allow you to verify incoming AES specific data as well as set output emphasis on.

AES SETTINGS:
SAMPLE RATE IN

This dialog reads the indicator flag for the selected input pair. Use the up and down arrow keys to select an AES/EBU input pair with a valid signal and the sample rate will be displayed in the dialog.

AES SETTINGS:
EMPHASIS IN

In the early days of digital, emphasis was used to artificially boost the level of high frequency signal content so that it could be quantized at a higher resolution. The **EMPHASIS IN** dialog indicates if the incoming AES signal is using emphasis or not.

AES SETTINGS:
EMPHASIS OUT

Use this dialog to turn emphasis flag on and off for the AES output signal. When it is turned on it indicates to the receiving device that the digital audio stream has been recorded with emphasis and it should be decoded accordingly.

Since RADAR® does not decode emphasis nor store the emphasis flag for audio recorded with emphasis, the emphasis flag should be turned **ON** if you know with absolute certainty that the digital audio you recorded had previously been encoded with emphasis.

Emphasis is rarely, if ever, used in the industry today and these options are included primarily for dealing with legacy recordings.

AES SETTINGS:
MULTI-CHNL TYPE

The number of channels supported by the installed card. For RADAR® this value will always be 24-channels.

MAIN/I/O MENU:
ADAT SETTINGS

(IF AES CARD PRESENT)

ADAT SETTINGS:
ADAT IN CLOCK

This dialog sets the input group that the ADAT clock information will be derived from. The settings are:

- **AUTOMATIC**
- **FIBER C**
- **FIBER B**
- **FIBER A**

For most situations the **AUTOMATIC** setting will be the best choice. RADAR® will detect any incoming clock from the fiber ports and automatically make the **ADAT IN CLOCK** assignment.

ADAT SETTINGS:
ADAT IN WIDTH

These settings can be used to compensate for poor quality optical transceivers that alter the usable pulse width of the digital audio signal. Compensation can be set independently for each fiber port. Increments are displayed in positive and negative hexadecimal units **0** through **F**.

ADAT SETTINGS:
ADAT IN SMPL PT

Used in conjunction with **ADAT IN WIDTH** and **ADAT OUT WIDTH**, **ADAT IN SMPL PT** can help establish a solid link using Lightpipe by shifting the point in the recovered waveform that RADAR® interprets the data value. Increments are displayed as hexadecimal units, with each unit delaying the sample point by 10 nanoseconds.

ADAT SETTINGS:
ADAT OUT WIDTH

As in **ADAT IN WIDTH**, these settings can be used to compensate for poor quality optical transceivers that alter the usable pulse width of the digital audio signal. Compensation can be set independently for each fiber port. Increments are displayed in positive and negative hexadecimal units **0** through **F**.

ADAT SETTINGS:
ADAT OUT USERBIT

The default setting, **ENABLED**, conforms to the ADAT output specification regarding the userbit (U2) when 96kHz or 192 kHz are selected. However, if you are experiencing noise when outputting ADAT from RADAR®, try the **DISABLED** setting.

ADAT SETTINGS:
FACTORY DEFAULTS

Use this function to return all of the RADAR®'s **ADAT SETTINGS** to the factory default.

MAIN/I/O MENU:
TDIF SETTINGS

(IF AES CARD PRESENT)

TDIF SETTINGS:
IN SAMPLE POINT

Interfacing with some makes and models of TDIF equipped audio gear can be challenging at times, especially with older equipment. The **IN SAMPLE POINT** dialog allows you to shift the position in the waveform where RADAR® interprets the incoming TDIF digital signal. The choices are:

- **¼ BIT**
- **½ BIT**
- **¾ BIT**

If you are experiencing difficulties interfacing with another digital audio device using TDIF you may want to experiment with these settings as a last resort.

TDIF SETTINGS:
SAMPLE RATE IN

These settings can be used to compensate for poor quality optical transceivers that alter the usable pulse width of the digital audio signal. Compensation can be set independently for each fiber port. Increments are displayed in positive and negative hexadecimal units **0** through **F**.

TDIF SETTINGS:
EMPHASIS IN

In the early days of digital, emphasis was used to artificially boost the level of high frequency signal content so that it could be quantized at a higher resolution. The **EMPHASIS IN** dialog indicates if the incoming TDIF signal is using emphasis or not.

TDIF SETTINGS:
EMPHASIS OUT

Use this dialog to turn **EMPHASIS ON** and **OFF** for the TDIF output signal. When it is turned on it indicates to the receiving device that the digital audio stream has been recorded with emphasis and it should be decoded accordingly.
Since RADAR® does not decode emphasis nor store the emphasis flag for audio recorded with emphasis, the emphasis flag should be turned on if you know with absolute certainty that the digital audio you recorded had previously been encoded with emphasis.
Emphasis is rarely, if ever, used in the industry today and these options are included primarily for dealing with legacy recordings.

TDIF SETTINGS:
CARD TYPE

The number of channels supported by the installed card. For RADAR® this value will always be 24-channels.

File Menu

MAIN/FILE MENU:
BACKUP

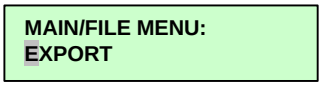
Shortcut keys:

Session Controller **BACKUP**
KC-24 Keyboard **BACKUP**

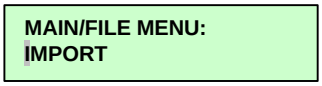
Selecting this menu item and pressing the **ENTER** key causes RADAR® to scan for attached devices. When the scan is complete all valid drives will be listed in the backup to: dialog. For more information on backing up your projects refer to OPERATIONS: FILE MENU: BACKUP.

MAIN/FILE MENU:
RESTORE

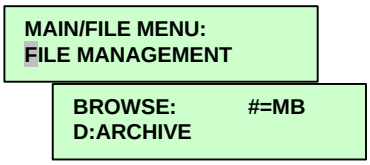
Selecting this menu item and pressing the **ENTER** key causes RADAR® to scan for attached devices. When the scan is complete all valid drives will be listed in the **RESTORE FROM:** dialog. For more information on restoring your projects refer to OPERATIONS: FILE MENU: RESTORE.



Selecting this menu item and pressing the **ENTER** key causes RADAR® to scan for attached devices. When the scan is complete all valid drives will be listed in the **EXPORT TO:** dialog. For further information on exporting your projects refer to OPERATIONS: FILE MENU: EXPORT.

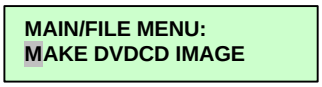


Selecting this menu item and pressing the **ENTER** key causes RADAR® to scan for attached devices. When the scan is complete all valid drives will be listed in the **IMPORT FROM:** dialog. For further information on importing audio refer to OPERATIONS: FILE MENU: IMPORT.



Shortcut keys:
Session Controller **SHIFT+B**
KC-24 Keyboard **SHIFT+B**

The **FILE MANAGEMENT** section of the **FILE MENU** has been created to give you extensive control over files on all drives connected to your RADAR®.



This feature is required in the process of creating a data CD/DVD. It creates an image file of a folder/directory on the internal system drive (e.g., **D:ARCHIVE**) and places the file in a **DISK IMAGES** folder also on the internal system drive. For more information refer to OPERATIONS: FILE MANAGEMENT: BURN A DATA CD-R/DVD-R.

This feature allows the user the ability to burn an image file containing backups and/or exports onto a CD-R or DVD-R. You must have the combo drive installed in your RADAR® in order to make use of this feature! For more information refer to OPERATIONS: FILE MANAGEMENT: BURN A DATA CD-R/DVD-R.

If you have a combo drive installed, you can burn one or more stereo exports as a Red Book CD-DA file that can be played in any CD player. RADAR® will automatically convert the audio to 16 bit / 44.1 KHz when you choose **CDAUDIO** at the **FILE FORMAT:** dialog during an **EXPORT**. The quality of the conversion is based on the **REFORMAT QUALITY** option under the ***MAIN MENU / FILE MENU / FILE PREFS***.

MAIN/FILE MENU:
FINALIZE CD

This feature allows you to close (finalize) an audio CD in order for the disk to be played in a standard CD player. If you decide to add **CDAUDIO** files over time to a CD, you'll need to use the **FINALIZE CD** option once you are finished adding tracks (**CDAUDIO** files) to the disk.

MAIN/FILE MENU:
DEL IMG FILE

This feature allows you to permanently delete old and/or unwanted ISO image files from the internal system drive that had been created for the purpose of burning a DVD-R and/or CD-R.

MAIN/FILE MENU:
MACROS

The macro keys (**Session Controller** only) provide a way to memorize multiple keystrokes and recall them at the touch of a button. Macro sets can be deleted, stored and exported so you can use them on other RADAR® units. See OPERATIONS: EDITING: MACROS for more information.

MAIN/FILE MENU:
MIX AUTOMATION

This option allows Sony DMX-R100 mixer automation settings, that have been saved to a floppy disk, to be stored within a RADAR® project. This feature also allows those same settings to be restored onto a floppy to get them back into the DMX-R100.

MAIN/FILE MENU:
FILE PREFS

These dialogs let you streamline your workflow by creating preferences for certain file related functions. The **EXPORT FORMAT** and **EXPORT SILENCE** preferences are also used when using the **EXPORT CLIP** short cut key.

FILE PREFS:
SHOW SIZE

When set to **MB** or **TIME**, a **XXXMB PROCEED?** dialog will be added during the backup and export procedures.

FILE PREFS:
EXPORT FORMAT

This sets the preference for the export file format. The choices are **WAV**, **BWAV** or **ASK**. When **ASK** is selected as the preference you will be prompted to choose a file format each time you export files.

FILE PREFS:
EXPORT SILENCE

During export, fill silence pads blank audio regions with zeros to create contiguous files. When **ASK** is selected as the preference you will be prompted to choose a fill silence option each time you export files.

FILE PREFS:
REFORMAT QUALITY

This dialog sets the default quality and speed of sample rate and bit resolution conversion for importing files as well as exporting **STEREO CDAUDIO** files.

FILE PREFS:
WRITE VERIFY

This option allows you to **ENABLE** or **DISABLE WRITE VERIFY** for various removable media. With this preference enabled, the data writing ensures a more accurate process however it also increases the overall completion time.

Project Menu

MAIN/PROJ MENU:
GOTO PROJECT

Shortcut keys:

Session Controller **GOTO PROJ**
KC-24 Keyboard **GO TO PROJECT**

Lets you quickly switch projects. Select a project and press **ENTER**.

MAIN/PROJ MENU:
NEW PROJECT

Shortcut keys:

Session Controller **NEW PROJ**
KC-24 Keyboard **N/A**

Lets you quickly create a new project. When you select new project a new project is created and assigned the next available unused project number. Type in a name for your project on the QWERTY keyboard and press the enter key

MAIN/PROJ MENU:
COPY PROJECT

Shortcut keys:

Session Controller **COPY PROJ**
KC-24 Keyboard **N/A**

When you don't want to mess with the original project, copy project lets you make a duplicate of the current project in a hurry. The project copy will be assigned the next available unused project number and be named automatically using the original project's name and an appended version number.

MAIN/PROJ MENU:
DELETE PROJECT

Shortcut keys:

Session Controller **DEL PROJ**
KC-24 Keyboard **N/A**

Lets you quickly delete a selected project.

IMPORTANT NOTE: A project cannot be recovered once it has been deleted!

MAIN/PROJ MENU: NAME PROJECT

Shortcut keys:

Session Controller **NAME PROJ**
KC-24 Keyboard **N/A**

Lets you quickly name a selected project. The dialog cursor defaults to the project number field.

MAIN/PROJ MENU: RENUMBER PROJECT

Lets you renumber a project (1 – 999) quickly. This is often required to give restored projects the same number for RADAR Link operation.

MAIN/PROJ MENU: SAMPLE RATE

Sets the sample rate for the selected project.

NOTE: This option can only be changed before audio is recorded.

MAIN/PROJ MENU: BIT RESOLUTION

Sets the bit depth for the selected project. The available bit depths are 16 and 24-bit PCM.

NOTE: This option can only be changed before audio is recorded.

MAIN/PROJ MENU: TC FORMAT

Sets the tc format for the selected project.

MAIN/PROJ MENU: TC RATE

Sets the tc rate for the selected project. All standard SMPTE/EBU formats are supported.

MAIN/PROJ MENU: START TIME

This dialog allows you to enter a start time for the current project.

MAIN/PROJ MENU: SYNC OFFSET

Shortcut keys:

Session Controller **SHIFT+SYNC (OFFSET)**
KC-24 Keyboard **SHIFT+SYNC**

It is often necessary to set an offset between two synchronized machines when time codes differ. When the two machines are parked at the appropriate location to be synchronized the offset can be calculated by subtracting the master machines time code from the slave machines time code. See CONFIGURATION: TIME CODE: TC CAPTURE for information on how RADAR® can capture an offset automatically.

MAIN/PROJ MENU:
DISPLAY MODE

RADAR® can display its current position in the following units:

- **FEET/FRAMES**
- **BARS/BEATS**
- **SMPTE**
- **INT/EXT SMPTE**

Choose your favorite format and press the **ENTER** key. For bars and beats operation you must also set the reference tempo in the **MIDI TEMPO MAP** (see the following menu reference).

MAIN/PROJ MENU:
MIDI TEMPO MAP

Use this dialog to set the reference tempo and time signature for **BARS/BEATS** display mode.

MAIN/PROJ MENU:
VARISPEED

Shortcut keys:

Session Controller	**VARI-SPEED**
KC-24 Keyboard	**N/A**

VARI-SPEED is stored independently for each project, but you must manually engage it each time the project is loaded. See OPERATIONS: VARI-SPEED for more details on using this feature.

