RADAR®

studio

Operator's Manual

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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 RADAR 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. Do not place bottles, cups, etc, containing liquids on or near the device.

4. ALLOW FOR VENTILATION

The device should be positioned so that proper ventilation can be maintained. 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 iZ Technology or performed under the guidance of qualified personnel.

6. REPLACING LITHIUM BATTERY (Motherboard CMOS Battery)

Replace only with the same or equivalent type.

CAUTION: Danger of explosion if battery is incorrectly replaced.

See www.izcorp.com Support Technical Memos for full instructions.

TABLE OF CONTENTS

SECTION 4
OPERATIONS (con't)

SECTION 5
APPLICATIONS ... 137

SECTION 6
TROUBLESHOOTING ... 155

SECTION 7
REFERENCE ... 159

APPENDIX

SECTION 1

INTRODUCTION

Welcome to RADAR, the world's first fully integrated turn-key professional DAW. Please take a few minutes to get familiarized with the content of this manual. It is a valuable resource that provides the information needed to get the most out of RADAR.

HOW TO USE THIS MANUAL

This manual is organized into the following sections:

1. *INTRODUCTION*
2. *SYSTEM SETUP*
3. *CONFIGURATION*
4. *OPERATIONS*
5. *APPLICATIONS*
6. *TROUBLESHOOTING*
7. *REFERENCE*
8. *APPENDIX*
9. *ADDENDUMS*
10. *RELEASE NOTES*

The *SYSTEM SETUP* section goes through the physical placement and connection of the unit as well as any configuration work that may be required to integrate RADAR with additional equipment in a particular setup.

The *CONFIGURATION* section provides the necessary software settings required to integrate RADAR with the rest of a particular system setup.

The *OPERATIONS* section provides all of the information necessary to quickly become a RADAR power user.

The *APPLICATIONS* section provides instructions for using RADAR in various common scenarios.

The *TROUBLESHOOTING* section provides troubleshooting tips for RADAR.

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

The *APPENDIX* section contains the *INDEX* and other sections that provide additional software information that may not apply to all RADAR systems.

The *ADDENDUMS* & *RELEASE NOTES* sections are for adding any Addendums, Release Notes, and any other RADAR documents.

OTHER IZ TECHNOLOGY INFORMATION RESOURCES

WEBSITE

Additional resources are available at the iZ website, www.izcorp.com. Browse to the Support section for Support document downloads, software downloads and release notes, tech tips, etc.

iZ FORUM

Please join the iZ Forum. It is a dynamic group of RADAR users and iZ staff and is a medium which will provide timely and intelligent replies to questions. Connect to the iZ Forum by accessing www.izcorp.com and finding the Forum under the Support section of the site.

CONTACT iZ

For any questions about RADAR please contact iZ Technology Corporation Support department, toll-free:

Email	support@izcorp.com
North America	1-800-776-1356
International	800-2747-2744 Please note that an International Direct Dialing prefix must be entered before dialing the International contact phone number. For a complete list of IDD prefixes, browse to the www.izcorp.com Contact page.

CONVENTIONS

The following text conventions are used throughout this manual. This information applies to the **Session Controller** and the built-in **LCD Touchscreen**.

- Session Controller keys: ENTER
- Session Controller or Touchscreen keys: ENTER
- Touchscreen only keys: ⏻
- Keys with a shifted function: Solo RLink (**SOLO**), that is, press and hold modifier keystroke: SHIFT + Solo RLink (**SOLO**)
- Menu paths: ***MAIN MENU / PROJ MENU / SAMPLE RATE***
- Menu selections and dialogues: **SAMPLE RATE: 48 KHZ**
- Enter or type the following: *user name*
- Object Names: **Session Controller**
- Rear panel labels and connectors: **WORDCLOCK**
- Manual references: *OPERATIONS: ENTERING VALUES*

NOTE SYMBOLS

IMPORTANT NOTE: This symbol is followed by important information.

TIP / TRICK: This symbol is followed by a tip or trick.

WARNING NOTE: This symbol is followed by a warning.

RADAR OVERVIEW

RADAR is both a dedicated multi-track recorder and a fully integrated professional DAW. RADAR can run any iZ certified third party Windows based audio editing and plug-in software. RADAR has a reputation for reliability, ease of use and exceptional audio quality. RADAR has instant functionality out of the box– simply turn on the power switch, arm the tracks and press record. RADAR's **LCD Touchscreen** and **Session Controller** professional remote provide rugged transport controls and intuitive, one-key access to many RADAR and DAW functions.

Features:

- Superb analogue I/O using iZ Technology's world famous high end converter cards.
- 24-channel digital I/O using the iZ Technology MADI, AES/EBU, ADAT Lightpipe, or TDIF cards.
- Direct Recording to host audio drives with the Adrenaline DR Recording Engine.
- Seamless/gapless punch-in and punch-out recording on all tracks.
- Non-destructive audio recording and editing.
- Degradation-free copy and transfer of digital audio in industry-standard formats.
- Multiple digital video outputs.
- Integrated Gigabit wired and wireless Ethernet for server backup, export, and file transfer.
- Factory installed backup devices for archiving RADAR projects.
- 2-channel AES/EBU and S/PDIF digital audio I/O.
- Professional sync options including Wordclock/Video Sync, balanced LTC, and Sony 9-pin.
- External USB drive and SD card support.
- Built-in 10.1" **LCD Touchscreen** for instant access to RADAR controls, menus, project information, and waveforms.

FRONT PANEL

RADAR's comprehensive front panel high resolution Touchscreen and tactile controls enable convenient and simple operation, while working seamlessly with the Session Controller professional remote.

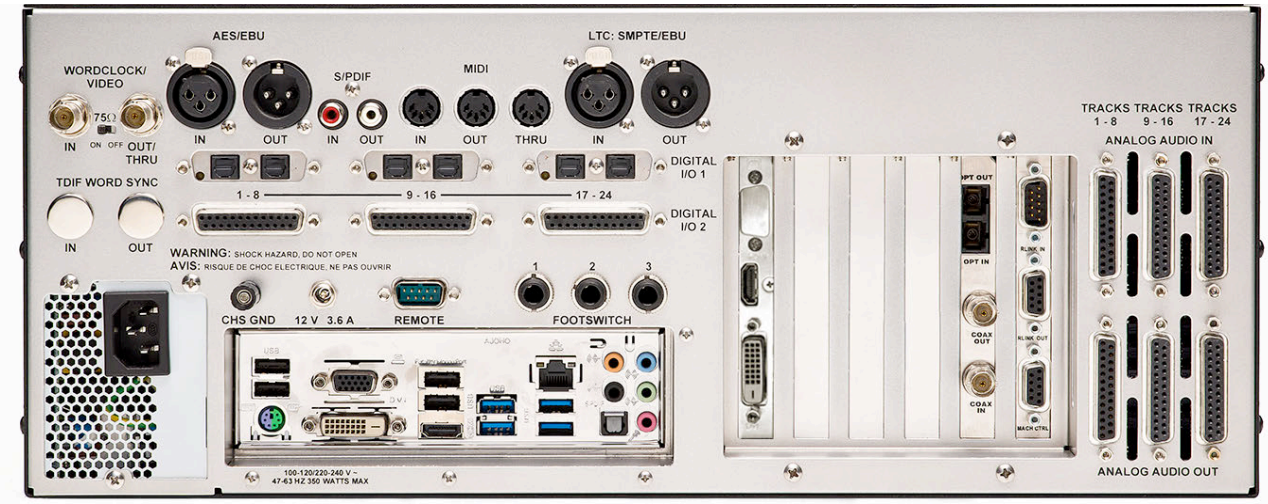
RADAR Front Panel Controls & Indicators

POWER ON/OFF SWITCH	Lighted, momentary power on/off switch provides power on and off capability. To properly power down RADAR choose **SHUTDOWN RADAR** from the ***MAIN MENU***, or press ⏻ from the Touchscreen buttons screen, select **YES**, then **ENTER**, and then push the power switch.
DRIVE BAY 1	Accommodates a dual drive-bay receiver for removable SATA solid-state recording drives.
DRIVE BAY 2	Accommodates optionally a second dual drive-bay receiver for removable SATA solid-state recording drives, an SDXC card slot, or a blank cover plate
10.1" LCD TOUCHSCREEN	Displays meters, waveforms, and project information, and provides instant access to RADAR controls and menus.
TRANSPORT CONTROLS	Dedicated transport control buttons.
EXTERNAL MEDIA PORTS	Two USB 3.0 ports for external recording devices and easy file transfer.
BD/DVD/CD MULTI DRIVE	Optional multi drive allows Blu-Ray, DVD-R, and CD-R disks to be used for backup and transfer purposes, or to create playable audio CDs.

System software has been pre-installed on the internal solid state drive. It is not necessary to use the supplied system software USB flash drive. Please keep the supplied USB flash drive in a safe place in case it becomes necessary to re-install the system software.

REAR PANEL

The rear panel of RADAR provides a wealth of professional sync and audio I/O options. (Shown with MADI, AES/EBU, ADAT, analogue I/O, and Sync Proc II Timecode option cards.)



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 *CONFIGURATION: SYNC REFERENCE* for information.

DIGITAL I/O

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

POSITIONAL (TIMECODE) SYNC

MTC (MIDI Timecode) and **LTC** (SMPTE) can be used for positional synchronization. See *CONFIGURATION: TIMECODE* for information.

CARD CAGE

The card cage contains the MADI digital I/O optical and coaxial connections, Sony 9-pin, and **RADARLink** machine control. Pro Tools cards and other DSP cards may also be installed in the card cage. See *SYSTEM SETUP: MAKING CONNECTIONS* for information.

PERIPHERAL DEVICE I/O

Peripheral device I/O includes HDMI and DVI digital video outputs, VGA analogue video output (not available with Touchscreen option), Gigabit Ethernet, 4 x USB 3.0 ports, 4 x USB 2.0 ports, combo PS/2 mouse/keyboard connector, and motherboard audio I/O (not recommended for use with RADAR).

ANALOGUE I/O

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

FOOTSWITCH JACKS

3 programmable footswitch jacks can be used for hands free play/stop, last locate, punch in/out operation, or macro assignment.

REMOTE AND POWER

Session Controller remote port and locking 12V power connector.

10.1" Touchscreen

The 10.1" integrated LCD touchscreen provides instant access to RADAR, controls, menus, project information, and waveforms.

RADAR Dashboard

The RADAR Dashboard is the first screen seen after bootup. From here users may open their DAW or other software, access files, or boot into RADAR mode. The Dashboard also contains a power button, and the Menu tool.

Power Button

The power button is located on the bottom-left corner of the screen. It has a glowing ring and resembles RADAR studio's physical front panel power button. Clicking on this power button will prompt the user if they wish to turn the machine **OFF**. The user can then proceed to power off RADAR or cancel the power off by clicking on the dashboard away from the power switch.

Menu Tool

Menu is the round button with three horizontal lines on the lower right corner of the display. Clicking on Menu once opens it. Clicking and holding Menu for a short time period unlocks its position, indicated by the colour purple, allowing the user to drag it to their desired location on the display. To reset Menu to its default location, right click it.

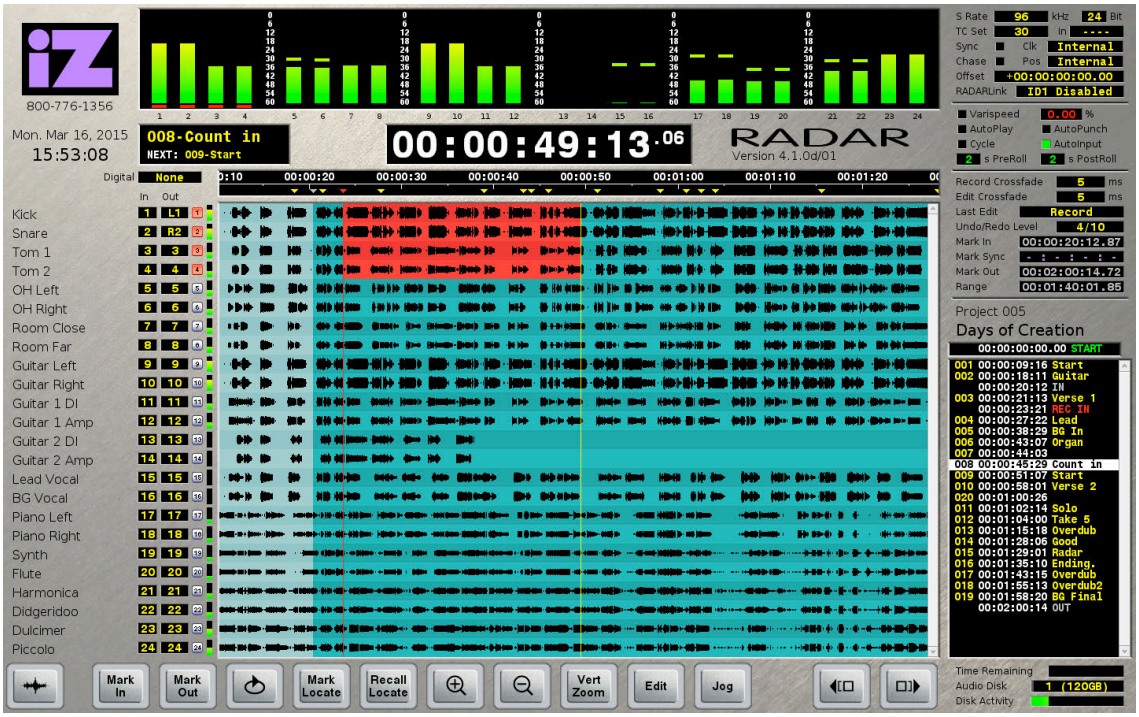
Menu can be used to access the main Dashboard, open a file browser, open a web browser, add applications to the Dashboard, or open the system control panel.

RADAR Mode

To run RADAR mode, click the RADAR button and select **YES** when prompted to reboot to RADAR. Since this is a reboot procedure, ensure that you have saved any unsaved data and close any open applications. RADAR operating mode has five user screens: Tracks Screen, Main Screen, System Configuration Screen, About Screen, and Debug Screen.

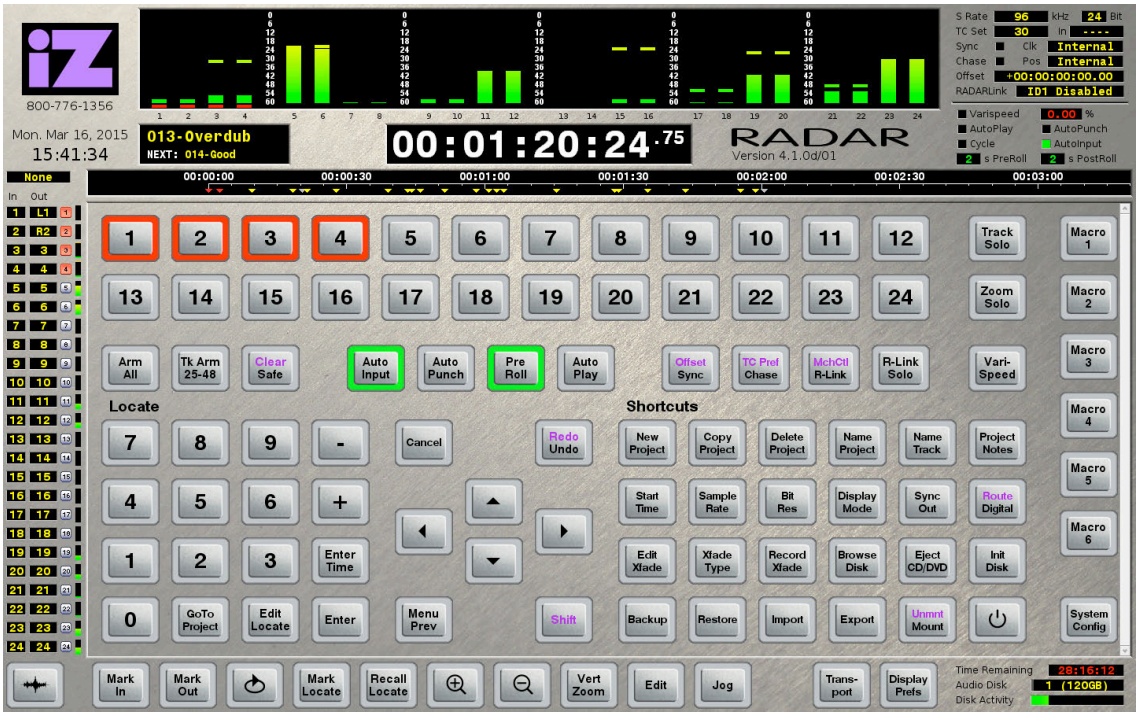
Tracks Screen

The Tracks Screen is the default RADAR screen and shows the waveforms and SMPTE time of the current project. This screen also displays large and mini track meters, track names, track arm status, locate information, as well as other project related information.



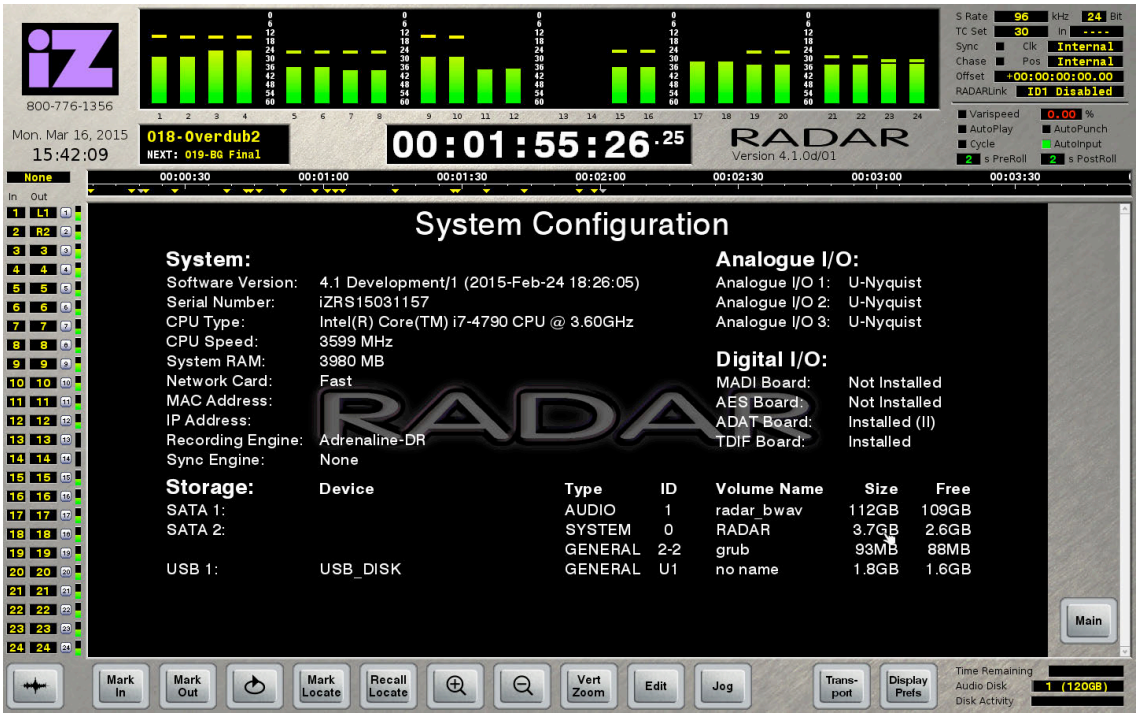
Main Screen

The Main Screen provides instant access to many of RADAR's features, and hosts track arm buttons, macro buttons, the number pad, as well as many other dedicated buttons for one-touch functionality.



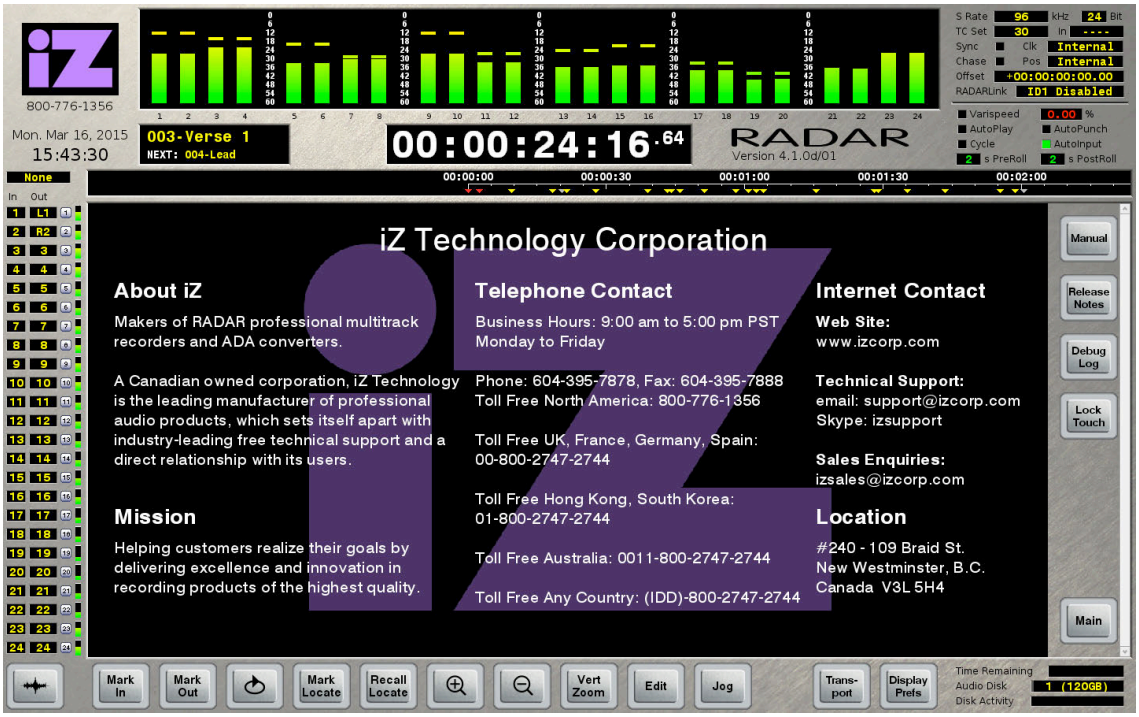
System Configuration Screen

The System Configuration screen displays information about the hardware and software installed.



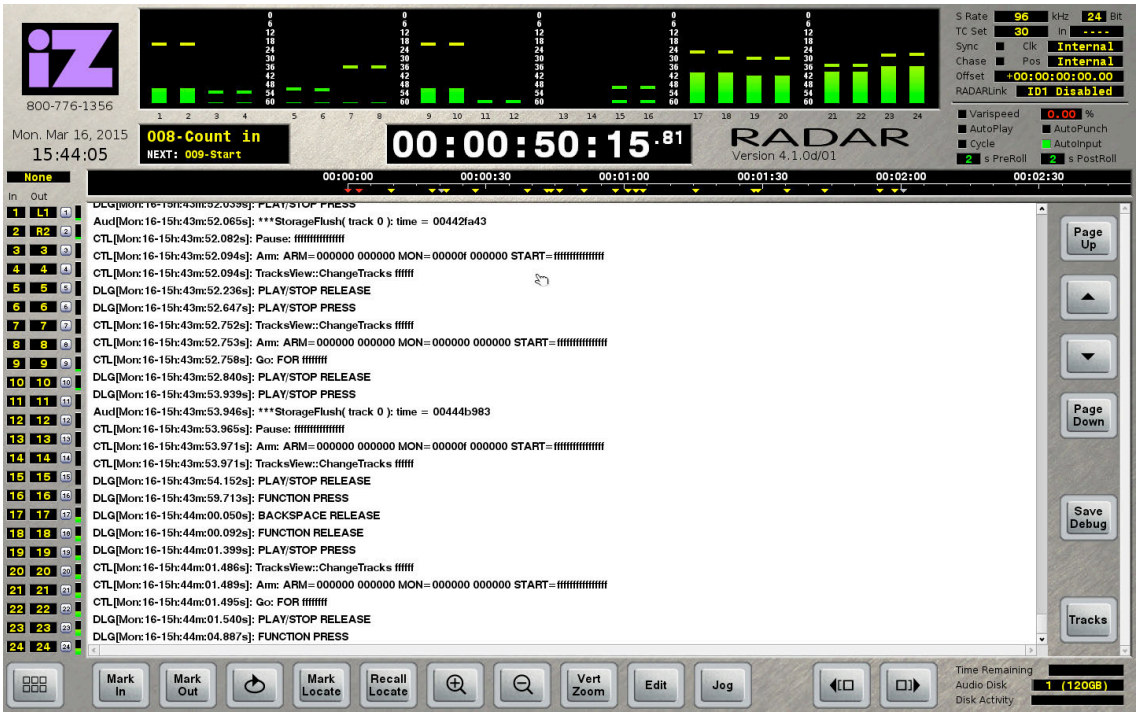
About Screen

The About Screen contains information about iZ Technology, including contact details, and provides access to the Manual, Release Notes, and the Debug Screen.



Debug Screen

The Debug Screen shows the current debug log as it is being written in real time, and provides the Save Debug option.



SECTION 2

SYSTEM SETUP

This section of the manual is designed to get RADAR up and running as quickly as possible.

INSTALLATION

Once RADAR is unpacked, please keep the box and all of the associated packaging materials. In the event that the unit needs to be returned for upgrade, service, or repair, the use of the original shipping - box will ensure that RADAR returns to iZ in good condition.

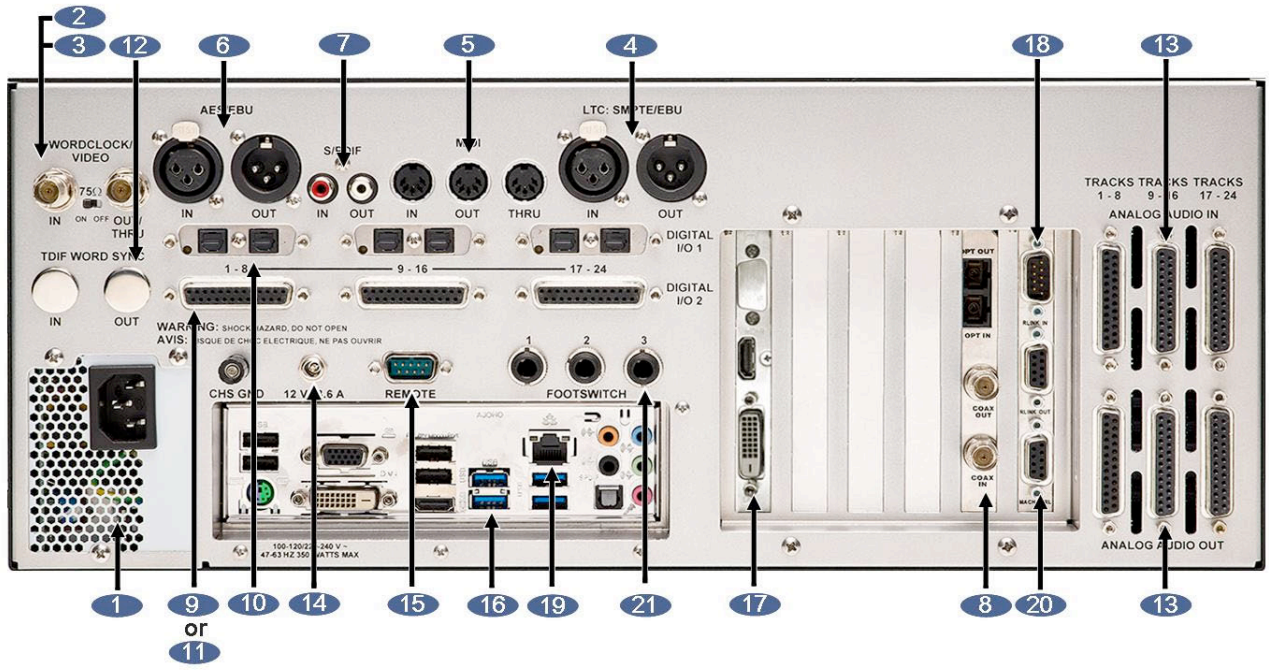
Make sure to consider the following before installing RADAR:

- Power supply and CPU fan make a certain amount of noise; installing the main RADAR unit outside of the control room is ideal.
- Leave space around the front and rear of RADAR to allow adequate air circulation, especially if installed in a closed rack space or isolation box.
- AES/EBU digital lines and the **Session Controller** extension cable can be run at a length of approximately 33 meters.
- MADI optical lines can be run at a length of approximately 2,000 meters, and MADI coaxial cables can be run at lengths of up to 200 meters with quality cabling.
- ADAT optical and TDIF digital audio cables can be run at a length of approximately 5 meters.
- If using a graphics display monitor, a DVI or HDMI monitor will be required, as well as a high quality DVI or HDMI extension cable if RADAR will be located in a machine room. RADAR supports multiple widescreen resolutions - 1024x600, 1440x900, and 1600x900. An analogue VGA monitor may also be used if no touchscreen is installed in RADAR front panel.
- Make sure that RADAR has a reliable, properly grounded AC power source. An Uninterruptible Power Supply (UPS) is highly recommended.

MAKING CONNECTIONS

Wiring diagrams for interfacing RADAR are available on the Support section of the iZ Technology website at www.izcorp.com.

RADAR BACK PANEL



1	AC Power	8	MADI I/O	15	Session Controller Data
2	Wordclock	9	AES Multichannel I/O	16	USB 3.0
3	Video	10	ADAT I/O	17	DVI/HDMI Video Output
4	SMPTE/EBU	11	TDIF I/O	18	RADARLink
5	MTC	12	TDIF Word Sync	19	Gigabit Ethernet
6	AES/EBU 2-Channel	13	Analogue I/O	20	Machine Control
7	S/PDIF 2-Channel	14	Session Controller Power	21	Footswitch Jacks

1 – AC Power

Connect RADAR to the AC mains using the supplied power cord. The power switch is located on the left side of the front panel. See *Introduction: Overview: Front Panel.*

The ATX Power Supply in RADAR will internally auto switch depending on the voltage output in one's region.

Sync Reference

Sync (clock) reference is one of the keys to reliable digital audio interfacing. There are 11 possible formats determined by the installed multi-channel digital I/O card(s) that can be used as the clock source for RADAR.

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select a sync source and press the ENTER key.

2, 3 – Wordclock/Video

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

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

The wordclock frequency value displayed in the **SYNC REFERENCE** dialogue will depend on the sample 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 MENU / SYNC MENU / SYNC REF OUTPUT*** setting.

To switch between wordclock out and thru:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REF OUTPUT*** and press the ENTER key.
2. Use the Home ← and End → keys to select **WORDCLK** or **THRU** and press the ENTER key.

VIDEO

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

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

The 75-Ohm switch provides video signal termination. This should only be **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 RADAR is powered off.

The video sync frequency value displayed in the **SYNC REFERENCE** dialogue displays the timecode rate setting of the **SYNC MENU** **not** the rate of the incoming video sync signal.

4, 5 – Positional Reference (SMPTE/MTC)

Positional (timecode) reference is the key to reliable positional synchronization of multiple devices.

SMPTE or MTC (MIDI Timecode) formats are used 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, 24, and 23.976–are supported.

The current selection in ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** determines which format will be used as the timecode source.

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** and press the ENTER key.
2. Use the Home ← and End → keys to select a timecode format and press the ENTER key.

SMPTE

SMPTE, also known as LTC or Longitudinal Timecode, 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 analogue tape machine.

When using unbalanced lines, pin 3 should be left floating.

MTC (MIDI TIMECODE)

MTC is input and output using the **MIDI IN** and **MIDI OUT** connectors on RADAR's rear panel.

SMPTE / MTC CLOCK REFERENCE

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" multi-track recorder or MIDI sequencer. In this instance RADAR uses the incoming timecode as a clock reference as well. When referenced to SMPTE or MTC RADAR will flawlessly track any variations in the speed of the master.

The timecode frequency value displayed in the **SYNC REFERENCE** displays the timecode rate setting of the **SYNC MENU, not** the rate of the incoming timecode signal.

MIDI Timecode is a high distortion, slow lock speed format and is not recommended as a sync reference.

6, 7 – AES/EBU 2-CHANNEL AND S/PDIF 2-CHANNEL

The **AES/EBU** connectors or 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. Only one set of connectors is enabled at a time.

To switch between AES/EBU 2-Channel and S/PDIF 2-Channel:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU /DIG 2-CH OUTPUT*** and press the ENTER key.
2. Use the Home ← and End → keys to select **AES/EBU** or **S/PDIF** and press the ENTER key.

8 – MADI I/O

The optional **MADI** connectors on the rear panel are available for transferring digital audio through Coaxial or Optical interface. Either interface can be used to receive a clock signal from a master clock or another digital audio source. Both MADI Optical and MADI Coaxial will always output clock and data.

To switch between MADI Optical and MADI Coaxial Input format:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER to go to the ***MAIN MENU / I/O MENU / MADI SETTINGS / COAX/OPTICAL IN*** and press the ENTER key.
2. Use the Home ← and End → keys to select **COAX** or **OPTICAL** and press the ENTER key.

If there is no MADI card installed an alert dialogue will state: **NO MADI CARD INSTALLED**.

9 – AES/EBU Multi-Channel I/O

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, or to transmit the master clock signal.

If there is no AES/EBU card installed an alert dialogue will state: **NO AES MULTI-CH CARD INSTALLED**.

10 – ADAT I/O

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, or to transmit the master clock signal.

If there is no ADAT card installed an alert dialogue will state: **NO ADAT CARD INSTALLED**.

11 – TDIF I/O

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, or to transmit the master clock signal. The clock embedded in the TDIF audio signal is different than TDIF Word Sync.

If there is no TDIF card installed an alert dialogue will state: **NO TDIF CARD INSTALLED**. Purpose built TDIF cables must be used; pin-to-pin cables will **not** work.

12 – 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 using TDIF to transfer digital audio between devices. 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.

13 – Analogue I/O

The **ANALOGUE I/O** slots use Tascam-format 25-pin D-Sub connectors. There are three card slots, each supporting one 8-channel analogue I/O card. Each analogue I/O card hosts two D-sub connectors, one for 8 channels of input, and one for 8 channels of output.

14 – Session Controller Power

The **SESSION CONTROLLER POWER** connector is a barrel-type connector that delivers the power required by the Session Controller. When using the Session Controller, both the power and data cables must be connected.

15 – Session Controller Data

The **SESSION CONTROLLER DATA** connector is a 9-pin serial connector that lets the Session Controller communicate with RADAR. This connector allows button press and jog wheel data to be sent from the controller to RADAR, as well as meter and display information to be returned from RADAR to the controller. When using the Session Controller, both the power and data cables must be connected.

16 – USB

In addition to two front panel **USB 3.0** ports, RADAR hosts four rear panel **USB 3.0** and four **USB 2.0** ports that may be used to connect a keyboard, mouse, or USB storage devices.

17 – External DVI Video Output

An optional standard DVI monitor can be attached directly to RADAR. Available wide screen resolutions are 1024x600, 1440x900, and 1600x900. Without a DVI monitor connected, only the touchscreen's native resolution of 1024x600 will be available. When RADAR is booted with a DVI monitor connected for the first time, the resolution will default to 1024x600. If the resolution is set higher with the DVI monitor connected, RADAR will remember this resolution each time RADAR is booted with a DVI monitor connected. However, each time RADAR is booted without a DVI monitor connected, it will default back to 1024x600 until booted again with a DVI monitor connected.

The default resolution is 1024x600, which is the native resolution for the 10.1" touchscreen. The 1440x900 resolution is also valid for the touchscreen but will not look as crisp on the touchscreen as its native resolution. The 1600x900 resolution is not valid for the touchscreen and may look slightly distorted on the touchscreen.