MAIN/PROJ MENU:
UNDO LEVEL

RADAR® supports up to 99 levels of undo. The factory default setting is 10. Use this dialog to customize the number of undo levels for your system. This setting can be changed at any time, however setting this value to a lower value will delete any undo information that existed in the higher undo levels. For example: changing the undo level setting from **10** to **0** and then back to **10** will erase all undo information.

NOTE: Too many levels of undo can waste disk space. Disk space cannot be automatically reclaimed by the system until deleted audio regions are no longer accessible via **UNDO**.

MAIN/PROJ MENU:
WAVE NOISE FLOOR

This dialog sets the signal level threshold for waveform drawing. Noise and other signals below the noise floor setting will not be drawn. The threshold value can be modified in 5-decibel increments between –90.0 and -60.0.

MAIN/PROJ MENU:
NAME TRACK

Shortcut keys:
Session Controller **NAME TRACK**
KC-24 Keyboard **N/A**
Enter a name using the QWERTY keyboard. Upon pressing the **ENTER** key, the new track name will appear to the left of the track numbers in the **RADARView™** display and the dialog will automatically select the next track number for naming. Track names can be 16 characters in length. For more information refer to OPERATIONS: TRACK MANAGEMENT: NAMING TRACKS.

MAIN/PROJ MENU:
RENUMBER LOCATES

This dialog lets you automatically renumber locates in chronological order. Selecting **RENUMBER LOCATES** and pressing the **ENTER** key presents you with the prompt: **RENUMBER ALL?** A **YES** response will renumber locates sequentially from the beginning of the project arranging them in chronological order. A **NO** response will cancel the renumber function.

MAIN/PROJ MENU:
REBUILD WAVES

This dialog allows you to rebuild waveforms for a particular project if the waveforms are missing or corrupt. Selecting **REBUILD WAVES** and pressing the **ENTER** key presents you with the prompt: **REBUILD WAVES?** A **YES** response will rebuild all of the waveforms within the current project. A **NO** response will cancel the rebuild **WAVES** function.

MAIN/PROJ MENU:
PROJ PREFS

These project preferences define the parameters that will be used every time you create a new project.

PROJ PREFS:
NEW PROJ SETTINGS

This preference allows you to choose:

a. whether the new project settings follow the default settings set in the **PROJ PREFS MENU**

b. use the settings of the current project

c. prompt the user to choose between a. or b. when creating a new project.

PROJ PREFS:
DEF SAMPLE RATE

Sets the sample rate for newly created projects. Valid values range from 32kHz to 192 kHz, depending on the I/O cards installed.

PROJ PREFS:
DEF BIT RES

This preference determines the default bit-depth or bit resolution for newly created projects.

PROJ PREFS:
DEF TC FORMAT

This preference determines the default tc format, SMPTE or MTC, for newly created projects.

PROJ PREFS:
DEF TC RATE

This preference determines the default tc rate for newly created projects.
All standard SMPTE/EBU formats are supported.

PROJ PREFS:
START TIME

This allows you to set the default start time for new projects.

PROJ PREFS:
DEF UNDO LEVEL

This allows you to set a default number of undo levels for all new projects.

PROJ PREFS:
DEF WAVE NS FLR

This sets the wave-drawing noise floor for all new projects.

Edit Menu

MAIN/EDIT MENU:
UNDO EDIT

Shortcut keys:

Session Controller **UNDO**

KC-24 Keyboard **UNDO**

Lets you undo an edit or record. Undo levels can be set anywhere from 0 to 99. For more information see OPERATIONS: RECORDING: UNDO/REDO

MAIN/EDIT MENU:
REDO EDIT

Shortcut keys:

Session Controller **REDO**

KC-24 Keyboard **REDO**

This function allows you to redo edits or records that were undone using the **UNDO** function. You may **REDO** as many times as you performed the undo function. The ability to **REDO** will be lost upon performing new edits, entering record or switching to another project. For more information refer to OPERATIONS: RECORDING: UNDO/REDO

MAIN/EDIT MENU:
MODIFY EDIT

Shortcut keys:
Session Controller **MODIFY EDIT**
KC-24 Keyboard **MODIFY EDIT**

This powerful function allows you to quickly change any or all of the parameters of the previous edit. Parameters available for modification include:

- **MARK IN**
- **MARK OUT**
- **CROSSFADE TIME**
- **ORIGINAL TRACK (S)**
- **DESTINATION TRACK (S)**
- **INSERT OR OVERWRITE**
- **SLIDE TIME**
- **LOOP COUNT ETC.**

For more information see OPERATIONS: EDITING: MODIFY EDIT

MAIN/EDIT MENU:
CUT

Shortcut keys:
Session Controller **SHIFT+ COPY(CUT)**
KC-24 Keyboard **CUT**

Cuts the defined track-region to the clipboard and removes it from the project. Audio after the edit point on affected tracks will be pulled forward to fill the space left by the cut function. For more information refer to OPERATIONS: EDITING: CUT.

MAIN/EDIT MENU:
COPY

Shortcut keys:
Session Controller **COPY**
KC-24 Keyboard **COPY**

Copies the defined track-region to the clipboard. Project audio is not affected in any way. For more information refer to OPERATIONS: EDITING: COPY.

MAIN/EDIT MENU:
PASTE

Shortcut keys:
Session Controller **PASTE**
KC-24 Keyboard **PASTE**

Pastes the defined track-region into the project from the clipboard. The **PASTE** function has many variables that will affect project audio in several different ways, including:

- **PASTE TO SAME OR DIFFERENT TRACKS**
- **INSERT OR OVERWRITE**
- **MULTIPLE PASTE POINTS**
- **PASTE TO ORIGINAL TIME**
- **BACK TIME PASTING**
- **SYNC MARKER PASTING**

For detailed information on pasting audio see OPERATIONS: EDITING: PASTE.

MAIN/EDIT MENU:
MOVE

Shortcut keys:
Session Controller **MOVE**
KC-24 Keyboard **MOVE**
Moves the defined track-region to another location without using the clipboard. Project audio is removed like the **ERASE** function and will either insert or **OVERWRITE** at the **MOVE TO:** point. For more information refer to OPERATIONS: EDITING: MOVE.

MAIN/EDIT MENU:
ERASE

Shortcut keys:
Session Controller **ERASE**
KC-24 Keyboard **ERASE**
Erases the defined track-region from the project. Post-edit point audio is not affected in any way. For more information refer to OPERATIONS: EDITING: ERASE.

MAIN/EDIT MENU:
LOOP

Shortcut keys:
Session Controller **LOOP**
KC-24 Keyboard **LOOP**
Creates consecutive loops of the defined track-region starting from the track-regions **MARK OUT** point. Loops may set to **INSERT** or **OVERWRITE**. For details refer to OPERATIONS: EDITING: LOOP.

MAIN/EDIT MENU:
SLIDE

Shortcut keys:
Session Controller **SHIFT+ MOVE(SLIDE)**
KC-24 Keyboard **SLIDE**
Slides the defined track-region in frames or milliseconds. Sliding leaves behind empty space and will overwrite post-edit project audio. For details refer to OPERATIONS: EDITING: SLIDE.

MAIN/EDIT MENU:
INSERT SILENCE

Shortcut keys:
Session Controller **SHIFT+ ERASE(SILENCE)**
KC-24 Keyboard **N/A**
Inserts a user-definable amount of silence into the project at the current **MARK IN** point. Silence is an **INSERT** type of edit and post-edit project audio on affected tracks will be moved later in time. For more information see OPERATIONS: EDITING: INSERT SILENCE.

MAIN/EDIT MENU:
REVERSE

Shortcut keys:
Session Controller **SHIFT+**
LOOP(REVERSE)
KC-24 Keyboard **N/A**
Reverses the audio on the clipboard. For details see OPERATIONS: EDITING: REVERSE.

MAIN/EDIT MENU:
GAIN/FADE

Shortcut keys:
Session Controller **GAIN/FADE**
KC-24 Keyboard **N/A**
Changes the gain of the current track-region. Start and End gain settings are independent so fade ins and fade outs can be performed. For details refer to OPERATIONS: EDITING: GAIN/FADE.

MAIN/EDIT MENU:
LISTEN

Shortcut keys:
Session Controller **SHIFT+**
PASTE(LISTEN)
KC-24 Keyboard **LISTEN**
Auditions the audio on the clipboard. For more information refer to OPERATIONS: EDITING: LISTEN.

MAIN/EDIT MENU:
EDIT XFADE TIME

Sets the crossfade time for edits. Possible values range from 1 millisecond to 9 seconds 999 milliseconds. The factory default is 5 milliseconds. For details see OPERATIONS: EDITING: EDITING CROSSFADES.

MAIN/EDIT MENU:
REC XFADE TIME

Sets the recording crossfade time. Recording crossfades occur whenever recording mode is entered or exited, including punch-ins and punch-outs. Possible values range from 1 millisecond to 9 seconds 999 milliseconds. The factory default is 5 milliseconds. For details see OPERATIONS: EDITING: EDITING CROSSFADES.

MAIN/EDIT MENU:
CROSSFADE TYPE

Sets the crossfade type for the **MOVE**, **SLIDE** and **ERASE** edits. The possible crossfade types are **PRE**, **MID** and **POST**. The factory default is **MID**. For more information refer to OPERATIONS: EDITING: EDITING CROSSFADES.

MAIN/EDIT MENU:
MUTE TRACKS

This is a legacy feature that was used to disabled unused tracks to free up disk bandwidth in the days of slower hard disks. The selections are **NONE** and **TRACK ARM**. The default is **NONE**. If you do wish to mute tracks for some reason you may do so by selecting **TRACK ARM** and using the **TRACK ARM** keys to temporarily disable selected tracks.

MAIN/EDIT MENU:
RECORD SAFE

Shortcut keys:
Session Controller **SAFE**
KC-24 Keyboard **SAFE**
Sets all tracks to **SAFE** mode. No recording can take place while **SAFE** mode is engaged.

Preferences Menu

MAIN/PREFS MENU:
DEF SMPTE FIELD

This setting determines the default position of the cursor when entering SMPTE times into the RADAR®. The preference choices are:

- **SECONDS**
- **FRAMES**

Cursor defaults to the selected field.

MAIN/PREFS MENU:
SHOW SUBFRAMES

This item allows you to select whether or not sub-frames (hundredths of a frame) will be displayed during normal transport operation. Sub-frames are always displayed when Jog is enabled.

MAIN/PREFS MENU:
SCROLL PROJ LED

This item allows you to set the default **Session Controller** project number scrolling for project numbers 100 or higher. 3x will cause the project number to scroll three times before displaying only the last two numbers. **CONTINUOUS** will constantly scroll the project number.

MAIN/PREFS MENU:
TRACK SOLO MODE

There are three different modes of operation for **TRACK SOLO**, which is a playback-monitoring feature available from the **Session Controller** and the **KC-24** keyboard. The three **TRACK SOLO MODE** settings are:

1. ADDITIVE
2. INTERLOCK
3. MOMENTARY

ADDITIVE mode adds to any others currently being soloed each time a **TRACK ARM** key is pressed.

INTERLOCK mode, which is the system default, replaces any previously soloed track(s) every time a track is soloed using a **TRACK ARM** key. If you want to solo more than one track while in **INTERLOCK SOLO** mode, simply press and hold the currently selected **TRACK ARM** key and select additional tracks to be soloed.

MOMENTARY mode keeps track(s) in solo only as long as their corresponding **TRACK ARM** keys are held down.

MAIN/PREFS MENU:
ZOOM SOLO AUDIO

This preference determines whether or not audio is soloed in concert with the zoom solo display function. When enabled, visually soloed tracks on the display will determine the solo status of audio tracks as well.

MAIN/PREFS MENU:
SLIDE TIME UNITS

Here you can select the units used for the **SLIDE TIME** editing function.

MAIN/PREFS MENU:
FFWD & REW RATE

This preference item is used to select the speed of both the **FFWD** and **REW** fast-wind transport modes. The value range is from 1 to 99 times normal play speed. The default setting is 8 times normal. RADAR® also provides a super fast-wind mode when the **FFWD** or **REW** keys are pressed twice in a row. The super fast-wind speed is 3x faster than the regular fast-wind speed set in this preference dialog.

MAIN/PREFS MENU:
PEAK HOLD TIME

This preference determines how long the meters will hold a peak level indication. The duration is specified in seconds, with a maximum value of 999 seconds. To hold level peaks indefinitely, enter a value of **-1** for this setting. To disable the feature altogether, enter a value of **0**.

MAIN/PREFS MENU:
CLIP HOLD TIME

This preference determines how long the clip LED's will hold a clip indication. The duration is specified in seconds, with a maximum value of 999 seconds. To hold clip indications indefinitely, enter a value of **-1** for this setting. To disable the feature altogether, enter a value of **0**.

MAIN/PREFS MENU:
SAVE STATE DELAY

This preference item specifies how long RADAR® waits after an operation before it performs its periodic **SAVE STATE**, which commits the current state of the system to the hard disk. The delay is set in seconds with a value ranging between 1 and 99. The **SAVE STATE** feature cannot be disabled.

MAIN/PREFS MENU:
SCRN-SAVER MENU

NOTE: Hold the **SHIFT** key and press **S** to immediately activate the screen saver lock mode. Hold the **SHIFT** key and press **S** again to release this mode.

SCRN-SAVER MENU:
SAVER DELAY

The default screen saver delay is 60 seconds. Delays up to 999 seconds are possible. Setting the value to 0 will disable the screen saver feature.

SCRN-SAVER MENU:
IMAGE EFFECTS

This enables and disables the image effects applied to the RADAR® screen saver.

MAIN/PREFS MENU:
AUTO RECLAIM

This preference setting enables and disables the **AUTO RECLAIM** function. **AUTO RECLAIM** automatically frees up disk space when deleted audio "falls off" the **UNDO** list.
NOTE: It is recommended that you leave **AUTO RECLAIM ENABLED** unless you have a really good reason to do otherwise.

MAIN/PREFS MENU:
TRK ARM GROUPING

When using multiple RADAR® units at higher sample rates, this feature allows all of the metering to be grouped together on the master machine. For example two units operating at 96 kHz with 12 tracks per unit could have all 24 tracks of metering displayed on a single **MeterBridge 24**. The selections are:

- **NORMAL**
- **COMPACT**

NORMAL refers to 12 tracks of metering available per meter bridge for 96 kHz RADARLink® projects and 6 tracks of metering available per meter bridge for 192 kHz projects.

COMPACT refers to 48 tracks of metering available per single 48-channel meter bridge for 96 kHz and higher RADARLink® projects.

MAIN/PREFS MENU:
IGNORE AES FLAGS

The incoming AES digital signal has the capability of indicating the sample rate of the source. RADAR is capable of interpreting this indicative flag. There are some cases where the incoming AES source doesn't indicate the sample rate which causes RADAR to mistakenly display a **XXXKHZ ILLEGAL** error message. Enabling the **IGNORE AES FLAGS** will remove this error message.

MAIN/PREFS MENU:
UNMOUNT PORTABLE

This preference will activate/deactivate the **MAKE DISK PORTABLE** prompt when you unmount a disk.

MAIN/PREFS MENU:
DAMSEL MODE

This preference is provided for RADAR® users requiring compatibility with Digital Audio Miracles (DAMSEL) file conversion software for the Macintosh.
For more information visit www.digitalaudiomiracles.com.

MAIN/PREFS MENU:
RADARVIEW RES

This preference allows you to select between **800 X 600** or **1024 X 768** graphics resolution. The default is set to **1024 X 768** high resolution. You can change back to **800 X 600** mode, however you will need to reboot RADAR® for the changes to take effect.

MAIN/PREFS MENU:
RECORD PREFS

These record preferences define several recording options to help you customize RADAR® operation for your specific needs.

RECORD PREFS:
1-BUTTON RECORD

With this feature disabled, you must hold **PLAY** and then press **RECORD** on the **Session Controller** or the **KC-24** in order to begin recording. If this feature is enabled, you only need to press **RECORD** in order to start recording.

RECORD PREFS:
TRACK ARM ACTION

The track arming keys on the **Session Controller** or the **KC-24** can engage either record **READY** or instant **RECORD** status per track. Instant **RECORD** allows you to drop into and out of **RECORD** by pressing the **TRACK ARM** keys during playback.

RECORD PREFS:
RECORD MK IN/OUT

You can use this preference dialog to enable or disable the automatic mapping of record in and out times as **MARK IN** and **MARK OUT** points.

RECORD PREFS:
LOW DISK WARNING

This preference allows you to set a low-disk space alarm that will alert you when the available recording time gets below the specified amount. The default setting for this level is 5 minutes. Values for the warning threshold range between 0 and 99 minutes. To disable the low disk space warning set the value to 0 minutes.

RECORD PREFS:
RECORD VERIFY

This preference determines whether or not RADAR® will operate in a **WRITE VERIFY** mode when recording to the audio disk.

MAIN/PREFS MENU:
FILE PREFS

These dialogs let you streamline your workflow by creating preferences for certain file related functions. The **EXPORT FORMAT** and **EXPORT SILENCE** preferences are also used when using the **EXPORT CLIP** short cut key.

FILE PREFS:
SHOW SIZE

When set to **MB** or **TIME**, a **XXXMB PROCEED?** dialog will be added during the backup and export procedures.

FILE PREFS:
EXPORT FORMAT

This sets the preference for the export file format. The choices are **WAV**, **BWAV** or **ASK**. When **ASK** is selected as the preference you will be prompted to choose a file format each time you export files.

FILE PREFS:
EXPORT SILENCE

During export, fill silence pads blank audio regions with zeros to create contiguous files. When **ASK** is selected as the preference you will be prompted to choose a fill silence option each time you export files.

FILE PREFS:
REFORMAT QUALITY

This dialog sets the default quality and speed of sample rate and bit resolution conversion for importing files as well as exporting **STEREO CDAUDIO** files.

FILE PREFS:
WRITE VERIFY

This option allows you to **ENABLE** or **DISABLE WRITE VERIFY** for various removable media. With this preference enabled, the data writing ensures a more accurate process however it also increases the overall completion time.

MAIN/PREFS MENU:
PROJ PREFS

These project preferences define the parameters that will be used every time you create a new project.

PROJ PREFS:
NEW PROJ SETTINGS

This preference allows you to choose:
a. whether the new project settings follow the default settings set in the **PROJ PREFS MENU**
b. use the settings of the current project
c. prompt the user to choose between a. or b. when creating a new project.

PROJ PREFS:
DEF SAMPLE RATE

Sets the sample rate for newly created projects. Valid values range from 32kHz to 192 kHz, depending on the I/O cards installed.

PROJ PREFS:
DEF BIT RES

This preference determines the default bit-depth or bit resolution for newly created projects.

PROJ PREFS:
DEF TC FORMAT

This preference determines the default tc format, SMPTE or MTC, for newly created projects.

PROJ PREFS:
DEF TC RATE

This preference determines the default tc rate for newly created projects. All standard SMPTE/EBU formats are supported.

PROJ PREFS:
DEF START TIME

Sets the start time that will be automatically assigned to new projects.

PROJ PREFS:
DEF UNDO LEVEL

This allows you to set a default undo level setting for all new projects.

PROJ PREFS:
DEF WAVE NS FLR

This sets the wave-drawing noise floor for all new projects.

MAIN/PREFS MENU:
NETWORK PREFS

For detailed information on networking please refer to CONFIGURATION: NETWORKING.

NETWORK PREFS:
INTERFACE PREFS

The following interface preferences allow the RADAR® to be configured for FTP and/or file sharing.

INTERFACE PREFS:
HOST NAME

Create a name for the RADAR®

INTERFACE PREFS:
DHCP SERVER

Enable or disable Dynamic Host Configuration Protocol

INTERFACE PREFS:
LOCAL IP ADDRESS

Define the local IP address of the RADAR® (if DHCP disabled)

INTERFACE PREFS:
SUBNET MASK

Define the local subnet mask of the RADAR RADAR® (if DHCP disabled)

INTERFACE PREFS:
GATEWAY

Enter the IP address of the router (if DHCP disabled)

INTERFACE PREFS:
DNS DOMAIN NAME

Enter the network domain name (if DHCP disabled)

INTERFACE PREFS:
PRIMARY DNS

Enter the primary dns address (if DHCP disabled)

INTERFACE PREFS:
SECONDARY DNS

Enter the secondary dns address (if DHCP disabled)

INTERFACE PREFS:
FTP SERVER

This enables the internal system drive (e.g., **D:ARCHIVE**) to act as an FTP server.

INTERFACE PREFS:
FTP USERNAME

Create an FTP username that will be required by any FTP client software (Mac or Windows) to log on to the internal system drive (e.g., **D:ARCHIVE**) once FTP is enabled.

INTERFACE PREFS:
FTP PASSWORD

Create an FTP password that will be required by any FTP client software (Mac or Windows) to log on to the internal system drive (e.g., **D:ARCHIVE**) once FTP is enabled.

NETWORK PREFS:
SERVER PREFS

Before RADAR® can share files via Ethernet it must be configured with information about the computer/server it will be connected with. Use the following preferences to input the required information.

SERVER PREFS:
CIFS SERVER IP

Enter the unique IP address of the server/computer you want the RADAR to connect with.

SERVER PREFS: SERVER NAME	Enter the unique computer name of the server/computer you want the RADAR to connect with. **NOTE:** Keep the name simple as it is cAsE SeNsItIvE
SERVER PREFS: SERVER SHARE	Enter the unique shared folder name found on the server/computer you want the RADAR to connect with. Enter the client workgroup of the server/computer you want the RADAR to connect with. Keep the name simple as it is cAsE SeNsItIvE
SERVER PREFS: CLIENT WORKGROUP	Enter the client workgroup of the server/computer you want the RADAR to connect with.
NETWORK PREFS: NETWORK CONTROL	This preference allows RADAR® to be controlled over Ethernet via RNC (RADAR® Network Control) software. The RNC program allows you to control one or more RADAR® machines over the Ethernet using a standard PC computer running Windows 98, NT, 2000 or XP.

Diagnostics Menu

MAIN/DIAG MENU: SCAN SCSI BUS	This function scans the SCSI bus and gives a report detailing the attached devices and their SCSI ID's.
MAIN/DIAG MENU: INIT DISK	This function selects and initializes attached SCSI hard disks. See OPERATIONS: DISK MANAGEMENT: INITIALIZE DISK for more information.
MAIN/DIAG MENU: CHECK DISK	This function selects and checks attached SCSI hard disks. See OPERATIONS: DISK DIAGNOSTICS: CHECK DISK for more information.
MAIN/DIAG MENU: REPAIR DISK	This function selects and repairs attached SCSI hard disks. See OPERATIONS: DISK DIAGNOSTICS: REPAIR DISK for more information.
MAIN/DIAG MENU: CHECK PROJECT	This function selects and checks projects for errors. See OPERATIONS: DISK DIAGNOSTICS: CHECK PROJECT for more information.

MAIN/DIAG MENU: REALTIME ERRORS	This function displays and clears any real time errors that are experienced by the system during playback or record. See OPERATIONS: DISK DIAGNOSTICS: REAL-TIME ERRORS for more information.
MAIN/DIAG MENU: VERIFY DISKS	This function selects and verifies attached SCSI hard disks. See OPERATIONS: DISK DIAGNOSTICS: VERIFY HARD DISKS for more information.
MAIN/DIAG MENU: CONFIGURE DEBUG	This function determines the information included in the debug log. See OPERATIONS: DISK DIAGNOSTICS: RADAR® DEBUG for more information.
MAIN/DIAG MENU: SAVE DEBUG	This function lets you save the debug log to a floppy disk. See OPERATIONS: DISK DIAGNOSTICS: RADAR® DEBUG for more information.
MAIN/DIAG MENU: RESTART DESKTOP	This function lets you restart the background BeOS Desktop which can then be accessed via the **KC-24** keyboard by holding down the **ALT** key and pressing the **F2** key. Once at the BeOS Desktop, you can access debug logs, rename/copy/delete folders/files on the **D:ARCHIVE** partition, etc. Essentially typical computer desktop operations. **IMPORTANT NOTE**: The BeOS desktop also gives you access to the system partition (**RADAR24BE**) which contains the software required to run your RADAR®. Do NOT tamper with this partition unless you've been given implicit instructions from iZ Technology support personnel!
MAIN/DIAG MENU: FACTORY SETTINGS	This function lets you return RADAR® settings to the factory defaults.

Help Menu

MAIN/HELP MENU: RELEASE NOTES

Shortcut keys:

Session Controller **HELP** or **H**

KC-24 Keyboard **H**

Launches the PDF viewer and displays the current release notes

To use the **FIND** function within the on-board manual or release notes press **SHIFT+HELP(FIND)** on the **Session Controller** or **CTRL/H** on the **KC-24** keyboard. For complete details refer to OPERATIONS: DISPLAY OVERVIEW: ON SCREEN HELP.

MAIN/HELP MENU: MANUAL

Shortcut keys:

Session Controller **HELP** or **H**

KC-24 Keyboard **H**

Launches the PDF viewer and displays the current manual

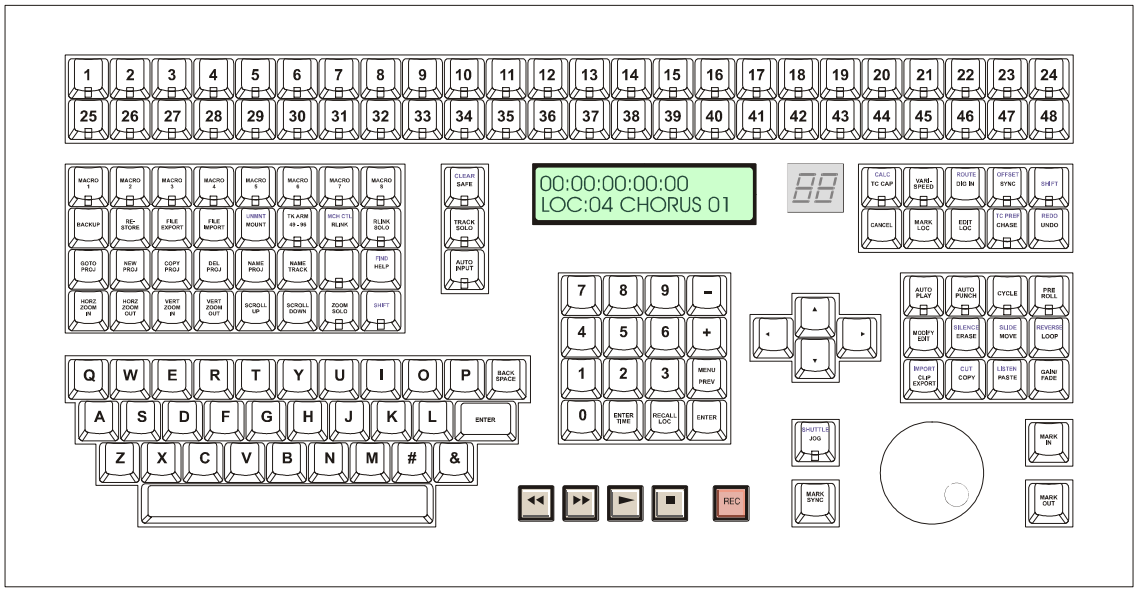
To use the **FIND** function within the on-board manual or release notes press **SHIFT+HELP(FIND)** on the **Session Controller** or, once the manual is launched, continually press the **RED0** key on the **KC-24** keyboard until the search field is selected. For complete details refer to OPERATIONS: DISPLAY OVERVIEW: ON SCREEN HELP.