The DVI, HDMI, and VGA outputs are active; however, the VGA output is not active if a touchscreen is installed.

18 – 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 or more 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. All RADAR units in a RADARLink configuration must have the same recording engine (Adrenaline, Adrenaline Plus, or Adrenaline DR) and the same software version.

Make sure that the cable is wired fully populated and pin-to-pin. Some 9-pin cables have modified pinouts and will not work for this application.

19 – Gigabit Ethernet

RADAR ships with a Gigabit Ethernet connection built into the Motherboard. This can be used for backing up, restoring, importing, and exporting files. RADAR can connect to a server-based network, or directly to a PC or Mac. When connecting directly to a PC or Mac without the use of a router, a 'crossover' Ethernet cable may be required.

20 – 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 synchronizers, 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. Connect an RS-422 serial cable (Sony 9-pin) to the **MACH CTRL** port located at the back of RADAR and directly below the **RLINK IN/OUT** connectors.

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

To enable or disable Machine Control:

1. Press Shift + R-Link (**MCH CTL**) on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **ENABLE/DISABLE** and press the ENTER key.
3. If machine control is disabled, pressing the ENTER key on **YES** will enable it. If machine control is enabled, pressing the ENTER key on **YES** will disable it.

To select 9-pin or MMC:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to choose **SELECT TYPE** and press the ENTER key.
3. Use the Home ← and End → keys to select **9-PIN** or **MMC** and press the ENTER key.

21 – Footswitch Jacks

Up to three footswitches can be plugged in to the back of the **Session Controller** or RADAR's back panel. The footswitches must be of the normally open, momentary type. Their default functions are **PLAY/STOP**, **LAST LOC**, and **PUNCH IN/OUT** but they can also be programmed for macro assignment. Use the **ASSIGN FT-SWITCH** setting in the **PREFERENCES MENU** to assign macros to any of the footswitches.

AUDIO CABLING

iZ recommends using the highest quality cables with RADAR. Wiring diagrams for interfacing RADAR are available on the Support section of the iZ Technology website at www.izcorp.com.

ANALOGUE

Analogue cables for RADAR use the TASCAM format, and share the same wiring scheme as analogue cables for Avid ProTools, and other popular modular digital multi-track recorders. The RADAR end of each analogue cable is a 25-pin D-sub connector that carries eight independent, balanced, line level audio signals. Altogether there are six cables required for 24 channels of ultra-high quality analogue audio I/O–three for input and three for output.

The other end of each analogue 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.

MADI

The optional MADI (Multi-channel Audio Digital Interface) I/O Card has the ability to transfer 24 channels of digital audio at sample rates up to 96 kHz, and 12 channels at 192 kHz. Audio and clock information is transferable through either BNC or optical connectors. The Coaxial I/O uses a 75-Ohm, BNC terminated cable which has a maximum length of 200m. The Optical I/O uses a MADI Optical cable which has a maximum length of 2,000m.

AES MULTI-CHANNEL

The optional RADAR AES/EBU multi-channel I/O uses the TASCAM format, the same wiring scheme as Avid Pro Tools and other popular modular digital multi-track 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, three cables are required for 24 channels of digital I/O at sample rates up 96 kHz, and 12 channels at 192 kHz. Another available cabling option breaks out to 4 male (8 outputs) and 4 female (8 inputs) XLR connectors.

ADAT

ADAT Lightpipe connections can be made with any optical fiber that has been approved for use with the Alesis ADAT system. Each fiber carries eight channels of digital audio in one direction. Three input and three output Lightpipe fibers provide 24 channels of ADAT I/O at 48 kHz. 96 kHz is also available in dual-wire mode for up to 12 tracks of transferable digital audio, and 192 kHz at up to 6 tracks.

TDIF

Audio: The optional RADAR TDIF I/O uses the TASCAM wiring scheme–the same scheme used by other modular digital multi-track 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 three cables are required for 24 channels of digital I/O at sample rates up to 48 kHz. 96 kHz is also available in dual-wire mode for up to 12 tracks of transferable digital audio, and 192 kHz at up to 6 tracks.

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.

SESSION CONTROLLER

The Session Controller Professional Remote attaches to the RADAR back panel via two connectors:

Power: Insert the barrel connector of the **Session Controller** cable into the power receptacle labeled **12V 3.6A** on the rear of RADAR.

Data: Attach the 9-pin D-sub connector of the **Session Controller** cable to the 9-pin receptacle labeled **REMOTE** on the rear of RADAR.

SECTION 3

CONFIGURATION

This section is a guide to configuring system settings and ensuring they are set correctly. This can vary depending on the studio setup. The configuration settings covered in this section are: Operating Level, Sync Reference, Digital I/O, Timecode, Machine Control, Networking, Preferences, and Software.

OPERATING LEVEL

The input and output levels of RADAR can be matched with the input and output levels of other pieces of equipment in the 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 0 dBFS (decibel Full Scale) meter reading on a digital recorder represents the absolute maximum level that can be recorded, a much lower nominal level should be specified. With analogue VU meters, 0 VU (+4dBu) represents this nominal level and above that is *headroom*, which allows for dynamic surges and peak transients.

Setting RADAR's analogue audio input and output levels can be done by setting the level in dBu at which RADAR will reach full scale (0 dBFS), **or** by setting the level in dBFS that a 0 VU (+4dBu) signal will meter on RADAR's meterbridge. The **ANALOG I/O LEVEL** dialogue in the **I/O MENU** will have a prompt of either **0 DBFS** or **+4 DBU** as the reference.

Choosing a reference of **0 DBFS** will display a prompt for setting the full scale input and output levels (0 dBFS) as a dBu value between +18 and +24 dBu. Choosing a reference of **+4 DBU** will display a prompt for setting where a signal at +4dBu will register on RADAR's meters in dBFS. This will be a value between –14 and –20 dBFS. This value is commonly referred to as *headroom*.

To set the input and output operating levels:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / ANALOGUE LEVELS*** and press the ENTER key.
2. Use the Home ← and End → keys to reference either **0 DBFS** or **+4 DBU** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select the desired input operating level and press ENTER.
4. Use the Page ↑ and Page ↓ keys to select the desired output operating level and press ENTER.

If a reference of **0 DBFS** is selected, the prompt will ask to set the full scale input and output levels as a dBu value between +18 and +24 dBu.

If a reference of **+4 DBU** is selected, the prompt will ask to set the value between –14 and –20 dBFS. This value is commonly referred to as headroom.

SYNC REFERENCE

The sync reference setting will vary widely depending on the application and the configuration of a system. It will also depend on whether RADAR is the master or slave in a particular setup. Access the sync settings using the Offset Sync or Setup Menu key on the **Session Controller** or **LCD Touchscreen**

To configure RADAR as 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 Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: INTERNAL** and press the ENTER key.
4. Use the Setup Menu key, the Page ↑ and Page ↓ keys and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REF OUTPUT*** and press the ENTER key.
5. Use the the Page ↑ and Page ↓ keys to select **WORDCLK** and press the ENTER key.

A reliable clock source is necessary for digital audio transfers to a digital mixer or other digital audio device. Without proper data synchronization, digital audio will exhibit pops, clicks, and other undesirable artifacts.

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

When synchronizing with analogue tape decks that exhibit fluctuations in transport speed, RADAR can reference to the incoming SMPTE signal. In this configuration RADAR will fluctuate right along with the analogue 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 the project sample rate in the ***MAIN MENU / PROJECT MENU / SAMPLE RATE*** dialogue matches the incoming wordclock frequency.
3. Press the Offset Sync key on the **Session Controller** or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
4. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: WORDCLK: XX kHz**, and press the ENTER key.

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

The wordclock frequency value displayed in the **SYNC REFERENCE** dialogue 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 the project's timecode rate in the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC RATE*** menu matches the incoming video sync frequency.
2. Press the Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: VIDEO: NTSC** or **PAL** and press the ENTER key.

The video sync frequency displayed in the **SYNC REFERENCE** dialogue 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 timecode or MTC:

1. Ensure that a valid SMPTE timecode 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC RATE*** menu and make sure that the timecode rate matches the incoming timecode signal.
3. Press the Offset Sync key on the **Session Controller**, or go to ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** and press the ENTER key.
4. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: SMPTE: 30** or **SYNC REFERENCE: MTC: 30** and press the ENTER key.

The timecode frequency value displayed in the **SYNC REFERENCE** dialogue will depend on the **TC RATE** setting of the **SYNC MENU** **not** the rate of the incoming timecode signal.

MIDI Timecode is a high distortion, slow lock speed format and is not recommended as a sync reference.

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

1. Connect the AES/EBU source to the **AES/EBU IN** connector with an XLR digital audio cable.

2. Press the Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.

3. Use the Page ↑ and Page ↓ 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 with an RCA digital audio cable.

2. Press the Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.

3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: S/PDIF 2CH SYNC** and press the ENTER key.

To slave RADAR to an external MADI clock source:

1. Connect the MADI source to either **BNC** or **OPTICAL CABLE** connector using the appropriate digital audio cable.

2. Press the Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.

3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: MADI (COAX)** or **SYNC REFERENCE: MADI (OPTICAL)** and press the ENTER key.

If no MADI card is installed, a dialogue will display **NO MADI CARD INSTALLED**.

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 Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.

3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: AES MULTI-CH** and press ENTER.

If no AES/EBU card is installed, a dialogue will display **NO AES MULTI-CH CARD INSTALLED**.

To slave RADAR to an external ADAT clock source:

1. Connect the ADAT source to the desired optical **ADAT IN** connector using an ADAT light pipe cable.
2. Press the Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: ADAT** and press the ENTER key.

If no ADAT card is installed, a dialogue will display **NO ADAT CARD 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 Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: TDIF L/R IN** and press the ENTER key.

If no TDIF card is installed, a dialogue will display **NO TDIF CARD INSTALLED**. 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 Offset Sync key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** menu and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SYNC REFERENCE: TDIF WORD SYNC** and press the ENTER key.

If no TDIF card is installed, a dialogue will display **NO TDIF CARD INSTALLED**. Use purpose built TDIF cables; pin-to-pin cables will not work.

DIGITAL I/O

The digital I/O formats that are available will depend on the digital interface options installed in RADAR. All units ship with built-in S/PDIF and AES/EBU 2-channel interfaces. The 24 channel digital I/O options available include AES/EBU Multichannel, ADAT, TDIF, and MADI. Please note that once a digital format is selected, an appropriate clock source must also be selected. The clock source may or may not be the digital I/O format. For example, the digital I/O format may be AES/EBU, but the sync reference may be AES/EBU or wordclock. RADAR may also act as clock master if **SYNC REFERENCE** is set to internal.

NONE

This selection returns all 24 inputs to analogue 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 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. It is essentially a consumer version of AES/EBU.

MADI

Each BNC connector or optical connector carries 24 channels of audio. Either **COAXIAL** or **OPTICAL** must be chosen in the **SYNC MENU** depending on the inputs/outputs of the external device.

AES MULTI-CH

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

ADAT

Lightpipe optical fibers carry eight channels of digital audio. This format is unidirectional so three input and three output Lightpipe cables will be required for 24 channels of ADAT I/O.

TDIF

TDIF uses three bidirectional cables carrying eight channels of audio each, for a total of 24 channels of digital I/O.

If a particular card is not installed, a dialogue will display: **NO _____ CARD INSTALLED**.

To select a digital I/O format:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / INPUT FORMAT*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the digital format of choice and press the ENTER key.

When a digital input format is specified one track must always be set to digital. To return all 24 tracks to analogue input select **NONE**.

To select tracks for digital input:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / I/O ROUTING*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **DIGITAL INPUTS** and press the ENTER key.
3. Use the Home ← and End → keys to select **ALL** or **SELECT** and press the ENTER key.
4. Use the **Track Selection** keys to select digital inputs.

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / I/O ROUTING*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **DIG 2-CH ROUTING** and press the ENTER key.
3. Use the Home ←, End →, Page ↑, and Page ↓ 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.

MADI Firmware Updates

The **INSTALL FIRMWARE** feature allows MADI firmware to be upgraded. This option is found in the **MADI SETTINGS** list in the **I/O MENU**.

To update MADI Firmware:

1. Navigate to ***MAIN MENU / I/O MENU / MADI SETTINGS / INSTALL FIRMWARE*** and press the ENTER key.
2. At the **MADI FIRMWARE IS NOT CURRENT** prompt press the ENTER key.
3. At the **INSTALL FIRMWARE VERSION: 0X** dialogue use the Page ↑ and Page ↓ keys to select the desired version and press the ENTER key.
4. At the **INSTALL MADI FIRMWARE VER 0X?** prompt use the Home ← and End → keys to select **YES** and press ENTER key.
5. At the **ARE YOU SURE?** prompt use the Home ← and End → keys to select **YES** and press ENTER .
6. The dialogue will display **INSTALLING** and show **+ 0% COMPLETE +**. When installation completes, **FIRMWARE INSTALLED** and **REBOOT TO ENABLE FIRMWARE** will be displayed. If the display shows **FIRMWARE FAILED**, the installation has not been completed and must be restarted.

Do not interrupt a firmware update as this could cause irreversible damage to RADAR hardware.

TIMECODE

RADAR supports two distinct protocols of positional timecode I/O when the optional Sync Processor card is installed: SMPTE/EBU and MIDI timecode (MTC). Both support all industry standard frame counts and rates. While chasing timecode it is normal practice to reference RADAR's clock either directly to the incoming timecode 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 either SMPTE or MTC (MIDI timecode) and synchronize its internal clock to video sync, wordclock, active digital I/O connections, or even to an incoming SMPTE or MTC signal. This allows RADAR to synchronize with other audio recorders, video tape recorders, and sequencers.

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

In other applications where all the devices in a system are referenced to video sync (e.g. 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 timecode and the timing information present in the video signal. For more information on video sync refer to *APPLICATIONS: LIVE RECORDING: CHASING TIMECODE AND CLOCK SYNCHRONIZING* and *APPLICATIONS: PLAYBACK: CHASING TIMECODE AND CLOCK SYNCHRONIZING*.

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

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

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

This key enables or disables chase mode on RADAR. When the TC Pref Chase (TC PREF) key is pressed on the **Session Controller** or **LCD Touchscreen**, RADAR will locate to the current incoming timecode 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.

CHASE MODE

CHASE MODE determines the chase behavior of RADAR. When set to **RECHASE**, RADAR will locate, lock, and begin playback, continually comparing its position with that of the incoming timecode. When set to **LOCK-AND-DROP**, RADAR will locate, lock, begin playback, and immediately switch back to internal clock. When set to **NUDGE**, if the timecode drifts, the clock speed will temporarily adjust (override) to bring the timecode back in sync.

Both the **SYNC REFERENCE** and **POSITION** reference will switch to **INTERNAL** (**CHASE** and **SYNC** LEDs will switch off) if set to **SMPTE** or **MTC**. If RADAR is required to stop manually and rechase to the incoming timecode, the TC Pref Chase key must be pressed (and Offset Sync key if also using **SMPTE** or **MTC** as a **SYNC REFERENCE**) in order for RADAR to rechase again (**SYNC** and **CHASE** LEDs flashing). This lock and release behavior is sometimes required for transfers from media with poor/damaged timecode or during a live recording.

There are three options for handling the situation where the clock (sync) source and the timecode (chase) are not in sync with each other:

LOCK-AND-DROP Chase to the incoming timecode initially, but once positional chase is established, stop looking at the timecode (turn **CHASE** off); therefore, rely only on the clock source and ignore any timecode drift (this is the former **RECHASE DISABLED** mode).

RECHASE If the timecode drifts, cue RADAR again and reestablish positional chase; therefore, rely on both the clock source and the timecode source.

NUDGE If the timecode drifts, this option will temporarily adjust (override) the clock speed to bring the timecode back in sync; therefore, rely primarily on the timecode source.

Timecode preferences can be accessed by pressing SHIFT+TC Pref Chase (**TC PREF**). Changing these settings will have a direct effect on chase operation. These preferences can also be accessed using the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** dialogue.

TC PREFERENCES

To set RADAR timecode preferences for **CHASE**:

1. Press the SHIFT+TC Pref Chase (**TC PREF**) keys on the **Session Controller** or **LCD Touchscreen**. These preferences can also be accessed in the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** menu dialogue.
2. Use the Home ← and End → keys to select either **SMPTE** or **MTC** as the timecode format and press the ENTER key.

3 Select a timecode rate from the **TC RATE** dialogue. The Page ↑, Page ↓, Home ←, and End → keys display the available rates. The available rates are:

23.976	
24	25
29.97ND	29.97DF
30ND	30DF

Use the Home ← and End → keys to make a selection from the current dialogue page and press the ENTER key.

SYNC DRIFT

When RADAR is required to **CHASE LTC** or **MTC**, it can display the amount of **SYNC DRIFT** between RADAR and the external timecode. When enabled, **DRIFT: X SMPLS** will be displayed in the **OFFSET** window on **RADARView**.

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / SHOW SYNC DRIFT*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to select **ENABLE** or **DISABLE** and press the ENTER key.

> In a situation when 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. 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 timecode. Normally, RADAR can maintain chase mode if the incoming timecode rate/position fluctuates between 0 and 128 samples relative to the sample clock rate.

To determine the sync drift threshold:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / SYNC THRESHOLD*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to select **NORMAL** or **WILD** and press the ENTER key. **WILD** is 10x **NORMAL** mode.

OFFSET

When synchronizing machines that have differing timecode positions, an offset can be calculated and set on RADAR to correct thhis. Offsets can be positive or negative, and are in the HH:MM:SS:FF format.

To set an offset:

1. Press SHIFT + Offset Sync (OFFSET) on the **Session Controller** or **LCD Touchscreen**.
2. Use the Page ↑ and Page ↓ keys, the **Jog/Shuttle Wheel**, or the numeric keypad to enter the offset starting on the right hand side with the frames field (or subframes if enabled). Use the Home ← and End → 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:

1. After pressing the SHIFT + Offset Sync (OFFSET) keys, pressing the Page ↑ and Page ↓ keys simultaneously will clear the offset.

Regardless of the offset, RADAR timecode will always reflect the actual project time.

CHASE ON POWERUP

When this feature is enabled, RADAR will automatically start chasing timecode when it is started up. This feature's default setting is **DISABLED**.

To set RADAR to chase on power up:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / CHASE ON POWERUP*** dialogue and press the ENTER key.
2. Use the End → key to select **ENABLED** and press the ENTER key.

CHASE CUE TIME

This setting allows the **CHASE CUE TIME** to be adjusted. When chasing timecode, one factor in the delay before RADAR begins chasing is the length of time spent waiting to guarantee that the disk has cued to any arbitrary point in the project. If the cue time will always be shorter (for example, if only six tracks are being played back), the time can be reduced. The default chase cue time is 1.6 seconds.

To adjust the chase cue time:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / CHASE CUE TIME*** dialogue and press the ENTER key.
2. At the **CHASE CUE TIME**: prompt use the Page ↑ and Page ↓ keys to adjust the time from 0.2–2.0 seconds and press the ENTER key to confirm the selection.

Be sure that the time is set long enough to allow the disk to cue to any point in the project. The cue time increases with number of tracks and amount of editing in a project.

MACHINE CONTROL

RADAR can be configured to allow external control via Sony 9-pin or MMC (MIDI Machine Control). **9-PIN SETTINGS** and **MMC SETTINGS** are available to allow RADAR to seamlessly integrate with a wide variety of professional products that provide 9-pin and/or MMC control protocols.

To enable or disable Machine Control:

1. Press Shift + R-Link (MCH CTL) LCD Touchscreen, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **ENABLE/DISABLE** and press the ENTER key.
3. If machine control is disabled, pressing the ENTER key on **YES** will enable it. If machine control is enabled, pressing the ENTER key on **YES** will disable it.

To select 9-pin or MMC:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to choose **SELECT TYPE** and press the ENTER key.
3. Use the Home ← and End → keys to select **9-PIN** or **MMC** and press the ENTER key.

The default **MMC DEVICE ID** is set to **127(7F) = ALL CALL**. This does not need to be altered unless advised by the MMC Manufacturer or iZ Support.

NETWORKING

RADAR ships with a Gigabit Ethernet interface built onto the motherboard. With the appropriate hardware and with properly configured software, RADAR can backup, restore, export, and import files using an Ethernet connection to a Windows, Linux, or Mac OS FTP server. 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.

The goal of RADAR networking is to configure the unit for integration into an existing network or connection to a personal computer. The concept of networking is very extensive; this section of the manual only addresses the networking configuration settings to be used with RADAR. Please refer additional networking questions to iZ Support. You can also see step-by-step instructions by going to http://www.izcorp.com/users/videos/tech-talk/ and finding the Network Setup video. For instructions on how to import/export files see *OPERATIONS: FILE MANAGEMENT: EXPORT* and *OPERATIONS: FILE MANAGEMENT: IMPORT* sections.

DISCLAIMER: iZ Technology cannot offer advice on networking and security issues that do not directly pertain to RADAR. 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 from one computer to another.

RADAR has built in FTP (File Transfer Protocol) server and client software. These features enables the transfer of files between and a network-connected computer via Ethernet. For instructions on how to configure RADAR for FTP refer to **CONFIGURE RADAR FOR NETWORKING** below. For details on how to export/import files please refer to the *OPERATIONS: FILE MANAGEMENT: EXPORT* and *OPERATIONS: FILE MANAGEMENT: IMPORT* sections.

RADAR IP ADDRESS SETUP

To setup RADAR for FTP and/or RADAR network control:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / PREFERENCES MENU / NETWORK PREFS / INTERFACE PREFS*** and press the ENTER key.
2. At the **INTERFACE PREFS:** dialogue, use the Page ↑ and Page ↓ 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 RADAR and press the ENTER key.
4. At the **DHCP SERVER:** dialogue, use the Home ← and End → keys to **ENABLE** or **DISABLE DHCP** and press the ENTER key. If **DHCP** is enabled, proceed to step 11. Do NOT enable **DHCP** when 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 Home ← and End → keys to enter a unique IP address and press the ENTER key. When using a crossover cable to connect directly with a Windows or Mac-based computer, the RADAR IP address should have the same first three sets of digits but the last set of digits must be different. For example, if the Mac computer IP is 192.168.1.14, the RADAR IP can be 192.168.1.7.

   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, any IP address range may be used. However, care should be taken when assigning IP addresses to avoid potential security risks and IP address conflicts. For further information visit the Internet Assigned Numbers Authority site at http://www.iana.org.

6 At the **SUBNET MASK:** prompt, use the numeric keypad and the Home and End 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 RADAR is connecting to.

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

8 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 the Home and End keys to enter a **PRIMARY DNS** value and press the ENTER key.

9 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 the Home and End keys to enter a **SECONDARY DNS** value and press the ENTER key.

10 The **SMTP HOST** setting is sometimes required to allow email of debug logs via a specific Internet Service Provider. At the **SMTP HOST:** prompt use the QWERTY keyboard to type a **SMTP HOST** (e.g. *mail.smtp.com*). Use the & key on the **LCD Touchscreen**, or the Page and Page keys or **Jog Wheel** to select the period (.) key.

11 At the **FTP SERVER:** dialogue, use the Home and End keys to **ENABLE** or **DISABLE FTP SERVER** and then press the ENTER key. The menu items in steps 12 and 13 will only appear if **FTP** server is enabled.

12 The **FTP LOGIN NAME** is required for accessing RADAR's internal System/Archive drive (e.g., **0:ARCHIVE**) via FTP. At the **FTP LOGIN NAME:** dialogue, use the QWERTY keys and the Page and Page 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 RADAR.

13 The **FTP PASSWORD** is also required for accessing RADAR via FTP. At the **FTP PASSWORD:** dialogue, use the QWERTY keys and the Page and Page 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 RADAR.

FILE SHARING WITH RADAR AS CLIENT, MAC OR PC AS SERVER

Networking with a Mac or PC can be set up one of two ways–with RADAR as the client and the Mac/PC as the server, or with RADAR as the server and the Mac/PC as the client. The steps below outline the setup for networking with RADAR as the client and the Mac/PC as the server. This is the recommended method as this is a one-step process to transfer files. Simply Export/Import/Backup/Restore to transfer files between the Mac or PC and RADAR's record drive. There is no need to transfer the files to RADAR's system drive when using this method.

RADAR has a built-in FTP (File Transfer Protocol) client that can communicate with an FTP server to facilitate file sharing.

RADAR FTP CLIENT SETUP

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN/PREFERENCES MENU/NETWORK PREFS/SERVER PREFS*** and press the ENTER key. Press the ENTER key again on **NETWORK PROTOCOL**
2. At the **NETWORK PROTOCOL:** prompt, press the ENTER key on **FTP**.
3. At the **SERVER IP ADDR:** prompt, use the numeric keypad and the Home ← and End → keys to enter the server's server IP address and press the ENTER key. (*e.g. 192.168.1.14*)
4. At the **SERVER NAME:** prompt, use the QWERTY keyboard to enter a name for the FTP Server. (*E.g. Win 8* or *Mac OSX*) (Note: This is display only and should not impact functionality.)
5. At the **SAVE CHANGES:** prompt press the ENTER key on **YES**.

Once FTP server information has been entered it is a good idea to test the connection. To do this, go to ***MAIN MENU / DIAGNOSTICS MENU / PING IP ADDRESS***. This provides a way to test communication by sending small packets of data across the network. By default the **SERVER IP** will be entered in this field. Press ENTER at the **PING IP ADDRESS:** prompt. **REPLY RECEIVED** means the server is reachable. If the message **NO REPLY** is displayed, recheck the networking settings on both RADAR and the Server.

RADAR FTP CLIENT USE

1. When performing **IMPORT**, **EXPORT**, **BACKUP**, **RESTORE**, or **FILE BROWSER**, the **N:[SERVER NAME]** option will appear in the drive list.
2. Press the ENTER key on **N:[SERVER NAME]**
3. At the **USER NAME:** prompt, use the QWERTY keyboard to enter the FTP login user name (*case sensitive*).
4. At the **USER PASSWORD:** prompt, use the QWERTY keyboard to enter the FTP login password (*case sensitive*).
5. Use the + and - keys to go in and out of folders.
6. Press the ENTER key to select folder.

MAC OS X SERVER NETWORK SETUP (RADAR AS CLIENT)

For PC setup instructions skip to the next section.

These instructions are for setting up a Network between RADAR and a Mac (OS X). All recent Mac desktop and laptop computers are shipped with an FTP server built into the operating system, however, a 3rd party FTP Server such as *Pure FTP Manager* may also be used to allow greater flexibility such as multiple users and unique paths.

Enabling the Mac FTP Server may allow your Mac computer to become vulnerable to security risks. iZ Technology takes no responsibility for the risks associated with enabling the Mac FTP Server.

If connecting from the Mac as the client to RADAR as the server, an FTP client is recommended (*such as Fetch* www.fetchsoftworks.com)

Connect an Ethernet cable between RADAR and the Mac. RADAR can also be integrated into a network environment; contact the network administrator for specific settings.

MAC IP ADDRESS SETUP WITH YOSEMITE (OS 10.10)

For setup with previous Mac OS versions, please the Support section of the iZ Technology website at www.izcorp.com.

1. Open **SYSTEM PREFERENCES** and then click on **NETWORK**.
2. Select **ETHERNET** (or the Built-in port connected).
3. At **CONFIGURE IPV4**: choose **MANUALLY**.
4. On **IP ADDRESS** enter a unique **IP ADDRESS** (*e.g. 192.168.1.14*).
5. For **SUBNET MASK** enter: *255.255.255.0.*
6. Click **APPLY** button.

MAC FTP SERVER SETUP

1. Open the **APPLICATIONS** folder. Select **UTILITIES** and then open the **TERMINAL** application.
2. Enter the following text exactly as it appears:
   ```
   sudo -s launchctl load -w /System/Library/LaunchDaemons/ftp.plist
   ```
3. Press **ENTER**. You will be prompted to enter your password. Enter your account password and press **ENTER** again. You may now close the **TERMINAL** window.
4. Open **SYSTEM PREFERENCES** and then click on **SHARING**.
5. Click on the **FILE SHARING** check box on the left side of the screen to check this selection.
6. Under **SHARED FOLDERS**, create or select a directory or folder you wish to share.

The Mac user Account Name and Password will be used for FTP access.

Mac FTP Server Username and Password:

1. Open **SYSTEM PREFERENCES**.
2. Click on **USERS AND GROUPS**.
3. Right click, or hold Control and click on the account name on the left side of the window. A small window will appear. Click on **ADVANCED OPTIONS**.

4. The **ACCOUNT NAME** shown in this window (NOT the **FULL NAME** displayed) is the account name you will use to connect to the Mac Server.
5. Use the password normally used to log into this account to connect to the Mac Server.

If the above settings do not allow a connection or file transfer, you may need to disable your Mac Firewall.

> Disabling the Mac Firewall may allow your Windows computer to become vulnerable to security risks. iZ Technology takes no responsibility for the risks associated with disabling the Mac Firewall.

To disable the Mac Firewall:

1. Open **SYSTEM PREFERENCES**.
2. Click on **SECURITY & PRIVACY**.
3. Click on **TURN OFF FIREWALL**.

WINDOWS 8 SERVER NETWORK SETUP (RADAR AS CLIENT)

These instructions are for setting up a Network between RADAR and a PC (Windows).

RADAR has a built-in FTP Client and FTP Server. PC computers, however, do not generally come with installed FTP Client or FTP Server programs. In order to Network RADAR, 3rd party FTP Client and FTP Server software must be installed on the PC. Downloadable FTP software options include:

- FTP Client software: Smart FTP
- FTP Server software: FileZilla Server

> File transfers via FTP will not be possible unless FTP Server and/or FTP Client software is installed on the destination PC.

Once the PC has been equipped with an FTP Client and/or an FTP Server, connect an Ethernet *crossover cable* between RADAR and the PC. Crossover cables are available at most computer stores. A crossover Ethernet cable is different from a standard (straight through) Ethernet cable, as the crossover cable has different wiring. Crossover cables are usually red or yellow in colour. If RADAR and the PC are connected through a router, standard Ethernet cables may be used. RADAR can also be integrated into a network environment; contact the network administrator for specific settings.

PC IP Address setup for Windows 8:

1. Open the **CONTROL PANEL**.
2. In the **CONTROL PANEL** click on **NETWORK AND INTERNET**, then **NETWORK AND SHARING CENTER** and click to select **CHANGE ADAPTER SETTINGS**.
3. Right click on the appropriate network adapter and choose **PROPERTIES**.

4. Select **INTERNET PROTOCOL VERSION 4 (TCP/IPV4)** and choose **PROPERTIES**.
5. Select **USE THE FOLLOWING IP ADDRESS** and enter a unique IP Address (*e.g. 192.168.1.14*).
6. For **SUBNET MASK** enter: *255.255.255.0*.
7. Leave all other fields blank.
8. Click the **OK** button.

PC FTP Server Username and Password:

1. Open the FTP Server.
2. Enter the necessary information to allow an FTP client to access a given directory on the PC.
3. The FTP server should ask you to create or enter a *username* and *password*. Enter this information. This is the username and password you will enter on RADAR when connecting to the FTP server.

If the above settings do not allow a connection or file transfer, you may need to disable your Windows Firewall.

Disabling the Windows Firewall may allow your Windows computer to become vulnerable to security risks. iZ Technology takes no responsibility for the risks associated with disabling the Windows Firewall.

To disable Windows Firewall:

1. Open the **CONTROL PANEL**.
2. Change the **VIEW BY:** option to **LARGE ICONS**.
3. Locate and select **WINDOWS FIREWALL**.
4. Click on **TURN WINDOWS FIREWALL ON OR OFF**.
5. Select the appropriate network type, turn off the Firewall and click the **OK** button.

FILE SHARING WITH RADAR AS SERVER, MAC OR PC AS CLIENT

Networking with a Mac or PC can be set up one of two ways–with RADAR as the client and the Mac/PC as the server, or with RADAR as the server and the Mac/PC as the client. The steps below outline the setup for networking with RADAR as the server and the Mac/PC as the client. Although this method works, this is not the recommended method as this is a two-step process to transfer files. Files transferred from RADAR to the Mac or PC will first need to be exported or backed up from RADAR's record drive onto RADAR's Archive drive. Files transferred from the Mac or PC to RADAR will need to be transferred from the Mac or PC to RADAR's Archive drive, and then will be imported or restored onto RADAR's record drive.

MAC OS X CLIENT NETWORK SETUP (RADAR AS SERVER)

Mac FTP client use:

1. Perform a File Export or Backup to **0:ARCHIVE** on RADAR.
2. Start the Mac **FTP CLIENT**.
3. Enter **RADAR'S IP ADDRESS**. (*e.g. 192.168.1.7*)
4. Enter the **LOGIN NAME**. (*E.g. radar*) (*lower case*)
5. Enter the **PASSWORD**. (*E.g. radar*) (*lower case*)
6. Click **CONNECT**.
7. The client should connect immediately (*less than 1 sec*). If the client fails to connect, check the PC and RADAR network settings and cable connections.
8. Locate the folder exported to. Drag and drop the files from RADAR to the Mac HD.
9. To transfer files using a Web Browser; type: *ftp://radar:radar@192.168.1.7/../../Archive* in the **ADDRESS BAR**.

WINDOWS 8 CLIENT NETWORK SETUP (RADAR AS SERVER)

Windows FTP client use:

1. Perform a **FILE EXPORT** or **BACKUP** to **0:ARCHIVE** on RADAR.
2. Start the Windows **FTP CLIENT**.
3. Enter **RADAR'S IP ADDRESS**. (*e.g. 192.168.1.7*)
4. Enter the **LOGIN NAME**. (*E.g. radar*) (*lower case*)
5. Enter the **PASSWORD**. (*E.g. radar*) (*lower case*)
6. Click **CONNECT**.
7. The client should connect immediately (*less than 1 sec*). If the client fails to connect, check the PC and RADAR network settings and cabling.
8. Locate the RADAR folder were audio files were exported to. Drag and drop the files from RADAR to the PC hard drive.
9. To transfer files using Windows Explorer; type: *ftp://radar:radar@192.168.1.7/../../Archive* in the **ADDRESS BAR**.

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

PREFERENCES

Every time a new project is created, this prompts RADAR to determine a variety of project settings such as sample rate, bit depth, TC format etc. In order to save 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 desired specifications.

SOFTWARE

Although RADAR is shipped with the latest version of RADAR software, it can be kept up to date by downloading new versions of the software as they become available. iZ is constantly working to add new features and to improve the performance and reliability of RADAR. Software updates and downloading instructions are available from the iZ website at www.izcorp.com, or can be obtained from an iZ authorized dealer or iZ Technology.

INSTALL PROCEDURE

1. Make a backup copy of everything that is on the current recording drive. Upgrading software shouldn't affect the audio on the recording drive; however, everything should be backed up as a precautionary measure.
2. Insert the RADAR install USB thumb drive into any available RADAR USB slot, or copy the *RADAR_v4.XX.X.zip* file to any other media attached to RADAR (e.g., **N:NETWORK**, **0:ARCHIVE**, **DVD:** (BD, DVD, or CD), **SDXC CARD** , or **THUNDERBOLT DRIVE**).
3. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / SYSTEM MENU / UPDATE SOFTWARE*** and press the ENTER key.
4. At the **UPDATE S/W FROM:** prompt, select either **WEB:IZCORP.COM** (WAN Access required), **N:NETWORK**, **0:ARCHIVE**, **DVD:** (BD, DVD, or CD), **SDXC CARD**, or **U:USB DRIVE**, or **THUNDERBOLT DRIVE** and press the ENTER key.
5. Use the Page ↑ and Page ↓ keys and the + and - keys to navigate to the software update file and press the ENTER key.
6. At the **INSTALL VER 4.XX?:** prompt use the Home ← and End → keys to select **YES** and press the ENTER key.
7. At the **REBOOT RADAR TO COMPLETE INSTALL** prompt, shutdown and power off RADAR, and power back on to complete the software installation.