Shutdown RADAR®

Performs a final **SAVE STATE**, which saves the current project and system information to the disk and displays a prompt in the display confirming that it is safe to power down the unit.

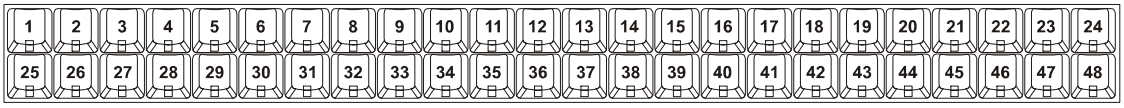
Remote Keyboard Keys

Session Controller



The **Session Controller** is a feature rich, professional control surface loaded with powerful features designed to help you be efficient and productive. The following section breaks the **Session Controller** keys into logical groupings and provides references to detailed information in the manual.

TRACK ARM KEYS



These keys perform two basic functions:

TRACK ARMING

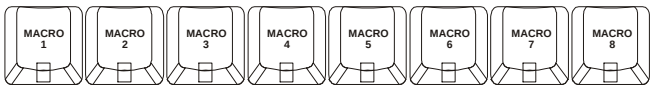
These keys provide up to 96 tracks of direct track arming when used in conjunction with the **49-96** key.

TRACK SELECTION

These keys are also used to select individual tracks when editing, exporting, soloing etc.

Refer to OPERATIONS: RECORDING: MONITORING AND TRACK STATUS for more information.

MACRO KEYS

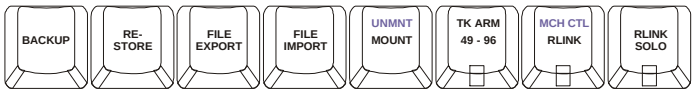


With a single key press, a macro key can recall multiple keystrokes. To store a new macro press **SHIFT+MACRO 1-8** and the selected macro key will begin flashing. Perform the keystrokes that you wish to record and then press the selected macro key again to store it.

Refer to Operations: File Management: Macros for more information.

FILE AND RADARLINK RELATED SHORTCUT KEYS

These keys are direct access shortcuts to frequently used menu items with the exception of the **49-96** key, which is not accessible from the menu system. For reference information please refer to the section covering the menu item accessed by the shortcut.



- **BACKUP**

  Shortcut to ***MAIN MENU /FILE MENU / BACKUP*** menu item.

- **RESTORE**

  Shortcut to ***MAIN MENU /FILE MENU / RESTORE*** menu item.

- **EXPORT**

  Shortcut to ***MAIN MENU /FILE MENU / EXPORT*** menu item.

- **IMPORT**

  Shortcut to ***MAIN MENU /FILE MENU / IMPORT*** menu item.

- **MOUNT (UNMNT)**

  Shortcut to ***MAIN MENU /DISK MENU /*** **MOUNT/UNMOUNT** dialog.

- **49-96**

  Switches metering and track arm keys for direct control of **RADARLink™** units 3 and 4.

- **RLINK (MCH CTL)**

  Shortcuts to ***MAIN MENU /SYNC MENU / RADARLINK /*** **ENABLE/DISABLE** and ***MAIN MENU /SYNC MENU / MACHINE CONTROL /*** **ENABLE/DISABLE**

- **RLINK SOLO**

  Shortcut to ***MAIN MENU /SYNC MENU / RADARLINK / RADARLINK SOLO*** menu item.

PROJECT RELATED SHORTCUT KEYS

- **GOTO PROJ**

  Shortcut to ***MAIN MENU / PROJECT MENU / GOTO PROJECT*** menu item.

- **NEW PROJ**

  Shortcut to ***MAIN MENU / PROJECT MENU / NEW PROJECT*** menu item.

- **COPY PROJ**

  Shortcut to ***MAIN MENU / PROJECT MENU / COPY PROJECT*** menu item.

- **DEL PROJ**

  Shortcut to ***MAIN MENU / PROJECT MENU / DELETE PROJECT*** menu item.

- **NAME PROJ**

  Shortcut to ***MAIN MENU / PROJECT MENU / NAME PROJECT*** menu item.

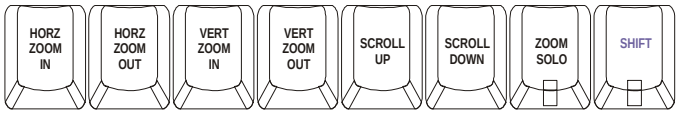
- **NAME TRACK**

  Shortcut to ***MAIN MENU / PROJECT MENU / NAME TRACK*** menu item.

- **HELP (FIND)**

  Shortcut to ***MAIN MENU / HELP*** menu item.

VIEW MANAGEMENT KEYS



- **HORZ ZOOM IN**

  Zooms in horizontally to a width of 5 seconds displayed across the screen.

- **HORZ ZOOM OUT**

  Zooms out horizontally to a width of 24 hours displayed across the screen.

- **VERT ZOOM IN**

  Zooms in vertically to a width of 1 track displayed on the screen.

- **VERT ZOOM OUT**

  Zooms out vertically to a width of 24 tracks displayed on the screen.

- **SCROLL UP**

  Scrolls the display upward vertically when fewer than 24 tracks are displayed.

- **SCROLL DOWN**

  Scrolls the display downward vertically when fewer than 24 tracks are displayed.

- **ZOOM SOLO**

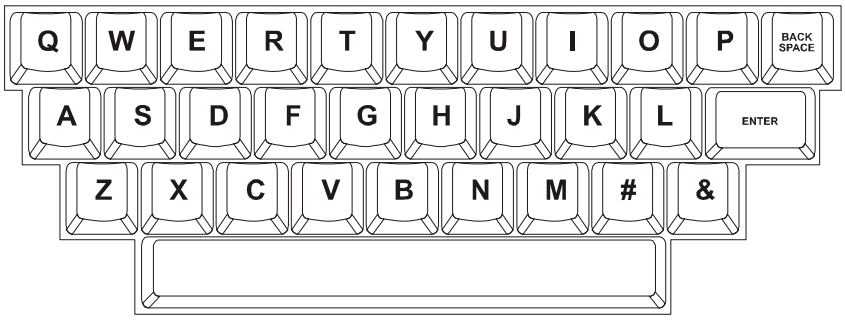
  When engaged the **TRACK ARM** keys may be used to visually solo tracks in the display.

- **SHIFT**

  This secondary **SHIFT** key is a duplicate of the **SHIFT** key located above the **UNDO** key.

Refer to OPERATIONS: DISPLAY OVERVIEW: VIEW MANAGEMENT for more information.

QWERTY KEYS



These keys are used to enter names and other information into RADAR®. They are also used as shortcuts in both transport and menu mode.

TRANSPORT MODE SHORTCUTS

H = Launch **HELP**

L = RADARLink™ **ENABLE/DISABLE**

M = Display the **MUTE TRACKS** dialog

N = Display the **NAME TRACK** dialog

S = RADARLink™ **SOLO**

Hold the **SHIFT** key and press **B** = File Management Browse

Hold the **SHIFT** key and press **S** = Screen Saver Lock (RADAR will immediately go into screen saver mode and stay there until you hold the **SHIFT** key and press **S** again)

Hold the **SHIFT** key and press **BACKSPACE** = Toggles between debug log and waveform display

Menu Mode Shortcuts

QWERTY KEYS = Cycle through menu selections starting with that letter.

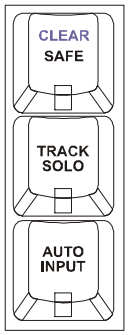
Example: While in the MAIN MENU menu repeatedly pressing **S** cycles through the **SYSTEM MENU**, **SYNC MENU** and **SHUTDOWN RADAR** selections.

Refer to OPERATIONS: QWERTY KEYBOARD for more information.

TRACK STATUS KEYS

These keys control several aspects of RADAR® recording and monitoring status:

SAFE (CLEAR)



This key puts the system in safe mode. No recording can take place while **SAFE** is engaged.

Pressing **SAFE** while recording enables record lock. Pressing **STOP** or **PLAY** will disable record lock. No other key press can disable recording once record lock mode has been engaged.

The shifted **CLEAR** function resets all tracks in record ready mode.

TRACK SOLO

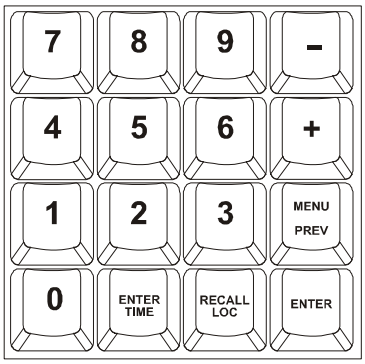
When **TRACK SOLO** is engaged selecting a **TRACK ARM** key places that track in solo mode.

AUTO INPUT

When the **AUTO INPUT** key is engaged the system automatically switches monitoring from **INPUT** to **PLAYBACK** when playback begins and returns it to **INPUT** when playback stops.

Refer to OPERATIONS: RECORDING: MONITORING AND TRACK STATUS for more information.

NUMERIC KEYS



The numeric keypad is used to enter times and other values into RADAR®. It is also used for recalling single digit locate points 0 - 9.

The plus and minus are multi-function keys, used for different purposes in different situations.

The remaining keys are used for locating and navigating through the RADAR® menu structure as outlined below.

- **0-9**

  One key recall of locate points in transport mode. Used to enter numerical data.

- **+ / -**

  Used for incrementing/decrementing, adding/subtracting and indicating positive or negative values.

- **ENTER TIME**

  Enter a time value and press **ENTER** to locate the current position to that time.

- **RECALL LOC**

  Use this key in conjunction with the numeric keys, **MARK IN/SYNC/OUT** keys and **ENTER** to recall locate points.

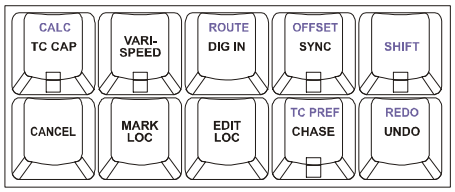
- **ENTER**

  Use **ENTER** in conjunction with functions, menus and dialogs to accept selections and values.

- **MENU / PREV**

  This key lets you step in and out of the menu system.

SYSTEM AND SYNC KEYS



Some of the keys in this grouping are not accessible from the menu system. For reference information please refer to the section covering the item accessed by the key.

- **TC CAP (CALC)**

  Used to automatically set an offset when receiving static SMPTE from a device that is in the correct position relative to RADAR®. For more information see CONFIGURATION: TIME CODE: TC CAPTURE. The shifted **CALC** function brings up an offset calculator that can be a big help if you need to calculate an offset from a predetermined set of time code locations like an EDL (Edit Decision List).

- **VARI-SPEED**

  This is a dual press activation/de-activation key. The first key press displays the **VARI-SPEED** value and the next key press engages **VARI-SPEED**. Pressing the key while **VARI-SPEED** is engaged once again displays the speed value and pressing it a second time disengages **VARI-SPEED**. To change the speed while the function is engaged, press the **VARI-SPEED** key once to display the speed dialog, change the value and hit the **CANCEL** key to return to transport mode. This setting may be changed while in **PLAY** mode. For further information please refer to OPERATIONS: VARI-SPEED.

- **DIG IN (ROUTE)**

  This shortcut key lets you quickly select digital I/O format or routing. The shifted **ROUTE** function sets the 2-channel I/O source and destination tracks and determines whether track inputs are analog or digital. For more information see CONFIGURATION: DIGITAL I/O.

- **SYNC (OFFSET)**

  The **SYNC** shortcut key lets you quickly select an external digital sync source for digital I/O formats. The shifted **OFFSET** function lets you enter a SMPTE time to create an offset with other LTC synchronized devices. For details refer to CONFIGURATION: DIGITAL I/O AND CONFIGURATION: TIME CODE.

- **SHIFT**

  This **SHIFT** key is one of 2 on the **Session Controller**. The **SHIFT** function can be used for capitalization when entering information or to select the shifted key functions on the remote.

- **CANCEL**

  When **CANCEL** is pressed the system will abort any current operations and return to transport ready mode. **CANCEL** can also be used to completely exit the menu tree or to abort a file I/O operation such as backup or restore.

- **MARK LOC**

  The **MARK LOC** key is used to drop locate markers along the project timeline. Markers can be dropped while playback is stopped or in any transport mode including fast-forward or rewind.

- **EDIT LOC**

  The **EDIT LOC** key is used to modify locate markers that have been placed along the project timeline. See OPERATIONS: TRANSPORT OPERATIONS: AUTO LOCATE MARKERS for detailed information.

- **CHASE (TC PREFS)**

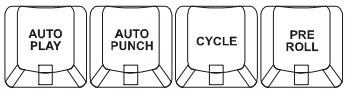
  When pressed, this key puts the system into **CHASE** mode using the parameters set in the ***MAIN MENU / SYNC MENU / TC SETTINGS*** menu. The shifted function **TC PREFS** acts as a direct access shortcut to these settings. For further information please consult OPERATIONS: CHASING TIME CODE.

- **UNDO (REDO)**

  The number of **UNDO** and **REDO** levels is dependent on the setting in the ***MAIN MENU / PROJECT MENU /*** **UNDO LEVELS** dialog. See OPERATIONS: RECORDING: UNDO/REDO for further information.

TRANSPORT KEYS

These keys provide access to advanced transport operations.



- **AUTO PLAY**

  When used in conjunction with any **RECALL LOCATE** functions **AUTOPLAY** initiates playback automatically once the specified timeline location has been cued.

- **AUTO PUNCH**

  AUTO PUNCH uses the **MARK IN** and **MARK OUT** locate points to automatically initiate and terminate recording. Please see OPERATIONS: RECORDING: AUTO PUNCH for further information.

- **CYCLE**

  The **CYCLE** key initiates a playback cycle using the **MARK IN** and **MARK OUT** points as a reference. Playback cycling will continue until the cycle key or any transport key is pressed again.

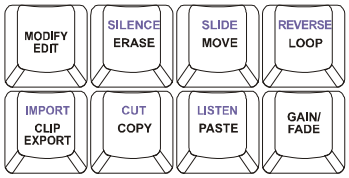
NOTE: There is a pause between playback cycles. This is not intended as a loop previewing function.

- **PRE ROLL**

  This key activates and de-activates the **PRE ROLL** function. For detailed information please refer to OPERATIONS: TRANSPORT OPERATIONS: PRE ROLL.

EDIT KEYS

The editing keys provide direct access to almost all of the functions contained in the **EDIT MENU**.



- **MODIFY EDIT**

  This function allows you to quickly and easily fine-tune the current edit. For details refer to OPERATIONS: EDITING: EDITING FUNCTIONS: MODIFY EDIT.

- **ERASE (SILENCE)**

  Use **ERASE** to eliminate audio without affecting post-edit audio on the project timeline. See OPERATIONS: EDITING: EDITING FUNCTIONS: ERASE for further information.

  The shifted function **SILENCE** can be used to insert a silent region into the project timeline. Refer to OPERATIONS: EDITING: EDITING FUNCTIONS: INSERT SILENCE for more information.

- **MOVE (SLIDE)**

  MOVE and **SLIDE** both reposition the audio defined by the selected track-region. While **MOVE** prompts you to enter a new destination in the HH:MM:SS:FF format, **SLIDE** uses frames or millisecond to provide a way to easily nudge audio regions. For more information please refer to OPERATIONS: EDITING: EDITING FUNCTIONS: MOVE AND OPERATIONS: EDITING: EDITING FUNCTIONS: SLIDE.

- **REVERSE (LOOP)**

  The **REVERSE** function reverses the audio currently stored on the clipboard. See OPERATIONS: EDITING: EDITING FUNCTIONS: REVERSE for more information.

  LOOP automatically pastes multiple copies of a track-region using the **MARK OUT** point as a starting reference. Please refer to OPERATIONS: EDITING: EDITING FUNCTIONS: LOOP for details.

- **CLIP EXPORT (IMPORT)**

  This shortcut key allows you to quickly export audio clips defined by the **MARK IN/OUT** keys using the current preferences set in the ***MAIN MENU / PREFERENCES MENU / FILE PREFS*** menu. For more information see OPERATIONS: FILE MANAGEMENT: CLIP EXPORT and REFERENCE: MENU ITEM QUICK REFERENCE: PREFERENCE MENU: FILE PREFS.

  The shifted function **IMPORT** lets you import audio directly to the clipboard. Once complete, you can then paste the clipboard data into the current or any existing project. For more information see OPERATIONS: FILE MANAGEMENT: IMPORT.

- **COPY (CUT)**

  COPY moves a duplicate of the defined track-region to the clipboard. The shifted function **CUT** removes the defined track-region from the project timeline and creates a duplicate of the defined track-region to the clipboard. For further information see OPERATIONS: EDITING: EDITING FUNCTIONS: COPY AND OPERATIONS: EDITING: EDITING FUNCTIONS: CUT.

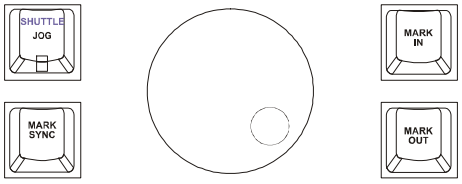
- **PASTE (LISTEN)**

  The **PASTE** function places a copy of the audio currently stored on the clipboard into the project at the specified paste point. See OPERATIONS: EDITING: EDITING FUNCTIONS: PASTE for details.

  The shifted function **LISTEN** lets you audition the audio currently stored on the clipboard. For details see OPERATIONS: EDITING: EDITING FUNCTIONS: LISTEN

- **GAIN / FADE**

  This key provides a shortcut to the **GAIN/FADE** edit menu. For details on **GAIN/FADE** operations please refer to OPERATIONS: EDITING: EDITING FUNCTIONS: GAIN/ FADE.



- **JOG (SHUTTLE)**

  This key engages the **JOG** function and allows you to scrub an edit point using the **Jog/Shuttle wheel**. The shifted **SHUTTLE** function initiates playback with variable speed in either forward and reverse. The Jog/Shuttle wheel dynamically controls playback speed and direction.

- **MARK SYNC**

  The **MARK SYNC** key places a special sync marker in a region defined by the **MARK IN** and **MARK OUT** points. See OPERATIONS: EDITING: MARKING A TIME REGION for more information.

- **MARK IN**

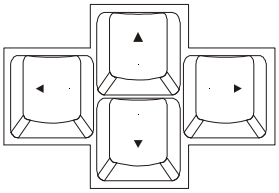
  This key is used to define the starting point of a track-region. See OPERATIONS: EDITING: MARKING A TIME Region for details.

- **MARK OUT**

  MARK OUT defines the end point of a track-region. See OPERATIONS: EDITING: MARKING A TIME REGION for further information.

- **ARROW KEYS**

  The arrow keys are multi-function keys that have many uses depending on the current context.



Uses include:

- Menu and dialog navigation (all arrow keys).
- Value increment and decrement (up and down arrow keys).
- Sub-frame positional nudge in Jog mode (left and right arrow keys).
- Locate to **MARK IN** and **MARK OUT** in transport mode (left and right arrow keys).
- Audition current **MARK IN** - **MARK OUT** region (down arrow key).
- Display remaining recording time (left and right arrow keys simultaneously).

TRANSPORT KEYS

The transport keys also have special alternate functions including:

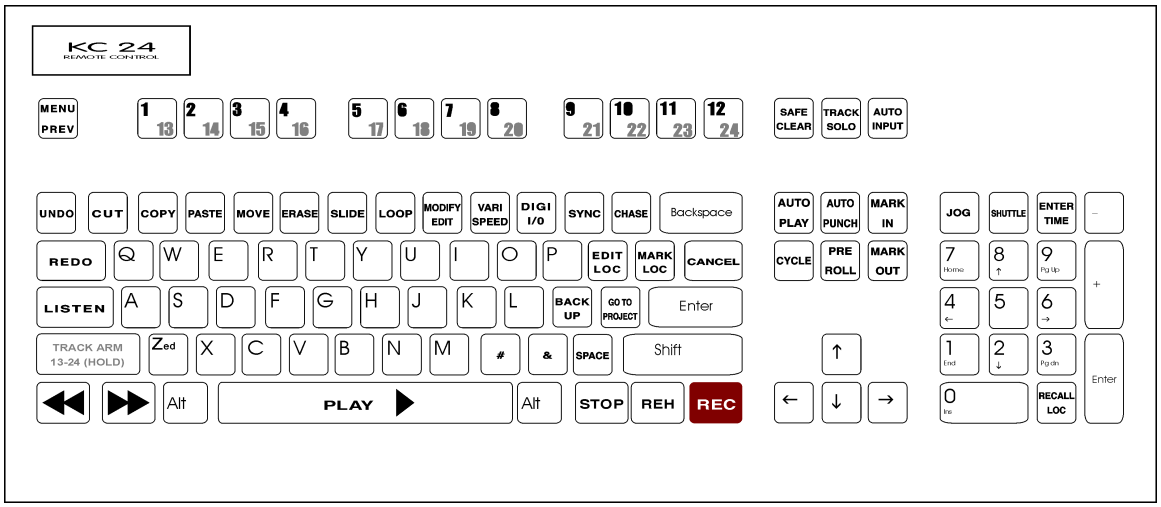
- **REWIND + PLAY** plays the audio in reverse.
- **RECALL LOC + REWIND** locates to the previous recorded audio boundary in a project.
- **RECALL LOC + FAST-FORWARD** locates to the next recorded audio boundary in a project.
- Pressing the **REWIND** or **FAST-FORWARD** key twice in rapid succession engages **SUPER FAST-WIND MODE**.
- When in **HELP** mode, the transport keys are used to navigate the PDF viewer.

KC-24 Keyboard

The **KC-24** is a full-featured control surface that is included with RADAR® units sold without the optional **Session Controller**. The following section gives an overview of the **KC-24** and provides references to related functions in the manual.

NOTE: The **KC-24** or a standard PC keyboard may be required for certain RADAR® diagnostic procedures.

Certain functions like **ZOOM SOLO** are not available using the **KC-24**.



The following table indicates the standard keyboard function and the equivalent **KC-24** function:

Keyboard Layout	KC-24 Layout
NOTE: LOS = Left of Spacebar ROS = Right of Spacebar NK = Numeric Keypad	
Esc	**MENU PREV**
F1	TK ARM **1/13**
F2	TK ARM **2/14**
F3	TK ARM **3/15**
F4	TK ARM **4/16**
F5	TK ARM **5/17**
F6	TK ARM **6/18**
F7	TK ARM **7/19**
F8	TK ARM **8/20**
F9	TK ARM **9/21**
F10	TK ARM **10/22**
F11	TK ARM **11/23**
F12	TK ARM **12/24**
Print Scrn SysRq	**SAFE CLEAR**
Scroll Lock	**TRACK SOLO**
Pause Break	**AUTO INPUT**
~	**UNDO**
1	**CUT**
2	**COPY**
3	**PASTE**
4	**MOVE**
5	**ERASE**
6	**SLIDE**
7	**LOOP**
8	**MODIFY EDIT**
9	**VARISPEED**
0	**DIGI I/O**

Keyboard Layout	KC-24 Layout
-	**SYNC**
=	**CHASE**
Backspace	**BACKSPACE**
Tab	**REDO**
Q	Q
W	W
E	E
R	R
T	T
Y	Y
U	U
I	I
O	O
P	P
[	**EDIT LOC**
]	**MARK LOC**
\	**CANCEL**
Caps Lock	**LISTEN**
A	A
S	S
D	D
F	F
G	G
H	H
J	J
K	K
L	L
;	**BACKUP**
"	**GO TO PROJECT**
Enter	**ENTER**

Keyboard Layout	KC-24 Layout
Z	Z
X	X
C	C
V	V
B	B
N	N
M	M
,	**#**
.	**&**
/	**SPACE**
LOS Shift	TK ARM **13-14**
LOS Ctrl	**RWD**
LOS "Windows"	**FFWD**
LOS Alt	LOS **ALT**
Spacebar	**PLAY**
ROS Alt	ROS **ALT**
ROS "Windows"	**STOP**
ROS Ctrl	**REC**
ROS Shift	ROS **SHIFT**
Insert	**AUTO PLAY**
Home	**AUTO PUNCH**
Page Up	**MARK IN**
Delete	**CYCLE**

Keyboard Layout	KC-24 Layout
End	**PREROLL**
Page Down	**MARK OUT**
Num Lock	**JOG**
NK /	**SHUTTLE**
NK *	**ENTER TIME**
NK -	NK -
NK 7	NK 7
NK 8	NK 8
NK 9	NK 9
NK +	NK +
NK 4	NK 4
NK 5	NK 5
NK 6	NK 6
NK 1	NK 1
NK 2	NK 2
NK 3	NK 3
NK Enter	NK **ENTER**
NK 0	NK 0
NK .	**RECALL LOC**
Arrow Up	**ARROW UP**
Arrow Down	**ARROW DOWN**
Arrow Left	**ARROW LEFT**
Arrow Right	**ARROW RIGHT**

TK ARM

These keys perform two basic functions:

- **TRACK ARMING**

  These keys provide up to 24 tracks of direct track arming when used in conjunction with the **TRACK ARM 13-24** key.

- **TRACK SELECTION**

  These keys are also used to select individual tracks when editing, exporting, soloing etc.

Refer to OPERATIONS: RECORDING: MONITORING AND TRACK STATUS for more information.

TRANSPORT CONTROLS

Standard transport controls are provided: **REWIND**, **FAST-FORWARD**, **PLAY**, **STOP**, and **RECORD**. Also included is the key labeled **REH**, which is the rehearse key. This is effectively a practice record button, switching between playback and input monitoring without actually entering record mode. Although the **REH** key is provided this feature has not yet been implemented in software.

The **JOG** key is at the top of the numeric pad. Once you press **JOG**, you may use the right and left arrow keys to scrub the audio. If a mouse is attached to the rear of the RADAR®, the mouse can be used as an alternative method for scrubbing audio.

The **SHUTTLE** key is next to the **JOG** key at the top of the numeric pad. Once you press **SHUTTLE**, you may use the mouse to begin shuttling audio either forwards or in reverse.

EDITING KEYS

Quick access keys are provided for the most commonly used editing functions including:

- **UNDO**
- **CUT**
- **COPY**
- **PASTE**
- **MOVE**
- **ERASE**
- **SLIDE**
- **LOOP**
- **MODIFY EDIT**

Please see OPERATIONS: EDITING for information on using these editing features.

MENU/PREV KEY

On the top, left hand side of the **KC-24** is the **MENU/PREV** key. This key accesses the RADAR® menu system. Pressing this key either enters the menu system, steps back to the previous menu level or exits the menu system completely depending on the current mode of operation. Refer to OPERATIONS: NAVIGATING MENUS: MENU/PREV for more information.

LOCATE/TRANSPORT FUNCTION KEYS

This key grouping is located above the arrow keys and contains the following keys:

- **AUTO PLAY**
- **AUTO PUNCH**
- **MARK IN**
- **MARK OUT**
- **PRE ROLL**
- **CYCLE**

The **MARK IN** and **MARK OUT** keys allow you to specify the start and end of a region for editing. These points also serve as in and out points for the **AUTO PUNCH** feature. Please see OPERATIONS: TRANSPORT OPERATIONS for more details.