After using any SSD, external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

RADAR NETWORK CONTROL SOFTWARE FOR PC

The RNC (RADAR Network Control) program allows the control of one or more RADAR machines via Ethernet by using a standard computer with Java Runtime Environment installed (version 1.4.2 or higher). A 30 day trial version of the RNC program is located on the USB flash drive included with RADAR. Please contact a local dealer or our sales department, izsales@izcorp.com or 1.800.776.1356 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**	**INPUT 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 USB flash drive.

If using a USB keyboard connected to the computer used to control RNC, the left-of-spacebar Alt key = **FFWD** and the right-of-spacebar Alt key = **STOP**.

Refer to *REFERENCE: REMOTE KEYBOARD KEYS: STANDARD KEYBOARD CONVERSION* for a full USB keyboard control layout.

To enable RADAR Network Control software:

1. Configure 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 Setup Menu key, the Page ▲ and Page ▼ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / NETWORK PREFS / NETWORK CONTROL*** and press the ENTER key.

3. Use the End key to move the cursor to **ENABLED** in the **NETWORK CONTROL** dialogue and press the ENTER key.
4. The confirmation prompt **NETWORK CONTROL SLAVE ID = X** indicates that RADAR can now be controlled by using the slave ID given.

To disable RADAR Network Control software:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / NETWORK PREFS / NETWORK CONTROL*** and press the ENTER key.
2. Use the Home key to move the cursor to **DISABLED** in the **NETWORK CONTROL** dialogue and press the ENTER key.
3. A confirmation prompt **NETWORK CONTROL SLAVE DISABLED** indicates that RADAR will no longer be controllable by RNC (RADAR Network Control).

SECTION 4

OPERATIONS

This section of the manual provides a quick reference to RADAR displays, key functionality, menus, value entry, and project management.

RADAR is a robust, dependable, and easy-to-use multi-track recorder and fully integrated professional DAW. All aspects of RADAR performance are designed to meet and exceed the performance requirements of a professional recorder. All professional recorder functions are available, such as the ability to record, punch in and out, jog/shuttle, and vari-speed.

POWERING RADAR ON AND OFF

The lighted, momentary power on/off switch provides power on and off capability. To properly power down RADAR choose **SHUTDOWN RADAR** from the ***MAIN MENU*** and then push the power on/off switch, or press  from the buttons screen.

When RADAR powers up, a power on self test (POST) is performed and the Power Up Mode Selection Screen appears. If RADAR Mode is selected, the iZ logo will appear followed by a black screen for a few seconds, followed by the RADAR logo, then by the **RADARView** operating screen. When the **RADARView** screen appears, RADAR will automatically mount the previously mounted audio drive and load the previously loaded project.

DISPLAY

While many RADAR users connect a DVI video monitor to make use of the **RADARView** display, it is important to note that a monitor is not required with the **LCD Touchscreen** or *optional* **Session Controller** when operating in RADAR Mode. The **LCD Touchscreen** and **Session Controller** make RADAR exceptionally portable and ideally suited for remote applications

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

FEET/FRAMES This is used for specific film applications.

BARS/BEATS This is used to display positions based on musical notation, which can be helpful when working with a MIDI sequencer.

SMPTE SMPTE (Society of Motion Picture and Television Engineers) is the most common format and is RADAR's default display. SMPTE is displayed in *Hours:Minutes:Seconds:Frames:Sub-frames* display.

INT/EXT SMPTE While in chase mode, the **Session Controller** will display the project's current time above the master machine's current timecode position. The **RADARView** display shows only the master machine's timecode position in this mode.

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 MENU / PREFS MENU / SHOW SUB-FRAMES*** dialogue.

To change the display mode of a project:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / DISPLAY MODE*** selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the format and press the ENTER key.

RADARVIEW

On the **LCD Touchscreen**, or with a DVI or VGA monitor attached, RADAR gives users a substantial display of the following information (clockwise from top left):

- iZ Logo (doubles as About Screen button)
- Date and time display
- Locate indicator displaying current and next locates
- 24 channels of metering with status and clip indicator lights
- Large, easy to read positional display
- RADAR software version
- Sync Status Display:
  - Sample rate and bit depth
  - Current timecode rate and incoming TC rate
  - Sync status and reference sync source
  - Chase status and TC format
  - Sync offset
  - RADARLink ID and status
- Transport Status Display:
  - Vari-speed indicator and percentage display
  - Loop Play, Auto Input, Auto Punch, and Auto Play indicators
  - Pre-Roll and Post-Roll current value status and current Pre-Roll value
- Edit Status Display:
  - Edit and Record crossfade values
  - Last Edit display
  - Undo/Redo level setting.
  - Mark In, Mark Sync, Mark Out points and range
- RADARLink/ Locator Display:
  - RADARLink ID and status
  - Start, Mark In, Mark Sync, Mark Out, Range values
  - Display (counter) format
- Project Name, Number, and Start Time
- Locate List

- Record Time Remaining
- Disk ID, Mode, and Activity
- Buttons Tray:
  - Track view expand/collapse
  - Jog/Shuttle, Edit, Zoom, Locate, Loop Play, Mark In/Mark Out controls
  - Tracks Screen/Main Screen toggle button
- Track display for audio waveform data (Tracks Screen), full-screen buttons (Main Screen), or System Configuration Screen, About Screen, or Debug Screen
- Track naming area, inputs, outputs, track arm buttons, and small meters
- Current digital I/O format display

RADARVIEW SKINS

RADAR ships with several different skins and allows the user to switch between skins. The four skins that ship with RADAR are **ELEGANT**, **FRONTIER**, **MIDNIGHT**, and **AZURE**. **ELEGANT** is the default skin. Users can also use image files as custom skins.

To change the RADARView skin:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / PREFERENCES MENU / RADARVIEW PREFS / RADARVIEW SKIN*** and press ENTER.
2. Use the Page ↑ and Page ↓ keys to select a skin and press the ENTER key.

To use a custom skin:

1. From **RADARView**, press W + 2 on the **Session Controller**. This will open the iZOS File Management Desktop. The **System** and **Archive** drives will appear on the desktop as icons.
2. Navigate to the image file you wish to use as the custom skin. Drag and drop or copy the image file into the /Archive/SystemFiles/Custom/Skins directory.
3. Press W + 1 on the **Session Controller** to return to RADARView.
4. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / PREFERENCES MENU / RADARVIEW PREFS / RADARVIEW SKIN*** and press the ENTER key.
5. Use the Page ↑ and Page ↓ keys to select the custom skin and press the ENTER key.

LABEL TEXT COLOUR

The label text colour may need to be changed in order to be visible with some RADARView skins, or to suit personal preference.

To change the label text colour:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / PREFERENCES MENU / RADARVIEW PREFS / LABEL COLOUR*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select a colour and press the ENTER key.

RADARVIEW TOUCHSCREEN

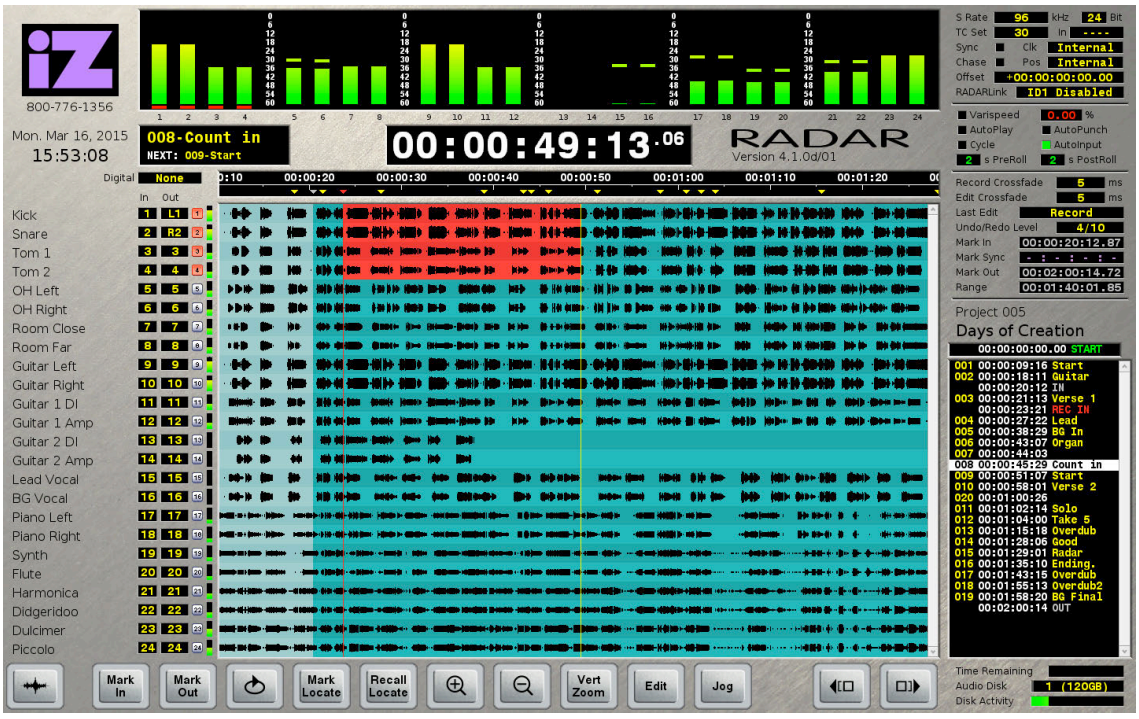
The 10.1” LCD Touchscreen lets RADAR user control settings and preferences with a single touch.

There are five user screens on the **LCD Touchscreen**:

- Tracks Screen
- Main Screen
- System Configuration Screen
- About Screen
- Debug Screen

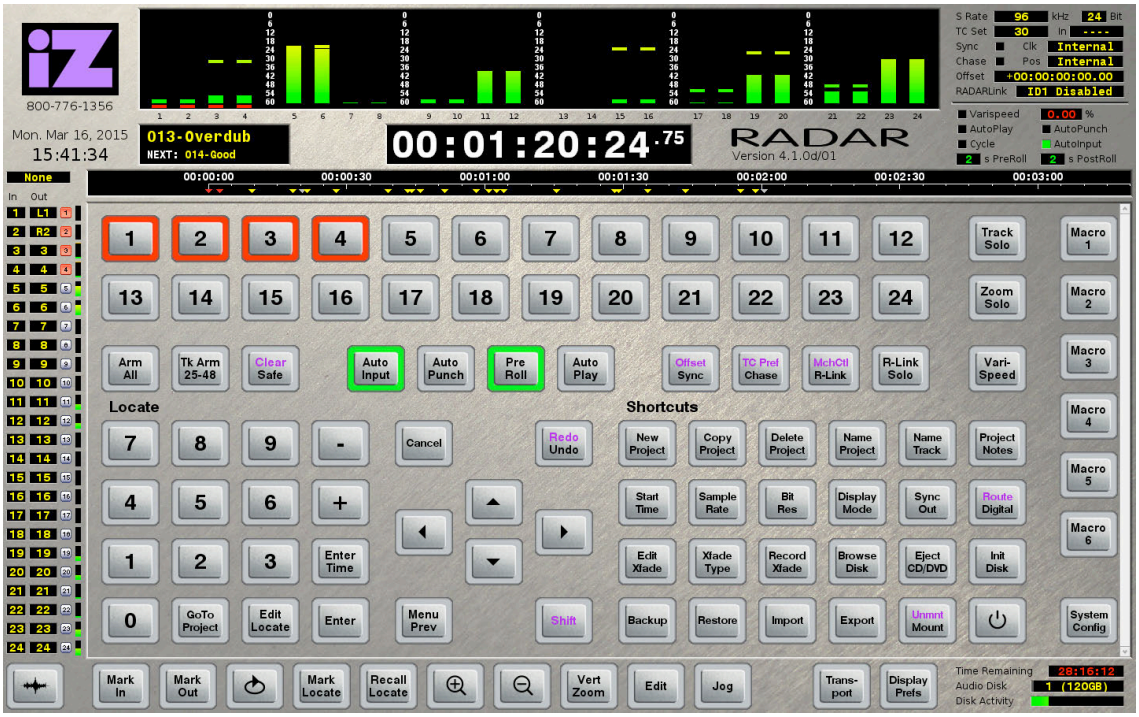
TRACKS SCREEN

The Tracks Screen is the default screen and shows the waveforms of the current project. This screen also displays track name, track arm, and locate information, as well as other project related information. Pressing the Edit key from any screen opens a modified version of the Tracks Screen, showing the waveform view and special function Edit button tray. Pressing from any other screen (or Tracks from the Debug Screen) returns to the Tracks Screen.



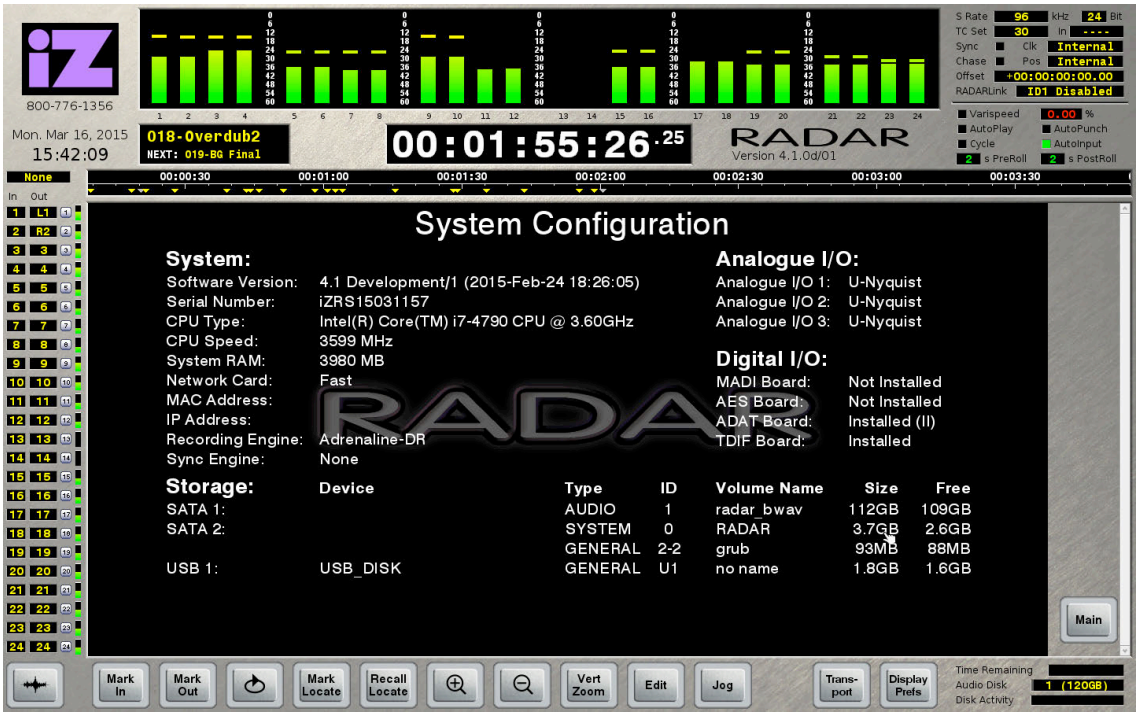
MAIN SCREEN

The Main Screen provides instant access to many of RADAR's features. This screen hosts track arm buttons, Macro 1–6 buttons, number pad for entering values and navigating to locate points, as well as many other dedicated buttons for one-touch functionality. This screen can also be useful if RADAR is being used with a mouse and DVI or VGA monitor. Pressing [▦] from any other screen (or [Main] from the System Configuration or About Screens) returns to the Main Screen.



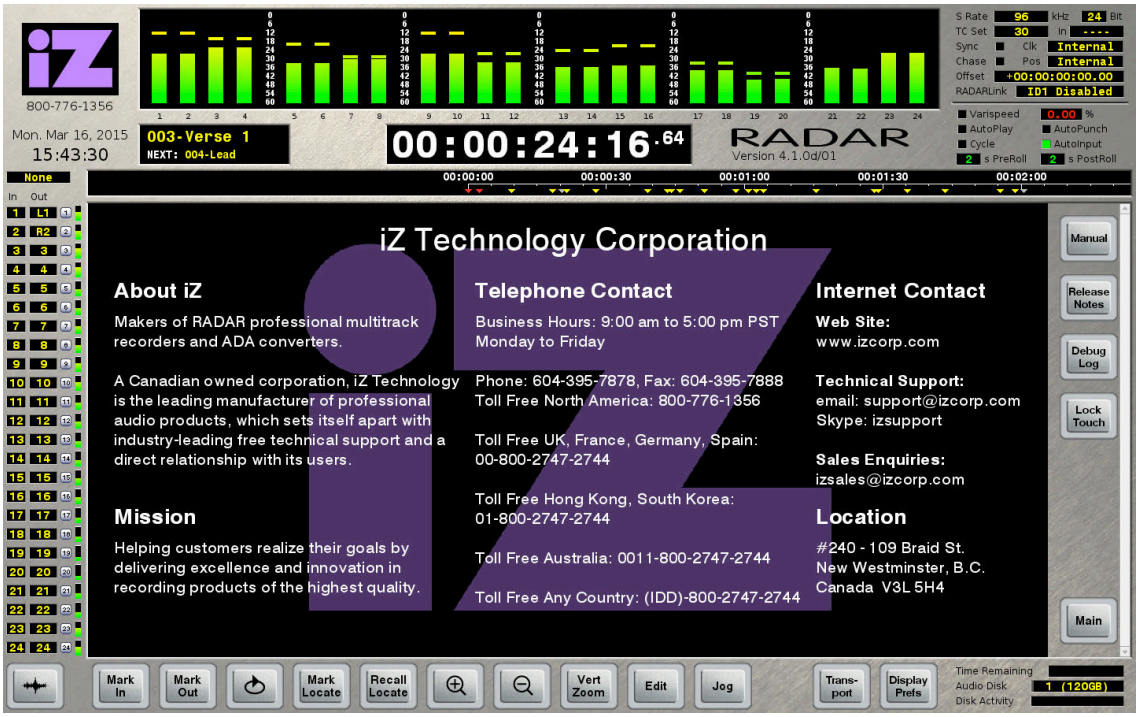
System Configuration Screen

The System Configuration screen displays information about the hardware and software installed. To get to the System Configuration screen, press System Config from the Main Screen.



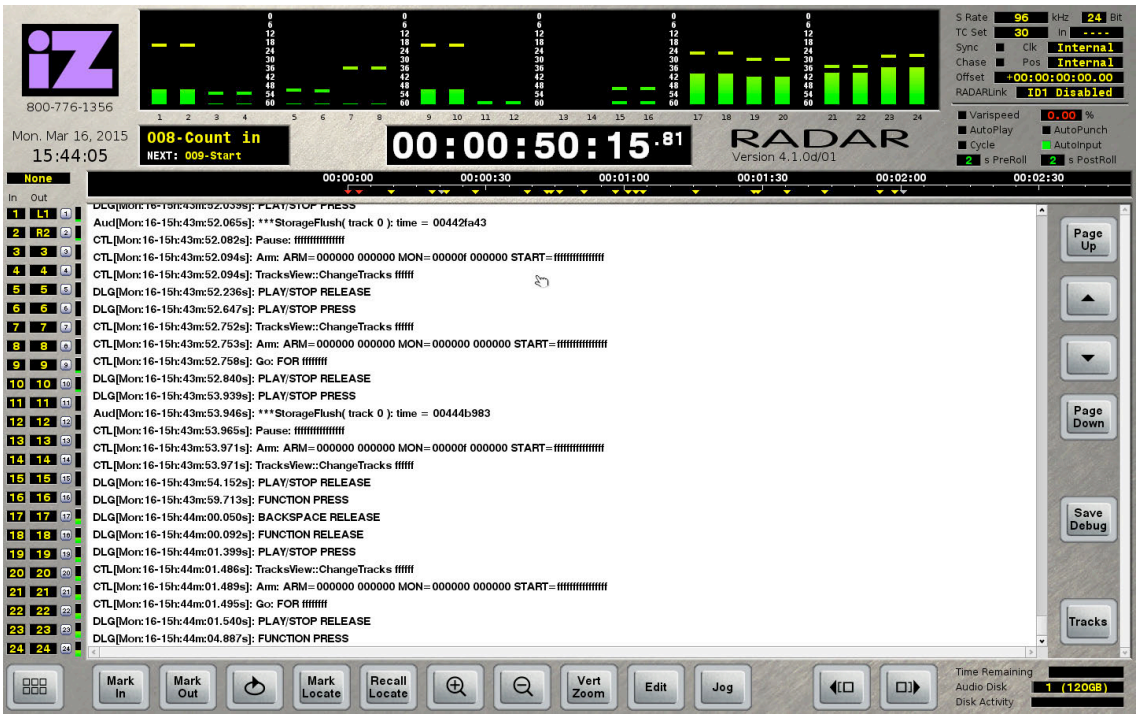
About Screen

The About Screen contains information about iZ Technology, including contact details. To get to the About Screen, press iZ from any other screen.



DEBUG SCREEN

The Debug Screen shows the current debug log as it is being written. This page also hosts a [Save Debug] key for instances where a debug log needs to be saved, or sent to iZ Support for diagnostic purposes. To get to the Debug Screen, press [Debug Log] from the About Screen.



SESSION CONTROLLER DISPLAY

The **Session Controller** has a 2 x 16 character display that is used to display the current timecode position in the project, as well as all RADAR menus and dialogues. The default display shows the current timecode location in the standard *Hours:Minutes:Seconds:Frames* plus sub-frames format. When menu functions are accessed using the Setup Menu 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), 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 MENU / PREFS MENU / CLIP HOLD TIME*** dialogue.

Use SHIFT + Esc to clear clipped meters.

STATUS

The additional LED indicators on each channel of the **Meterbridge 24** and **Meterbridge 48** include:

ARM Red, flashing LED indicators to identify tracks that are armed and ready for recording.

INPUT Steady-state, yellow LED indicators to identify tracks currently in input monitoring mode.

SOLO Steady-state, green LED indicators to identify tracks that are currently soloed.

EDIT Red, flashing LED indicators to identify tracks that are selected for the current editing operation.

Note: In Workstation Mode, the **EDIT** light identifies tracks that are currently muted.

WAVEFORM DISPLAY

There are several options for controlling the current view of the waveforms displayed on **RADARView**. These options are accessed via the **Session Controller** or the **LCD Touchscreen**.

SESSION CONTROLLER

The **Session Controller** supports horizontal zoom, vertical zoom, scrolling and a special function key called Zoom Solo.

RQ and TQ — Controls the amount of time currently displayed.

SHIFT+RQ and SHIFT+TQ — Controls the number of tracks currently displayed.

Select ↑ and Select ↓ — Adjusts the current track(s) displayed when using SHIFT+TQ.

Zoom Solo — Select viewable tracks using the **Track Selection** 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 selected.

LCD TOUCHSCREEN

The LCD Touchscreen has dedicated buttons for zoom in and zoom out, which can be toggled to vertical zoom with Vert Zoom. The Scroll Up and Scroll Down buttons take the place of Edit and Jog when Vert Zoom is pressed. There is also a special function key called Zoom Solo found on the Main Screen. The left and right sides of the waveform track view can also be expanded and collapsed to show more or less waveform view on the screen. The ◧ and ◨ keys extend and collapse the left and right side panels of the waveform track view.

⊕ and ⊖ — Controls the amount of time currently displayed.

Vert Zoom selected, ⊕ and ⊖ — Controls the number of tracks currently displayed. Vert Zoom is selected when the ring around the button glows green.

Vert Zoom selected, Scroll Up and Scroll Down — Adjusts the current track(s) displayed when using Vert Zoom. These buttons will only be available when Vert Zoom is selected.

Zoom Solo — Selects 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 selected.

◧ and ▸◧ — Expands and collapses the left hand side of the waveform track view. Pressing SHIFT and Home ← on the Session Controller toggles between collapsed and expanded view.

◨ and ◨◂ — Expands and collapses the right hand side of the waveform track view. Pressing SHIFT and End → on the Session Controller toggles between collapsed and expanded view.

WAVEFORM CURSOR POSITION

The position of the yellow waveform cursor bar can be changed to optimize functionality of the waveform display. **LEFT** places the cursor towards the left-hand side of the display, therefore displaying a greater amount of waveforms ahead of the cursor bar, which may be useful in playback scenarios. **MID** places the cursor in the middle of the display, therefore displaying equal amounts of waveforms ahead of and behind the cursor. This is the default setting, and may be useful for most recording and editing scenarios. **RIGHT** places the cursor towards the right-hand side of the display, displaying a greater amount of waveforms behind the cursor, which maybe useful in live recording scenarios when it is necessary to see waveforms of audio that was already recorded without taking the transport out of record mode.

To change the waveform cursor position:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RADARVIEW PREFS / CURSOR POSITION*** dialogue and press ENTER.
2. Use the Home ← and/or End → keys to select **LEFT**, **MID**, or **RIGHT** and press the ENTER key.

ON SCREEN HELP

The Find Help key or the ***MAIN MENU / HELP*** menu launches the PDF viewer and loads the Operator's Manual or the latest software Release Notes for viewing on the **RADARView** display.

To launch the help viewer:

1. Press the Find Help key on the **Session Controller** or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / HELP*** menu and press the ENTER key.
2. Select either the Operator's Manual or the software Release Notes and press the ENTER key.

   For PDF Viewer navigation keystrokes, please see ***REFERENCE: RADAR PDF VIEWER***.

To navigate to Help documents from the **LCD Touchscreen**:

1. Navigate to the About Screen by pressing iZ.
2. Select either the Operator's Manual or the software Release Notes by pressing Manual or Release Notes.

   For PDF Viewer navigation keystrokes, please see ***REFERENCE: RADAR PDF VIEWER***.

ENTERING VALUES

NUMERIC KEYPAD

The numeric keypad has several key functions important to RADAR operation:

- Numeric keys 0–9* and ENTER key for locating to a specified timecode location
- The Recall Loc . and numeric keys 0–9* for recall of locates 0–99
- Numeric keys 0–9* and ENTER for entering times and values in menu dialogues
- The Setup Menu and the ENTER keys for menu navigation and dialogue selection
- The + and - keys for incrementing or decrementing times and values in RADAR dialogues as well as selecting next or previous directories at a **SELECT FOLDER:** dialogue

ENTER TIME FUNCTION

When a numeric key 0–9* is pressed, the Enter Time dialogue will automatically open.

1. Press a numeric key 0–9*.
2. RADARView will display:

   00: 00: 00: 00. 00
   00: 00: 00: 00. 00

3. Enter a time and press the ENTER key, for example:

   00: 00: 00: 00. 00
   00: 10: 30: 00. 00

ARROW KEYS

The Page, Page, Home, and End keys are used for navigating the menu system. They also have special functions depending on the current state of RADAR.

WITHIN A MENU

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

WITHIN A NAME FIELD

- Use Page and/or Page to enter the following symbols:
  / . - , + *) (' & % $ # " ! BLANK { | } ∂ ? > = < ; :
  or to scroll through the numbers/letters.
- Use Home and/or End to move the cursor to the next/previous character field.

IN CONJUNCTION WITH A DIRECT KEY

- Certain direct key and menu dialogues use Page and Page to increment and decrement values.

AS AN EXTENSION OF THE TRANSPORT

- Home locates directly to the **MARK IN** point.
- End locates directly to the **MARK OUT** point.
- Page auditions the audio between the selected **MARK IN** and **MARK OUT** points.

AS AN EXTENSION OF THE TRANSPORT WITH PRE-ROLL ENGAGED

- Home locates directly to the **MARK IN** point with Pre-Roll.
- End locates directly to the **MARK OUT** point with Pre-Roll.
- Page auditions the audio between the selected **MARK IN** and **MARK OUT** points **without** Pre-Roll.

JOG/SHUTTLE WHEEL

The **Jog/Shuttle Wheel** allows users to manually jog and shuttle audio. The **Jog/Shuttle Wheel** can also 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.

Pressing Jog on the **LCD Touchscreen** will enter Jog mode. Swipe forwards and backwards on the displayed waveform box to jog or shuttle forwards and backwards. When Jog is selected on the **LCD Touchscreen**, Edit will be temporarily replaced by Shuttle. Press Shuttle to switch between Jog and Shuttle modes. When in Jog mode, a mouse can also be used. The mouse will only be used for jogging when the mouse cursor is in the waveform box.

Pressing Scroll on the **Session Controller** allows the user to scroll through menus or dialogues with the **Jog/Shuttle Wheel**.

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

The Setup Menu key is used to enter **MAIN MENU MODE**, go to previous dialogues, menu and sub-menu selections, and exit **MAIN MENU MODE.** The display on the **Session Controller**, the **LCD Touchscreen**, 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.

CANCELLING A SELECTION

While in the menu system, pressing the Esc key will exit the current dialogue. The **Session Controller** LCD will return to the time and locate display, and the **RADARView** menu window will disappear.

MENUS

Once the Setup Menu 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 Setup Menu or Esc keys. To make a selection, locate the desired menu item using the Page ↑ and Page ↓ keys or the QWERTY keyboard and press the ENTER key. This will navigate to 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 Setup Menu key once

MAIN MENU:
SYSTEM MENU

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

MAIN/SYS MENU:
SYSTEM INFO

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

RADAR SOFTWARE
VERSION: X.XX

DIALOGUES

Upon arriving at the end of any given menu tree, the user will be presented 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

The **Session Controller** and the **LCD Touchscreen** have a wide range of keys that offer one-key access to a particular function. Most of the direct access keys provide short cuts to menu items but some provide functions that are not available via the menu. For more information please refer to *REFERENCE: REMOTE KEYBOARD KEYS*.

DISK MANAGEMENT

RADAR uses solid-state SATA drives, external USB or Thunderbolt drives, or SDXC cards for audio recording. Storage drives and SDXC cards are a robust recording and storage medium, but proper care should be taken when handling, storing, or transporting them. As drives wear over time, scheduled replacement is recommended for best reliability. Please take note of the following important points:

- Use only iZ drives and carriers which can be purchased directly from iZ or from one of our authorized dealers, or an iZ approved USB or Thunderbolt drive, or SDXC card.
- Newly purchased drives are initialized for native BWAV recording, but can be initialized for a different format using the **MAIN MENU / DISK MENU / INIT DISK** menu dialogue before use.

Initializing a disk erases any existing data permanently. Use with caution.

- A valid recording drive on the default disk ID will automatically be mounted upon boot up.

To boot RADAR without mounting any audio drives, hold the  (Stop) key on the **Session Controller** or **Front Panel Transport Controls** during boot up.

MOUNTING, UNMOUNTING, AND SELECTING DISKS

The RADAR Mount and Unmount commands allow recording drives to be exchanged, drives to be copied/cloned, and a different recording drive to be selected from the current mount volume.

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

1. Press the Remove Mount key on the **Session Controller** or **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / MOUNT AUDIO DISK*** dialogue and press the ENTER key.
2. At the **MOUNT DISK:** dialogue, use the Page ↑ and Page ↓ keys to choose the **X: RADAR_BWAV** disk ID to mount and press the ENTER key.

When a drive is already mounted press the Remove Mount key to switch to a different disk ID.

To unmount the current recording drive, or a Thunderbolt or USB drive:

1. Press the SHIFT + Remove Mount (REMOVE) key on the **Session Controller** or **LCD Touchscreen,** or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / UNMOUNT DISK*** dialogue and press the ENTER key.
2. At the **UNMOUNT DISK:** prompt use the Home ← or End → key to select the drive you wish to unmount and then press the ENTER key.

RADAR SATA recording drives are not hot-swappable. Only SATA drives that were installed in RADAR upon booting can be mounted or switched between. To mount other SATA recording drives, reboot RADAR with the drive installed.

Failure to unmount drives before removing them from the system may result in permanent data loss and damage to RADAR. Always unmount before removing 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. These values are “track minutes”; in other words, the displayed time will vary depending on the number of tracks selected using the **Track Selection** keys.

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

1. Press the **Track Selection** keys to select the number of tracks to be used in the remaining time calculation.
2. Consult the **TIME REMAINING** display on the bottom right of **RADARView** or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / SHOW DISK SPACE*** dialogue and press the ENTER key to view the remaining disk space in the hours, minutes, and seconds format.

SHOW DISK SPACE can also be displayed on the **Session Controller** LCD display by simultaneously pressing the Home ← and End → keys on the **Session Controller**.

To display the remaining space in megabytes, hold SHIFT and press B, then **BROWSE** to the appropriate drive and press the spacebar.

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 the user 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** is enabled by default and works automatically in the background to ensure the most efficient use of disk space. It can be disabled in the ***MAIN MENU / PREFERENCES MENU / AUTO RECLAIM*** dialogue.

To reclaim disk space:

1. Before reclaiming space ensure every project on the recording drive is backed up. **RECLAIM SPACE** is a global disk function and may affect audio in projects other then the current project.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / RECLAIM SPACE*** dialogue and press the ENTER key.
3. Select **DISABLED** or **ENABLED** at the **AUTO RECLAIM:** prompt and press the ENTER key.
4. Select the **DISABLED** or **ENABLED** option to keep or lose the **UNDO LIST** audio references and press the ENTER key. If selecting **ENABLED**, all undo possibilities for every project currently on the drive will be lost. Proceed with CAUTION.

MAKE PORTABLE DISK

This feature should be used when a BWAV audio disk will be used on other RADAR units running previous versions of software.

Mounting a BWAV audio drive in RADAR II or in RADAR 24/V running software pre 3.35 will destroy all the data on that drive.

To make a disk portable:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / MAKE PORTABLE*** dialogue and press the ENTER key.
2. At the **MAKE PORTABLE DISK?** prompt, select **YES** and press the ENTER key.
3. Depending on how many projects are on the audio disk, the **MAKE PORTABLE DISK** function may take a while as this feature involves a conversion of each project to a RADAR software independent format. During this time, the Session Controller LCD and **RADARView** will display:

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

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

ERASE ALL AUDIO

Use **ERASE ALL AUDIO** to clear all of the recording drives connected to the system.

To erase all recorded audio:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / ERASE ALL AUDIO*** dialogue 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.

ERASE ALL AUDIO cannot be undone; use with caution.

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.

It is possible to export and import WAV and BWAV files to/from drives in FAT32, Mac HFS, or NTFS formats connected to RADAR. For details on how to export/import files please refer to the *OPERATIONS: FILE MANAGEMENT: EXPORT* and *IMPORT* sections. For 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, Mac HFS, or NTFS).

To initialize a disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / INIT DISK*** dialogue and press the ENTER key.
2. Select the Disk ID of the disk to initialize *(i.e. 1: Record Drive, U1: USB)* and press the ENTER key.
3. When prompted with the question **INIT DISK X?**, use the Home ← and End → keys to select **YES** and press the ENTER key.
4. At the **INIT VOLUME FOR:** dialogue, use the Page ↑ and Page ↓ keys to select one of the options and then press the ENTER key.

AUDIO: RADAR_BWAV	RADAR Native Broadcast Wave audio format for the recording drive.
TRANSFER: FAT32	FAT32 format for file transfers to/from a PC and/or Mac.

Initializing disk for RADAR_BWAV:

5. At the **INIT FOR WAVES?** prompt, use the Home ← and End → keys to select **NO** or **YES** and press the ENTER key. To see **RADARView** waveforms, select **YES**, otherwise select **NO**.

DISK MIRROR MODE

DISK MIRROR MODE is only available to RADAR systems with two recording drives. It allows audio to be recorded simultaneously to both recording drives.

To enable/disable **DISK MIRROR MODE**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the **MAIN MENU / DISK MENU / DISK MIRROR** dialogue and press the ENTER key.
2. At the **MOUNT MSTR DISK:** prompt, use the Page ↑ and Page ↓ keys to select the disk ID of the master and press the ENTER key.
3. At the **MIRROR TO DISK:** prompt, use the Page ↑ and Page ↓ keys to select the disk ID of the slave and press the ENTER key.
4. At the **ARE DISKS EXACT COPIES?** prompt, select **NO** and press the ENTER key.
5. At the **INIT DRIVE X+Y** prompt, select **YES** and press the ENTER key.

If using drives that are of different sizes, the smaller drive must be made the master.

Initializing drives will erase all data.

Entering **DISK MIRROR MODE** without initializing both hard drives is only possible in two scenarios:

a. The two drives were previously initialized and used in **DISK MIRROR 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 used to enable **DISK MIRROR MODE** in the directions above, except at the **ARE DISKS EXACT COPIES?"** prompt, select **YES** and press the ENTER key.

After recording in **DISK MIRROR MODE** and performing an **UNMOUNT DISKS** or **SHUTDOWN RADAR**, RADAR will remember that these drives are configured for dual disk recording.

To re-enable **DISK MIRROR MODE**:

1. The next time disks are mounted, a prompt will ask to **CONFIG DISKS AS** either **SINGLE** or **DUAL**.
2. Provided the disks have not changed, select **DUAL**.
3. At the prompt: **ARE DISKS EXACT COPIES?** select **YES**.
4. At the prompt: **ARE YOU SURE?** select **YES**.

If disk mirror mode is enabled with a pair of drives that don't fit either of these criteria, the audio on the secondary disk will be damaged.

Disk mirror mode is for recording only. To edit, backup, or flatten files, the disks must be remounted in single disk mode. To go back into disk mirror mode at a later time, it is necessary to initialize or clone the drive so that it fits one of the criteria above.

CLONE RADAR DISK

This function provides an easy way to copy data from one hard drive to another. To clone a disk:

1. Unmount the drive by pressing SHIFT + Remove Mount (REMOVE) key on the **Session Controller** or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / UNMOUNT DISK*** dialogue and press the ENTER key.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / CLONE RADAR DISK*** dialogue and press the ENTER key.
3. At the **COPY FROM DISK:** prompt, use the Page ↑ and Page ↓ keys to select the disk to copy from and press the ENTER key.
4. At the **COPY TO DISK:** prompt, use the Page ↑ and Page ↓ keys to select the disk to copy to and press the ENTER key.
5. To clone a drive, select **YES** in the **SECTOR-BY-SECTOR COPY?** dialogue and press the ENTER key. Selecting **NO** will perform a file based disk copy (not recommended).

> 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.

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

DISK NOTES

When an audio drive is mounted in RADAR, 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 an audio drive is unmounted, 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 backup folder whenever a project is backed up.

The disk info file can be saved to another location using the **DISK NOTES** selection in the **DISK MENU**. This selection also gives the option to **VIEW** the disk notes on the **RADARView** screen.

DISK DIAGNOSTICS

RADAR has a variety of diagnostic tools to help the user with trouble-shooting and configuration. If experiencing problems with the record drive, the first and best course of action is to call iZ Support at 1-800-776-1356 or email us at support@izcorp.com.

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 Support. Exercise extreme caution when using them.

CHECK DISK

The **CHECK DISK** routine performs a check of the selected record 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** display and can also be output to a text file as a part of the debug file. See *OPERATIONS: DISK DIAGNOSTICS: RADAR DEBUG* for more details.

To check a disk on a disk ID:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CHECK DISK*** dialogue and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the disk ID that corresponds to the drive 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:** dialogue. To view the details, use the Page ↑ and Page ↓ keys to scroll through the list. This information will be stored in the debug file that can be saved and sent to iZ Support if required. See *OPERATIONS: DISK DIAGNOSTICS: RADAR DEBUG* for more details.
5. Press the Esc 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 using the **CHECK DISK** function. If experiencing technical issues please call iZ Support at 1-800-776-1356, or email us at support@izcorp.com **before** using this feature.

Using this feature could result in audio data being lost; exercise caution.

To repair an audio disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DIAGNOSTICS MENU / REPAIR DISK*** dialogue and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the disk ID of the drive and press the ENTER key.
3. Select **YES** at the **REPAIR DISK X?** prompt to confirm, and press the ENTER key.
4. The disk will be un-mounted and re-mounted, and a report will be generated and displayed in the **DISK ERRORS:** dialogue. To view the details, use the Page ↑ and Page ↓ 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: RADAR DEBUG* for more details.
5. Press the Esc key to resume normal operation.

CHECK PROJECT

The **CHECK PROJECT** function analyzes a selected RADAR project and checks for playlist errors.

To check a project for playlist errors:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CHECK PROJECT*** dialogue, and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the project to check and press the ENTER key.
3. The resulting dialogue will display the overall errors if any are found. Use the Page ↑ and Page ↓ keys to scroll through the results for each individual track.
4. Press the ENTER or Esc 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.

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

ASSERT Indicates that, while RADAR was running, a condition that was expected to be true was found to be false. These Assert errors are stored in the debug file and can be of great help to iZ Support while trying to diagnose a problem. See *OPERATIONS: DISK DIAGNOSTICS: RADAR 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 Support. Critical errors will be indicated by a red flashing SMPTE counter in **RADARView** and/or a flashing **!ERR!** message in the **Session Controller** display.

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 problem with RADAR.

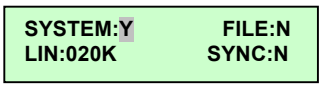
During the operation of RADAR, the debug log can be displayed in **RADARView** by holding the SHIFT key down and pressing the Back Space key, or by navigating to the Debug Screen. To do this on the **LCD Touchscreen**, press iZ to navigate to the About Screen, and then press Debug Log. This will switch the waveform view to a text view displaying the debug lines. To scroll through the debug line by line via the **Session Controller**, hold the SHIFT key down and press the Page ↑ and Page ↓ keys. To scroll through the debug page by page, hold the SHIFT key down and press the + and - keys, or press Page Up and Page Down on the **LCD Touchscreen**.

Hold the SHIFT key down and then press the Back Space key, or press  on the **LCD Touchscreen** to return to the waveform view.

CONFIGURE DEBUG

The **CONFIGURE DEBUG** dialogue has options to filter the data that is output to the **DEBUG** files. This is provided to isolate problems on RADAR by filtering out unnecessary data.

The available filtering options are:



SYSTEM Include or exclude system data. The default setting is **Y.**.

FILE Include or exclude file system 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.

To configure the debug output:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DIAGNOSTICS MENU / CONFIGURE DEBUG*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to move between the fields and the Page ↑ and Page ↓ keys to change the field's value. Selecting **Y** for a filtering field includes that data in the debug file output.
3. Press ENTER or Esc to resume normal operation.

SAVE DEBUG - SAVING DEBUG LOGS

The **SAVE DEBUG** option in the **DIAGNOSTICS MENU** allows the user to select the current, last 5, last 20, all, or selected logs. These logs can be saved in text or zip format to any disk or network drive.

To **SAVE DEBUG**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the **MAIN MENU /DIAGNOSTICS MENU / SAVE DEBUG** dialogue and press the ENTER key, or press iZ, then Debug Log, and then Save Debug on the **LCD Touchscreen**.
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 Page ↑ and Page ↓ keys to select the device to save to, and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.
5. At the **SELECT FOLDER:** prompt select the destination folder using the Page ↑ and Page ↓ keys and press the ENTER key.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (REMOVE) on the Session Controller, or on the Main Screen in RADARView.

EMAIL DEBUG LOGS

If RADAR is connected to the internet, debug logs can be sent directly to iZ Technology Support using the **EMAIL DEBUG** option. To assist the support process, RADAR's serial number, current software version, and information about the installed memory and processor will automatically be included in the email.

To **EMAIL DEBUG**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU /DIAGNOSTICS MENU / EMAIL DEBUG*** dialogue and press the ENTER key.
2. At the **EMAIL DEBUG:** prompt choose **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. Follow the other prompts and fill in:
   - **ENTER YOUR NAME**
   - **PHONE NUMBER**
   - **COMPANY NAME**
   - **LOCATION**
5. At the prompt for **REPLY EMAIL** enter an email address that an iZ Support Agent can reply to.

6. At the prompt for **SEND EMAIL NO/YES** prompt, select **YES** and press the ENTER key.
7. A confirmation email will be sent to the **REPLY EMAIL** address that the email has been sent.

PROJECT MANAGEMENT

RADAR uses projects as a way to manage audio recordings. RADAR can store up to 999 projects depending on the available hard disk space. Each project has a 24 hour timeline.

Since the **Session Controller** only has a 2-digit LED display for the project number, it will only show the last two digits. The **SCROLL PROJ LED** can be enabled in the **PREFERENCES** menu.

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 Home ← and End → keys to select **3X** or **CONTINUOUS** and then press the ENTER key. **3X** will scroll a project number of 3 digits (100 or higher) three times before remaining fixed on the last two digits. This is the factory default. **CONTINUOUS** will continue scrolling the three digits indefinitely.

SET STARTUP PROJ

The **DIAGNOSTICS MENU** contains a **SET STARTUP PROJ** setting. This will allow the user specify the project that will be loaded the next time a RADAR drive is mounted. This function may be useful in troubleshooting RADAR when certain projects are causing problems mounting the drive.

All disks must be unmounted before using this function.

To **SET STARTUP PROJ**:

1. Navigate to ***MAIN MENU / DIAGNOSTICS MENU / SET STARTUP PROJ*** and press the ENTER key.
2. At the **AFTER MOUNTING, LOAD PROJECT:** prompt, type in a project number and press the ENTER key. If there isn't a project already at the project number selected, RADAR will automatically create one.
3. Navigate to ***MAIN MENU / DISK MENU / MOUNT/UNMOUNT*** and press the ENTER key.
4. Use the Home ← and End → keys to select **MOUNT** at the **FILESYSTEM:** prompt. RADAR will now **MOUNT** the selected startup project.

VIRTUAL TRACKS

Audio data can be freely copied and pasted between projects without using more disk space. This opens up many creative possibilities; for example, the 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 an instrument or vocal, 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.

PROJECT NOTES

General notes about the project and specific notes about each track can be entered and saved along with other project info (e.g., the locate list) as a printable text file.

To edit **PROJECT NOTES**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / PROJECT NOTES*** dialogue and press the ENTER key.
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 Page ↑ and Page ↓ keys.
4. Type information to be stored in the general notes, and then use the Page ↓ key to go to the next line. Press the ENTER key to exit **PROJECT NOTES**.
5. To enter track notes, press a **Track Selection** key 1 through 24 while in edit mode. At the **NOTES FOR TRK:XX** prompt, enter details about that specific track. Press Setup Menu to return to the general notes, or ENTER to exit **PROJECT NOTES**.

To save the **PROJECT NOTES**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / PROJECT NOTES*** dialogue and press the ENTER key.
2. At the **PROJECT NOTES:** prompt, select **SAVE AS** and press the ENTER key.
3. At the **SAVE TO:** prompt, use the Page ↑ and Page ↓ keys to select the device to save to, and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.
4. At the **SELECT FOLDER:** prompt, select the destination folder using the Page ↑ and Page ↓ keys and press the ENTER key.

Project notes are also saved automatically on the audio drive. A project notes text file is automatically included whenever a File Flatten, Backup, or mono Export is executed.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT+Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

GoTo Project

To go to a new project:

1. Press the New Recent key on the **Session Controller** or Go To Project on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / GOTO PROJECT*** menu item and press the ENTER key.
2. Select the project number to go to using the numeric keys, the Page ↑ and Page ↓ keys, or the **Jog/Shuttle Wheel** and press the ENTER key.

Track Arm Recall and Zoom Level Recall

The **TRACK ARM RECALL** and **ZOOM LEVEL RECALL** features allow the track arm and zoom level status of a project to be saved with the project file. New preferences have been added for **TRACK ARM RECALL** and **ZOOM LEVEL RECALL**. When enabled, switching to a project will restore the arm-readied tracks and/or the vertical and horizontal zoom levels to the state they were when the project was last accessed. These preferences are found in the **PREFERENCES MENU**.

To enable **TRACK ARM RECALL**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / TRACK ARM RECALL*** selection and press the ENTER key.
2. At the **TRACK ARM RECALL** dialogue, use the Home ← and End → keys to select **ENABLED** and press the ENTER key.

To enable **ZOOM LEVEL RECALL**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / ZOOMLEVEL RECALL*** selection and press the ENTER key.
2. At the ***ZOOMLEVEL RECALL*** dialogue, use the Home ← and End → keys to select **ENABLED** and press the ENTER key.

PROJECT TEMPLATES

Using a template can simplify the process of creating new projects. Templates can take the settings and audio established in the current project and apply them to subsequent projects. Settings that can be applied to other projects via template include:

- track names
- bit depth
- sample rate
- locate points
- timecode rate
- start time

To create a new template based on the current loaded project:

1. Go to the ***MAIN MENU / PROJECT MENU / TEMPLATES/*** **MAKE TEMPLATE** selection and press the ENTER key.
2. At the **NAME TEMPLATE** prompt use the QWERTY keyboard to enter the template name and press the ENTER key.
3. At the ***XXKB REQUIRED PROCEED?*** prompt, choose **YES** and press the ENTER key.

To set a default template to be used for all new projects:

1. Go to the ***MAIN MENU / PROJECT MENU / PROJECT PREFS / NEW PROJ SETTNGS*** selection and press the ENTER key.
2. At the **NEW PROJ SETTNGS** prompt, choose **TEMPLATE** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys and choose from ***CURRENT***, **DEFAULT**, or a previously created template and press the ENTER key.

To set RADAR to **ASK** which template to use each time a project is created:

1. Go to the ***MAIN MENU / PROJECT MENU / PROJECT PREFS / NEW PROJ SETTNGS*** selection and press the ENTER key.
2. At the **NEW PROJ SETTNGS** prompt, choose **ASK** and press the ENTER key.
3. Create a new project. At the **SELECT TEMPLATE** prompt, use the Page ↑ and Page ↓ keys to choose from **CURRENT**, **DEFAULT**, or a previously created template and press the ENTER key.

To export a template to be used on another RADAR:

1. Go to the ***MAIN MENU / PROJECT MENU /*** **TEMPLATES** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **EXPORT TEMPLATE** and press the ENTER key.
3. At the **EXPORT TEMPLATE** prompt, choose **ALL TEMPLATES** or **SELECT TEMPLATES** and press the ENTER key. If selecting **ALL TEMPLATES**, skip to step 5.
4. If choosing **SELECT TEMPLATES**, use the Page ↑ and Page ↓ keys to select templates, and the + key to mark them for export. Once the desired templates are selected, press the ENTER key.
5. At the **EXPORT TO:** prompt, use the Page ↑ and Page ↓ keys to select the device to save to, and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.

To import a template from another RADAR:

1. Go to the ***MAIN MENU / PROJECT MENU / TEMPLATES*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **IMPORT TEMPLATE** and press the ENTER key.
3. At the **IMPORT FROM:** prompt, use the Page ↑ and Page ↓ keys to select the device to import from and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR. Select the template folder and press the ENTER key.
4. At the **IMPORT TEMPLATE** prompt, choose **ALL TEMPLATES** or **SELECT TEMPLATES** and press the ENTER key. If selecting **ALL TEMPLATES**, skip to step 6.
5. If choosing **SELECT TEMPLATES**, use the Page ↑ and Page ↓ keys to select templates, and the + key to mark them to be exported. Once the desired templates are selected, press ENTER.
6. At the **XX FLS/ XXMB PROCEED?** prompt, select **YES** and press the ENTER key.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (REMOVE) on the Session Controller, or on the Main Screen in RADARView.

To delete a template from RADAR:

1. Go to the ***MAIN MENU / PROJECT MENU / TEMPLATES*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **DELETE TEMPLATE** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select templates for deletion, and the + key to mark them to be deleted. Once the desired templates are selected press the ENTER key.
4. At the **XX FLS/ XXMB PROCEED?** prompt, select **YES** to confirm and press the ENTER key.

NEW PROJECT

1. Press SHIFT + New Recent (NEW) on the **Session Controller** or the New Project key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 on the next available project number. Use the QWERTY keyboard to type 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: MENU ITEM QUICK REFERENCE: PROJECT MENU* for further information.

If the **NEW PROJECT** setting is set to **ASK** in the **PROJECT PREFS** menu, the prompt will display **SELECT TEMPLATE: DEFAULT** or **CURRENT**.

COPY PROJECT

To copy a project:

1. Press SHIFT + Save As Save (SAVE AS) on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 Page ↑ and Page ↓ 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 Delete Project key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 to delete using the numeric keys, the Page ↑ and Page ↓ 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. To confirm this select **YES** at the **ARE YOU SURE?** prompt and press the ENTER key.

This function cannot be undone. Double check that all necessary projects have been backed up.

NAME PROJECT

To name or rename a project:

1. Press the Name Project key **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / NAME PROJECT*** selection and press the ENTER key.
2. Use numeric keys, the Page ↑ and Page ↓ keys, or the **Jog/Shuttle Wheel** to select the project number to rename.
3. Use the End → 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / RENUMBER PROJECT*** selection and press the ENTER key.
2. Use the numeric keys, the Page ↑ and Page ↓ 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, the prompt will display the following:

   ```
   SWAP XXX WITH XXX
   NO YES
   ```

   b. If the new project number is unused, the prompt will display the following:

   ```
   RENUM XXX TO XXX
   NO YES
   ```

3. Use the N and Y keys on the keyboard, or the Home ← and End → keys to make the 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 one to one routing, the user may choose to route an input to a different track or multiple tracks, as well as route a specific track to a different output. However, routing multiple inputs to one track or multiple tracks to a single output is **not** an option.

The I/O routing feature is saved on a per project basis; 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / I/O ROUTING / INPUT ROUTING*** and press the ENTER key.
2. Use the numeric keys, the Page ↑ and Page ↓ keys, or the **Jog/Shuttle Wheel** to select the physical input (source) number.
3. Use the **Track Selection** key(s) to select the destination track(s) and then press the ENTER key.

NOTE 1: 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.

NOTE 2: 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**.

NOTE 3: 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / IO ROUTING / OUTPUT ROUTING*** and press the ENTER key.
2. Use the numeric keys, the Page ↑ and Page ↓ keys, or the **Jog/Shuttle Wheel** to select the track (source) number.
3. Use the **Track Selection** key(s) to select the destination physical output and then press the ENTER key.

NOTE 1: Flashing Red on the **RADARView** track and meter LEDs and on the **Session Controller TK ARM** and **Meterbridge EDIT** indicators show the designated output for the current selected track.

NOTE 2: Solid Red on the **RADARView** track and meter LEDs and on the **Session Controller TK ARM** and **Meterbridge EDIT** indicators illustrate that an output has a different source track than the default **1:1**.

NOTE 3: 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / I/O ROUTING / RESET ROUTING*** and press the ENTER key.
2. Use the Home ← and End → 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 recording directories. RADAR takes care of all the details so work can be done quickly and easily.

NAMING TRACKS

Track names are displayed in **RADARView** along the left-hand side beside each track number.

To name a track:

1. Press the Name Track key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / NAME TRACK*** selection and press the ENTER key.
2. Use the **Track Selection** keys or the Page ↑ and Page ↓ keys to select a track.
3. Use the End → key to move to the name field and type in a name using the QWERTY keyboard and press the ENTER key.

TRACK NOTES

Track-specific notes about each track can be saved along with other project info (e.g., the locate list) as a printable text file.

To edit **TRACK NOTES**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / PROJECT NOTES*** dialogue and press the ENTER key.
2. Press a **Track Selection** key 1 through 24 while in edit mode. At the **NOTES FOR TRK:XX** prompt, enter details about that specific track. Press Setup Menu to return to the general notes, or ENTER to exit **PROJECT NOTES**.

FILE MANAGEMENT

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

FILE COMPATIBILITY

RADAR can **IMPORT** and **EXPORT** WAV, Broadcast Wave, and Red Book (CD-DA) files. Broadcast Wave 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 when importing files as well as exporting stereo CD audio 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

To find out how long a backup will take, or how much space it will use, choose to display either the backup time or the backup size in the ***PREFERENCES MENU/ FILE PREFS/*** **SHOW SIZE** dialogue. With this dialogue activated, RADAR will prompt just before it begins the backup in case adjustments need to be made in order for the backup to fit into the time or space available.

To reduce backup size or time required, the undo list can be cleared off RADAR, or the projects can be grouped in a set. The undo list must be cleared **before** beginning the backup of a project, or by selecting **BWAV (NO UNDO)** to achieve a reduction in backup size. When backing up several projects that share a lot of the same audio, space and time can also be saved by backing them up as a set. By grouping projects as a set any shared audio is only backed up once instead of being copied for each individual project.

To reduce project size by clearing the undo list:

1. Make sure that no recording or editing needs to be undone on the material being backed up.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to select the ***MAIN MENU / PROJECT MENU / UNDO LEVEL*** and press the ENTER key.
3. Use the Page ↑ and Page ↓ 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to immediately reselect the ***MAIN MENU / PROJECT MENU / UNDO LEVEL*** and press the ENTER key.
5. Use the Page ↑ and Page ↓ keys to set the undo level back to the previous setting and press the ENTER key.

Clearing the Undo list is not necessary when using the **BWAV (NO UNDO)** backup type.

BACKING UP A PROJECT

When backing up RADAR projects there are 4 options available: **BWAV**, **RADAR**, **BOTH**, or **DSET**. Projects backed up from an audio drive initialized for **RADAR_BWAV** can only be restored on an audio drive initialized as **RADAR_BWAV**.

If attempting to restore a non-BWAV project on a BWAV audio drive, RADAR will display: **CAN'T RESTORE NON BWAV AUDIO**.

If attempting to restore a BWAV project on a Non-BWAV drive, RADAR will display: **CAN'T RESTORE BWAV AUDIO**.

To mount a BWAV drive from a RADAR using 4.XX software in a RADAR with older software, the **MAKE PORTABLE** option must be chosen before attempting to mount the drive.

Multiple backup devices can be connected to RADAR simultaneously for the greatest level of flexibility and compatibility. This allows the ability to restore from one format and archive to another if needed.

BWAV (NO UNDO) Selecting **BWAV** at the **BACKUP TYPE:** prompt will back up the selected projects in Broadcast Wave (BWAV) format. The BWAV files in the Audio Files sub-folder of the backup will be named according to the **FILE NAME FORMAT** specified in the **FILE PREFS**. Backing up in this format can also replace **FILE EXPORT** and is useful when needing to backup multiple projects.

RADAR (WITH UNDO) Selecting **RADAR** at the **BACKUP TYPE:** prompt will back up the selected projects in RADAR's proprietary format and include all undo levels.

BOTH (BWAV & RADAR) Selecting **BOTH** at the **BACKUP TYPE:** prompt will perform two separate backups: **BWAV** and **RADAR**.

DSET (LEGACY) Backup in RADAR's legacy **DSET** format for compatibly with software versions pre 3.35.

Selecting **BOTH** (**BWAV & RADAR**) will approximately double the size of the backup.

To backup one or more projects:

1. Insert the archive media if necessary and press Save As Save on the **Session Controller**, press the Backup key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU /*** **BACKUP** selection and press the ENTER key.

2. Use the Page ↑ and Page ↓ keys to select the device to use for backup in the **BACKUP TO:** dialogue and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and backup drives connected to RADAR.

3. Select a destination folder in the **SELECT FOLDER** dialogue using one of the following methods:

   a. Use the Page ↑ and Page ↓ keys to select **<ROOT DIRECTORY>** and press the ENTER key.

   b. Use the Page ↑ and Page ↓ keys to select an existing folder name and press the ENTER key.

      Use the + and - keys if you wish to navigate within a specific folder.

   c. Use the Page ↑ and Page ↓ keys to select **<NEW FOLDER>** and press the ENTER key. At the **FOLDER NAME** dialogue use the QWERTY keyboard to type in a name for the folder and press the ENTER key. The **SELECT FOLDER:** dialogue will display the new folder name as the current selection. Press the ENTER key to accept this folder as the destination.

Backups of audio drives formatted as **RADAR_BWAV** cannot be restored on pre 3.35 software, unless a **DSET (LEGACY)** format backup is done. However, the audio files from BWAV backups can be imported using version 3.30 or later.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT+Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

RADAR II and older versions of RADAR software CANNOT restore backups within folders on record disks. If these backups need to be restored on a RADAR II or RADAR 24 running older software, they should be backed up to the **<ROOT DIRECTORY>**.

<ROOT DIRECTORY> must be selected at the **SELECT FOLDER:** dialogue within the **BACKUP** menu if using removable media (BD, DVD, or CD) and the backup size is larger than one side of the chosen media.

4 At the **BACKUP PROJ:** dialogue, use the Page ↑ and Page ↓ keys to select **ALL PROJECTS**, **CURRENT PROJECT**, or **SELECTED PROJS** and press the ENTER key.

If the **SELECTED PROJS** option is chosen, select the project(s) to back up by using the Page ↑ and Page ↓ 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, the way in which the projects are organized within the backup must be chosen.

- 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 selected will be backed up as a data set, and must be restored as a set. Backup size may be reduced if audio is shared between projects in the same group.

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

6 When using the **SET** option, a name must also be chosen for the backup. At the **BACKUP NAME:** dialogue, use the keyboard to enter a new name in the name field, or accept the default name and press the ENTER key. Backups grouped as a **SET** will automatically use the **DSET** backup type.

7 Select **BWAV**, **RADAR**, **BOTH**, or **DSET** at the **BACKUP TYPE:** prompt and press ENTER.

8 Select **MARK IN/OUT** or **ALL**. If **MARK IN/OUT** is selected, this will apply to all projects. If a project has multiple mark in and mark out points set, selecting **MARK IN/OUT** will backup the audio only from the main mark in/out time range. If **BWAV** or **BOTH** is selected, and **FILL SILENCE** is set to **ASK** in ***FILE MENU / FILE PREFS / FILL SILENCE***, continue on to Step 9. Otherwise skip to Step 10.

When **MARK IN/OUT** is selected, projects that only have a **MARK IN** point will be backed up from the mark in point up to the end of the last piece of audio. Projects that only have a **MARK OUT** point will be backed up from the start of the first piece of audio up to the mark out point.

9 If the **FILL SILENCE** preference is set to **ASK**, a **FILL SILENCE** option will have to be chosen for each BWAV backup.

To set the **FILL SILENCE** preference:

a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / FILL SILENCE*** selection and press the ENTER key.

b. At the **FILL SILENCE** prompt, use the Page ↑ and Page ↓ keys to select:

ASK	Will prompt for fill silence option each export/BWAV backup.
FILL GAPS ONLY	**FILL ALL GAPS** without front or back fill.
FRONT FILL+GAPS	**FRONT FILL** and **FILL GAPS** without **BACK FILL**.
GAPS+BACK FILL	**BACK FILL** and **FILL GAPS** without **FRONT FILL**.
FRONT+GAPS+BACK	**FRONT** and **BACK FILL** and **FILL GAPS.**
NO	Each export/BWAV backup will transfer with no fill.

Make a selection and press the ENTER key. The factory default setting is **ASK**.

10 At the **BACKUP NAME:** use the QWERTY keyboard to enter a name for the backup.

11 When backing up to removable media, the **BACKUP MODE:** dialogue will appear asking to **APPEND** or **OVERWRITE**. **APPEND** will add the new project backup data to the existing archive. **OVERWRITE** will erase all existing archive data on the disk and replace it with the new backup. If selecting to **OVERWRITE**, the **ERASE EXISTING DISK?** prompt will be displayed. This prompt will also appear with **APPEND** if the disk is formatted with a different file system or cluster size. Use the Home ← and End → keys to select **APPEND** or **OVERWRITE** from the **BACKUP MODE:** dialogue and press the ENTER key.

The **ERASE EXISTING DISK?** prompt means that the disk chosen for backup is formatted as an archive disk and may contain archived data. The **ERASE AUDIO DISK?** prompt means that the disk chosen for backup is formatted as an audio drive and may contain audio data. The **ERASE EXPORT DISK?** prompt means that the disk selected for backup is formatted as an export drive and may contain BWAV (Broadcast Wave) or WAV format files. Answer **YES** to confirm and 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 overwritten.

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

A Backup may be cancelled at any time by pressing the Esc key.

RESTORE

To restore a RADAR project:

1 Press Close Open on the **Session Controller**, press the Restore key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / RESTORE*** selection and press the ENTER key.

2 At the **RESTORE FROM:** dialogue, use the Page ↑ and Page ↓ keys to select the device to restore from and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and backup drives connected to RADAR.

3 Use the Page ↑ and Page ↓ keys to select the folder containing the backup(s) to restore and press ENTER.

4 Use the Page ↑ and Page ↓ keys to select **ALL** or **SELECTED** from the restore menu and press ENTER.

5 With the **SELECTED** option use the Page ↑ and Page ↓ 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 prompt will alert **AUDIO DRIVE FULL**.

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

To cancel a Restore at any time press the Esc key. When canceling a project that is partially restored there will be the option to **SALVAGE PARTIAL PROJECT.** Choose **NO** for RADAR to automatically reclaim the disk space.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

FLATTEN PROJECT

After initializing the recording drive for **AUDIO:RADAR_BWAV**, the drive will be compatible with any Mac or PC computer. To access the audio from a mounted RADAR BWAV drive on a Mac or PC, select **FLATTEN PROJECT** in the **FILE** menu. This function consolidates all of the punch-ins into continuous files and puts them into a user folder that is easily accessed from a Mac or PC.

To flatten a project on a **RADAR_BWAV** disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FLATTEN PROJECTS*** dialogue and press the ENTER key.

2. At the prompt **FILL SILENCE?:** The options will be:

   - **NO** (each region will be one file)
   - **GAPS** (each track will be one file with potentially different start times)
   - **ALL** (each track will be one file with the same start time)

   Press the ENTER key to select an option.

3. At the **FLATTEN PROJ:** dialogue, use the Page ↑ and Page ↓ keys to select **ALL PROJECTS**, **CURRENT PROJECT**, or **SELECTED PROJS** and press the ENTER key.

   If the **SELECTED PROJS** option is chosen, select the individual project or projects to flatten by using the Page ↑ and Page ↓ keys, and the + and - keys on the numeric keypad. Pressing the + key adds the selected project to the flattening 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 flattening 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.

4 If **GAP** or **ALL** is selected and additional disk space will be consumed to fill the gaps, the prompt **XXX MB REQUIRED PROCEED?** will be displayed. Select **YES** and press the ENTER key.

5 The prompt **CANT CANCEL/UNDO PROCEED?** will be displayed to indicate that it is a destructive process. All undo levels of this project will be lost. Select **YES** and press ENTER.

6 Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU /*** **UNMOUNT** dialogue and press the ENTER key.

7 Remove the recording drive from RADAR and plug it into a receiver connected to a Mac or PC.

8 The workstation computer will mount the drive and the consolidated files and project notes will be located in a new folder titled after the project name within the **USER** directory.

9 Copy this project folder over to a DAW recording drive or an external drive for DAW manipulation.

10 After file copy is complete, safely unmount the drive from the workstation.

RADAR drives are read-only on Mac or PC.

Do not write, erase, or modify any data on the RADAR drive with a Mac or PC. Performing this will corrupt the RADAR drive.

After flattening a project, if the original project within RADAR is deleted or any record punches or edits are made, the project automatically becomes unflattened and the corresponding folder in the **USER** directory will be automatically deleted.

Only projects that don't contain edits (e.g., paste, erase, loop), can be flattened. **EXPORT** or use **BWAV** backup to the **Audio Recording Drive** for the same functionality as file flattening. The drive can be mounted on a Mac or PC and the files will be in a specific project folder in the user directory.

Do not export to a flattened project's folder in the **USER** directory. Within the **USER** directory create a new folder called **EXPORTS** and export to this folder.

EXPORT

RADAR has the capability of exporting WAV, Broadcast Wave, or Red Book (CD Audio) files to a variety of destinations. These include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR, or the **USER** directory of the **RADAR_BWAV** recording drive.

To create a Red Book audio CD, **EXPORT** directly to the CD as a one-time burn or choose **FINALIZE** later to add additional tracks over time before closing (finalizing) the CD. Another option is to **EXPORT STEREO CDAUDIO** files to a folder on the internal system drive (**0:ARCHIVE**). This folder can be used to store **CDAUDIO** files as the source for burning and finalizing an audio CD.

Exporting for the purpose of creating an audio CD requires selecting **STEREO** as the export format in order to access the **CDAUDIO** option. If the project being exported has a sample rate and/or bit resolution other than 16 bit/44.1kHz, there will be an option 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.

To export one or more files (tracks):

1. First, choose a project to export from as the current project. Use the Close Open key to load the project.
2. Press Fn + Save As Save on the **Session Controller**, press the Export key (**LCD Touchscreen**), or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / EXPORT*** selection and press the ENTER key.
3. At the **EXPORT:** dialogue, use the Home ← and End → keys to select **MONO** or **STEREO** and press the ENTER key.
4. At the **FILE FORMAT:** dialogue, use the Home ← and End → 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.

   To set the default as **WAV** or **BWAV** when exporting, change the **FILE FORMAT** preference. This will bypass the prompt when files are exported.

   To set the file format preference:

   a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / EXPORT FORMAT*** selection and press the ENTER key.

   b. At the **EXPORT FORMAT:** prompt, use the Page ↑ and Page ↓ keys to select **MONO FORMAT** or **STEREO FORMAT** and then press the ENTER key.

   c. At the **MONO FORMAT:** or **STEREO FORMAT:** prompt, use the Home ← and End → keys to select **WAV**, **BWAV**, **CDR** (stereo only), or **ASK** and then press the ENTER key. The factory default setting is **ASK**.
5. If selecting **WAV** or **BWAV**, skip to step 7.
6. If selecting **CDAUDIO** and the project sample rate and/or bit resolution is **NOT** 16 bit/44.1kHz, it will prompt with a **REFORMAT QUALITY** dialogue. Use the Home ← and End → keys to select **Q1**, **Q2** or **Q3** and press the ENTER key.

   To set the **REFORMAT QUALITY** preference:

   a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / FILE MENU / FILE PREFS / REFORMAT QUALITY*** and press the ENTER key.

   b. Use the Home ← and End → keys to select **Q1**, **Q2**, or **Q3** and then press the ENTER key. The factory default setting is **Q3**.

Q3 represents the slowest speed but highest quality.

7 If the **FILL SILENCE** preference is set to **ASK**, a **FILL SILENCE** option will have to be chosen for each WAV/BWAV export or BWAV backup. If **CDAUDIO** is selected, all silence will be filled automatically in the selected audio.

To set the **FILL SILENCE** preference:

a. Use the Setup Menu key, the Page ▲ and Page ▼ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / FILL SILENCE*** selection and press the ENTER key.

b. At the **FILL SILENCE** prompt, use the Page ▲ and Page ▼ keys to select:

ASK	Will prompt for fill silence option each export/BWAV backup.
FILL GAPS ONLY	**FILL ALL GAPS** without **FRONT FILL** or **BACK FILL**.
FRONT FILL+GAPS	**FRONT FILL** and **FILL GAPS** without **BACK FILL**.
GAPS+BACK FILL	**BACK FILL** and **FILL GAPS** without **FRONT FILL**.
FRONT+GAPS+BACK	**FRONT** and **BACK FILL** and **FILL GAPS.**
FRONT FILL ONLY	**FRONT FILL** without **FILL GAPS** or **BACK FILL.**
NO	Each export/BWAV backup will transfer with no fill.