QUICK ACCESS AND UTILITY KEYS

Several keys on the **KC-24** provide one touch access to frequently accessed menu functions. These include:

- **VARI-SPEED**
- **CHASE**
- **MARK LOC**
- **GO TO PROJECT**
- **TRACK SOLO**
- **RECALL LOC**
- **SYNC**
- **EDIT LOC**
- **BACK UP**
- **SAFE (CLEAR)**
- **AUTO INPUT**

QWERTY KEYS AND NUMERIC KEYPAD

The QWERTY keys are used to enter names and values into the system. Please note that keys in use as transport or custom controls will not work like their counterparts on a conventional keyboard. You must use the SPACE and SHIFT keys provided on the right hand side of the keyboard.

The Numeric keypad is used to enter values and to recall locate points in the project.

ZOOM/SCROLL FUNCTIONS

- On the **KC-24** there aren't dedicated zoom or scroll keys. The following key combinations are used instead:
- Zoom in or out horizontally by pressing and holding the **Z** key and pressing either **+** or **-**.
- Zoom in or out vertically by pressing and holding the **V** key and pressing either **+** or **-**.
- Scroll up or down by pressing and holding the **V** key and pressing the up or down arrow key.

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3.38 Manual Addendum

This addendum provides changes and additions to the 3.30 Manual for all RADAR® products. The 3.30 Manual page numbers are referenced for contextual purposes.

Menu Tree Overview

This section provides an overview of the RADAR® menu structure. (pg. 125)

MAIN MENU MENU >

- SYSTEM MENU >
  - SYSTEM VERSION
    - RADAR SOFTWARE VER
    - SERIAL NUMBER
    - RECORDING ENGINE
    - INSTALLED RAM
    - CPU TYPE
    - CPU SPEED
    - IP ADDRESS
    - MAC ADDRESS
    - ETHERNET TYPE
    - ANALOG I/O
    - DIGITAL I/O 1
    - DIGITAL I/O 2
    - PRIMARY MASTER
    - SECOND MASTER
    - SCS ID 0
  - SET TIME & DATE
  - SET SERIAL NUMBER
  - UPDATE SOFTWARE
- DISK MENU >
  - MOUNT/UNMOUNT
  - SHOW DISK SPACE
  - RECLAIM SPACE
  - MAKE PORTABLE
  - ERASE ALL AUDIO
  - INIT DISK (NOW/ HAS RADAR BWAV OPTION)
  - DISK MODE (NOW HAS A DUAL DISK OPTION, IF ADRENALINE® PLUS PRESENT)
  - 24 TRKS AT 192K (IF ADRENALINE® PLUS PRESENT)
  - SEAMLESS 64K
  - CLONE RADAR DISK
  - DISK NOTES
- SYNC MENU >
  - TC SETTINGS >
    - TC FORMAT
    - TC RATE
    - SMPTE LOCK SPEED
    - FREEWHEEL TIME
    - STATIC TC OUT
    - CHASE MODE (REPLACES RECHASE MODE)
    - SHOW SYNC DRIFT
    - SYNC THRESHOLD
    - CHASE ON POWERUP
  - SYNC REFERENCE
  - RADARLINK >
    - ENABLE/DISABLE
    - RADARLINK SOLO
    - RADARLINK ID
  - MACHINE CONTROL >
    - ENABLE/DISABLE
    - SELECT TYPE
    - 9-PIN SETTINGS >
      - DEVICE ID
      - 9-PIN CHASE MODE (REPLACES CHASE MODE)
      - TRACK ARM MODE
      - VARISPEED MODE
      - SHUTTLE-0 MODE
      - TC OUT MODE-CUE
      - TC OUT MODE-PLAY

SYNC MENU (CON'T) >
- MMC SETTINGS
  - DEVICE ID
- SYNC REF OUTPUT
- LOST SYNC IN REC

I/O MENU >
- I/O ROUTING
  - INPUT ROUTING
  - OUTPUT ROUTING
  - RESET ROUTING
  - DIG 2-CH ROUTING
  - DIGITAL INPUTS
  - 8-BUS MODE
- ANALOG I/O LEVEL
- DIG IN FORMAT
- DIG I/O SDQ
- DIG 2-CH OUTPUT
- AES SETTINGS > (IF AES CARD PRESENT)
  - SAMPLE RATE IN
  - EMPHASIS IN
  - EMPHASIS OUT
  - MULTI-CHNL TYPE
- ADAT SETTINGS > (IF ADAT CARD PRESENT)
  - ADAT IN CLOCK
  - ADAT IN WIDTH
  - ADAT IN SMPL PT
  - ADAT OUT WIDTH
  - ADAT OUT USERBIT
  - FACTORY DEFAULTS
- TDIF SETTINGS > (IF TDIF CARD PRESENT)
  - IN SAMPLE POINT
  - SAMPLE RATE IN
  - EMPHASIS IN
  - EMPHASIS OUT
  - CARD TYPE

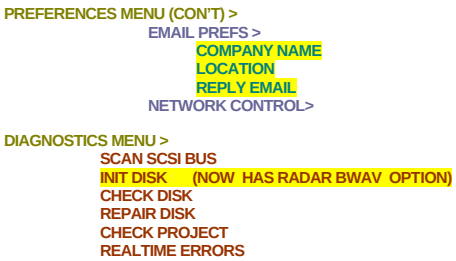
FILE MENU >
- BACKUP
- RESTORE
- EXPORT (NOW HAS AUDIO
- IMPORT RECORDING DRIVE OPTION)
- FLATTEN PROJECTS
- FILE MANAGEMENT
- MAKE DVDCD IMAGE
- BURN DATA CD/DVD
- BURN AUDIO CD
- FINALIZE CD
- DEL IMG FILE
- MACROS
- MIX AUTOMATION
- FILE PREFS >
  - SHOW SIZE
  - EXPORT FORMAT
  - EXPORT SILENCE
  - REFORMAT QUALITY
  - WRITE VERIFY
  - FILE NAME FORMAT
  - DVD BURN MODE
  - DVD BURN SPEED

PROJECT MENU >
- GOTO PROJECT
- NEW PROJECT
- COPY PROJECT
- DELETE PROJECT
- NAME PROJECT
- RENUMBER PROJECT
- SAMPLE RATE
- BIT RESOLUTION
- TC FORMAT
- TC RATE
- START TIME
- SYNC OFFSET
- DISPLAY MODE
- MIDI TEMPO MAP
- VARISPEED
- UNDO LEVEL
- WAVE NOISE FLOOR
- NAME TRACK
- RENUMBER LOCATES
- REBUILD WAVES
- I/O ROUTING
  - INPUT ROUTING
  - OUTPUT ROUTING
  - RESET ROUTING
  - DIG 2-CH ROUTING
  - DIGITAL INPUTS
  - 8-BUS MODE
- PROJECT NOTES
- PROJECT PREFS >
  - NEW PROJ SETTINGS
  - NEW PROJ NUMBER
  - DEF SAMPLE RATE
  - DEF BIT RES
  - DEF TC FORMAT
  - DEF TC RATE

PROJECT MENU (CON'T) >
- DEF START TIME
- DEF UNDO LEVEL
- DEF WAVE NS FLR

EDIT MENU >
- UNDO EDIT
- REDO EDIT
- MODIFY EDIT
- CUT
- COPY
- PASTE
- MOVE
- ERASE
- LOOP
- SLIDE
- INSERT SILENCE
- REVERSE
- GAIN/FADE
- LISTEN
- EDIT XFADE TIME
- REC XFADE TIME
- CROSSFADE TYPE
- MUTE TRACKS
- RECORD SAFE

PREFERENCES MENU >
- DEF SMPTE FIELD
- SHOW SUBFRAMES
- SCROLL PROJ LED
- TRACK SOLO MODE
- ZOOM SOLO AUDIO
- SLIDE TIME UNITS
- FFWD & REW RATE
- MAX JOG RATE
  - (IF ADRENALINE ® PLUS PRESENT)
- PEAK HOLD TIME
- CLIP HOLD TIME
- SAVE STATE DELAY
- SCRN-SAVER MENU >
  - SAVER DELAY
  - IMAGE EFFECTS
- AUTO RECLAIM
- TRK ARM GROUPING
- IGNORE AES FLAGS
- UNMOUNT PORTABLE
- DAMSEL MODE
- RADARVIEW RES
- CLCOK MODE
- MUTE I/O ON STOP
- RECORD PREFS>
  - 1-BUTTON RECORD
  - TRACK ARM ACTION
  - RECORD MK IN/OUT
  - LOW DISK WARNING
  - RECORD VERIFY
  - RECORD ON CHASE
  - PROJECT PER TAKE
- FILE PREFS >
  - SHOW SIZE
  - EXPORT FORMAT
  - EXPORT SILENCE
  - REFORMAT QUALITY
  - WRITE VERIFY
  - FILE NAME FORMAT
  - DVD BURN MODE
  - DVD BURN SPEED
- PROJ PREFS >
  - NEW PROJ SETTINGS
  - NEW PROJ NUMBER
  - DEF SAMPLE RATE
  - DEF BIT RES
  - DEF TC FORMAT
  - DEF TC RATE
  - DEF START TIME
  - DEF UNDO LEVEL
  - DEF WAVE NS FLR
- NETWORK PREFS >
  - INTERFACE PREFS >
    - HOST NAME
    - DHCP SERVER
    - LOCAL IP ADDRESS
    - SUBNET MASK
    - GATEWAY
    - DNS DOMAIN NAME
    - PRIMARY DNS
    - SECONDARY DNS
    - FTP SERVER
    - FTP LOGIN NAME
    - FTP PASSWORD
  - SERVER PREFS >
    - NETWORK PROTOCOL
    - SERVER IP ADDRESS
    - SERVER NAME
    - SERVER SHARE
    - CLIENT WORKGROUP



New Software Install Procedure

Once you have version 3.38 installed, you will use the **UPDATE SOFTWARE** selection in the **SYSTEM MENU** for future installs. Here, you will choose how you want to install (from floppy, CD, REV disk, local network, iZ website, etc.). Follow the prompts to verify a proper installation disk before rebooting RADAR®.

The **DOWNGRADE SYSTEM** selection in the **SYSTEM MENU** has been replaced by the **INSTALL PREV VER** selection in the **DIAGNOSTICS MENU**. This will give you a list of all software versions that you have previously installed, or you can select **OTHER** to install an older version from floppy, CD, etc.

To upgrade the software:

1. Use the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to ***THE MAIN / DIAGNOSTICS / INSTALL PREV VER*** dialog and press the **ENTER** key.
2. At the **UPDATE S/W FROM** prompt, select the software location and press the **ENTER** key.
3. At the **INSTALL VERSION 3.3X? YES OR NO** prompt select **YES** and press the **ENTER** key.

To downgrade the software:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / DIAGNOSTICS / INSTALL PREV VER*** dialog and press the **ENTER** key.
2. Select **3.3X** or **OTHER** and press the **ENTER** key.
3. If **OTHER** is selected, at the **INSTALL S/W FROM** prompt, select the software location and press the **ENTER** key.
4. At the **INSTALL VERSION 3.3X? YES OR NO** prompt select **YES** and press the **ENTER** key.

Install Interim Software Updates Directly from the iZ Web Site

If your RADAR® is connected to the internet, you will be able to install **upcoming** interim software upgrades directly from www.izcorp.com without the need to manually FTP files or create a software disk. When you select **UPDATE SOFTWARE** from the **SYSTEM MENU**, and choose "WEB:izcorp.com", the newest software version number will appear. If it is a free interim upgrade, you will be able to download the software directly to your RADAR®.

For major upgrades which require payment (as indicated by a "$" sign), you will not be able to download the software directly, so RADAR® will ask if you would like an email request to be sent to iZ Sales. To assist the sales process, your RADAR®'s serial number, current software version, and information about the installed memory and processor will automatically be included in the email. You will also be prompted to enter your name, phone number, company name, location and email address. Note that when entering your email address, you can use the **[#]** and **[&]** keys to enter the '@' and '**.**'.

File Transfer to/from Network Devices using RADAR®'s FTP Client

Now you can speed up backup/restore, import/export, and file copy to network drives by connecting to an FTP server with RADAR® as the client.

To set FTP client on RADAR®:

1. Use the **MENU/PREV, ARROW** keys and **ENTER** key to go to the ***MAIN /PREFERENCES/NETWORK PREFS/SERVER PREFS/NETWORK PROTOCOL*** and press the **ENTER** key.
2. Select **FTP** and press the **ENTER** key.
3. At the **SERVER IP ADDR** input your FTP server's IP address
4. At the **SERVER NAME** input your FTP server's name
5. When you backup/restore, import/export, and file copy, the file browser will display the FTP server as drive **N:**
6. Press **[ENTER]** on **N:[SERVER NAME]**
7. At the **USER NAME** prompt enter the FTP server's user name and press the **ENTER** key.
8. At the **USER NAME** prompt enter the FTP server's user name and press the **ENTER** key.

Ping IP Address

As an aid to network setup, the **PING IP ADDRESS** selection in the **DIAGNOSTICS MENU** provides a way to test communication.

To ping an IP address:

1. Use the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to the ***MAIN /DIAGNOSTICS MENU/PING IP ADDRESS*** and press the **ENTER** key.
2. Input the IP address of the network device to communicate with (SERVER IP is default address) and press the **ENTER** key.

Copy and Paste Files to DVD-R or CD-R

Now, when you use the file browser to copy files, you can paste them to a DVD multi drive containing a blank DVD-R or CD-R. RADAR® will automatically make an ISO image and burn it to the disk.

To paste files to a blank DVD-R or CD-R:

1. Press the **SHIFT** and **B** keys to browse. Press the **COPY** key on the desired file or folder and press the **ENTER** key.
2. Press the **ENTER** key on **B:DVD BLANK DISK**
3. Press the **PASTE** key on **BLANK DVD-R DISK** or **BLANK CD-R DISK**
4. At the **X FLS/X MB PROCEED YES OR NO** prompt select **YES** and press the **ENTER** key.
5. At the **NAME DISK:** input the name of the disk and press the **ENTER** key.

One-Step Backup to DVD-R or CD-R

Now, you can backup to **B:DVD BLANK DISK**. RADAR® will automatically create an ISO image and burn it to a blank CD-R or DVD-R.