Make a selection and press the ENTER key. The factory default setting is **ASK**.

8 At the **EXPORT TO:** dialogue, use the Page ▲ and Page ▼ keys to select the device to export to and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR, or the **USER** directory of the **RADAR_BWAV** recording drive.

If selecting **DVD:DVD BLANK DISK**, proceed to step 9.

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

a. Use the Page ▲ and Page ▼ keys to select an existing folder name and press the ENTER key.

b. Select **NEW FOLDER** and press the ENTER key. RADAR will display a **FOLDER NAME:** dialogue. Type in a name for the new folder and press the ENTER key. This will return to the **SELECT FOLDER** dialogue with the new folder name as the current selection. Press the ENTER key to accept this folder as a destination.

9 To create a folder within a folder, follow these steps:

- At any **SELECT FOLDER:** dialogue, select **<NEW FOLDER>** and press the ENTER key.
- RADAR will display a **FOLDER NAME:** dialogue. Type in a name for the folder (e.g., **EXPORTS**) and press the ENTER key.

- This will return to the **SELECT FOLDER** dialogue with the 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 enter the newly created folder.

- Repeat the previous three steps. For example, if the second new folder was Song 1, the display would look like this:

  SELECT FOLDER:
  SONG 1/

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

  SELECT FOLDER:
  EXPORTS/SONG 1/

10 At the **TIME RANGE:** prompt, use the Home and End keys to select **IN/OUT**, **MULTI**, or **ALL** and press the ENTER key. **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. **MULTI** exports the audio within multiple mark in and mark out location markers, which are set with the SHIFT, Mark In, and Mark Out keys. This only exports audio within the multiple marked time ranges, as it does not reference the main mark in/out time range.

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

When exporting to an audio CD, each multiple marked time range will be a separate track on the CD. This can be very useful, for example when exporting multiple stereo mixes to a CD from a single project.

11 At the **EXPORT: TRACKS** dialogue, select the tracks to export using **Track Selection** keys 1 through 24 or choose the **ALL** option and then press the ENTER key.

If exporting a stereo file for the purpose of burning an audio CD, use the **EXPORT:TRACKS LEFT:00 RIGHT:00** dialogue to define the two tracks to use to create the stereo [interleaved] audio track. When finished selecting the track(s), press the ENTER key.

To only burn one track, select the same track for both left and right.

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

12 The **EXPORT TO DISK** dialogue will appear while RADAR marks the files. Next, a confirmation dialogue displaying the size or estimated time of the export may appear, depending on the **SHOW SIZE** preference in the **FILE PREFS** menu. Select **YES** and press the ENTER key.

To set the **SHOW SIZE** preference:

a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / SHOW SIZE*** selection and press the ENTER key.

b. Use the Home ← and End → keys to select **OFF**, **MBYTES**, or **TIME** and press the ENTER key. The factory default setting is **MBYTES**.

13 The final stages of the **CDAUDIO** export will contain the following:

a. If burning directly to a CD, it will prompt the user at the **FINALIZE CD** dialogue. If finalize now is selected, additional tracks **CANNOT** be added at a later time. Use the Home ← and End → keys to select **NO** or **YES** and press the ENTER key.

b. If exporting to a folder/directory for the purpose of burning an audio CD at a later time, it will prompt the user at the **FILE NAME:** dialogue. Use the keyboard to type in a name and press the ENTER key. The default file name given consists of **PROJECT NAME-STEREO.WAV**. For example: **DAYS OF CREATION-STEREO.WAV**. If the same file name exists within the folder/directory, the **OVERWRITE FILE? NO YES** dialogue will appear. If **NO** is selected, it will return to the **FILE NAME:** dialogue where the name can be changed. If **YES** is selected, the previous file will be overwritten and will **NOT** be recoverable.

To finalize (close) the CD at any time, use the **FINALIZE CD** option located at ***MAIN MENU / FILE MENU / FINALIZE CD***.

When attempting 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 **DVD:CD-R OPEN**.

Once the CD burn begins the procedure becomes a background task and cannot be cancelled. However, RADAR can still be used for record/playback/edit.

14 The export is complete once the **EXPORT COMPLETE PRESS ANY BUTTON** dialogue appears or CD burn is finished. If **FINALIZE CD** is selected, the CD will eject once the burn completes. If **FINALIZE CD** is not selected, the CD will remain in the drive.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (REMOVE) on the Session Controller, or on the Main Screen in RADARView.

IMPORT

When importing, make sure that the DVD-R or CD-R being importing from has been written in the ISO 9660 format.

RADAR has the capability of importing WAV and/or Broadcast Wave files into the clipboard or into a new project from a variety of devices. These devices include **0:ARCHIVE** (RADAR internal system drive), **N: NETWORK**, **BLU-RAY, DVD-R**, **CD-R**, **RED BOOK AUDIO CD** and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.

If the project sample rate and bit resolution do **NOT** match the incoming file(s), there is an option to convert the audio to the bit depth and sample rate of the current project based on the **REFORMAT QUALITY** preference. If the project sample rate and bit resolution match the incoming file(s) and reformatting won't be required to reformat.

To set the **REFORMAT QUALITY** preference:

a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / REFORMAT QUALITY*** selection and press the ENTER key.

b. At the **REFORMAT QUALITY:** prompt, use the Page ↑ and Page ↓ keys to select **Q1**, **Q2**, or **Q3** and press the ENTER key.

Q3 represents the slowest speed but highest quality.

FILE IMPORT

To import audio into a new project:

1. Press Fn + Close Open on the **Session Controller**, press the Import key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / IMPORT*** selection and press the ENTER key.
2. At the **IMPORT FROM:** dialogue, use the Page ↑ and Page ↓ keys to select the device to import from and press the ENTER key.
3. At the **SELECT FOLDER:** dialogue, use the Page ↑ and Page ↓ keys to locate the folder or **<ROOT DIRECTORY>** to import from. Move in and out of a folder/directory using the + and - keys. Press the ENTER key to select the folder/directory to import from.

When importing from a Red Book audio CD, there are two folders in the list to choose from: **CDDA** and **WAV**. Select the **WAV** folder.

4 If using the Import key on the **LCD Touchscreen**, skip to step 6.

5 If the import was started by selecting **IMPORT** from the **FILE MENU**, use the Page and Page keys to select **PROJECT** from the **IMPORT TO:** dialogue and press the ENTER key.

6 Use the Page and Page keys to select either **ALL FILES** or **SELECTED FILES** from the **IMPORT FILES:** dialogue and press the ENTER key.

7 When using either the **ALL FILES** or **SELECTED FILES** option, RADAR will prompt with one of the following dialogues (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 that 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, **??? FORMAT** will be displayed if one or more of the parameters aren't compatible.

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

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

VIEW Allows the user to scroll through the list of files selected for importing and deselect any file(s) that aren't appropriate for the current import.

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

b. If **SELECTED FILES** was chosen, use the Mark In and Mark Out keys, or the Page and Page keys in conjunction with the + and - keys to add or remove individual files from the **PCM XX/XX TRK:** dialogue. The **Track Selection** keys 1 through 24 may also be used to select which track the file will import to. When finished making the selection(s), press the ENTER key.

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

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

Cancel an import at any time by pressing the Esc key.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT+Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

Set Project Start Time when Importing

When importing files to a new project, the project start time will be based on the **IMPRT PROJ START** setting in the **FILE PREFS** menu. If this preference is set to **AUDIO**, the project start time will be set to the time stamp of the earliest audio region imported to the project. If the preference is **DEFAULT**, the project start time will be set to the **DEF START TIME** defined in the **PROJECT PREFS** menu.

To set the default **IMPRT PROJ START**:

1. Navigate to ***MAIN MENU / FILE MENU / FILE PREFS / IMPRT PROJ START*** and press the ENTER key.
2. Use the Home and End keys to select **DEFAULT** or **AUDIO** at the **IMPRT PROJ START** and press the ENTER key.

When 4.XX software is first installed, this preference is set to **DEFAULT**. **DEFAULT** will **IMPORT** to the timeline set in **DEF START TIME** in **PROJECT PREFS**. **AUDIO** will **IMPORT** to the earliest timeline set in the BWAV header of the earliest audio region.

File Management (Browse)

The **FILE MANAGEMENT** menu item allows extensive control over files on all drives connected to RADAR, including the ability to **COPY**, **MOVE**, and **PASTE** files from one drive to another.

For example, a project can be backed up to the internal system drive and later, the **COPY** and **PASTE** features can be used to create a second copy of the backup on **N: NETWORK**, **U:USB DRIVE**, **BLU-RAY**, **DVD-R**, **CD-R**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.

To browse files and folders:

1. Hold the SHIFT key and press the letter B, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the drive to browse and press the ENTER key.

When scrolling through the list of drives, the size of the disk (if available) will be displayed.

```
BROWSE:    4.3 GB
DVD:DVD
```

3. Use the Page ↑ and Page ↓ keys to select the folder to browse and press the ENTER or + key. Use the Setup Menu or - key to go to the previous directory level.

If a folder name is shown, it will be followed by a / and **#=MB** will appear. Pressing SHIFT+8 * 3 # (**#**) on the **Session Controller** will calculate the size of the folder; this may take several seconds. Pressing the SHIFT+8 * 3 # (**#**) 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, pressing SHIFT+8 * 3 # (**#**) will display the format, sample rate, and bit resolution. The size will be remembered until the main menu is exited in case the user wishes to scroll back to that folder or file.

Use the Home ← and End → keys, or the Scroll ↔ key and the **Jog/Shuttle Wheel** to view names that are too long to fit in the **Session Controller** LCD display and/or the menu window of **RADARView**.

Pressing spacebar on the **Session Controller** will indicate space available on the current drive.

4. At the file level (lowest directory), the following will be evident:
   - **a.** The keyboard and numeric keys, the Page ↑ and Page ↓ 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.

To copy and paste files and/or folders:

1. Hold the SHIFT key and press the letter B or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the drive to browse (copy from) and press ENTER.

3 Use the keyboard and numeric keys, the Page ↑ and Page ↓ keys, **Jog/Shuttle Wheel**, as well as the +, -, and ENTER keys to navigate to the file or folder to copy, and press ENTER. The top right corner of the **Session Controller** LCD and menu window of the **RADARView** display will specify the size. The **+** symbol indicates that it has been selected. For example:

```
COPY:          6.6MB+
MY SONG/
```

4 To add additional files and/or folders to the copy list, use the Page ↑ and Page ↓ keys to navigate to the file and/or folder, and press the C copy key. The additional files and/or folders **must** reside within the current directory.

Pressing SHIFT + 3 (**#**) on the **Session Controller** 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 finished selecting the file(s) and/or folder(s) to copy, press the ENTER key to complete the selection process. This will transfer the items to a clipboard at which point the display will show the number of files and size along with the prompt **BROWSE TO PASTE** before returning to the browse display.

If selecting only one folder with one file inside to copy, the display will indicate **2 FLS** at the **PROCEED?** dialogue since the folder and the file within are being copied.

6 Use the keyboard and numeric keys, the Page ↑ and Page ↓ keys, **Jog/Shuttle Wheel** as well as the +, -, and ENTER keys to navigate to the drive/directory to paste to and then press the V paste key.

7 A confirmation prompt will show 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 =

```
COPY FILES: 0 -> 0
+      1 OF 1      +
```

```
COPY FILES: 0 -> 0
+     WORKING     +
```

```
COPY COMPLETE
PRESS ANY BUTTON
```

The display shows the drive that the file(s) are being copied from and to. For example, if copying from **0:ARCHIVE** to a **DVD**, the display would show **COPY FILES 0 -> DVD.**

This process does not remove the file(s) and/or folder(s) from their original location. The file(s) and/or folder(s) can still be pasted to another location if needed. The file(s) and/or folder(s) will remain on the copy clipboard until either a different file(s) and/or folder(s) to copy is selected, or RADAR is shutdown.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT+Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

To move files and/or folders:

1. Hold the SHIFT key and press the letter B or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the drive that contains the file(s) and/or folder(s) to move and press the ENTER key.
3. Use the keyboard and numeric keys, the Page ↑ and Page ↓ keys, **Jog/Shuttle Wheel**, as well as the +, -, and ENTER keys to navigate to the file or folder to move, and press the M 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:

```
MOVE: 0:   6.6MB+
MY SONG/
```

4. To add additional files and/or folders to the move list, use the Page ↑ and Page ↓ keys to navigate to the file and/or folder and press the M key. The additional files and/or folders **must** reside within the current directory.

Pressing the SHIFT+8 * 3 # (**#**) on the **Session Controller** 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 finished selecting the file(s) and/or folder(s) to move, press the ENTER key to complete the selection process. This will transfer the items to a clipboard at which point the display will show the number of files and size along with the prompt **BROWSE TO PASTE** before returning to the browse display.

6 Use the keyboard and numeric keys, the Page ↑ and Page ↓ keys, **Jog/Shuttle Wheel**, as well as the +, -, and ENTER keys to navigate to the drive/directory to move to, and press V paste.

7 A confirmation prompt will show 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:

```
25 FLS/6.6MB
PROCEED? NO YES
```

Press ENTER =

```
MOVE FILES: D -> D
+     1 OF 1      +
```

```
MOVE FILES: D -> D
+    WORKING    +
```

```
MOVE COMPLETE
PRESS ANY BUTTON
```

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

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

To delete files and/or folders:

1 Hold the SHIFT key and press the letter B or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and press the ENTER key.

2 Use the Page ↑ and Page ↓ keys to select the drive that contains the file(s) and/or folder(s) to delete and press the ENTER key.

3 Use the keyboard and numeric keys, the Page ↑ and Page ↓ keys, **Jog/Shuttle Wheel**, as well as the +, -, and ENTER keys to navigate to the file or folder to delete, and press the E key. The top right corner of the **Session Controller** LCD and menu window of the **RADARView** display will specify the size. The **+** symbol indicates that it has been selected. For example:

```
DELETE: 0:     6.6MB+
MY SONG/
```

4. To add additional files and/or folders to the erase list, use the Page ↑ and Page ↓ keys to navigate to the file and/or folder and press the E key. The additional files and/or folders must reside within the current directory.

5. When finished selecting the file(s) and/or folder(s) to erase, press the ENTER key.

6. A confirmation prompt will show 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 that this process **cannot** be undone. Use the arrow keys to select **YES** and then press the ENTER key to proceed. The process is complete once the display reads:

DELETE COMPLETE
PRESS ANY BUTTON

The deletion **cannot** be undone. There is no way to recover file(s) and/or folder(s) once they have been erased.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

iZOS File Management Desktop

iZOS includes the iZOS File Management Desktop–a mouse-driven, dedicated file management system. The iZOS File Management Desktop provides the same functions as the RADAR application menu item labeled File Management (***MAIN MENU / FILE MENU / FILE MANAGEMENT***), however its interface offers a larger viewing area and easy drag and drop functionality. From the iZOS File Management Desktop, RADAR users can manage files in the RADAR Archive drive, as well as drag and drop files for transfer or backup purposes between the RADAR Archive drive, an external drive connected via USB or Thunderbolt, or a network drive.

Getting To and From the iZOS File Management Desktop

To access the iZOS File Management desktop:

1. From **RADARView**, press W + 2 on the **Session Controller**. The **System** and **Archive** drives will appear on the desktop as icons.

Do not modify or delete any content from the system drive unless instructed by iZ Support.

To access **RADARView** from the iZOS File Management desktop:

1. Press **W** + **1** on the **Session Controller**.

BURN A DATA BLU-RAY/CD-R/DVD-R

This feature allows the user to burn backups and/or exports that have been stored on the internal system drive (E.g., **0:ARCHIVE**) to a **BLU-RAY**, **DVD-R**, or **CD-R** .

Make sure that all projects/files to be burned are placed into the same folder on **0:ARCHIVE**.

These steps are not necessary unless burning files on the **0:ARCHIVE**. If burning current projects refer to the previous section *OPERATIONS: FILE MANAGEMENT*.

To backup and/or export projects/files to **0:ARCHIVE**, refer to the *OPERATIONS: FILE MANAGEMENT* sections of the manual for the specific steps.

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

1. Create the ISO image file for burning.

   a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / MAKE DVDCD IMAGE*** and press the ENTER key.

   b. Use the Page ↑ and Page ↓ 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 REQUIRED PROCEED? NO YES** prompt, confirm that the image MB size will fit the destination disc, select **YES**, and press the ENTER key. If the image file is too large, 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 the destination disc.

Standard sizes are:

Blu-Ray	25 GB
DVD-R	4.7 GB
CD-R	700 MB

   d. At the **NAME IMAGE FILE:** prompt, create an image name or use the default **UNTITLED** and press the ENTER key.

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

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.

This process works in the background and RADAR can be returned to normal use during this operation.

2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / BURN DATA CD/DVD*** selection and press the ENTER key.

3. Press the ENTER key at the **BURN TO: CD: CD-R BLANK** or **DVD: DVD BLANK** prompt.

4. At the **SELECT DVD IMAGE** prompt, use the Page ↑ and Page ↓ keys to navigate to the **.IMG** file to burn and press the ENTER key.

5. At the **XX.IMG PROCEED? NO YES** prompt, verify that this is the image file 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.

A background window will appear at the bottom of **RADARView** indicating the burn progress. During the **finalizing** process, the **taskbar doesn't indicate progress** and may take up to 15 minutes to complete. Finalizing time is dependant on the image file size and media format (BD, DVD, or CD). It is safe to continue working with RADAR while the Blu-Ray, DVD-R, or CD-R image is written and finalized.

BURN AN AUDIO CD

With a multi-drive installed, one or more stereo exports can be burned 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 selecting **CDAUDIO** at the **FILE FORMAT:** dialogue during an export. The quality of the conversion is based on the **REFORMAT QUALITY** option under the **FILE MENU / FILE PREFS**. The length of time between audio tracks is fixed at two seconds.

To set the **REFORMAT QUALITY** preference:

a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / REFORMAT QUALITY*** selection and press the ENTER key.

b. At the **REFORMAT QUALITY:** prompt, use the Page ↑ and Page ↓ keys to select **Q1**, **Q2**, or **Q3** and then press the ENTER key.

Q3 represents the slowest speed but highest quality.

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

- The sequence that the **CDAUDIO** files were exported directly to the CD.
- The sequence that the **CDAUDIO** files were exported into the destination folder/directory.
- The list created at the **SELECT FILES:** submenu of **BURN AUDIO CD**.

See the *OPERATIONS: FILE MANAGEMENT: EXPORT* section of this manual for specific details.

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 **CD:CD-R BLANK**. Do **NOT** proceed to step 3. Instead, refer to the *OPERATIONS: FILE MANAGEMENT: EXPORT* section of this manual for specific details.
   b. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / BURN AUDIO CD*** dialogue and press the ENTER key. Proceed to step 3.

Either method allows the CD to be finalized immediately after the burn is complete or at a later time. If **NO** is selected at the **FINALIZE CD** prompt, RADAR will display the CD as **CD:CD-R OPEN**.

3. At the **BURN FROM:** dialogue, use the Page ↑ and Page ↓ keys to select the drive that contains the folder/directory of **STEREO CDAUDIO** files and press the ENTER key.
4. At the **SELECT FOLDER:** dialogue, use the Page ↑ and Page ↓ keys, and the + and - keys to locate the folder or **<ROOT DIRECTORY>** to burn from and press the ENTER key.
5. At the **BURN FILES:** dialogue, use the Page ↑ and Page ↓ 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 **ALL FILES** is selected, the CD track order will reflect the sequence that the files were exported. If **SELECTED FILES** is chosen, the track order will be based upon the selected list created under the **SELECT FILES:** dialogue.

   If **ALL FILES** is selected, proceed to step 8.
6. At the **SELECT FILES:** dialogue, use the Page ↑ and Page ↓ 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:

   SELECT FILES: T01
   PROJECT1_STEREO.WAV

7. At the **BURN TO:** dialogue, use the Page ↑ and Page ↓ keys to select **CD:CD-R BLANK** and press the ENTER key.

8 At the **FINALIZE CD** dialogue, choose to finalize now or later. If **YES** is selected, additional tracks **CANNOT** be added at a later time. If **NO** is selected, use the ***MAIN MENU / FILE MENU / FINALIZE CD*** option to close (finalize) the disk when finished exporting all the audio tracks to the CD. Use the Home and End keys to select **NO** or **YES** and then press the ENTER key.

Once CD burn begins the procedure becomes a background task and cannot be cancelled. However, RADAR can still be used for recording/playback/editing.

FINALIZE AN AUDIO CD

This feature allows the user to close (finalize) an audio CD in order for the disk to be played in a standard CD player. RADAR allows exporting of **STEREO CDAUDIO** (CD-DA) files for the purpose of creating a Red Book (audio) CD. If **CDAUDIO** files are added over time to a CD, the **FINALIZE CD** option will need to be used once all the tracks (**CDAUDIO** files) are added to the disk.

To finalize a CD:

1 Insert a CD into the multi-drive that already has **CDAUDIO** files exported to it from RADAR.

2 Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FINALIZE CD*** dialogue and press the ENTER key.

3 At the **FINALIZE:** dialogue, use the **CD:CD-R OPEN** display to verify that the correct disk is inserted, and 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?** confirms this task. Once the finalizing begins, it **CANNOT** be cancelled. Use the Home and End keys to select **NO** or **YES** and then press the ENTER key.

Once CD burn begins the procedure becomes a background task and cannot be cancelled. However, RADAR can still be used for recording/playback/editing. The CD will be ejected once the process is completed.

DELETE AN IMAGE FILE

DEL IMG FILE allows the user 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 Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / DEL IMG FILE*** dialogue and press the ENTER key.

2 At the **DELETE DVD IMAGE** prompt, use the Page and Page keys to select the image file to remove from the internal system drive and press the ENTER key.

The deletion **cannot** be undone. There is no way to recover file(s) and/or folder(s) once they have been erased.

MACROS

RADAR F1–F8 keys allow single keys to perform multi-step functions through the macro function.
To record and use a macro:

1. Hold SHIFT and press a function key F1–F8.
2. Perform a key sequence on the **Session Controller** or **LCD Touchscreen**. The F1–F8 key will flash, indicating the macro is being recorded.
3. Press the F1–F8 key to end recording of the sequence.
4. Press the F1–F8 key to trigger RADAR to perform saved key sequence.

LOAD

The **LOAD** feature allows the user to import macros from a file on an internal or connected drive.
To load a macro:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / LOAD MACROS*** menu item and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the macro file to load in the **LOAD MACROS:** dialogue and press the ENTER key. When the load is complete the display will read **MACROS LOADED PRESS ANY BUTTON**.

SAVE

The **SAVE** feature allows the user to export macros to a file on an internal or connected drive.
To save a macro:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / SAVE MACROS*** menu item and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the directory in which to save the macros in the **SAVE MACROS:** dialogue and press the ENTER key
3. Use the keyboard to type a name for the macro file to save in the **NAME THE MACRO:** dialogue and press the ENTER key. When the save is complete the display will read **MACROS SAVED PRESS ANY BUTTON**.

DELETE

The **DELETE** feature allows the user to delete macro files on an internal or connected drive.
To delete a macro:

1. Hold the SHIFT key and press the letter B, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE MANAGEMENT*** selection and press the ENTER key.

2. Use the Page ↑ and Page ↓ keys, the +, -, and ENTER keys to navigate to the macro file, press the ENTER key to select the file for deletion, and then press the ENTER key.

FILE PREFS

SHOW SIZE

This preference allows the user to choose the information displayed prior to a backup or export.

To modify the information displayed prior to a backup or export:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / SHOW SIZE*** and press the ENTER key.
2. Use the Home ← and End → keys to select **OFF**, **MBYTES**, or **TIME** in the **SHOW SIZE:** dialogue and press the ENTER key.

EXPORT FORMAT

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

To select the default file format setting for export:

a. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / EXPORT FORMAT*** selection and press the ENTER key.

b. At the **EXPORT FORMAT:** prompt, use the Page ↑ and Page ↓ keys to select **MONO FORMAT** or **STEREO FORMAT** and press the ENTER key. The default setting is **ASK**.

c. At the **MONO FORMAT:** or **STEREO FORMAT:** prompt, use the Home ← and End → keys to select **WAV**, **BWAV**, **CDR** (stereo only), or **ASK** and press the ENTER key. The factory default setting is **ASK**. If selecting the **ASK** option, RADAR will prompt the user to choose the file format each export.

FILL SILENCE

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

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FILE PREFS / FILL SILENCE*** selection and press the ENTER key.
2. At the **FILL SILENCE** prompt, use the Page ↑ and Page ↓ keys to select:

ASK	Will prompt for fill silence option each export/BWAV backup.
FILL GAPS ONLY	**FILL ALL GAPS** without front or back fill.
FRONT FILL+GAPS	**FRONT FILL** and **FILL GAPS** without **BACK FILL**.
GAPS+BACK FILL	**BACK FILL** and **FILL GAPS** without **FRONT FILL**.
FRONT+GAPS+BACK	**FRONT** and **BACK FILL** and **FILL GAPS**.
FRONT FILL ONLY	**FRONT FILL** without back or gap fill.
NO	Each export/BWAV backup will transfer with no fill options.

3 Make a selection and press the ENTER key. The factory default setting is **ASK**.

REFORMAT QUALITY

This preference allows the user 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to ***MAIN MENU / FILE MENU / FILE PREFS / REFORMAT QUALITY*** and press the ENTER key.

2 Use the Home ← and End → keys to select **Q1**, **Q2**, or **Q3** in the **REFORMAT QUALITY:** dialogue and press the ENTER key. **Q3** is the slowest but highest quality conversion and is the factory default setting.

FILE NAME FORMAT TEMPLATES

The BWAV files in the **AUDIO FILES** sub-folder of a **BWAV** backup or export are named according to the **FILE NAME FORMAT** specified in the **FILE PREFS**. There are two options for file name format: **PRESET** and **CUSTOM**.

If **PRESET** is selected, choose from the following pre-defined naming conventions:

TRK-NAME-STAMP E.g. *T01-TrkName-01h22m36s12f00.WAV*

This format consists of the track number, up to 12 characters of the track name, and the time stamp. This is the default format.

TRK-PROJ-STAMP E.g. *T01-ProjName-01h22m36s12f00.WAV*

This format consists of the track number, up to 12 characters of the project name, and the time stamp.

TRK-REGION-NAME E.g. *T01-0001-TrackName.WAV*

This format consists of the track number, region number, and track name.

TRK-REGION-PROJ E.g. *T01-0001-ProjectName.WAV*

This format consists of the track number, region number, and project name.

PROJ-TRK-REGION E.g. *ProjectName-T01-0001.WAV*

This format consists of project name, track number and region.

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.

If **CUSTOM** is selected, choose from the following options to create and manage file name templates:

Create a new export template to be used on all exports or BWAV backups:

1. Go to ***MAIN MENU / FILE MENU / FILE PREFS / FILE NAME FORMAT*** and press the ENTER key.
2. Use the Home and End keys to select **CUSTOM** and press the ENTER key.
3. At the **CUSTOM FORMAT:** prompt use the Page and Page keys to select **MAKE TEMPLATE** and press the ENTER key.
4. Use the Page and Page keys at the **CHOOSE SEPARATOR SELECT:** prompt to scroll through the options, or use the End key to select **NONE** and press the ENTER key.
5. Use the Home and End keys at the **CHOOSE EXTENSION:** prompt to choose **.WAV** or **OTHER**. If selecting other, choose the desired extension and press ENTER.
6. Use the Page and Page keys at the **FIRST FIELD** prompt to scroll through the options and press the ENTER key.
7. If **FIXED TEXT** is selected, at the **TEXT:** prompt enter a name for the first field and press the ENTER key.
8. At the **ADD ANOTHER FIELD?** prompt, use the Home and End keys to choose **YES** or **NO** and press the ENTER key.
9. At the **NAME TEMPLATE:** prompt enter a name and press the ENTER key.
10. At the **SELECT TEMPLATE:** prompt use the Home and End keys to choose **YES** or **NO** and press the ENTER key.

Edit an existing template:

1. Use the ***MAIN MENU / FILE MENU / FILE PREFS / FILE NAME FORMAT / CUSTOM / EDIT TEMPLATE*** and press the ENTER key.
2. Use the Page and Page keys at the **CHOOSE SEPARATOR SELECT:** prompt to scroll through the options or use the End key to select **NONE** then press the ENTER key.
3. Use the Home and End keys at the **CHOOSE EXTENSION:** prompt to choose **.WAV** or **OTHER**. If selecting other, choose the desired extension and press ENTER.
4. Use the Page and Page keys at the **FIRST FIELD** prompt to scroll through the options and press the ENTER key.
5. If **FIXED TEXT** is selected, at the **TEXT:** prompt, enter a name for the first field and press ENTER.
6. At the **ADD ANOTHER FIELD?** prompt, use the Home and End keys to choose **YES** or **NO** and press the ENTER key.
7. At the **NAME TEMPLATE:** prompt, enter a name and press the ENTER key.
8. At the **SELECT TEMPLATE:** prompt, use the Home and End keys to choose **YES** or **NO** and press the ENTER key.

Select previously created template:

1. Use the ***MAIN MENU / FILE MENU / FILE PREFS / FILE NAME FORMAT / CUSTOM / SELECT TEMPLATE*** and press the ENTER key.
2. At the **SELECT TEMPLATE:** prompt, use the Page and Page keys to select a template and press the ENTER key.

To export a template to be used on another RADAR:

1. Go to the ***MAIN MENU / FILE MENU / FILE PREFS / FILE NAME FORMAT*** and press the ENTER key.
2. Use the Home and End keys, select **CUSTOM**, and press the ENTER key.
3. At the **CUSTOM FORMAT:** prompt, use the Page and Page keys, select **EXPORT TEMPLATE** and press the ENTER key.
4. At the **EXPORT TEMPLATE** prompt, choose **ALL TEMPLATES** or **SELECT TEMPLATES** and press the ENTER key. If selecting **ALL TEMPLATES**, skip to step 5.
5. If choosing **SELECT TEMPLATES**, use the Page and Page keys to select templates and the + to mark them to be exported. Once the desired templates are selected, press the ENTER key.
6. At the **EXPORT TO:** prompt, use the Page and Page keys to select the device to save to and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT + Remove Mount (**REMOVE**) on the Session Controller, or on the Main Screen in RADARView.

To import a template from another RADAR:

1. Go to the ***MAIN MENU / FILE MENU / FILE PREFS / FILE NAME FORMAT*** and press the ENTER key.
2. Use the Home and End keys to select **CUSTOM** and press the ENTER key.
3. At the **CUSTOM FORMAT:** prompt use the Page and Page keys to select **IMPORT TEMPLATE** and press the ENTER key.
4. At the **IMPORT FROM:** prompt, use the Page and Page keys to select the device to import from, and press the ENTER key. This list will include **0:ARCHIVE** (RADAR internal system drive partition), **N:NETWORK**, **DVD:** (BD, DVD, or CD), **U:USB DRIVE**, and any FAT32, Mac HFS, or NTFS formatted drives connected to RADAR. Once the template folder is selected, press ENTER.

5. At the **IMPORT TEMPLATE** prompt, choose **ALL TEMPLATES** or **SELECT TEMPLATES** and press the ENTER key. If selecting **ALL TEMPLATES**, skip to step 7.
6. If choosing **SELECT TEMPLATES**, use the Page and Page keys to select templates and the + to mark them to be exported. Once the desired templates are selected, press the ENTER key.
7. At the **XX FLS/ XXKB PROCEED?** Select **YES** and press the ENTER key.

After using any external USB drive, Thunderbolt drive, or SD card, make sure it is unmounted before unplugging it from RADAR. Access the **MOUNT/UNMOUNT** dialogue via the **DISK MENU** or by pressing SHIFT+Remove Mount (REMOVE) on the Session Controller, or on the Main Screen in RADARView.

To delete a template from RADAR:

1. Go to the ***MAIN MENU / FILE MENU / FILE PREFS /*** **FILE NAME FORMAT** and press the ENTER key.
2. Use the Home and End keys, select **CUSTOM** and press the ENTER key.
3. At the **CUSTOM FORMAT:** prompt, use the Page and Page keys, select **DELETE TEMPLATE** and press the ENTER key.
4. Use the Page and Page keys to select templates and the + to mark them to be deleted. Once the desired templates are selected, press the ENTER key.
5. At **XX FLS/ XXKB PROCEED?**, select **YES** to confirm deletion and press the ENTER key.

WRITE VERIFY

WRITE VERIFY is used during backup or export to removable media (e.g. DVD). This preference determines whether or not the backup process verifies the data after it is written. It is highly recommended that this preference is set to **ENABLED** (factory default setting). However, with **WRITE VERIFY ENABLED**, the backup time takes twice as long. To create an unverified DVD backup to decrease the backup time, set this preference to **DISABLED**.

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

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to ***MAIN MENU / FILE MENU / FILE PREFS /*** **WRITE VERIFY** and press the ENTER key.
2. Use the Home and End keys to select **DISABLED** or **ENABLED** in the **WRITE VERIFY** dialogue and press the ENTER key.

TRANSPORT OPERATIONS

RADAR transport operation is based on a professional tape recorder. RADAR combines the best features of the tape machine auto-locator with the incredible power of non-linear digital recording.

TRANSPORT KEYS

RADAR uses industry standard transport keys for the **Session Controller**, the **LCD Touchscreen**, and the RADAR front panel.

REWIND Simulates the rewind transport function of a tape machine. Double tapping the **(Rewind)** key enters a fast rewind mode that is 3 times the current rewind speed. The default speed for rewind is 8 times normal playback speed. Rewind speed can be changed with the preferences listed below.

FAST FORWARD Simulates the fast forward transport function of a tape machine. Double tapping the **(Fast Forward)** key enters a fast forward mode that is 3 times the current fast forward speed. Default fast forward speed is 8 times playback speed. Fast forward speed can be changed with the preferences listed below.

To change rewind and fast forward speeds:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / FFWD & REW RATE*** menu selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select a value and press the ENTER key.

PLAY

The **(Play)** key begins audio playback from current location. Pressing **(Play)** while the transport is in record mode exits record mode without stopping playback. Pressing **(Play)** and **(Rewind)** together enters reverse play mode.

STOP

(Stop) cancels all transport operations including record and puts RADAR into ready mode.

REC

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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** menu selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **1-BUTTON RECORD** and press the ENTER key.
3. Use the Home ← and End → keys to select either **DISABLED** or **ENABLED** and press ENTER.

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

JOG/SHUTTLE WHEEL

The RADAR **Jog/Shuttle Wheel** provides a solid, responsive control suitable for professional audio editing and also functions as an intuitive data entry device.

Jogging is the equivalent of rocking recorded audiotape back and forth across the playback head of an analogue 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.

To engage the wheel for jogging audio simply press the Shuttle Jog key located on the **Session Controller** to the upper left of the jog wheel, and on the **LCD Touchscreen**. To engage the wheel for shuttling audio, press SHIFT + Shuttle Jog (**SHUTTLE**).

To exit jog or shuttle mode, press the Shuttle Jog key on the Session Controller, or press the **(Stop)** key.

SWIPE JOG (TOUCHSCREEN)

Engaging jog or shuttle mode by pressing the Jog (**SHUTTLE**) key on the **Session Controller** or **LCD Touchscreen** allows the user to swipe the waveform view on the RADAR Touchscreen to jog or shuttle.

TIMELINE PRESS TO CUE (TOUCHSCREEN)

To cue RADAR to any location visible on the timeline, simply tap the timeline above the waveform view on the **LCD Touchscreen**, or click it with a mouse. RADAR will instantly cue to the timeline location selected. Use in conjunction with the Auto Play key to keep RADAR in play mode while cueing.

AUTO LOCATE MARKERS

One of the greatest features of a professional recorder transport is the auto-locator. RADAR's **Auto-Locator** provides the usual transport controls, a timecode based positional display and a number of preset locations that can be cued up automatically with a couple of keystrokes.

SETTING AND RECALLING

RADAR provides 99 location markers that can be set or "dropped" using the Mark In, Mark Out, and Edit Enter Mk Loc keys on the **Session Controller** or **LCD Touchscreen**. Once set, these location markers can be recalled, allowing the user to cue instantly to various points in the project. Location markers can be set and recalled regardless of the transport function. Locates cannot be set or recalled when RADAR is in **MENU MODE**.

The first sixteen locates can be accessed with a single keystroke using the Direct Locate keys 33/17 1 – 48/32 16. Locates **17-32** are accessed by double-pressing Direct Locate keys 33/17 1 – 48/32 16. Locates **33–48** are accessed by pressing SHIFT + 33/17 1 – 48/32 16 (**33-48**). To access Locate **0**, which is always the project start time, press the ENTER key located by the QWERTY keyboard.

Any locate point is also addressable by using the Recall Loc . key, numeric keys 0 through 9*, and the ENTER key.

To mark and recall a location using the Edit Enter Mk Loc key:

1. When the transport is located at the desired location, press the Edit Enter Mk Loc key on the **Session Controller** or **LCD Touchscreen.**
2. To recall the first sixteen locate markers, use the Direct Locate keys 33 17 1 – 48 32 16. To recall Locates **17-32**, double-press the Direct Locate keys 33 17 1 – 48 32 16. To recall Locates **33–48**, use the Direct Locate keys 33 17 1 – 48 32 16 in conjunction with the SHIFT key.
3. To recall any locate marker, 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 SHIFT + Edit Enter Mk Loc (EDIT) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.

EDIT

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

To select a location marker for editing:

1. Press the SHIFT + Edit Enter Mk Loc (EDIT) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.
2. Use the Home ← and End → keys to select **EDIT** and press the ENTER key.
3. Use the numeric keys, the Page ↑ and Page ↓ keys, the Mark In key, the Mark Out key, or the **Jog/Shuttle Wheel** to select a location marker for editing. Press the ENTER key to select.
4. At this point each attribute of the location marker can be modified. The Home ← and End → 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 press the End → key once. The cursor should now be flashing in the field beside the **LOC** number. Type the name for the **LOC** point. Press the ENTER key to complete the edit.
5. It will return to the main **EDIT LOC** dialogue. To exit, press Esc or Setup Menu.

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 SHIFT + Edit Enter Mk Loc (EDIT) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.
2. Use the Home ← and End → keys to select **DEL** and press the ENTER key.

3. Use the Home and End keys in the **SELECT LOCATES** dialogue to select **ONE** and press the ENTER key.
4. Use the numeric keys, the Page and Page keys, the Mark In key, the Mark Out 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. It will return to the **SELECT LOCATES** dialogue. To exit to the **EDIT LOC** menu, press Esc or Setup Menu.

To delete a range of location markers between the Mark In and Mark Out locate points:

1. Press the SHIFT+Edit Enter Mk Loc (**EDIT**) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.
2. Use the Home and End keys to select **DEL** and press the ENTER key.
3. Use the Home and End keys in the **SELECT LOCATES** dialogue to select **RANGE** and press the ENTER key.
4. A dialogue will ask **DEL BETWEEN MARK IN + OUT?** Select **YES** and press the ENTER key to continue.
5. The display will return to the main **EDIT LOC** dialogue. To exit, press Esc or Setup Menu.

To delete all of the location markers in a project:

1. Press the SHIFT+Edit Enter Mk Loc (**EDIT**) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.
2. Use the Home and End keys to select **DEL** and press the ENTER key.
3. Use the Home and End keys in the **SELECT LOCATES** dialogue to select **ALL** and press the ENTER key.
4. A dialogue will ask **DEL ALL LOCATE POINTS?** Select **YES** and press the ENTER key to continue.
5. The display will return to the main **EDIT LOC** dialogue. To exit, press Esc or Setup Menu.

The deletion of location markers is a permanent operation and cannot be undone.

To create a new location marker:

1. Press the SHIFT+Edit Enter Mk Loc (**EDIT**) keys on **Session Controller** or the Edit Locate key on the **LCD Touchscreen**.
2. Use the Home and End keys to select **NEW** and press the ENTER key.
3. Use the numeric keys, the Page and Page keys, or the **Jog/Shuttle Wheel** to enter a time for the new location marker.

4. Use the Home and End keys to move the cursor to the blank name field and type in a name using the keyboard. Press the ENTER key.

5. The display will return to the main **EDIT LOC** dialogue. To exit, press Esc or Setup Menu.

This option can be used to create location markers for a project. Location markers can also be set on the fly using the Mark In, Mark Out, and Edit Enter Mk Loc keys on the **Session Controller** or **LCD Touchscreen.** See *OPERATIONS: TRANSPORT OPERATIONS: AUTO LOCATE MARKERS* for more information.

AUTO PLAY

When the Auto Play key is pressed 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-Roll and Post-Roll specified.

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 *OPERATIONS: RECORDING: AUTO PUNCH*.

When **AUTO PUNCH** is enabled, manual recording is not possible, except within the **MARK IN** and **MARK OUT** points.

LOOP PLAY

When the Loop Play or  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 loop will be repeated indefinitely until cancelled by pressing one of the other transport keys. Loop Play can be used in conjunction with the Pre Roll key for automatic playback with the amount of Pre-Roll and Post-Roll specified.

PRE-ROLL

The operation of the Pre Roll key is somewhat unique because it must be pressed twice to engage its function. The first key press prompts the user to enter the Pre-Roll and Post-Roll values desired. Once modified, or if no change is required, a second key press will enable both Pre-Roll and Post-Roll. These functions can be used in conjunction with the **AUTO PLAY**, **AUTO PUNCH**, and **LOOP PLAY** functions. Pressing the Pre Roll key twice while it is enabled will turn off Pre-Roll and Post-Roll.

FOOTSWITCHES

Footswitches can be connected to the **Session Controller** or RADAR's back panel for hands free play/stop, last locate, punch in/out operation, and macro assignment. The footswitches should be of the normally open, momentary type.

Up to three footswitches can be plugged in to the back of the **Session Controller** or RADAR's back panel. Their default functions are **PLAY/STOP**, **LAST LOC**, and **PUNCH IN/OUT**. Use the **ASSIGN FT-SWITCH** setting in the **PREFERENCES MENU** to assign macros to any of the footswitches.

To assign a macro to a footswitch port:

1. Go to ***MAIN MENU / PREFERENCES MENU / ASSIGN FT-SWITCH*** and press ENTER.
2. At the **ASSIGN FT-SWITCH** prompt use the Page and Page keys to select from **1: PLAY/STOP, 2: LAST LOC, 3: PUNCH IN/OUT**.
3. Once the footswitch to be changed is selected use the End key to move the cursor to the function and use the Page and Page keys to select the function or **MACRO 1–8**. Once the function or macro function has been assigned press the ENTER key to confirm the selection.

RECORDING

With RADAR, recording is as easy as using a professional tape recorder. Arm the desired track(s) by pressing All None Arm and the corresponding **Track Selection** key(s) and press **(Play)** and REC. Use the following preferences with RADAR to increase efficiency in workflow.

RECORD PREFS

Because RADAR is used in many different professional applications, several recording options to customize RADAR operation for specific needs have been added.

ONE-BUTTON RECORD

With this feature disabled, press **(Play)** and REC simultaneously on the **Session Controller** or **RADAR Front Panel** to begin recording. If this feature is enabled, just press REC to start recording.

To change the operation of the transport controls for recording:

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** menu selection and press the ENTER key.
2. Use the Page and Page keys to select **1-BUTTON RECORD** and press the ENTER key.
3. Use the Home and End keys to select either **DISABLED** or **ENABLED** and press the ENTER key.

TRACK ARM ACTION

The track arming keys on the **Session Controller** or **LCD Touchscreen** can engage either record **READY** or instant **RECORD** status per track. Instant **RECORD** allows the ability to drop in and out of record by pressing the **Track Selection** keys during playback.

To enable and disable instant **RECORD** via the **Track Selection** keys:

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU*** / **RECORD PREFS** menu selection and press the ENTER key.
2. Use the Page and Page keys to select **TRACK ARM ACTION** and press the ENTER key.
3. Use the Home and End 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 be constantly updated to the last record drop-in/out. This can be especially useful during overdubs as it provide a very fast playback method of the last punch. Once an overdub is finished, simply press the Page key to audition the performance.

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

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU*** / **RECORD PREFS** menu selection and press the ENTER key.
2. Use the Page and Page keys to select **RECORD MK IN/OUT** and press the ENTER key.
3. At the **UPDATE MK IN/OUT ON RECORD:** dialogue, use the Home and End keys to select either **NO** or **YES** and press the ENTER key.

By default, RADAR sets **REC IN/OUT** locate points automatically to the beginning and end of every record. These **REC IN** and **REC OUT** locate points will appear in the locate list.

RECORD 24 TRACKS AT 192 KHZ

With this mode enabled, 24 tracks can be recorded 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 real-time crossfades are required, disable the 24 track mode and select the 12 tracks to record.

To enable/disable **24 TRKS AT 192K**:

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** menu selection and press the ENTER key.
2. Use the Page and Page keys to select **24 TRKS AT 192K** and press the ENTER key.
3. Choose **ENABLE/DISABLE** and press the ENTER key.
4. If **DISABLE** is selected RADAR will prompt to **SELECT TRACKS**. Choose from: **1–12 13–24 SELCT** (using the **Track Selection** keys, select the desired tracks)
5. After making a selection, press the ENTER key.

LOW DISK WARNING

This preference determines the amount of recording minutes based on the current project sample rate, bit depth, and number of tracks armed, remaining in order to produce the **LOW DISK WARNING**.

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

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

RECORD VERIFY

This determines whether or not RADAR will operate in a **RECORD VERIFY** mode when recording. Record Verify is a low-level data verification option. It is not recommended that this option be enabled as it could slow down overall functionality. The **RECORD VERIFY** default preference is set to Disabled.

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

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** menu selection and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **RECORD VERIFY** and press the ENTER key.
3. At the **RECORD VERIFY:** dialogue, use the Home ← and End → keys to select either **DISABLED** or **ENABLED** and press the ENTER key. The factory default setting is **DISABLED**.

MONITORING AND TRACK STATUS

There are two modes to manage input monitoring: input (record/input mode); and the recorded signal (repro mode). RADAR uses the **Track Selection** keys, the All None Input key, and the All None Solo key to create an easy to manage system for switching between these source modes.

TRACK SELECTION KEYS

These keys are used extensively in RADAR operations. While recording and overdubbing they can be used to record enable and disable tracks 1–24 and switch them in and out of input monitoring mode.

When in **TRACK ARM** mode, pressing SHIFT + All None Arm (**ALL**) on the **Session Controller** will select all tracks, regardless of the number of tracks that are already selected. Pressing Fn + All None Arm (**NONE**) on the **Session Controller** will de-select all tracks, regardless of the number of tracks that are already selected..

The **LCD Touchscreen** uses the Tk Arm 25-48 key in conjunction with **Track Arm** keys 1–24 to record enable and disable tracks 25–48 on 48 track systems.

To monitor an input signal using input mode:

1. Arm a track from the **Session Controller** or **LCD Touchscreen**.
2. View the input level to RADAR using the **Meterbridge 24/48** or **RADARView**.

AUTO INPUT

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

- While stopped, RADAR will monitor the input signal on all tracks that are readied.
- When playback begins, monitoring switches to reproduce mode and all tracks playback audio.
- Entering record mode begins recording on all armed tracks. RADAR switches to input mode for monitoring the source signal that is being recorded.

To enable **AUTO INPUT**:

1. Press the All None Input key on the **Session Controller** or Auto Input on the **LCD Touchscreen.**

TRACK SOLO

TRACK SOLO mutes the output of all tracks except those selected using the **Track Selection** keys. **TRACK SOLO** can also be automatically engaged in tandem with the **ZOOM SOLO** function, which is used to visually solo a track or group of tracks on the **RADARView** display. This preference can be set in the ***MAIN MENU / PREFERENCES MENU / ZOOM SOLO AUDIO*** dialogue.

To enable **ZOOM SOLO AUDIO** mode:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / ZOOM SOLO AUDIO*** menu selection and press the ENTER key.
2. At the **ZOOM SOLO AUDIO:** dialogue, use the Home ← and End → keys to select either **DISABLED** or **ENABLED** and press the ENTER key. The factory default setting is **DISABLED**.

To use **TRACK SOLO** mode on the **Session Controller**:

1. Press the All None Solo key on the **Session Controller**
2. Use the **Track Selection** keys to select the tracks to solo.

When in **TRACK SOLO** mode, pressing SHIFT + All None Solo (**ALL**) on the **Session Controller** will select all tracks, regardless of the number of tracks that are already selected. Pressing Fn + All None Solo (**NONE**) on the **Session Controller** will de-select all tracks, regardless of the number of tracks that are already selected.

To use **TRACK SOLO** mode on the **LCD Touchscreen**:

1. Press the Track Solo key on the **LCD Touchscreen.**
2. Use the **Track Selection** keys to select the tracks to solo.

TRACK MUTE

TRACK MUTE mutes the output of the tracks selected using the **Track Selection** keys.

To use **TRACK MUTE** mode on the **Session Controller**:

1. Press the All None Mute key on the **Session Controller**
2. Use the **Track Selection** keys to select the tracks to solo.

When in **TRACK MUTE** mode, pressing SHIFT + All None Mute (**ALL**) on the **Session Controller** will select all tracks, regardless of the number of tracks that are already selected. Pressing Fn + All None Mute (**NONE**) on the **Session Controller** will de-select all tracks, regardless of the number of tracks that are already selected.

SAFE

SAFE puts all tracks into safe mode. In this state no recording can take place under any circumstances.

To use the Safe key:

1. Press the Safe key on the **Session Controller** or **LCD Touchscreen** to enable safe mode.
2. Press the Safe key on the **Session Controller** or **LCD Touchscreen** while in safe mode to disable safe mode.

Pressing Safe while recording prevents accidentally exiting record by ignoring all buttons except **(Play)** and **(Stop)**.

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 **LCD Touchscreen.**
2. Use any locate or transport function to move to a timecode position before the **MARK IN** point.
3. Enter record mode using the + REC keys or REC key.

To enable **1-BUTTON RECORD** mode, use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS*** dialogue. Select **1-BUTTON RECORD**, press ENTER, select **ENABLED**, and press ENTER.

When **AUTO PUNCH** is enabled, manual recording is not possible, except within the **MARK IN** and **MARK OUT** points.

UNDO/REDO

The **UNDO** and **REDO** functions are a good example of the features that non-linear digital recorders such as RADAR have to offer. 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 a 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 a project. This will cause backup files to be larger than necessary and may add significantly to archiving 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 *OPERATIONS: FILE MANAGEMENT: BACKUP* for more information.

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 the project.

To change the number of undo levels:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / UNDO LEVEL / UNDO LEVEL:*** dialogue and select the desired undo level.
2. Enter a preferred number of undo levels and press the ENTER key.

Using **UNDO(REDO)**:

1. Press Z undo to undo the last record or editing operation.
2. Press SHIFT + Z undo to redo the last record or editing operation.

Not all operations are undoable. Only recording and editing operations can be undone and redone with the Z undo key.

EDITABLE RECORD IN/OUT HANDLES

RADAR has the capability to edit record in and out handles after a take. This allows the user to shorten the recorded audio region without needing to copy the project, edit the region, and bring the audio back into the original project. This can be very useful in many cases, for example, when a musical performance was perfect, but the punch in was too early, or the punch out was too late.

To edit a recording's record in/out handles:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / MODIFY EDIT:*** dialogue and press the ENTER key.
2. Set the Record Crossfade time using the Page ↑ and Page ↓ keys or the numeric keypad and press the ENTER key.
3. Enter the timecode location of the new Record In point, and press the ENTER key. Enter the timecode location of the new Record Out point and press the ENTER key.

FOOTSWITCH (OPTIONAL)

A footswitch can be used with the footswitch jacks for hands-free punch in and punch out. The footswitch 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 and speed 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 1200 cents to a maximum of plus 200% or 1902 cents at a sample rate of 48 kHz. The **VARI-SPEED** feature can be used in all transport modes including record.

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

USING VARI-SPEED WITH DIGITAL I/O

If using ADAT, TDIF, AES/EBU, or MADI digital audio interfaces, there are some limitations when using the **VARI-SPEED** feature. Since RADAR modifies its sample clock frequency to produce pitch changes with **VARI-SPEED**, it is not possible to use this feature when slaved to another device's sample clock. If RADAR is made the clock master, however, any devices slaved to the system should alter their clock rates accordingly.

The following table shows the cent changes of audio at specific sample rates:

Sample Rate	Plus		Minus	
kHz	%	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

- With **VARI-SPEED** off, the first press of the Vari-Speed key displays the **VARI-SPEED** dialogue for entering a value. Immediate changes to the pitch of playback audio can be made from this dialogue using either the **Jog/Shuttle Wheel** or the Page ↑ and Page ↓ 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 RADAR to ready mode with **VARI-SPEED** engaged.
- With **VARI-SPEED** on, once again the first press displays the **VARI-SPEED** dialogue for entering or changing a value. At this point, RADAR can return to ready mode with **VARI-SPEED** on using the Esc key, or the **VARI-SPEED** operation may be terminated 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 dialogue:

   V-SPEED: 00.00%
   UNITS: PERCENT

2. To change the units displayed, use the Home ← and End → keys to move to the **UNITS** field and use the Page ↑ and Page ↓ keys to select either **PERCENT** or **CENTS**.
3. Use the Home ← and End → keys to return to the **V-SPEED** field and use the Page ↑ and Page ↓ keys, 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.

The Page ↑ and Page ↓ keys and/or **Jog/Shuttle Wheel** will provide instant speed change. When using the numeric keypad the speed change will only occur upon pressing the ENTER key.

EDITING

RADAR provides a powerful array of non-linear editing tools. The editing functions are designed to allow editing that is easy to learn and easy to use.

RADAR editing differs from many digital audio workstations as it is based on a professional remote with dedicated keys and **Jog Wheel**, instead of a mouse and drop down menus. RADAR allows editing without the **RADARView** display. Some users familiar with workstation style editing might find the approach a little foreign at first, but using RADAR's editing interface allows editing to be done quickly and efficiently, even when in the middle of tracking a session.

Editing can also be performed using the **LCD Touchscreen**. Pressing the Edit button found in the button tray on the Touchscreen switches the Touchscreen into an edit mode, showing the project waveforms and edit function buttons.

OVERVIEW

RADAR edits generally follow a similar pattern:

1. Mark a time region for editing using the Mark In and Mark Out keys and yellow waveform cursor bar.
2. Select an editing function using one of the editing keys or the **EDIT MENU**.
3. Select the tracks to be edited using the **Track Selection** keys.
4. Follow the specialized prompts for each type of edit.

THE CLIPBOARD

The clipboard is a temporary digital audio storage area that is used extensively in the editing process. Material on the clipboard does not take up extra disk space and it is 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.

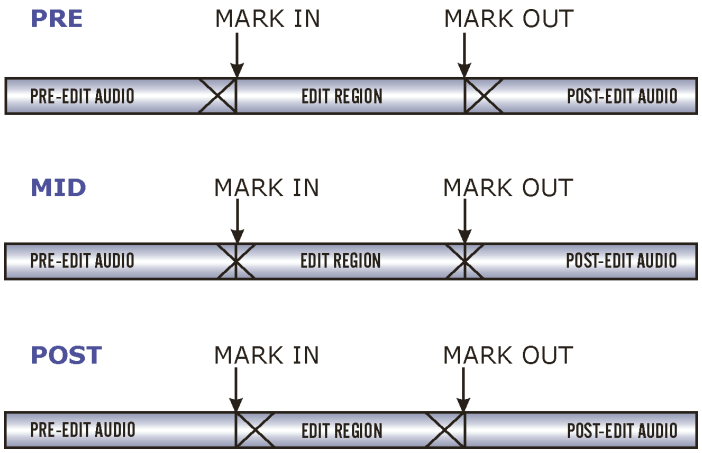
To audition the contents of the clipboard:

- After defining a track-region and using **CUT** or **COPY**, press the Play Edit Select button on the **Session Controller**, press Shift + Paste (**LISTEN**) on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the 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 9,999 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 be avoided by setting an erase edit to **PRE**.

To modify the record crossfade:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / REC XFADE TIME*** menu item and press the ENTER key.
2. Use the Home ← and End → keys to select the **IN** crossfade time. Use the Page ↑ and Page ↓ keys, the numeric keys, or the **Jog/Shuttle Wheel** to set the **IN** crossfade time.
3. Use the Home ← and End → keys to select the **OUT** crossfade time. Use the Page ↑ and Page ↓ 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / EDIT XFADE TIME*** menu item and press the ENTER key.
2. Use the Page ↑ and Page ↓ 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / CROSSFADE TYPE*** menu item and press the ENTER key.
2. Use the Home ← and End → keys to select the crossfade type and press the ENTER key.

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 **LCD Touchscreen**. The audio located between the in point and the out point can be auditioned by pressing the Page ↓ or Play TL Select key on the **Session Controller**.

To mark a region for editing:

1. Locate the **IN** point for an edit. Use the **Jog/Shuttle Wheel** or other transport/locate functions to locate and press the Mark In key on the **Session Controller** or **LCD Touchscreen.**
2. Locate the **OUT** point for the edit. Use the **Jog/Shuttle Wheel** or other transport/locate functions to locate and press the Mark Out key on the **Session Controller** or **LCD Touchscreen**.

The time region defined can now be edited using RADAR's editing tools.

> Although multiple in and out markers may be set by pressing the Mark In and Mark Out keys in conjunction with the SHIFT key, these multiple markers will not be used by RADAR as time region marking for editing functions.

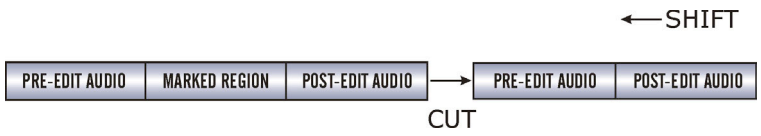
EDITING FUNCTIONS

Once a time region has been established, RADAR's editing tools can be used to modify a project. The following editing functions are available:

CUT

CUT removes the defined time 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.

> Edits occur on a track-by-track basis; use caution when cuts are done on fewer than 24 tracks.



To **CUT** audio:

1. After marking a time region, press X cut on the **Session Controller**, or the Shift + Copy (CUT) key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / CUT*** menu item and press the ENTER key.
2. Select the tracks to **CUT**. Use the Home ← and End → keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** 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:

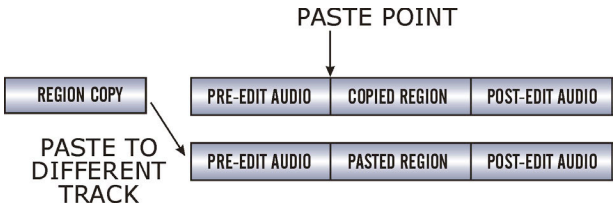
1. After marking a time region, select the **COPY** function by pressing C copy on the **Session Controller**, or the Copy key on the **LCD Touchscreen**, or by selecting **COPY** from the **EDIT MENU**.
2. Select the tracks to **COPY**. Use the Home and End keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** 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 time 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, a **PASTE** point or points can be marked using the Mark In and Mark Out keys. See **MULTIPLE PASTE** and **BACK TIME PASTE** below.

There are many pasting options including:

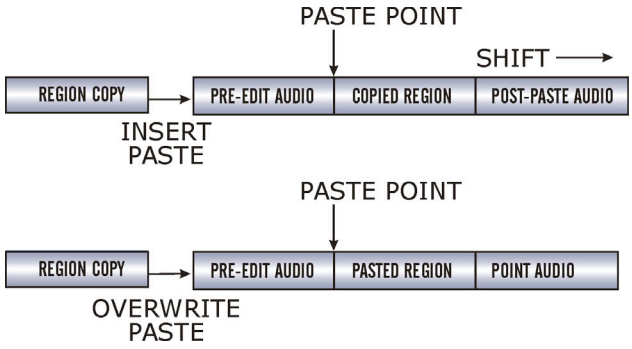
- **PASTE** to the same tracks or different tracks.



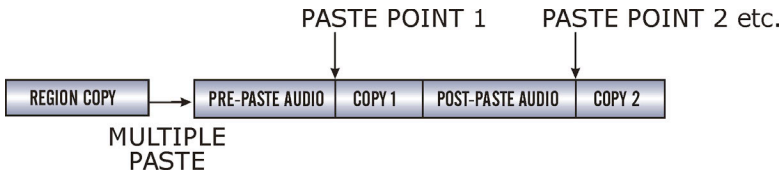
If the clipboard contains multiple tracks, a corresponding number of destination tracks must be selected. The destination tracks do not need to be adjacent but the pasted tracks will always be mapped to their target tracks in a lowest-to-lowest, highest-to-highest order. Example: Track-region copies from tracks 1 and 2 can be pasted to 7 and 13. Note that pasting track 1 to track 13 and track 2 to track 7 cannot be done in a single operation.

A track can be pasted to multiple tracks, e.g., track 1 to tracks 2, 3, 4, or tracks 1 & 2 to tracks 3 & 4, 5 & 6.

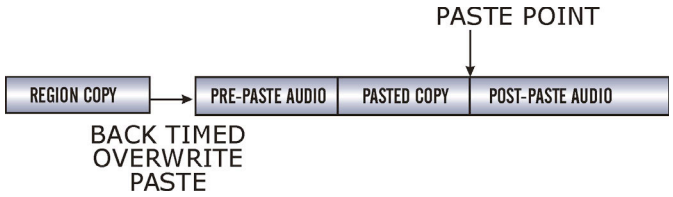
- Insert the **PASTE** or overwrite existing data.



- Multiple **PASTE** points.



- Back Time pasting.



To **PASTE** audio:

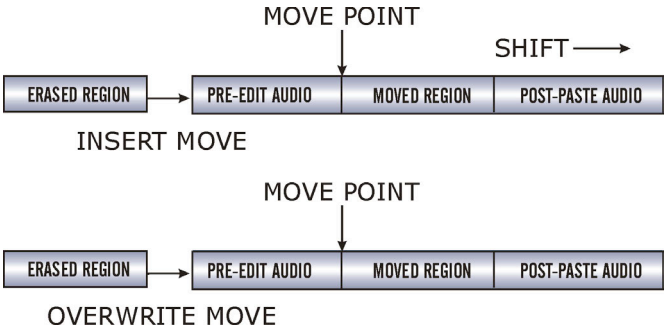
1. Press V paste on the **Session Controller** or the Paste key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / PASTE*** menu item and press the ENTER key.
2. Select the tracks to **PASTE** to. Use the Home ← and End → keys to select either **SAME** or **OTHER**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.
3. Use the Home ← and End → 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 in the **PASTE TO:** dialogue 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 the 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 or Mark Out key to place an initial **PASTE TO:** point. Reposition the transport and place additional **PASTE TO** points by pressing the Mark In or Mark Out key on the **Session Controller**, or Shift + Mark In on the **LCD Touchscreen**. Press the ENTER key to execute the multiple **PASTE**.

Multiple paste markers can be set during playback.

MOVE

MOVE repositions the audio defined by the track-region. It can also be used to move audio from one track to another. 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**.



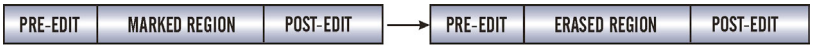
To **MOVE** audio:

1. After marking a time region, press the M key on the **Session Controller**, or the Move key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / MOVE*** menu item and press the ENTER key.
2. Select the tracks to **MOVE**. Use the Home ← and End → keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.

3. Select the destination tracks. Use the Home and End keys to select either **SAME** or **OTHER**. When selecting **OTHER** use the **Track Selection** keys to select tracks. Press the ENTER key.
4. Select either the **INSERT** or **OVERWRITE** move modes using the Home and End 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.



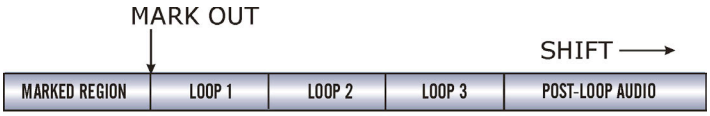
ERASE

To **ERASE** audio:

1. After marking a time region, press the E key on the **Session Controller**, or the Erase key on the **LCD Touchscreen**, or use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / ERASE*** menu item and press the ENTER key.
2. Select the tracks to **ERASE**. Use the Home and End keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks and press the ENTER key.

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.



LOOP COUNT = 3 INSERT MODE

To **LOOP** audio:

1. After marking a time region, press the L key on the **Session Controller**, or the Loop key on the **LCD Touchscreen**, or use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / LOOP*** menu item and press the ENTER key.
2. Select the tracks to **LOOP**. Use the Home and End keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.
3. Use the Home and End keys to select either the **INSERT** or **OVERWRITE** loop modes and press the ENTER key.

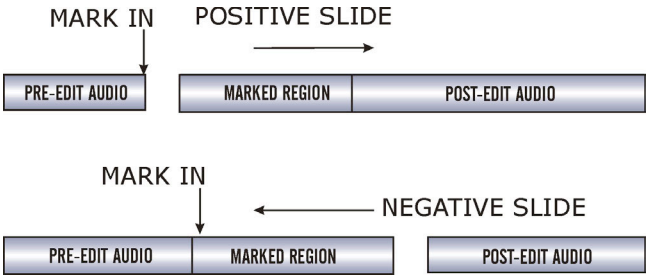
4. Use the Page ↑ and Page ↓ keys or the numeric keypad to enter the number of loops of the track-region to create.

5. Press the ENTER key to create the loops and return RADAR to transport mode.

To loop backwards on the time line, use a negative number of loops.

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 S key on the **Session Controller** or Shift + Move (**SLIDE**) on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / SLIDE*** menu item and press the ENTER key.

2. Select the tracks to **SLIDE**. Use the Home ← and End → keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.

3. Use the Page ↑ and Page ↓ 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 shifted 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 I key on the **Session Controller**, or Shift + Enter (**SILENCE**) on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / INSERT SILENCE*** menu item and press the ENTER key.
2. Select the tracks to **INSERT SILENCE** on. Use the Home ← and End → keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.
3. Use the numeric keys to enter the amount of silence 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 other reversed effects very easy to accomplish.

To **REVERSE** clipboard audio:

1. After marking a time region, **COPY** or **CUT** the track-region to be reversed onto the clipboard.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / REVERSE*** menu item and press the ENTER key.
3. Paste the reversed audio to the desired location in the project.

GAIN/FADE

The **GAIN/FADE** functions allow the user 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 F button on the **Session Controller** or Gain / Fade on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / EDIT MENU / GAIN/FADE*** menu item and press the ENTER key.
2. Select the tracks to modify. Use the Home ← and End → keys to select either **ALL** or **TRACK ARM**. Use the **Track Selection** keys to select individual tracks. Press the ENTER key.
3. Use the Page ↑ and Page ↓ keys, the numeric keys, or the **Jog/Shuttle Wheel** to set the **START** gain and press the ENTER key.
4. Use the Page ↑ and Page ↓ 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

UNDO allows the user to undo an edit or record. **UNDO LEVELS** can be set anywhere from 0 to 99. For more information see *OPERATIONS: RECORDING: UNDO/REDO*

REDO

REDO allows the user to **REDO** edits or records that were undone using the **UNDO** function. **REDO** may be done as many times as the **UNDO** function was performed. The ability to **REDO** will be lost upon performing new edits, entering record, or switching to another project. For more information, see *OPERATIONS: RECORDING: 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** allows for changes to 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.**

MACRO FUNCTION KEYS

The **MACRO FUNCTION KEYS** provide a way to memorize multiple keystrokes and recall them at the touch of a button. **MACRO** sets can be stored and exported for use on other RADAR units. See *OPERATIONS: FILE MANAGEMENT: MACROS* for more information.

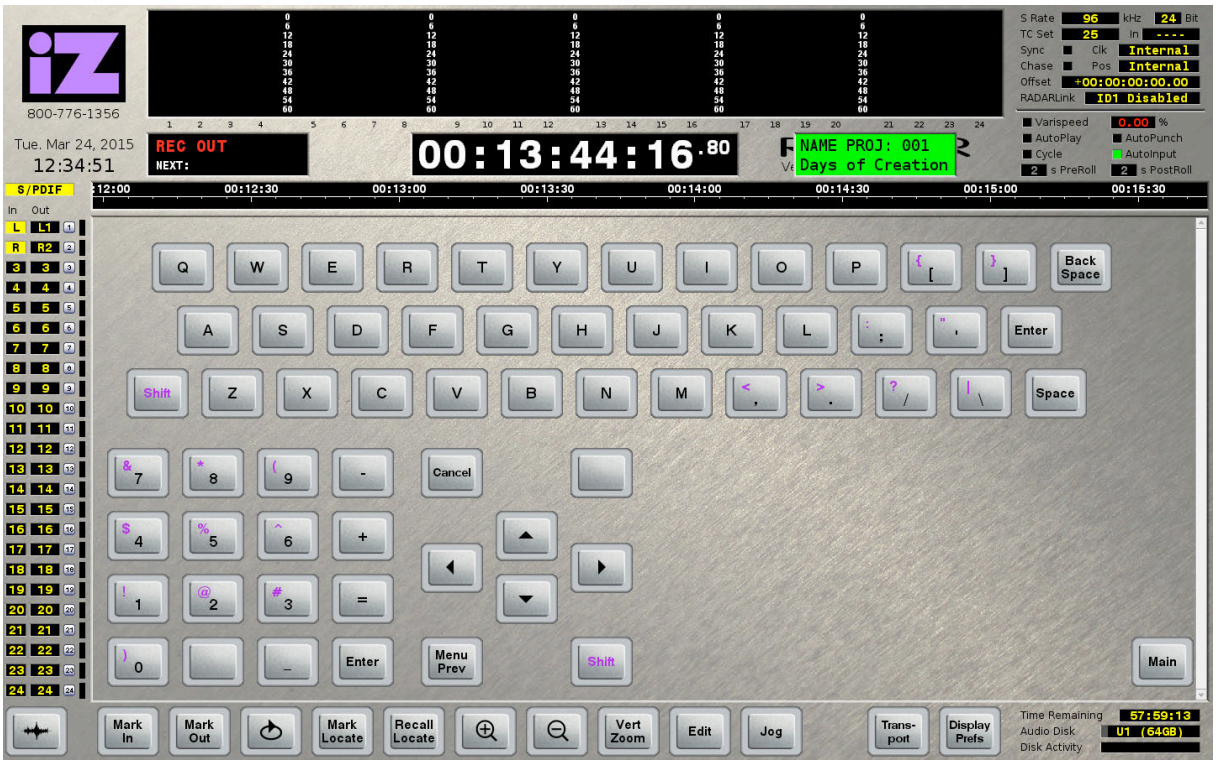
To store multiple keystrokes as a macro:

1. Press SHIFT and then press a function key 1–8 to program a **MACRO** on the **Session Controller** or Press Shift and then a Macro key on the **LCD Touchscreen**. The F1 (13) – F8 (20) or Macro key will begin to flash.
2. Perform the sequence of keystrokes to store and press the F1 (13) – F8 (20) or Macro key again.
3. The **MACRO** is now stored and ready for use. Pressing the F1 (13) – F8 (20) or Macro key again will execute the stored keystroke sequence.