Project Notes Included in Backups

A project notes text file is now automatically included in the **DSET** folder whenever you backup a project (just as it is included when you flatten a project or do a mono export).

Disk Info File

When you mount an audio drive, a disk info file will automatically be created in the **DISK INFO FILE** folder on RADAR®'s system drive. This file will contain information about the drive capacity, the projects on the drive, and the contents of the **USER** folder. When you unmount an audio drive, the disk info file will be

removed from the system drive, and placed in the **USER** folder on the audio drive itself. The disk info file is also included in the **DSET** folder whenever you backup a project.

To view **DISK INFO FILE**:

1. Use the **MENU/PREV**, **ARROW** keys and the **ENTER** key to go to the ***MAIN / DISK MENU / DISK NOTES*** dialog and press **ENTER** **OR** press **SHIFT** and then press the **PROJECT NOTES** key on the Session Controller.

2. Press the **ENTER** key on **VIEW**

To save the **DISK INFO FILE**:

1. Use the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to ***THE MAIN / DISK MENU / DISK NOTES*** dialog and press the **ENTER** key **OR** press the **SHIFT** key and then press the **PROJECT NOTES** key on the Session Controller.
2. At the **PROJECT NOTES:** prompt select **SAVE** and press the **ENTER** key.
3. At the **SAVE AS:** prompt select **TXT** or **PDF** and press the **ENTER** key.
4. At the **SAVE TO:** prompt, use the **UP** and **DOWN** arrow keys to select the device you wish to save to, and press the **ENTER** key. This list will include **D:ARCHIVE** (RADAR® internal system drive partition), **NET: FOLDER** (network shares), **A:FLOPPY, B:DVD** (DVD-RAM, DVD-R or CD-R), **REV DISK**, and any Fat32 or HFS Standard formatted SCSI drives connected to the RADAR®.
5. At the **SELECT FOLDER:** prompt, select the destination folder using the **UP**/**DOWN** arrow keys and press the **ENTER** key.

New Project Retains Track Names of Current Project

Using **CURRENT** project settings when creating a new project now keeps the track names of the current project.

Audio Level Measurement

The new **SHOW AUDIO LEVEL** selection in the **DIAGNOSTICS MENU** provides an accurate digital read-out of the dBFS audio level on the selected track.

To **SHOW AUDIO LEVEL**:

1. Use the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to ***THE MAIN / DIAGNOSTICS MENU/ SHOW AUDIO LEVEL*** dialog and press the **ENTER** key.
2. Press the track arm key of any track to view the audio level in dBFS of that track

Audio Level Setting

Now, when you set your analog audio input and output levels, you can do it by setting the level in dBu at which the RADAR® will reach full scale (0 dBFS), ***or*** by setting the level in dBFS that a +4dBu signal will meter on RADAR® (commonly called Headroom).

To set the **ANALOG I/O LEVEL**:

1. Use the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to the ***MAIN / IO MENU/ ANALOG IO LEVEL*** dialog and press the **ENTER** key.
2. At the **REFERENCE TO:** prompt select **0 DBFS** or **+4DBU**
3. If you choose a reference of **0 DBFS** you will then be prompted to set the full scale input and output levels as a dBu value between +18 and +24 dBu.

4. If you choose a reference of **+4DBU** you will then be prompted to set a value between -14 and -20 dBFS. This value is commonly referred to as "headroom".

Enhanced SYSTEM INFO Menu

Now in the **SYSTEM INFO** from you can view the following:

- **RADAR SOFTWARE VER:** E.g 3.38
- **SERIAL NUMBER:** iZR02400101166
- **RECORDING ENGINE:** Adrenaline
- **INSTALLED RAM:** 384 MB
- **CPU TYPE:** Intel Celeron
- **CPU SPEED:** 796 MHz
- **IP ADDRESS:** 192.168.28.187
- **MAC ADDRESS:** 00c0.2657.04ba
- **ETHERNET TYPE:** FAST
- **ANALOG I/O:** NYQUIST
- **DIGITAL I/O 1:** ADAT (TYPE I)
- **DIGITAL I/O 2**: TDIF
- **PRIMARY MASTER:** Archive 108GB
- **PRIMARY MASTER:** Radar24Be 6GB
- **SECOND MASTER:** DVD-RAM SW-9573
- **SCSI ID 0:** DDYS-T18350N

To view the system info menu:

1. Press the **MENU/PREV, ARROW** keys and **ENTER** key to go to the ***MAIN / SYSTEM MENU / SYSTEM*** info dialog and press the **ENTER** key.
2. Use the **ARROW** keys or **JOG WHEEL** to view the list.

BUFFER UNDERRUN Protection when Burning DVD-R

If you are receiving **BUFFER UNDERRUN** errors when attempting to burn DVD-R disks, you can set the **DVD BURN MODE** to **SAFE**. This will set the DVD multi drive to use **PROGRAMMED I/O MODE** which is more reliable for burning. After changing the setting, you will have to reboot RADAR® for the **PIO** mode to take effect.

As this mode is very processor-intensive, it should be used only if you are experiencing **BUFFER UNDERRUN** errors. If you are performing other work on RADAR while the DVD is burning in the background, you may want to set the DVD BURN SPEED to "1X" so that the processor is not overloaded. When using DVD-RAM disks for backup/restore or import/export, you should set the DVD **BURN MODE** back to **NORMAL** to ensure that the processor is not overloaded.

To set the DVD burner for **DVD SAFE MODE**:

1. Press the **MENU/PREV**, **ARROW** keys and **ENTER** key to go to the **MAIN / PREFERENCES MENU/ FILE PREFS/DVD BURN MODE** dialog and press the **ENTER** key.
2. Select **SAFE** and press the **ENTER** key. You will be prompted to reboot.

DVD-R Burn Speed Preference

Now you can select the speed for burning DVD-R disks via **THE DVD BURN SPEED** option in the **FILE PREFS** menu. You can choose speeds from 1X through 8X, or choose **MAX** to let the DVD drive burn at its maximum possible speed. Note that if your DVD drive is not capable of burning at the speed you select, it will automatically use the closest available speed.

To set the burner **DVD BURN SPEED**:

Press the **MENU/PREV** arrow keys and **ENTER** key to go to ***THE MAIN / PREFERENCES MENU/ FILE PREFS/DVD BURN SPEED*** dialog and press the **ENTER** key.

2. Select **1X** or **2X** or **4X** or **8X** or **MAX** and press the **ENTER** key

Saving Debug Logs

The **SAVE DEBUG** option in the **DIAGNOSTICS MENU** now allows you to select the current log, the last 5 logs, last 20 logs, all logs, or any logs of your choosing. You can save these logs in text format or as a zip file to any disk or network drive.

To **SAVE DEBUG:**

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN /DIAGNOSTICS MENU / SAVE DEBUG*** dialog and press the **ENTER** key
2. At the **SAVE DEBUG:** prompt select **SELECTED, CURRENT LOG, LAST 5 LOGS, LAST 20 LOGS, ALL LOGS** and press the **ENTER** key.
3. At the **SAVE AS:** prompt select **TXT** or **ZIP** and press the **ENTER** key.
4. At the **SAVE TO:** prompt, use the **UP** and **DOWN** arrow keys to select the device you wish to save to, and press the **ENTER** key. This list will include **D:ARCHIVE** (RADAR® internal system drive partition), **NET: FOLDER** (network shares), **A:FLOPPY, B:DVD** (DVD-RAM, DVD-R or CD-R), **REV DISK**, and any Fat32 or HFS Standard formatted SCSI drives connected to the RADAR®.
5. At the **SELECT FOLDER:** prompt, select the destination folder using the **UP**/**DOWN** arrow keys and press the **ENTER** key

Email Debug Logs

If your RADAR® is connected to the internet, you can email the logs directly to iZ Tech Support using the new **EMAIL DEBUG** option. To assist the support process, your RADAR®'s serial number, current software version, and information about the installed memory and processor will automatically be included in the email. Note that when entering your email address, you can use the '**#**' and '**&**' keys to enter the '**@**' and '**.**'.

To **EMAIL DEBUG:**

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN /DIAGNOSTICS MENU / EMAIL DEBUG*** dialog and press the **ENTER** key
2. At the **EMAIL DEBUG:** prompt select **SELECTED, CURRENT LOG, LAST 5 LOGS, LAST 20 LOGS, ALL LOGS** and press the **ENTER** key.
3. At the Prompt for **DESCRIPTION** enter a description of the problem that occurred.
4. At the Prompt for **ENTER YOUR NAME** enter your name
5. At the Prompt for **PHONE NUMBER** enter the phone number that an iZ Support Agent can reach you at.
6. At the Prompt for **COMPANY NAME** enter your company name.
7. At the Prompt for **LOCATION** enter a town or city you are in.
8. At the Prompt for **REPLY EMAIL** enter an email address that an iZ Support Agent can reach you at.
9. At the Prompt for **SEND EMAIL NO/YES** prompt select **YES** and press the **ENTER** key.
10. A confirmation email will be sent to your **REPLY EMAIL** address that the email has been sent.

24 Frame Rate Now Valid for Slow PAL

Now, when the project **TC RATE** is set to 24, you can select **VIDEO: SLOW PAL** as the **SYNC REFERENCE**. This setting is for use with a 48 Hz PAL signal.

To **SET SYNC REFERENCE:**

1. Press the **SYNC** key
2. Select **SYNC REFERENCE:** select **VIDEO: SLOW PAL**

New 23.976 Frame Rate

This additional time code rate can be used when pull-down of the 24 frame rate is required for film or video editing. When the project **TC RATE** is set to **23.976**, you can select **VIDEO: NTSC** as the **SYNC REFERENCE**

To **SET 23.976 FRAME RATE:**

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN /SYNC MENU / TC SETTINGS/TC RATE*** dialog and press the **ENTER** key

2. Select **TC RATE:** select **23.976**

File Name Format Options for Export and Flattening

The **FILE NAME FORMAT** selection in the **FILE PREFS** menu allows you to choose how exported or flattened wav files are named. To ensure that every wav file has a unique name, the name always contains the track number and either the time stamp or region number (the sequence number of audio chunks on the same track). The track name and/or project name are also included in some formats to help you organize your files. The options are:

CUSTOM E.g. Proj__Name__010001ENTrkName.WAV

This format is derived from the project name, track name and number, and region number.

PROJ-TRK-REGION E.g. ProjectName-T01-0001.WAV

This format consists of the project name, track number and region number.

TRK-REGION-PROJ E.g. T01-0001-ProjectName.WAV

The same information is rearranged so that the files are sorted by track instead of project.

TRK-REGION-NAME E.g. T01-0001-TrackName.WAV

This format is similar to the above, but contains the track name rather than the project name.

TRK-PROJ-STAMP E.g. T01-ProjName-01h22m36s12f00.WAV

This format consists of the track number, time stamp, and up to 12 characters of the project name. If the project name is more than 8 characters, the h, m, s, and f delimiters are omitted from the time stamp. If the project name is more than 12 characters, these characters will not be included in the wav file name.

TRK-NAME-STAMP E.g. T01-TrkName-01h22m36s12f00.WAV

This format is similar to the above, but with the track name rather than the project name. This is the default format

TRK-REGION (DOS) E.g. T01-0001.WAV

This simple format containing the track and region number conforms to the DOS 8.3 file naming convention.

Mute I/O on Stop

When the new, **MUTE I/O ON STOP** preference is enabled, audio will not be monitored (even on input-readied tracks) when the transport is stopped.

To enable **MUTE I/0 ON STOP** preferences:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / FILES PREFS / MUTE I/O ON STOP*** dialog and press the **ENTER** key.
2. Use the arrow keys to select **ENABLED** press the **ENTER** key.

Defaults for 9-Pin Settings

On new RADAR® units, or when you restore **FACTORY SETTINGS** from the **DIAGNOSTICS MENU**, the 9-pin settings will default as follows:

DEVICE ID:	"RADAR 24"
9-PIN CHASE MODE:	"LOCAL"
TRACK ARM MODE:	"9-PIN"
VARISPEED MODE:	"9-PIN"
SHUTTLE-0 MODE:	"STOP"
TC OUT MODE ON CUE:	"NORMAL"
TC OUT MODE ON PLAY:	"NORMAL"

Serial Number Added to System Info

After installing Version 3.36 software, the first time RADAR® boots you will be prompted to enter the serial number. Type in the number found on RADAR®'s back panel. If it is a RADAR® 24, it will be a 14-digit number starting with "iZR024". If it is a RADAR® V, it will be a 12-digit number starting with "iZRV". After you have entered this number, it will appear in all debug logs, bwav headers, and in the **SYSTEM INFO** section of the **SYSTEM MENU**. If it has been entered incorrectly, it can be modified using the **SET SERIAL NUM** option in the **SYSTEM MENU**.

To modify the serial number:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / SYSTEM MENU*** / **SET SERIAL NUMBER** dialog and press the **ENTER** key.
2. At the **SERIAL NUMBER:** prompt type the correct serial number and press the **ENTER** key.

RADARView Clock

The date and time now appear near the top left corner of the RADARView screen. If the date or time is incorrect, you can update it using the **SET TIME & DATE** option in the **SYSTEM MENU**.

To set the date and time:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / SYSTEM MENU*** / **SET TIME & DATE** dialog and press the **ENTER** key.

2. At the **DATE:** prompt type the correct Year/Month/Day and press the **ENTER** key.
3. Use the arrow keys and to go to the **DATE:** and type the correct time of day and press the **ENTER** key.

To remove the clock from the screen or change it from 24-hour clock to a 12-hour mode:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / CLOCK MODE /***
2. At the **CLOCK MODE:** prompt select:
   a) **OFF** To remove the clock
   b) **24-HR** For 24-hour clock mode
   c) **12-HR** For 12-hour clock mode
3. Press the **ENTER** key.