QWERTY KEYBOARD

The **Session Controller** has a QWERTY keyboard, which makes managing tracks and projects very easy. In addition to edit functions, track naming, project naming, and other data entry tasks, the keyboard provides handy shortcuts to menu items. Cycle through the menu items by pressing the corresponding key on the QWERTY keyboard of the first letter of the name of the desired menu.

The **LCD Touchscreen** also has a QWERTY keyboard that appears on the screen for certain functions such as naming tracks, entering username and password, and other similar functions.



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. **RADARLink** requires a **Sync Processor** card to be installed in each RADAR unit.

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
- Modifying system parameters and preferences

- Mount/Unmount of Record drives
  - When selecting **MOUNT** or **UNMOUNT** on a **RADARLink** master, the slave unit will also **MOUNT** or **UNMOUNT**.
- Shutdown/power up of master and slave
  - When selecting **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, fully populated, pin to pin, 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.

The entire length of cabling between RADAR units must be less than 10 meters (30 feet).

All RADAR units in the **RADARLink** system must all use the same RADAR software version and RADAR recording engine (Adrenaline, Adrenaline Plus, or Adrenaline DR) and Sync Processor Card (I or II).

Software Versions

All units in a **RADARLink** configuration must be running identical versions of software. It is always recommended to use the latest version of RADAR software. The latest software releases can be downloaded from the Support section of the iZ Technology website at 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 Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / RADARLINK*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select **RADARLINK ID** and press the ENTER key.
3. Use the Page ↑ and Page ↓ 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 the Solo RLink key on the **Session Controller**, or Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / RADARLINK*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to locate the **ENABLE / DISABLE** dialogue and press the ENTER key.
3. Use the Page ↑ and Page ↓ 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. RADAR will notify 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.

When RADARLink is disabled, then re-enabled, all undo levels are cleared. Ensure all edits and punch-ins are correct before re-linking.

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 **RLINK SOLO MODE** operation, all slaves will be cued to the current position of the last soloed unit.

If there is an ID conflict, cancel and then reestablish **RADARLink** mode after changing the conflicting slave ID number to enable the change.

It is possible to remove just one machine from **RADARLink**, but it requires a remote be connected to the unit being unlinked. Pressing the Esc 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-Roll/Post-Roll Time
- Auto-Input, Auto-Play, Auto-Punch, Loop Play, Record Safe
- System Preferences, Time/Date
- Project Number
- Locate Points and Labels
- File Flattening

RLINK SOLO MODE

RLINK SOLO MODE allows the user 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 **RLINK SOLO MODE** is engaged:

- Disk functions (i.e., diagnostic operations, Upgrade System, Reclaim Space)
- Backup and Restore
- Import and Export
- Digital I/O parameter adjustment

To solo a **RADARLink** slave:

1. Press SHIFT + Solo RLink (**SOLO**) on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / RADARLINK / RADARLINK SOLO*** dialogue and press the ENTER key.
2. Use the Page ↑ and Page ↓ 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.

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 the Solo RLink key on the **Session Controller**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / RADARLINK / ENABLE DISABLE*** dialogue and press the ENTER key.
2. Use the Home ← and End → 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 it may be necessary to manually renumber projects on the slave machines to match the master.

To renumber a project on a slave unit:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJECT MENU / RENUMBER PROJECT*** menu and press the ENTER key.
2. Use the Page ↑ and Page ↓ 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, it will prompt to swap to project numbers. Use the Home ← and End → keys to select **YES** to confirm and swap the project numbers. Press the ENTER key.

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 timecode, only the master RADAR is involved. The master in turn sends its clock data to each of the slave units providing sample 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 multi-track recorder. There are, however, some exceptions.

It is not possible to move or paste audio from one RADAR to another.

iZOS File Management Desktop

This section provides an overview of the iZOS File Management Desktop and describes how to:

- connect & mount external drives
- mount network drives
- copy files to destination drives

Overview

iZOS includes the iZOS File Management Desktop–a mouse-driven, dedicated file management system. The iZOS File Management Desktop provides the same functions as the RADAR Application Menu item labeled File Management (***MAIN MENU / FILE MENU / FILE MANAGEMENT***), however, its interface offers a larger viewing area and easy drag and drop functionality.

Within the iZOS File Management Desktop, RADAR users can:

- drag and drop files for transfer or backup purposes between the RADAR Archive drive, an external drive, and/or a network drive
- manage files in the RADAR Archive drive

GETTING TO AND FROM THE iZOS FILE MANAGEMENT DESKTOP

The iZOS File Management Desktop's features are accessed via its mouse-driven, desktop interface.

To access the iZOS File Management desktop:

1. From **RADARView**, press W + 2 on the **Session Controller**. The **System** and **Archive** drives will appear on the desktop as icons.

Do not modify or delete any content from the system drive unless instructed by iZ Support.

To access **RADARView** from the iZOS File Management desktop:

1. Press W + 1 on the **Session Controller**.

CONNECTING & MOUNTING AN EXTERNAL DRIVE

Use the following steps to connect an external drive:

1. Connect an external drive to RADAR's USB or Thunderbolt port. FAT32, Mac HFS, and NTFS formatted drives are supported.
2. Power on the external drive, then right click the iZOS File Management Desktop and select **MOUNT**. Choose the volume to mount. The drive is now mounted and a drive icon will be visible on the desktop.

USB or Thunderbolt drives must be unmounted before being physically disconnected. See *UNMOUNTING EXTERNAL DRIVES* below.

MOUNTING A NETWORK DRIVE

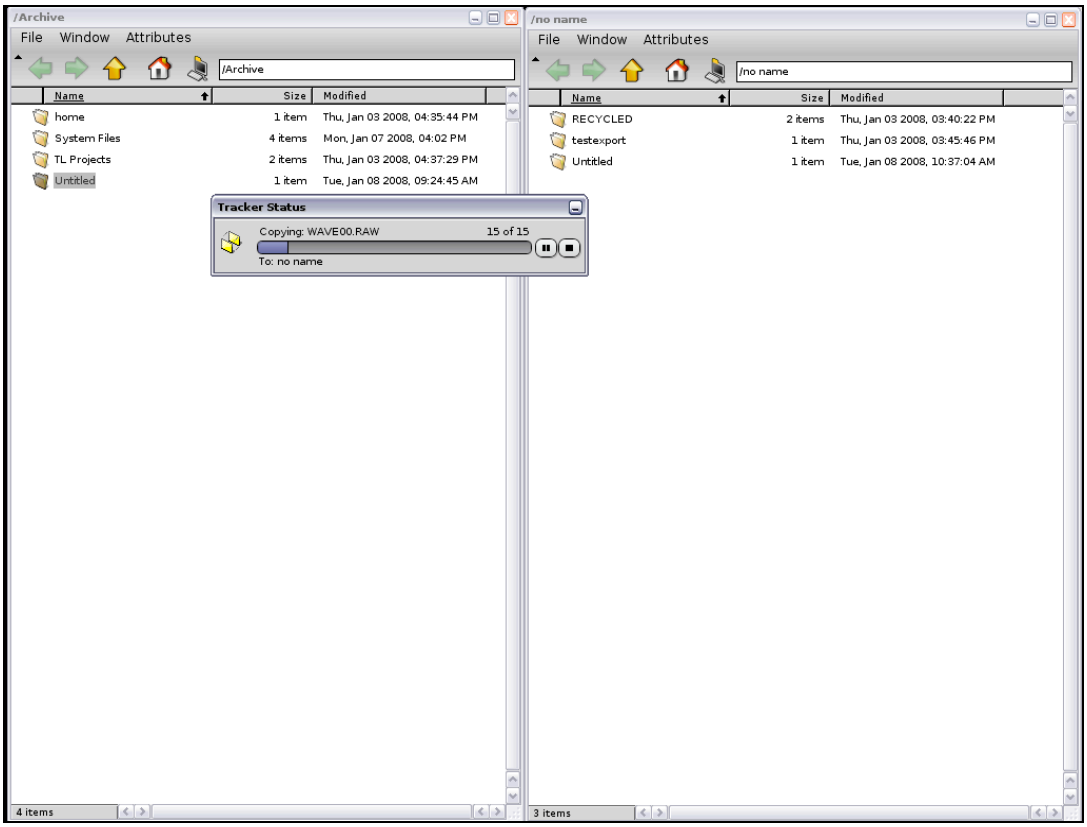
Use the following steps to mount a network drive:

1. From **RADARView**, press SHIFT + B and use the Page ↑ and Page ↓ keys to select: **N:NETWORK** and press the ENTER key.
2. At the login prompt, type in the user name and password.
3. Once connected to the network drive, press W + 2 on the **Session Controller** to switch to the iZOS File Management Desktop.

COPYING FILES TO A DESTINATION DRIVE

Use the following steps to copy files to or from an external USB, Thunderbolt, or network drive:

1. Open the source drive folder by double clicking on the source drive's icon on the desktop.
2. Open the destination drive folder by double clicking on the destination drive's icon on the desktop.
3. In the source folder, highlight the files to be copied and drag them to the destination folder.



UNMOUNTING EXTERNAL DRIVES

Use the following steps to unmount an external USB or Thunderbolt drive before physically removing it from RADAR:

1. Right click on the USB or Thunderbolt drive icon on the desktop and select **UNMOUNT**.
2. Once the volume is unmounted, it is safe to remove the drive from RADAR.

Failure to unmount an external USB or Thunderbolt drive correctly can cause damage to the data on the drive.

SECTION 5

APPLICATIONS

This section of the manual provides setup instructions and suggested RADAR configurations settings in various scenarios and applications. The scenarios and applications covered here are: Studio Recording, Live Recording, Post Production, Playback, and Standalone Converters.

STUDIO RECORDING

CONNECTING TO A CLOCK MASTER

When RADAR is not the only digital device in a studio environment, all digital components must run from the same clock (sync) to avoid pops and clicks. Even though RADAR has a superior internal clock, it may be required to clock (sync) RADAR to an external clock.

RADAR can clock (sync) to Wordclock, Video Sync, TDIF Wordclock, TDIF Multi-channel, AES 2 Channel, SPDIF, AES Multi-channel, ADAT, MADI Optical, MADI Coaxial, SMPTE, and MTC. When clocking many digital devices together, verify each device is set to the same sample rate.

To set RADAR to slave to an external clock source:

1. Connect one of the above formats to the input of RADAR.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** and press the ENTER key (or press the Offset Sync key on the **Session Controller**.)
3. Use the Page ↑ and Page ↓ keys to select the clock source and press the ENTER key.
4. The **Sync** light on the **Session Controller** and **RADARView** screen will flash while awaiting incoming clock, and stay solid when locked to an external sync source.

To use RADAR as the master clock source:

1. Connect a clock cable from RADAR's output into the other device's input.
2. Set the other device to clock (sync) to external clock.

RADAR always outputs all clock formats, except 2-Ch AES and SPDIF.

Try using RADAR as the master clock to improve the sound of the other digital gear.

For externally clocking a **RADARLink** system, only the master machine needs to be synced to an external clock source as all slave machines are clocked to the master machine via the **RADARLink** cable.

SYNCHRONIZATION WITH A DAW

To expand the number of total tracks with another recorder or to include Sequencer tracks, a common time location reference (timecode) between devices is required. RADAR requires a **Sync Processor** to be installed to allow SMPTE or MTC input or output.

RADAR AS THE MASTER

1. Connect SMPTE or MTC, and wordclock from RADAR's output to the other device's input.
2. Set the other device to chase external timecode and its clock to external clock. The other device will now follow RADAR. Position can be controlled using RADAR's transport.

RADAR AS THE SLAVE

Since RADAR will be chasing an external timecode source, RADAR should be clocked to the same clock reference (Sync) as the timecode generator.

RADAR TO CHASE EXTERNAL TIMECODE

1. Connect SMPTE or MTC cable to the input of RADAR.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SMPTE** or **MTC** and press the ENTER key.
4. Press the TC Pref Chase key on the **Session Controller** or **LCD Touchscreen** to go into chase.

RADAR TO SLAVE TO AN EXTERNAL CLOCK SOURCE

1. Connect a clock reference format input on RADAR.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key, or press the Offset Sync key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select the clock source and press the ENTER key.
4. The **Sync** light on the **Session Controller** and **RADARView** screen will flash while awaiting incoming clock and stay solid when locked to an external sync source. RADAR will now follow the other device's location. RADAR's position can be controlled using the other device's transport.

For externally clocking a **RADARLink** system, only the master machine needs to be synced to an external clock source as all slave machines are clocked to the master machine via the **RADARLink** cable.

VOCAL COMPS

Audio data can be freely copied and pasted between projects without using extra disk space. 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 new project.
3. Record multiple takes of an instrument or vocal 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.

FILE COMPATIBILITY

RADAR can read and write audio in the industry standard WAV and BWAV file formats.

TRANSFERRING OUT OF RADAR

Once recording is complete on RADAR, the project can be transferred to a DAW.

Select a File Name Format:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / FILE PREFS / FILE NAME FORMAT*** and press the ENTER key.
2. Use the Home ← and End → keys to select a **CUSTOM FILE NAME FORMAT** to be compatible with a DAW and press the ENTER key.

To transfer the project to a DAW:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / BACKUP*** and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the device in the **BACKUP TO:** dialogue and press the ENTER key. For direct transfers to the DAW, select **N: NETWORK**.
3. Select the DAW recording drive in the **SELECT FOLDER** dialogue and press the ENTER key.
4. At the **BACKUP PROJ** dialogue, use the Page ↑ and Page ↓ keys to select **CURRENT PROJECT** and press the ENTER key.
5. Select **BWAV** at the **BACKUP TYPE:** prompt and press the ENTER key.
6. Select **ALL** or **MARK IN/OUT** and press the ENTER key.

7. At the **BACKUP NAME:** prompt, type the name of the backup using the QWERTY keyboard and press the ENTER key. This will be the name of the folder written to the DAW recording drive.
8. Use the Home and End keys to select **YES** at the backup confirmation prompt and press the ENTER key.
9. Once the RADAR backup is complete, open a new session on the DAW. Import the files from the DAW recording drive (***N:DAW RECORDING DRIVE/BACKUPNAME/AUDIO FILES/***) into a project with the option of the DAW to locate each audio file to the time stamp in the BWAV header

In the ***/BACKUPNAME/PROJECT INFO FILES/*** folder, there is a RADAR Project Notes text file which contains useful information.

If the project is being sent to another studio with an unknown system, use the BWAV Backup format, as this format can be restored to a RADAR system or imported into any DAW program.

If the RADAR project does not contain edits or if undos are not required, the project can be File Flattened.

To flatten a project on a **RADAR BWAV** disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU /*** **FLATTEN PROJECT** dialogue and press the ENTER key.
2. At the **FILL SILENCE?:** prompt the options will be:
   - **NO** (each region will be one file).
   - **GAPS** (each track will be one file with potentially different start times).
   - **ALL** (each track will be one file with the same start time).

   Make a selection and press the ENTER key.
3. At the **FLATTEN PROJS?:** prompt the options will be:
   - **SELECTED PROJS** (select multiple projects using + key).
   - **CURRENT PROJ** (select current project).
   - **ALL** (select all projects).

   Make a selection and 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. At the **XXX MB REQUIRED PROCEED?** prompt, select **YES** and press the ENTER key.
5. The **CANT CANCEL/UNDO PROCEED?** prompt indicates that a destructive process is about to be selected. All undo levels will be lost on this project. Select **YES** and press the ENTER key.
6. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU /*** **UNMOUNT** dialogue and press the ENTER key.

7. Remove the recording drive from RADAR and plug it into a receiver connected to a Mac or PC.
8. The workstation computer will mount the drive and the consolidated files and project notes will be located in a new folder titled after the project name within the **USER** directory.
9. Copy this project folder over to a DAW recording drive for DAW manipulation.
10. After file copy is complete, safely unmount the drive from the workstation.

Do not write or delete any files on the RADAR recording drive when mounted on the Mac or PC. This drive is read only, and any modification will possibly destroy any data on the RADAR drive.

DON'T WRITE TO RADAR BWAV DRIVES USING NON-RADAR SOFTWARE

RADAR BWAV drives may be mounted/unmounted by systems running other operating systems (E.g., Mac OSX, Unix, Windows, Linux). The RADAR BWAV drive's file directory may be browsed, and files may be copied onto the other system without the risk of data corruption. However, if any of the following is done to RADAR BWAV disks in another system, there is a risk of loss or corruption of RADAR recorded data:

1. Mount/Unmount RADAR BWAV disks that had been clones in a RADAR recorded Disk Mirror session, and then subsequently attempt to mount them as a cloned pair in RADAR. These disks–simply by having been mounted in another system–are no longer clones. Attempted subsequent Disk Mirror use in RADAR of such disks may cause data loss or corruption.
2. Write files into any directory on a RADAR BWAV drive while mounted on another system.
3. Delete, rename, or modify any existing files or folders on a RADAR BWAV disk or modify the disk in any way using another system. These operations may only be done in RADAR.

TRANSFERRING INTO RADAR

RADAR imports BWAV or WAV files and automatically places them at the time location stored in the BWAV header.

To transfer audio into RADAR:

1. Press Fn + Close Open on the **Session Controller**, the File Import or Import key on the **LCD Touchscreen**, or use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / IMPORT / PROJECT*** dialogue and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys to select the device in the **IMPORT FROM:** dialogue and press the ENTER key. For direct transfers from a DAW, select **N:NETWORK**.

3. Select the DAW's consolidated **PROJECT'S AUDIO FILES** folder in the **SELECT FOLDER** dialogue and press the ENTER key.
4. Use the Page and Page keys to select **ALL FILES** from the **IMPORT FILES** dialogue and press the ENTER key.
5. Use the Page and Page keys to select **ACCEPT** at the **PCM XX/XX FORMAT** dialogue and press the ENTER key.

The DAW's audio files will be imported to the audio files' time stamp locations in a new RADAR project.

LIVE RECORDING

DISK MIRRORING

When a RADAR has two or more record drives mounted, these drives can be initialized for disk mirroring. When **DISK MIRRORING** is enabled, audio is recorded simultaneously to both disks.

To enable **DISK MIRROING**:

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / MIRROR DISK*** dialogue and press the ENTER key.
2. At the **MOUNT MAIN DISK:** prompt, use the Page and Page keys to select the disk ID of the master and press ENTER.
3. At the **MIRROR TO DISK:** prompt, use the Page and Page keys to select the disk ID of the slave and press the ENTER key.
4. At the **ARE DISKS EXACT COPIES?** prompt, select **NO** and press the ENTER key.
5. At the **INIT DRIVE X+Y** prompt, select **YES** and press the ENTER key.

Initializing a disk erases any existing data permanently. Use with caution.

If using drives that are of different sizes, the smaller drive must be the master.

Enabling **DISK MIRRORING** without initializing both hard drives is only possible in two scenarios:

a. The two drives were previously initialized in **MIRROR** 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 used to enable **DISK MIRRORING** in the directions above, except at the **ARE DISKS EXACT COPIES?** prompt, select **YES** and press the ENTER key. If recording in **MIRROR DISK** mode and the disks are unmounted or RADAR is shut down, RADAR will remember that fact. In this case, to re-enable **DISK MIRRORING**:

1. When the disks are mounted, the prompt will ask to **CONFIG DISKS AS** either **SINGLE** or **DUAL**. Provided the disks have not changed, select **DUAL**.
2. At the **ARE DISKS EXACT COPIES?** prompt, select **YES**.
3. At the **ARE YOU SURE?** prompt, select **YES**.

If entering disk mirror mode with a pair of drives that don't fit either of these criteria, the audio on the secondary disk will be damaged.

Do not enable **DISK MIRRORING** if **RECORD RECOVERY** is enabled.

Disk mirror mode is for recording only. To edit, backup, or flatten files, the drive must be mounted in single disk mode. To go back into disk mirror mode at a later time, the drive must be initialized or cloned so that it fits one of the criteria above.

CHASING TIMECODE AND CLOCK SYNCHRONIZING

For audio recorded on RADAR to line up with video, or the timeline of another device, a time location reference (timecode) is required. Since RADAR will be chasing an external timecode source, RADAR should be clocked to the same clock reference (Sync) as the timecode generator. RADAR will also be in external Chase and external Sync, so for stable live recording the following settings are recommended:

LOCK-AND-DROP

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / CHASE MODE*** dialogue and press the ENTER key.
2. At the **CHASE MODE** prompt, use the Page ↑ and Page ↓ keys to select **LOCK-AND-DROP** and press the ENTER key.

LOST SYNC IN RECORD

Under this setting, RADAR will lock to timecode and then ignore it. RADAR will stay in sync, since the internal clock will be synced to the same video clock source as the timecode generator. This prevents RADAR from dropping out of record from instablity in or loss of timecode.

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / LOST SYNC IN RECORD*** dialogue and press the ENTER key.
2. At the **LOST SYNC IN REC** prompt use the Home ← and End → keys to select **CONTINUE** and press the ENTER key.

Under this setting, if the external sync source is lost, RADAR will continue recording, switch to internal clock, and place a locate marker in the timeline.

To set RADAR to chase external timecode:

1. Connect a timecode source to the input on RADAR.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / TC FORMAT*** and press the ENTER key.
3. Use the Page ↑ and Page ↓ keys to select **SMPTE** or **MTC** and press the ENTER key.
4. Press the TC Pref Chase key on the session controller enter Chase mode.

To set RADAR to slave to an external clock source:

1. Connect clock reference (sync) to the input on RADAR.
2. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / SYNC REFERENCE*** press the ENTER key. (Pressing the Offset Sync key on the **Session Controller** will go to the same menu.)
3. Use the Page ↑ and Page ↓ keys to select the clock source and press the ENTER key.
4. The **Sync light** on the **Session Controller** and **RADARView** screen will flash while awaiting incoming clock and stay solid when locked to an external sync source.

For externally clocking a **RADARLink** system, only the master machine needs to be synced to an external clock source as all slave machines are clocked to the master machine via the **RADARLink** cable.

FILE FLATTENING

For long, multi-track live recordings, a quick transfer to a workstation or backup may be required. With RADAR's Native BWAV format recording and File Flattening, transfers are quick and easy.

A recording drive initialized for **AUDIO:RADAR_BWAV** will be compatible with any Mac or PC computer (read-only). To access the audio on a Mac or PC, first select the **FLATTEN PROJECT** menu item in the **FILE** menu. File Flattening consolidates all punch–ins and track regions into continuous files and puts them into a user folder that is easily accessed from a Mac or PC.

To flatten a project on a **RADAR Broadcast WAV** disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FLATTEN PROJECT*** dialogue and press the ENTER key.
2. At the **FILL SILENCE?:** prompt, the 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).

   Make a selection and press the ENTER key.

3. At the **FLATTEN PROJS?:** prompt, the options will be:
   - **SELECTED PROJS** (select multiple projects using the + key).
   - **CURRENT PROJ** (select current project).
   - **ALL** (select all projects).

   Make a selection and 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. At the **XXX MB REQUIRED PROCEED?** prompt, select **YES** and press the ENTER key.

5. The **CANT CANCEL/UNDO PROCEED?** prompt will indicate that is a destructive process. All undo levels will be lost on this project. Select **YES** and press the ENTER key.

6. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU /*** **UNMOUNT** dialogue and press the ENTER key.

7. Remove the recording drive from RADAR and plug the drive into a receiver connected to a Mac or PC.

8. The workstation computer will mount the drive, and the consolidated files and project notes will be located in a new folder titled after the project name within the **USER** directory.

9. Copy this project folder to a DAW recording drive for DAW manipulation.

10. After the file copy is complete, safely unmount the drive from the workstation.

DON'T WRITE TO RADAR BWAV DRIVES USING NON-RADAR SOFTWARE

RADAR BWAV drives may be mounted/unmounted by systems running other operating systems (E.g., Mac OSX, Unix, Windows, Linux). The RADAR BWAV drive's file directory may be browsed, and files may be copied onto the other system without the risk of data corruption. However, if any of the following is done to RADAR BWAV disks in another system, there is a risk of loss or corruption of RADAR recorded data:

1. Mount/Unmount RADAR BWAV disks that had been clones in a RADAR recorded Disk Mirror session, and then subsequently attempt to mount them as a cloned pair in RADAR. These disks–simply by having been mounted in another system–are no longer clones. Attempted subsequent Disk Mirror use in RADAR of such disks may cause data loss or corruption.
2. Write files into any directory on a RADAR BWAV drive while mounted on another system.
3. Delete, rename, or modify any existing files or folders on a RADAR BWAV disk or modify the disk in any way using another system. These operations may only be done in RADAR.

RECORD RECOVERY MODE

Record Recovery mode is designed for live recording only and therefore is disabled by default on RADAR. While recording, RADAR writes all the data to the recording drive constantly, but a save state is required once the transport is stopped to update the file lengths and header information. If power is lost during recording, and a save state is not performed, it can be a lengthy procedure to retrieve and rebuild the project. If RADAR's **RECORD RECOVERY MODE** is enabled, RADAR will constantly update the file lengths and header information. Writing this data to the system drive allows a quick procedure to rebuild the project.

To enable record recovery:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES MENU / RECORD PREFS / RECORD RECOVERY*** dialogue and press the ENTER key.
2. At the **RECORD RECOVERY** prompt, use the Home ← and End → keys to select **ENABLED** and press the ENTER key.
3. At the **SHUTDOWN TO ENABLE CHANGES** prompt, press the ENTER key.
4. At the **SYSTEM SHUTDOWN PROCEED?** prompt, use the Home ← and End → keys to select **YES** and press the ENTER key. RADAR will unmount all drives and display **YOU MAY SAFELY TURN OFF POWER**. Reboot from the power switch on RADAR to enable changes.

If **RECORD RECOVERY** is enabled, each time RADAR mounts a drive the message **RECORD RECOVERY ENABLED** will be displayed. Press the ENTER key to continue mounting drives.

If power is lost during recording and record recovery mode is enabled, remove the recording disk from RADAR and call or email iZ Support for instructions. Do not attempt to mount the disk. The audio drive and the media containing the Record Recovery files will need to be sent to iZ Technology for recovery.

Do not enable **DISK MIRRORING** if **RECORD RECOVERY** is enabled.

POST PRODUCTION

CONNECTING TO A 9-PIN SYNCHRONIZER

9-pin is ideal for applications requiring multiple machines to be in sync and controlled from a single interface. RADAR locks to 9-pin commands solidly and quickly, which is why RADAR is a top choice in professional Post Production environments.

Connect a 9-pin cable to RADAR on the **Sync Processor** card labeled **MACH CTRL** to a synchronizer or 9-pin controller. This is the only connection required between RADAR and the 9-pin synchronizer.

To select 9-pin:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL / SELECT TYPE*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to select **9-PIN** and press the ENTER key.

To enable 9-pin:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL / ENABLE*** dialogue and press the ENTER key.

A flashing **S** will appear in the **Session Controller Window** to show that Sony 9-pin is enabled and waiting for commands. A solid **S** will appear once RADAR is receiving valid 9-pin communication.

FILE FLATTENING

When using RADAR as a dubber, thousands of punch-ins and overdubs can be generated. By using File Flattening, each track can be quickly consolidated into one file. With RADAR's Native BWAV recording file format and Instant File Flattening, transfers to workstations are quick and easy.

After initializing the recording drive for **AUDIO:RADAR_BWAV**, the drive will be compatible with any Mac or PC computer. To access the audio from a mounted RADAR BWAV drive on a Mac or PC, select **FLATTEN PROJECT** in the **FILE** menu. This function consolidates all of the punch-ins into continuous files and puts them into a user folder that is easily accessed from a Mac or PC.

To flatten a project on a **RADAR_BWAV** disk:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / FILE MENU / FLATTEN PROJECTS*** dialogue and press the ENTER key.
2. At the prompt **FILL SILENCE?:** The options will be:
   - **NO** (each region will be one file)
   - **GAPS** (each track will be one file with potentially different start times)
   - **ALL** (each track will be one file with the same start time)

   Press the ENTER key to select an option.

3. At the **FLATTEN PROJ:** dialogue, use the Page and Page keys to select **ALL PROJECTS**, **CURRENT PROJECT**, or **SELECTED PROJS** and press the ENTER key.

   If the **SELECTED PROJS** option is chosen, select the individual project or projects to flatten by using the Page and Page keys, and the + and - keys on the numeric keypad. Pressing the + key adds the selected project to the flattening list and places a **+** sign to the right of its name. Pressing the - key removes the selected project from the flattening list and removes the **+** sign to the right of its name.

4. If **GAP** or **ALL** is selected and additional disk space will be consumed to fill the gaps, the prompt **XXX MB REQUIRED PROCEED?** will be displayed. Select **YES** and press the ENTER key.

5. The prompt **CANT CANCEL/UNDO PROCEED?** will be displayed to indicate that it is a destructive process. All undo levels of this project will be lost. Select **YES** and press ENTER.

6. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / DISK MENU / UNMOUNT*** dialogue and press the ENTER key.

7. Remove the recording drive from RADAR and plug it into a receiver connected to a Mac or PC.

8. The workstation computer will mount the drive and the consolidated files and project notes will be located in a new folder titled after the project name within the **USER** directory.

9. Copy this project folder over to a DAW recording drive or an external drive for DAW manipulation.

10. After file copy is complete, safely unmount the drive from the workstation.

DON'T WRITE TO RADAR BWAV DRIVES USING NON-RADAR SOFTWARE

RADAR BWAV drives may be mounted/unmounted by systems running other operating systems (E.g., Mac OSX, Unix, Windows, Linux). The RADAR BWAV drive's file directory may be browsed, and files may be copied onto the other system without the risk of data corruption. However, if any of the following is done to RADAR BWAV disks in another system, there is a risk of loss or corruption of RADAR recorded data:

1. Mount/Unmount RADAR BWAV disks that had been clones in a RADAR recorded Disk Mirror session, and then subsequently attempt to mount them as a cloned pair in RADAR. These disks–simply by having been mounted in another system–are no longer clones. Attempted subsequent Disk Mirror use in RADAR of such disks may cause data loss or corruption.
2. Write files into any directory on a RADAR BWAV drive while mounted on another system.
3. Delete, rename, or modify any existing files or folders on a RADAR BWAV disk or modify the disk in any way using another system. These operations may only be done in RADAR.

After flattening a project, if the original project within RADAR is deleted or any record punches or edits are made, the project automatically becomes un-flattened and the corresponding folder in the **USER** directory will be automatically deleted.

Only projects that don't contain edits (e.g., paste, erase, loop), can be flattened. **EXPORT** or use **BWAV** backup to the **Audio Recording Drive** for the same functionality as file flattening. The drive can be mounted on a Mac or PC and the files will be in a specific project folder in the user directory.

Do not export to a flattened project's folder in the **USER** directory. Within the **USER** directory create a new folder called **EXPORTS** and export to this folder.

PLAYBACK

CHASING TIMECODE AND CLOCK SYNCHRONIZING

For audio recorded on RADAR to match up with video, a time location reference (timecode) is required. Since RADAR will be chasing an external timecode source, RADAR should be clocked to the same clock reference (Sync) as the timecode generator. Since RADAR will be in external CHASE and external SYNC, for stable live recording the following settings are recommended:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / TC SETTINGS / CHASE MODE*** dialogue and press the ENTER key.
2. At the **CHASE MODE** prompt, use the Page ↑ and Page ↓ keys to select **LOCK-AND-DROP** and press the ENTER key.

Under this setting, RADAR will lock to timecode and then ignore it. RADAR will stay in sync, since the internal clock will be synced to the same video clock source as the timecode generator. This prevents RADAR from dropping out of record because of timecode issues.

THEATER MODE PREFERENCES AND LOCATE POINTS

There are a number of preferences in RADAR to assist with live playback.

ARROW KEY GOTO

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES / ARROW KEY GOTO*** dialogue and press the ENTER key.
2. At the **ARROW KEY GOTO:** prompt, use the Home ← and End → keys to select **IN/OUT** or **LOC LIST** and press the ENTER key.

If **LOC LIST** is selected, the Home key will locate RADAR to the previous locate in the list and the End key will go to the next locate in the list, excluding **MARK IN/OUT** markers. If **PRE-ROLL** is enabled, it will add a Pre-Roll offset. If **AUTOPLAY** is enabled, RADAR will enter **PLAY** mode after locating.

STOP AT LOCATE

The **STOP AT LOCATE** option can be enabled on a per-project basis. When **ENABLED**, RADAR will automatically stop playing when it reaches a locate point.

To **ENABLE** or **DISABLE STOP AT LOCATE** on the current opened project:

1. Navigate to ***MAIN MENU / PROJECT MENU / STOP AT LOCATE*** and press the enter key.
2. Use the Home and End keys to select **DISABLED** or **ENABLED** at the **STOP AT LOCATE** and press the ENTER key.
3. If **ENABLED** is selected, use the Home and End keys to select **STOP** or **CUE NEXT** from the **AT LOCATE POINT** prompt and press the ENTER key.
4. If **ENABLED** is selected: At the **AT LOCATE POINT** prompt, use the Home and End keys to select **STOP** or **CUE NEXT**.
   - Selecting **STOP** will cause RADAR to stop playback when encountering the next locate on the timeline.
   - Selecting **CUE NEXT** will cause RADAR to skip to the next locate and stop when encountering the next locate on the timeline.
   - If **PRE-ROLL** is enabled, it will add a Pre-Roll offset to the locate.
   - If **AUTOPLAY** is enabled, RADAR will enter **PLAY** mode after locating.

ASSIGN FT-SWITCH FUNCTION

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES / ASSIGN FT-SWITCH*** dialogue and press the ENTER key.
2. At the **ASSIGN FT-SWITCH:** prompt, use the Page and Page keys to select the **FOOT SWITCH INPUT** and the End key to select the function or macro the footswitch will perform.

ASSIGN MMC LOC FUNCTION

1. Use the Setup Menu key, the Page and Page keys, and the ENTER key to go to the ***MAIN MENU / PREFERENCES / ASSIGN MMC LOC*** dialogue and press the ENTER key.
2. At the **ASSIGN MMC LOC:** prompt use the Page and Page keys to scroll though the list of **MMC LOCATE INFORMATION FIELD NAMES**, **08**, **09**, **0A**, **0B**, **0C**, **0D**, **0E**, and **0F**. Press the End key to move the cursor, and scroll to select the **MMC LOCATE ASSIGNMENT**). Press the ENTER key. The options will include a list of **8 MACRO BUTTONS**, the **GOTO PREV LOC**, **GOTO NEXT LOC** function, or the **GOTO SYNC MRK** function (default).

MIDI MACHINE CONTROL (MMC)

MMC is an option for applications requiring multiple machines to be in sync, and controlled from a single interface. Connect a MIDI cable to RADAR's **MIDI IN** connector from a synchronizer or MIDI controller.
To select **MMC**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL / SELECT TYPE*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to select **MMC** and press the ENTER key.

To enable **MMC**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / SYNC MENU / MACHINE CONTROL / ENABLE*** dialogue and press the ENTER key.

ASYNCHRONOUS PLAYBACK

Asynchronous Playback allows a selected region of audio to be cued and played or "triggered" at the press of a button, or from a MIDI System Exclusive command (contact iZ Support for more info), while RADAR is in Stop mode or playing other tracks synchronous to the timeline regardless of RADAR's current SMPTE location. This allows the user to have multi-track playback and on the fly individual sample playback simultaneously.