Cancel Record

To cancel the current punch while RADAR® is recording:

1. Hold the **CANCEL** key then press the **RECORD** key.
2. Press **STOP**.

The red bars will remain on the screen while the transport continues to roll, however as soon as you stop the transport, the current punch will be discarded and the underlying audio (if any) will be revealed.

Breaking a Cycle

Now, if you press **PLAY** while in cycle mode, RADAR® will break out of the cycle and continue playing.

Record on Chase

With this feature, if you press **RECORD** while the chase light is blinking, RADAR® will automatically go into record when chase is locked and exit record when chase lock is lost. This feature is always enabled, but you can set the **RECORD ON CHASE** setting from **ONCE** to **CONTINUOUS** if you want RADAR® go back into record whenever chase is reestablished.

To set **RECORD ON CHASE** preferences:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / RECORD PREFS /*** **RECORD ON CHASE** dialog and press the **ENTER** key.
2. At the **RECORD ON CHASE** use the left and right arrow keys to select **ONCE** or **CONTINUOUS** and press the **ENTER** key.

Project Per Take

With this option enabled, RADAR® will automatically create a new project whenever the transport stops while in record. This leaves you ready to record the next take in a new project.

To enable **PROJECT PER TAKE**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / RECORD PREFS / PROJECT PER TAKE*** dialog and press the **ENTER** key.
2. At the **PROJECT PER TAKE** use the **LEFT** and **RIGHT** arrow keys to select **ENABLED** or **DISABLED** and press the **ENTER** key.

New Project Number Preference

This feature allows you to specify how you want new projects to be numbered. If you select **FROM 1**, RADAR® will assign the lowest available project number whenever a new project is created. If you select **FROM CUR**, then RADAR® will use the next available number starting at the current project number.

To set **NEW PROJECT NUMBER** preference:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / PROJ PREFS / NEW PROJECT NUMBER*** dialog and press the **ENTER** key.
2. At the **NEW PROJECT NUMBER:** dialog use the **LEFT** and **RIGHT** arrow keys to select **FROM 1** or **FROM CUR** and press the **ENTER** key.

Added "Nudge" to Chase Mode Settings

The **RECHASE MODE** has been renamed to **CHASE MODE**. There are now three options for handling the situation where the clock (sync) source and the time code (chase) are not in sync with each other:

LOCK-AND-DROP Chase to the incoming time code initially, but once positional chase is established, stop looking at the time code (turn Chase off); therefore, rely only on the clock source and ignore any time code drift (this is the former **RECHASE DISABLED** mode).

RECHASE If the time code drifts, recue RADAR® and reestablish positional chase; therefore, rely on both the clock source and the time code source (this is the former **RECHASE ENABLED** mode).

NUDGE If the time code drifts, temporarily adjust (override) the clock speed to bring the time code back in sync; therefore, rely primarily on the time code source (this is the new mode).

To set **CHASE MODE** preference:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / SYNC MENU / TC SETTINGS / CHASE MODE*** dialog and press the **ENTER** key.
2. At the **CHASE MODE:** dialog use the **DOWN** and **UP** arrow keys to select **LOCK-AND-DROP** or **RECHASE** or **NUDGE** and press the **ENTER** key.

Dual Disk Recording (Adrenaline® Plus Card Only)

With a 3-bay RADAR® system and Adrenaline® Plus you can now initialize your record drives for mirrored (dual disk) recording. In **DUAL DISK MODE**, audio is recorded simultaneously to both disks.

To enable **DUAL DISK MODE:**

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / DISK MENU / DISK MODE / DUAL DISK*** dialog and press the **ENTER** key.
2. At the **MASTER DISK: 0** prompt use the **UP** and **DOWN** arrow keys to select the disk ID of the master.
3. Use the **LEFT** and **RIGHT** arrow keys to select **SLAVE DISK: 0** then use the **UP** and **DOWN** arrow keys to select the disk ID of the slave then press the **ENTER** key.
4. At the **ARE DISKS EXACT COPIES?** prompt, select **NO** and press **ENTER**.
5. At the **INIT DRIVE X+Y** prompt, select **YES** and press **ENTER**.

> **Important Note:** If you are using drives that are of different sizes, you must make the smaller drive the master.

Entering **DUAL DISK MODE** without initializing both hard drives is only possible in two scenarios:

a) The two drives were previously initialized and used in **DUAL DISK** mode and have not been mounted individually since that time;

b) One drive is an exact clone of the other (i.e. it was made using the **SECTOR-BY-SECTOR COPY** option in the **CLONE RADAR DISK** menu.

In both these cases, follow the same steps you used to enable **DUAL DISK MODE** in the directions above except at the **ARE DISKS EXACT COPIES?"** prompt, select **YES** and press **ENTER**.

When you have been recording in **DUAL DISK MODE**, and you **UNMOUNT DISKS** or **SHUTDOWN RADAR**, RADAR® will remember that fact. In this case, to re-enable **DUAL DISK MODE:**

1. The next time you mount disks, you will be prompted to ***CONFIG DISKS AS*** either **SINGLE** or **DUAL**.

2. Provided you have not changed disks, you may select **DUAL**
3. At the prompt: **ARE DISKS EXACT COPIES?"** Select **YES**
4. At the prompt: **ARE YOU SURE?** Select **YES**

!	**Warning:** If you enter dual disk mode with a pair of drives that don't fit either of these criteria, the audio on the secondary disk will be damaged.
!	**Important Note:** Dual disk mode is for recording only. To edit, backup or flatten files, you must remount in single disk mode. If you later want to go back into dual disk mode, you will have to initialize or clone the drive so that it fits one of the criteria above.

Record 24 Tracks at 192kHz (Adrenaline® Plus Card Only)

With this mode enabled you can record 24 tracks at 192 kHz, however crossfades will not be processed until the transport is stopped. During this time the LCD will display the **+WORKING+** message.

RADAR® is able to process 12 tracks seamlessly (in real time) at 192 kHz. If you require real-time crossfades, disable the 24 track mode select the 12 tracks that you want to record.

To enable/disable **24 TRKS AT 192K**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / DISK MENU / 24 TRKS AT 192K*** dialog and press the **ENTER** key.
2. At the **ENABLE/DISABLE** select your choice and press the **ENTER** key.
3. If you selected **DISABLE** you will be prompted with **SELECT TRACKS**. Your options will be:
   - **1-12**
   - **13-24**
   - **SELECTED** (using the track arm keys, select the desired tracks)
4. After making your selection, press the **ENTER** key.

Max Jog Rate (Adrenaline® Plus card only)

Setting the **MAX JOG RATE** to maximum, allows jogging speeds up to 192 kHz.

To set the **MAX JOG RATE** to maximum.

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PREFERENCES MENU / MAX JOG RATE*** dialog and press the **ENTER** key.
2. Select **MAXIMUM** and press the **ENTER** key.

Project Notes

The button beside the **HELP** button on the Session Controller has been assigned as the **PROJECT NOTES** button. You can type general notes about the project, as well as specific notes about each track and then save this information along with other project info (e.g., the locate list) as a printable text file.

To edit **PROJECT NOTES**:

1. Use the **MENU/PREV**, arrow keys and enter key to go to the ***MAIN / PROJECT MENU / PROJECT NOTES*** dialog and press the **ENTER** key or press the **PROJECT NOTES** key on the Session Controller.
2. At the **PROJECT NOTES:** prompt select **EDIT** and press the **ENTER** key.
3. At the **NOTES LINE:XX** prompt, select a line to write to using the **UP** and **DOWN** arrows.
4. Type your information to be stored in the general notes, and then use the **DOWN** arrow key to go to the next line. Press the **ENTER** key to exit **PROJECT NOTES**.
5. To enter track notes, press a **TRACK ARM** key **1** through **24** while in edit mode. At the **NOTES FOR TRK:XX** prompt, enter details about that specific track. Press **MENU/PREV** to return to the general notes, or **ENTER** to exit **PROJECT NOTES**.

To save the **PROJECT NOTES**:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / PROJECT MENU / PROJECT NOTES*** dialog and press the **ENTER** key or press the **PROJECT NOTES** key on the Session Controller.
2. At the **PROJECT NOTES:** prompt select **SAVE** and press the **ENTER** key.
3. At the **SAVE AS:** prompt select **PDF** and press the **ENTER** key.
4. At the **SAVE TO:** prompt, use the **UP** and **DOWN** arrow keys to select the device you wish to save to, and press the **ENTER** key. This list will include **D:ARCHIVE** (RADAR® internal system drive partition), **NET: FOLDER** (network shares), **A:FLOPPY**, **B:DVD** (DVD-RAM, DVD-R or CD-R), **REV DISK**, and any Fat32 or HFS Standard formatted SCSI drives connected to the RADAR®.
5. At the **SELECT FOLDER:** prompt, select the destination folder using the **UP**/**DOWN** arrow keys and press the **ENTER** key.

Note: Project notes are also saved automatically on the audio drive. A project notes text file is automatically included (in the same folder as the wav files) whenever you flatten a project or do a mono export.

Native Broadcast Wave

RADAR® now has the ability to record natively in Broadcast Wave format. To begin recording in Broadcast Wave all you need to do is initialize the recording drive for **AUDIO:RADAR_BWAV**.

To initialize a disk for Broadcast Wave Recording:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / DIAGNOSTICS MENU / INIT DISK*** dialog and press the **ENTER** key.
2. At the **INIT DISK:** prompt select the disk ID of the disk you want to initialize and press the **ENTER** key.
3. At the **INIT DISK X?** prompt, select **YES** the destination and press the **ENTER** key.
4. At the **INIT VOLUME FOR:** prompt, select **AUDIO:RADAR_BWAV** and press the **ENTER** key.
5. At the **INIT FOR WAVES:** prompt, select **YES** and press the **ENTER** key.
6. At the **ERASE OLD DATA:** prompt, select **YES** and press the **ENTER** key.

> **!** **Important Note:** Audio drives formatted for Broadcast Wave recording will not be compatible with RADAR® units running 3.32 versions of software and below. **You will lose audio** if you mount a RADAR BWAV drive in 3.32 or lower. As always, you can still initialize a drive as **AUDIO:!RADAR!** to record in the traditional RADAR® format and make portable to be used in pre 3.32 versions of software.

Single 32k: 0 Mode = Single Disk !RADAR! Legacy 32k Cluster Recording to Drive 0
Single 64k: 0 Mode = Single Disk !RADAR! Legacy 64k Cluster Recording to Drive 0
Single 96k: 0 Mode = Single Disk Native RADAR_BWAV 96k Cluster Recording to Drive 0
Single 128k: 0 Mode = Single Disk !RADAR! Legacy 128k Cluster Recording to Drive 0
Dual 128k: 0/1 Mode = Dual Disk !RADAR! Legacy 128k Cluster Recording to Drive 0 and 1
Custom 128k Mode = Custom Disk !RADAR! Legacy 128k Cluster Recording to Custom Drive configuration
Span 128k: All = Span All Disk !RADAR! Legacy 128k Cluster Span Recording to all Drives

Flatten Project

When you initialize the recording drive for **AUDIO:RADAR_BWAV**, the drive will now be compatible with any Mac or PC computer. If you want to access the audio on your Mac or PC you must first select the **FLATTEN PROJECT** menu item in the **FILE** menu. This function consolidates all of your punch ins into continuous files and puts them into a user folder that is easily accessed from your computer.

To flatten a project on a Broadcast Wave disk:

1. Use the **MENU/PREV**, arrow keys and **ENTER** key to go to the ***MAIN / FILE MENU / FLATTEN PROJECT*** dialog and press the **ENTER** key.
2. You will be prompted with **FILL SILENCE?:** Your options will be:
   - **NO** (**EACH** region will be one file)
   - **GAP** (each track will be one file with potentially different start times)
   - **ALL** (each track will be one file with the same start time)

   then press the **ENTER** key.
3. You will be prompted with **FLATTEN PROJS?:** Your options will be:
   - **SELECTED PROJS** (Select multiple projects using "**+**" key)
   - **CURRENT PROJ** (Selects current project)
   - **ALL** (Selects all projects)

   then press the **ENTER** key.
4. If **GAP** or **ALL** is selected and the regions contain gaps or different start times, RADAR will need additional drive space. Then you will be prompted **XXX MB REQUIRED PROCEED?**. Select **YES** and press the **ENTER** key.
5. You will be prompted **CANT CANCEL/UNDO PROCEED?** to indicate that is a destructive process. You will lose all undo levels of this project. Select **YES** and press the **ENTER** key.
6. You can now mount the drive on your Mac or PC and the consolidated files and project notes will be located in a new folder titled after the project name within the **USER** directory.
7. Copy this project folder over to your DAW recording drive for DAW manipulation.

!	**Important Note:** After flattening a project if you delete this project, record punches or perform edits in this project within RADAR®, the corresponding folder in the **USER** directory will be automatically deleted.
!	**Important Note:** On a PC or Mac, the flattened project's folder in the **USER** directory is locked. If this folder and/or files are deleted or changed, the corresponding RADAR® project will lose audio and have errors.
!	**Important Note:** Only projects that don't contain edits (e.g., paste, erase, loop, etc), can be flattened. Use the export to **AUDIO DRIVE** function for projects with edits.

Export to / Import from the Audio Recording Drive

RADAR® now has the ability to import to and export from the **Audio Recording Drive**. If your project has edits, you can export to the **Audio**

Recording Drive for the same functionality as file flattening. You can now mount the drive on your Mac or PC and you will find your exported files in its own project folder in the **USER** directory.

> **Important Note:** Do not export to a flattened project's folder in the **USER** directory. Within the **USER** directory you should create a new folder called **EXPORTS** and export to this folder.

New Back Panel for RADAR®

RADAR® products purchased after Aug 1, 2004 will have a different style back panel. See the following diagram for the changes to the back panel.