To enable **ASYNCHRONOUS PLAYBACK**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PROJ MENU / ASYNC PLAYBACK*** dialogue and press the ENTER key.
2. Use the Home ← and End → keys to select **DISABLED** or **ENABLED** and press the ENTER key.

To set **ASYNCHRONOUS PLAYBACK CUE TIME**:

1. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / PREFS MENU / ASYNC CUE TIME*** dialogue and press the ENTER key.
2. Use the Page ↑ and Page ↓ keys or the 0–9* keys to enter the cue time and press ENTER.

ASYNCHRONOUS PLAYBACK PROJECT SETUP

Asynchronous Playback requires specific project setup. Several project attributes must be correctly setup to allow proper use of this function:

- The **ASYNC PLAYBACK** function must be enabled.
- Synchronous audio (all audio to be played back normally with RADAR's transport controls or incoming SMPTE timecode) must be placed within a predetermined time range–the project start time should be the start of this time range.
- Asynchronous audio (all audio to be cued independent of SMPTE time or transport controls) must be located before or after the predetermined synchronous time range.
- Each asynchronous audio region on a given track must be separated by non-recorded silence, which appears in RADARView as a black space between blue bar regions.

TRIGGERING ASYNCHRONOUS PLAYBACK

To trigger Asynchronous Playback from the Session Controller:

1. Press the Fn + T keys, and then a **Track Selection** key to select a track for asynchronous playback.
2. Enter a 2-digit clip number using the 0 – 9* keys and press the ENTER key to trigger the clip and exit the dialogue. Clips will be numbered by their positional order on a per-track basis.

If the SHIFT key is enabled when the Fn + T keys are pressed, the dialogue will remain open after ENTER is pressed to allow the quick triggering of multiple audio clips.

STANDALONE CONVERTERS

ANALOGUE TO DIGITAL CONVERTERS

RADAR's world class converters can be used as a front end to a DAW system. RADAR can be equipped with AES, TDIF, ADAT, and/or MADI digital I/O.

For best quality use RADAR's clock as the master clock.

To use RADAR as an Analogue to Digital converter for a DAW system, first set RADAR as the master clock source:

1. Connect a clock cable from RADAR's output into the DAW's clock (sync) input.
2. Set the DAW to sync to external clock. The DAW will now be syncing to RADAR's internal clock.

To transfer digital audio:

1. Connect digital audio cables between RADAR's outputs and the DAW's digital inputs.
2. Set the DAW to input these digital inputs.
3. Input the source into RADAR's analogue inputs.
4. Press the **Track Selection** keys on RADAR.
5. Enable the DAW to record.

RADAR always outputs all digital audio formats. It is not required to set the output, except for 2-ch AES and SPDIF.

It is not required to have a drive mounted in RADAR to pass audio.

DIGITAL TO ANALOGUE CONVERTERS

RADAR's world class converters can be used as a front end to a separate DAW system. RADAR can be equipped with AES, TDIF, ADAT, and/or MADI digital I/O.

For best quality use RADAR's clock as the master clock.

To use RADAR as a Digital to Analogue converter for a DAW system, first set RADAR as the master clock source:

1. Connect a clock cable from RADAR's output into the DAW's clock (sync) input.
2. Set the DAW to sync to external clock. The DAW will now be syncing to RADAR's internal clock.

To transfer digital audio:

1. Connect digital audio cables between RADAR's inputs and the DAW's digital outputs.
2. Set the DAW to output these digital outputs.
3. Use the Setup Menu key, the Page ↑ and Page ↓ keys, and the ENTER key to go to the ***MAIN MENU / I/O MENU / DIGITAL INPUTS*** and press the ENTER key.
4. Use the Page ↑ and Page ↓ keys to select the digital format and press the ENTER key.
5. Press All None Arm and the **Track Selection** keys on the **Session Controller** to arm the desired tracks.
6. Enable the DAW to play.
7. Route or monitor RADAR's analogue outputs with a console.

RADAR always outputs all digital audio formats; it is not required to set the output.

It is not required to have a drive mounted in RADAR to pass audio.

SECTION 6

TROUBLESHOOTING

Below are some basic troubleshooting tips for RADAR systems. Please contact iZ Support or a local iZ Dealer if having any problems with the RADAR system. RADAR does not contain any user serviceable parts. Do not remove the lid or attempt to repair or replace any components without authorization from iZ Technology.

CONDITION	CAUSE	SOLUTION
RADAR does not power on	– AC power cable unplugged – Power not switched on – No power to outlet	– Check AC cable, connection, and outlet
No display on Video Monitor	– Video cable or monitor faulty or unplugged – Not using the correct video ports – Using VGA with Touchscreen installed	– Connect a different monitor and cable – Plug video monitor into the DVI output, and not VGA output – If the session controller is working, it is likely a monitor or cable problem
Session Controller does not display but is powered	– Session Controller cable not plugged into Session Controller – Session Controller cable not plugged into the correct port on RADAR	– Check Session Controller cable is plugged into the port on RADAR labeled **REMOTE**
No signal on Analogue Input	– Faulty Cable or incorrect pinout – Tracks not armed – RADAR Sync not locked – Input format not set – RADAR Configured in Dual/Quad wire mode – Project sample rate not supported	– See Wiring Diagrams on www.izcorp.com – If Sync light is flashing, check sync source or set RADAR as master – ***MAIN MENU/IO MENU/DIG INPUT FORMAT*** and select format **NONE** – ***MAIN MENU/IO MENU/DIG IO SDQ*** is set to **SINGLE** – Ensure project sample rate supported by analogue I/O cards
No Signal on Analogue Output	– Faulty Cable or incorrect pinout – RADAR Sync not locked – Project sample rate not supported	– See Wiring Diagrams on www.izcorp.com – If Sync light is flashing, check sync source or set RADAR as master – Ensure project sample rate supported by analogue I/O cards

CONDITION	CAUSE	SOLUTION
No signal on Digital Input	– Faulty Cable or incorrect pinout – Tracks not armed – RADAR Sync not locked – Input format not set – RADAR Configured in Dual/Quad wire mode	– See Wiring Diagrams on www.izcorp.com – If Sync light is flashing, check sync source or set RADAR as master – ***MAIN MENU/IO MENU/DIGIN FORMAT*** and select format to your digital I/O source – ***MAIN MENU/IO MENU/DIG IO SDQ*** is set to **SINGLE** – See “Loopback Test” video at http://www.izcorp.com/users/videos/tech-talk/
No signal on Digital Output	– Faulty Cable or incorrect pinout – RADAR Sync not locked	– See Wiring Diagrams on www.izcorp.com – If Sync light is flashing, check sync source or set RADAR as master – See “Loopback Test” video at http://www.izcorp.com/users/videos/tech-talk/
Pop and Clicks on Ins/Outs	– RADAR Sync not locked or faulty – Not enough ventilation for RADAR – PSU not delivering sufficient power – Dirty or oxidized internal power connectors	– If Sync light is flashing, check sync source or set RADAR as master – Allow adequate airflow and cooling for RADAR – Not enough ventilation for RADAR – See “PSU Voltage Test” video at http://www.izcorp.com/users/videos/tech-talk/
Can’t mount Recording Drive	– Drive not inserted – Drive not locked – RADAR not set to mount drive ID – Drive has failed – Drive not RADAR_BWAV format	– Check to see that drive key is locked. – Mount RADAR_BWAV format drive or initialize as RADAR_BWAV
Flashing Red Timecode or ‘ERR’ in Session Controller Display	– Recording drive not rated for high sample rate – Drive is failing	– Verify use of an iZ Technology recording drive for the project sample rate – Replace drive
‘XXX kHz Illegal’ Message	– The incoming AES source doesn’t indicate the sample rate, which causes RADAR to mistakenly display a ***XXX kHz ILLEGAL*** error message	– ***MAIN MENU / PREFS MENU/IGNORE AES FLAGS*** – Enabling the ***IGNORE AES FLAGS*** will remove this error message

CONDITION	CAUSE	SOLUTION
Can't Mount Network Drive	– Bad or incorrect Ethernet cable – Incorrect Networking Settings – Firewall or other security blocking access	– Verify use of correct cable by checking that LEDs on network card is lit – See Support Documents on www.izcorp.com for setup – Turn off firewall or other security programs – See "Networking Setup" video at http://www.izcorp.com/users/videos/tech-talk/
'H/W INIT FAIL' Message	– Adrenaline card requires reseating – Faulty Adrenaline card – Incorrect SIC1 jumper settings	– Reseat Adrenaline card. See "SIC0, SIC1 Reseating" video at http://www.izcorp.com/users/videos/tech-talk/ – Confirm correct SIC1 jumper settings. See SIC1 Jumper Settings under Technical Memos at http://www.izcorp.com/izsupport/documents/
Can't Import Audio File	– Not WAV or BWAV file – Wrong format of BD/DVD/CD – Attempting to import files from incorrect location	– Ensure audio files are WAV or BWAV format – Confirm disc is ISO9660 format – Confirm DVD or CD are DVD-R or CD-R – Use + and – keys to navigate folders, and the ENTER key to select

SECTION 7

REFERENCE

MENU TREE OVERVIEW

This section provides an overview of the RADAR menu structure.

- SYSTEM MENU ▼
  - SYSTEM INFO ▼
    - RADAR SOFTWARE VERSION
    - SERIAL NUMBER
    - CPU TYPE
    - CPU SPEED
    - SYSTEM RAM
    - NETWORK CARD
    - MAC ADDRESS
    - IP ADDRESS
    - RECORDING ENGINE
    - SYNC ENGINE
    - ANALOGUE I/O 1
    - ANALOGUE I/O 2
    - ANALOGUE I/O 3
    - MADI BOARD
    - AES BOARD
    - ADAT BOARD
    - TDIF BOARD
    - SATA 1
    - SATA 2
    - SATA 3
    - IDE MASTER
  - SET TIME & DATE
  - SET SERIAL NUM
  - UPDATE SOFTWARE

- DISK MENU ▼
  - MOUNT AUDIO DISK
  - UNMOUNT DISK
  - EJECT CD/DVD
  - SHOW DISK SPACE
  - RECLAIM SPACE
  - MAKE PORTABLE
  - ERASE ALL AUDIO
  - INIT DISK
  - MIRROR DISK
  - CLONE DISK
  - DISK NOTES

- SYNC MENU ▼
  - TC SETTINGS ▼
    - TC FORMAT
    - TC RATE
    - SMPTE LOCK SPEED
    - FREEWHEEL TIME
    - STATIC TC OUT
    - CHASE MODE
    - SHOW SYNC DRIFT
    - SYNC THRESHOLD
    - CHASE ON POWERUP
    - CHASE CUE TIME
  - SYNC REFERENCE
  - RADARLINK ▼
    - ENABLE/DISABLE
    - RADARLINK SOLO
    - RADARLINK ID

- SYNC MENU (CON'T) ▼
  - MACHINE CONTROL ▼
    - ENABLE/DISABLE
    - SELECT TYPE
    - 9-PIN SETTINGS ▼
      - DEVICE ID
      - 9-PIN 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
  - 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
  - ANALOGUE LEVELS
  - DIG IN FORMAT
  - DIG I/O SDQ
  - DIG 2-CH OUTPUT
  - MADI SETTINGS ▼
    (IF MADI CARD PRESENT)
    - SAMPLE RATE IN
    - EMPHASIS IN
    - EMPHASIS OUT
    - LEGACY MODE (96K)
    - INTERLACE (48CH)
    - COAX/OPTICAL IN
    - INSTALL FIRMWARE
  - 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
  - FLATTEN PROJECTS
  - FILE MANAGEMENT
  - MAKE DVDCD IMAGE
  - BURN DATA CD/DVD
  - BURN AUDIO CD
  - FINALIZE CD
  - DEL IMG FILE
  - LOAD MACROS
  - SAVE MACROS
  - FILE PREFS ▼
    - SHOW SIZE
    - IMPRT PROJ START
    - EXPORT FORMAT ▼
      - MONO FORMAT
      - STEREO FORMAT
    - FILL SILENCE
    - REFORMAT QUALITY
    - WRITE VERIFY
    - FILE NAME FORMAT ▼
      - PRESET ▼
        - TRK-NAME-STAMP
        - TRK-PROJ-STAMP
        - TRK-REGION-NAME
        - TRK-REGION-PROJ
        - PROJ-TRK-REGION
        - TRK-REGION (DOS)
      - CUSTOM ▼
        - SELECT TEMPLATE
        - MAKE TEMPLATE
        - IMPORT TEMPLATE
        - EXPORT TEMPLATE
        - EDIT TEMPLATE
        - DELETE TEMPLATE
    - 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
  - STOP AT LOCATE
  - ASYNC PLAYBACK
  - WAVE NOISE FLOOR
  - NAME TRACK
  - RENUMBER LOCATES
  - REBUILD WAVES
  - RESET SLIPS
  - 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
    - DEF START TIME
    - DEF UNDO LEVEL
    - DEF WAVE NS FLR
  - TEMPLATES ▼
    - MAKE TEMPLATE
    - IMPORT TEMPLATE
    - EXPORT TEMPLATE
    - DELETE TEMPLATE
- EDIT MENU ▼
  - UNDO EDIT
  - REDO EDIT
  - MODIFY EDIT
  - CUT
  - COPY
  - PASTE
  - MOVE
  - ERASE
  - LOOP
  - SLIDE
  - INSERT SILENCE
  - REVERSE
  - GAIN/FADE
  - LISTEN
  - EDIT 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
  - PEAK HOLD TIME
  - CLIP HOLD TIME
  - SAVE STATE DELAY
  - AUTO RECLAIM
  - TRK ARM GROUPING
  - IGNORE AES FLAGS
  - MUTE I/O ON STOP

- PREFERENCES MENU (CON'T) ▼
  - ARROW KEY GOTO
  - SEAMLESS CYCLE
  - TRACK ARM RECALL
  - ZOOMLEVEL RECALL
  - ASSIGN FT-SWITCH
  - ASSIGN MMC LOC
  - ASYNC CUE TIME
  - RECORD PREFS ▼
    - 1-BUTTON RECORD
    - TRACK ARM ACTION
    - RECORD MK IN/OUT
    - REC XFADE TIME
    - 24 TRKS AT 192K
    - LOW DISK WARNING
    - RECORD VERIFY
    - RECORD ON CHASE
    - PROJECT PER TAKE
    - RECORD RECOVERY
  - FILE PREFS ▼
    - SHOW SIZE
    - IMPRT PROJ START
    - EXPORT FORMAT ▼
      - MONO FORMAT
      - STEREO FORMAT
    - FILL SILENCE
    - REFORMAT QUALITY
    - WRITE VERIFY
    - FILE NAME FORMAT ▼
      - PRESET ▼
        - TRK-NAME-STAMP
        - TRK-PROJ-STAMP
        - TRK-REGION-NAME
        - TRK-REGION-PROJ
        - PROJ-TRK-REGION
        - TRK-REGION (DOS)
      - CUSTOM ▼
        - SELECT TEMPLATE
        - MAKE TEMPLATE
        - IMPORT TEMPLATE
        - EXPORT TEMPLATE
        - EDIT TEMPLATE
        - DELETE TEMPLATE
    - DVD BURN MODE
    - DVD BURN SPEED
  - PROJECT 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
      - PRIMARY DNS
      - SECONDARY DNS
      - SMTP HOST
      - FTP SERVER
      - FTP LOGIN NAME
      - FTP PASSWORD
    - SERVER PREFS ▼
      - NETWORK PROTOCOL
      - SERVER IP ADDR
      - SERVER NAME
      - SERVER SHARE
      - CLIENT WORKGROUP
    - EMAIL PREFS ▼
      - COMPANY NAME
      - LOCATION
      - REPLY EMAIL
    - NETWORK CONTROL
  - RADARVIEW PREFS ▼
    - RADARVIEW RES
    - RADARVIEW SKIN
    - LABEL COLOUR
    - WAVE/BAR COLOUR
    - SCREENSAVER ▼
      - SAVER DELAY
      - IMAGE EFFECTS
    - NUMBER OF METERS
    - CURSOR POSITION
    - CLOCK MODE

- DIAGNOSTICS MENU ▼
  - CHECK DISK
  - REPAIR DISK
  - CHECK PROJECT
  - SET STARTUP PROJ
  - REALTIME ERRORS
  - SHOW AUDIO LEVEL
  - PING IP ADDRESS
  - CONFIGURE DEBUG
  - SAVE DEBUG
  - EMAIL DEBUG
  - SCREEN CAPTURE
  - FACTORY SETTINGS
  - INSTALL PREV VER
- HELP MENU ▼
  - RELEASE NOTES
  - MANUAL
- SHUTDOWN RADAR

MENU ITEM QUICK REFERENCE

MAIN MENU

Pressing the Setup Menu key on the **Session Controller** (Menu Prev key on the **LCD Touchscreen**) accesses the **MAIN MENU**. To enter the sub-menu structure of the currently selected menu item or to accept a selection or value in a menu dialogue, press the ENTER key. To exit from any level of the menu system, press the Setup Menu key repeatedly or press the Esc (Cancel) key.

SYSTEM MENU

MAIN/SYS MENU: SYSTEM INFO	Displays RADAR's hardware and software information.
RADAR SOFTWARE VERSION: 4.XX	Displays the currently installed version of RADAR software.
SERIAL NUMBER: iZRSXXXXXXXX	Displays RADAR's serial number.
CPU TYPE: Intel(R) i7 4790(R)	Displays the CPU type.
CPU SPEED: 3600 MHz	Displays the speed of the installed CPU.
SYSTEM RAM: 32768 MB	Displays the amount of RAM installed in RADAR.
NETWORK CARD: FAST	Displays the type of network card installed in RADAR.
MAC ADDRESS: XXXX.XXX.XXXX	Displays RADAR's network card's MAC address.
IP ADDRESS: 192.168.XXX.XXX	Displays RADAR's IP Address.
RECORDING ENGINE: ADRENALINE-DR	Displays RADAR's installed Recording Engine.
SYNC ENGINE: SYNC PROC II	Displays RADAR's installed Sync Engine.
ANALOGUE I/O 1: U-NYQUIST	Displays RADAR's installed Analogue I/O card 1.

ANALOGUE I/O 2: U-NYQUIST	Displays RADAR's installed Analogue I/O card 2.
ANALOGUE I/O 3: U-NYQUIST	Displays RADAR's installed Analogue I/O card 3.
MADI BOARD: INSTALLED (05)	Displays RADAR's installed MADI board and firmware version.
AES BOARD: INSTALLED	Displays RADAR's installed AES board.
ADAT BOARD: INSTALLED (II)	Displays RADAR's installed ADAT board and board type.
TDIF BOARD: NOT INSTALLED	Displays RADAR's installed TDIF board.
SATA 1: XXXXXXXXX	Displays RADAR's SATA 1 drive model number.
SATA 2: XXXXXXXXX	Displays RADAR's SATA 2 drive model number.
SATA 3: XXXXXXXXX	Displays RADAR's SATA 3 drive model number.
MAIN/SYS MENU: SET TIME & DATE	Allows the user to specify local time and date. The time should be set to local time upon receiving RADAR.
MAIN/SYS MENU: SET SERIAL NUM	Allows the user to set the serial number designated on the back of RADAR.
MAIN/SYS MENU: UPDATE SOFTWARE	Allows the user to update RADAR software from any media attached to RADAR (CD/DVD, USB, Thunderbolt, SD Card, Network, or the Web). Follow the prompts to verify a proper installation disk before rebooting RADAR.

DISK MENU

MAIN/DISK MENU: MOUNT AUDIO DISK	Allows mounting of record drives or switching the current recording drive to a different device.
MAIN/DISK MENU: UNMOUNT DISK	Allows unmounting of record drives, or external USB or Thunderbolt drives.

MAIN/DISK MENU: EJECT CD/DVD	Ejects the CD, DVD, or Blu-ray disk.
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 audio files that are no longer referenced by any RADAR project play list.
MAIN/DISK MENU: MAKE PORTABLE	Converts files on the audio disk for use on other RADAR units running older versions of software.
MAIN/DISK MENU: ERASE ALL AUDIO	Clears all audio from the recording drives connected to RADAR.
MAIN/DISK MENU: INIT DISK	Selects and initializes DVD-RAM and hard disks as one of the following options: **AUDIO:RADAR_BWAV** RADAR Native Broadcast Wave audio format for recording drives. **TRANSFER:FAT32** FAT32 format for file transfers to/from a PC and/or Mac. See *OPERATIONS: DISK MANAGEMENT: INITIALIZE DISK* for more information.
MAIN/DISK MENU: MIRROR DISK	Allows user to select disk mirroring mode for recording.
MAIN/DISK MENU: CLONE DISK	Provides an easy way to copy data from one hard drive to another for backup or Disk Mirror mode.
MAIN/DISK MENU: DISK NOTES	Allows user to save or view track information, project name/number, sample rate, bit depth, sync rate, and locate points.

SYNC MENU

MAIN/SYNC MENU: TC SETTINGS	Provides synchronization options that allow RADAR to easily integrate into any studio, post-production, or broadcast environment.

TC SETTINGS: **TC FORMAT**	Shortcut keys (sets format and rate): SHIFT + TC Pref Chase (TC PREF) Allows the selection of either **SMPTE** or **MTC** as a timecode 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): SHIFT + TC Pref Chase (TC PREF) Allows user to select a frame rate for the current project. RADAR supports all standard timecode rates including: • 30 fps • 30 fps drop frame • 29.97 fps • 29.97 fps drop frame • 25 fps • 24 fps • 23.976 fps
TC SETTINGS: **SMPTE LOCK SPEED**	Allows user to choose a fast or slow lock speed when chasing timecode. In most situations the **FAST** setting will be the best choice. However, with jittery or poor quality timecode, the **SLOW** setting provides smoother tracking of the incoming timecode at the expense of lock time.
TC SETTINGS: **FREEWHEEL TIME**	Determines the number of frames of bad or missing timecode that will be tolerated before dropping out of chase mode. The possible values for this dialogue range between 0 and 10 frames.
TC SETTINGS: **STATIC TC OUT**	Enables and disables the output of a static timecode value when the RADAR transport is stopped. **STATIC TC OUT** is useful in certain situations where other machines need to know the position of the RADAR at all times.

TC SETTINGS: CHASE MODE	Determines the behavior of RADAR when in chase mode. The following options are available: In **LOCK-AND-DROP** mode RADAR will locate, lock, begin playback, and release. Lock and Drop behavior is recommended when chasing poor or damaged timecode, and for line recording. In **RECHASE** mode RADAR will locate, lock, and begin playback, continually comparing its position with that of the incoming timecode. In **NUDGE** mode, if the timecode drifts, the clock speed will be temporarily adjusted to bring the timecode back into sync, and therefore relies primarily on the timecode source. This setting is recommended when chasing MTC and set to internal sync.
TC SETTINGS: SHOW SYNC DRIFT	Displays the number of samples of drift between RADAR's clock and the incoming timecode in the offset window of **RADARView**.
TC SETTINGS: SYNC THRESHOLD	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 RADAR is powered up and a project is loaded.
TC SETTINGS: CHASE CUE TIME	Sets the time RADAR takes to cue to incoming timecode.

MAIN/SYNC MENU: SYNC REFERENCE	Shortcut keys: Offset Sync Allows user to select a synchronization source. 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 the following digital synchronization options: • 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 • MADI (Coaxial or Optical) One of these options can be selected in the **SYNC REFERENCE** dialogue and will remain selected until the unit is powered down or rebooted. For further information refer to *CONFIGURATION: SYNC REFERENCE*.
MAIN/SYNC MENU: RADARLINK	Allows access to RADARLink settings. 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: Solo RLink Enables or disables **RADARLink** operation.
RADARLINK: RADARLINK SOLO	Shortcut keys: SHIFT + Solo RLink [SOLO] Allows the selection of a particular slave machine by entering its **RADAR LINK ID** number. **RADAR LINK SOLO** operation is required for editing and certain other machine specific functions like backup, restore, mount and unmount, with more than 48 tracks.

RADARLINK: RADARLINK ID	Determines unique ID number between **1** and **7** for each slave unit in a **RADARLink** configuration. The **RADARLink** master is automatically assigned an ID of **M**.
MAIN/SYNC MENU: MACHINE CONTROL	Configures RADAR for use as a machine control slave in a variety of applications .RADAR supports both 9-pin serial (RS-422) and MMC, which is the MIDI implementation of machine control.
MACHINE CONTROL: ENABLE/DISABLE	Allows user 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	Allows switching between **9-PIN** and **MMC**.
MACHINE CONTROL: 9-PIN SETTINGS	Configures 9-pin preferences.
9-PIN SETTINGS: DEVICE ID	Allows RADAR to appear as one of the following to the machine control master: • RADAR • RADAR 24 • 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: 9-PIN CHASE MODE	Determines whether transport commands will be derived locally or from machine control master via 9-pin (RS-422).
9-PIN SETTINGS: TRACK ARM MODE	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	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	Determines whether a **SHUTTLE-0** command from a 9-pin controller will put RADAR in **STOP** or **SHUTTLE-0**.

9-PIN SETTINGS: TC OUT MODE-CUE	Allows the timecode output while cueing to respond differently for different applications. In **NORMAL** mode, RADAR will cue to a new location and begin outputting timecode upon playback, based on the new position in the project. The small gap in timecode output that occurs when cueing can cause problems with some older synchronization systems that are expecting an immediate ramp up in timecode 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 timecode 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	Allows the timecode output on playback to respond differently for different applications; similar to **TC OUT MODE-CUE**. In **NORMAL** mode, RADAR will begin outputting timecode only when in 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 timecode 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 timecode 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	Allows user to adjust the MMC preferences.
MMC SETTINGS: DEVICE ID	Allows 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 running a studio/system where multiple devices are being controlled via MMC, RADAR will need to be set to a **DEVICE ID** other than **127** (**7F**).

MAIN/SYNC MENU: SYNC REF OUTPUT	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 RADAR. To use the clock of RADAR to drive other devices in the studio choose the **WORDCLK** option in this dialogue.
MAIN/SYNC MENU: LOST SYNC IN REC	Allows RADAR to automatically switch to internal sync (clock) and continue recording after losing an external sync (clock) source.

I/O MENU

MAIN/I/O MENU: I/O ROUTING	Allows the user to define the analogue and digital input-track-output routing assignment. Aside from the default routing of one to one, it is possible to route an input to a different track or multiple tracks, as well as route a specific track to a different output or multiple outputs. The inputs can also be set to all analogue or digital or a combination of both.
I/O ROUTING: INPUT ROUTING	Selects which track(s) to route the current input to.
I/O ROUTING: OUTPUT ROUTING	Selects which output 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	Allows the ins and outs of the 2-channel digital I/O to be assigned on tracks 1 through 24. The inputs do not have to be the same as the outputs.
I/O ROUTING: DIGITAL INPUTS	Allows the ability 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:
ANALOGUE LEVELS

REFERENCE TO:
0 DBFS **+4 DBU**

Determines the **ANALOGUE I/O LEVEL** relative to the reference of **0 DBFS** or **+4DBU**. Below are the level settings available depending on reference selection.

0 dBFS =	+4 DBU =
+24 dBu	–20 dBFS
+22 dBu	–18 dBFS
+20 dBu	–16 dBFS
+18 dBu	–14 dBFS

MAIN/I/O MENU:
DIG IN FORMAT

Determines if RADAR will use digital or analogue audio inputs and also allows selection of 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 dialogue are:

- NONE (ANALOGUE)
- AES/EBU 2-CH
- S/PDIF 2-CH
- AES MULTI-CH
- ADAT
- TDIF
- MADI

MAIN/I/O MENU:
DIG I/O SDQ

Configures SDQ settings. 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.

Selecting **DUAL** or **QUAD** disables the RADAR's analogue I/O. Once the audio is recorded, however, the project can be played back using the analogue outputs by selecting an SDQ setting of **SINGLE**.

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**	Switches between the AES/EBU and S/PDIF 2-channel I/O formats.
MAIN/I/O MENU: **MADI SETTINGS** **(IF MADI CARD PRESENT)**	Allows verification of incoming MADI-specific data, and sets output emphasis to On or Off.
MADI SETTINGS: **SAMPLE RATE IN**	Reads the indicator flag for the selected input pair. Use the Page ▲ and Page ▼ keys to select a MADI input pair with a valid signal and the sample rate will be displayed in the dialogue.
MADI SETTINGS: **EMPHASIS IN**	Indicates whether the incoming MADI signal is using emphasis or not. 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.
MADI SETTINGS: **EMPHASIS OUT**	Sets Emphasis Out to On or Off. 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 the digital audio recorded has 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.
MADI SETTINGS: **LEGACY MODE (96K)**	Allows the user to select MADI modes. **NON-LEGACY** mode is true 96 kHz.
MADI SETTINGS: **INTERLACE (48CH)**	Allows the user to select channels 1-24 or 25-48 from the incoming MADI stream.
MADI SETTINGS: **COAX/OPTICAL IN**	Sets the MADI digital-in format. RADAR will accept clocking information on either format regardless of this setting.
MADI SETTINGS: **INSTALL FIRMWARE**	Allows updating of MADI firmware. For further instructions refer to *CONFIGURATION: DIGITAL I/O: MADI FIRMWARE UPDATES*.

MAIN/I/O MENU: **AES SETTINGS** **(IF AES CARD PRESENT)**	Allows verification of incoming AES-specific data, and sets output emphasis to On or Off.
AES SETTINGS: **SAMPLE RATE IN**	Reads the indicator flag for the selected input pair. Use the Page ↑ and Page ↓ keys to select an AES/EBU input pair with a valid signal and the sample rate will be displayed in the dialogue.
AES SETTINGS: **EMPHASIS IN**	Indicates whether the incoming AES signal is using emphasis or not. 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.
AES SETTINGS: **EMPHASIS OUT**	Sets Emphasis Out to On or Off. 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 the digital audio recorded has 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**	Displays number of channels supported by the installed card. For RADAR this value will always be 24 channels.
MAIN/I/O MENU: **ADAT SETTINGS** **(IF ADAT CARD PRESENT)**	Allows verification of incoming ADAT- specific data, and sets output emphasis to On or Off.
ADAT SETTINGS: **ADAT IN CLOCK**	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 will automatically make the **ADAT IN CLOCK** assignment.

ADAT SETTINGS: **ADAT IN WIDTH**	Allows user 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**	Sets the ADAT In Sample Point settings. 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 where 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**	Sets ADAT Out Width settings. 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**	Sets ADAT Out Userbit settings. The default setting, **ENABLED**, conforms to the ADAT output specification regarding the userbit (U2) when 96kHz or 192 kHz are selected. However, if experiencing noise when outputting ADAT from RADAR, try the **DISABLED** setting.
ADAT SETTINGS: **FACTORY DEFAULTS**	Returns all of the RADAR's **ADAT SETTINGS** to the factory default.
MAIN/I/O MENU: **TDIF SETTINGS** **(IF TDIF CARD PRESENT)**	Allows verification of incoming TDIF-specific data, and sets output emphasis to On or Off.

TDIF SETTINGS: IN SAMPLE POINT	Sets TDIF In Sample Point settings. Interfacing with some makes and models of TDIF equipped audio gear can be challenging at times, especially with older equipment. The **IN SAMPLE POINT** dialogue allows shifting of the position in the waveform where RADAR interprets the incoming TDIF digital signal. The choices are: • ¼ BIT • ½ BIT • ¾ BIT If experiencing difficulties interfacing with another digital audio device using TDIF, it may be beneficial to experiment with these settings.
TDIF SETTINGS: SAMPLE RATE IN	Reads the indicator flag for the selected input pair. Use the Page ↑ and Page ↓ keys to select a TDIF input pair with a valid signal and the sample rate will be displayed in the dialogue.
TDIF SETTINGS: EMPHASIS IN	Indicates whether the incoming TDIF signal is using emphasis or not. 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.
TDIF SETTINGS: EMPHASIS OUT	Sets TDIF Emphasis Out to On or Off. 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 the digital audio recorded has 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	Displays 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** Save As Save Selecting this menu item and pressing the ENTER key scans for all attached devices. When the scan is complete, all valid drives will be listed in the **BACKUP TO:** dialogue. For more information on backing up projects refer to *OPERATIONS: FILE MANAGEMENT: BACKUP*.
MAIN/FILE MENU: RESTORE	Shortcut keys: **Session Controller** Close Open Selecting this menu item and pressing the ENTER key scans for all attached devices. When the scan is complete, all valid drives will be listed in the **RESTORE FROM:** dialogue. For more information on restoring projects refer to *OPERATIONS: FILE MANAGEMENT: RESTORE*.
MAIN/FILE MENU: EXPORT	Shortcut keys: **Session Controller** Fn + Save As Save Selecting this menu item and pressing the ENTER key scans for all attached devices. When the scan is complete, all valid drives will be listed in the **EXPORT TO:** dialogue. For further information on exporting projects refer to *OPERATIONS: FILE MANAGEMENT: EXPORT*.
MAIN/FILE MENU: IMPORT	Shortcut keys: **Session Controller** Fn + Close Open Selecting this menu item and pressing the ENTER key scans for all attached devices. When the scan is complete, all valid drives will be listed in the **IMPORT FROM:** dialogue. For further information on importing audio refer to *OPERATIONS: FILE MANAGEMENT: IMPORT*.
MAIN/FILE MENU: FLATTEN PROJECTS	Allows projects to be “flattened” and mounted on a PC or Mac system. For more information on restoring projects refer to *OPERATIONS: FILE MANAGEMENT: FLATTEN PROJECT*.

MAIN/FILE MENU: **FILE MANAGEMENT** **BROWSE: #=MB** **0:ARCHIVE**	Shortcut keys: **Session Controller** SHIFT + B Allows extensive control over files on all drives connected to RADAR.
MAIN/FILE MENU: **MAKE DVDCD IMAGE**	Allows the user to create a data CD/DVD. It creates an image file of a folder/directory on the internal system drive (e.g., **0: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*.
MAIN/FILE MENU: **BURN DATA CD/DVD**	Allows the user to burn an image file containing backups and/or exports onto a CD-R or DVD-R. For more information refer to *OPERATIONS: FILE MANAGEMENT: BURN A DATA CD-R/DVD-R*.
MAIN/FILE MENU: **BURN AUDIO CD**	Enables users to 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 **CDAUDIO** is selected at the **FILE FORMAT:** dialogue 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**	Allows an audio CD to be closed (finalized) in order for the disk to be played in a standard CD player. If adding **CDAUDIO** files over time to a CD, use the **FINALIZE CD** option when finished adding tracks (**CDAUDIO** files) to the disk.
MAIN/FILE MENU: **DEL IMG FILE**	Allows deletion of 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: **LOAD MACROS**	Allows pre-saved macros to be loaded into RADAR. See *OPERATIONS: FILE MANAGEMENT: MACROS* for more information.
MAIN/FILE MENU: **SAVE MACROS**	Allows macros to be saved. See *OPERATIONS: FILE MANAGEMENT: MACROS* for more information.

MAIN/FILE MENU: RESTORE DSF/QSF	Allows RADAR to restore projects recorded at sample rates higher than 48 kHz on older RADAR systems. This includes any RADAR with the Adrenaline recording engine (not Adrenaline Plus or Adrenaline DR). Selecting this menu item and pressing the ENTER key scans for all attached devices. When the scan is complete, all valid drives will be listed in the **RESTORE FROM:** dialogue. For more information on restoring projects refer to *OPERATIONS: FILE MANAGEMENT: RESTORE*.
MAIN/FILE MENU: FILE PREFS	Creates preferences for file related functions.
FILE PREFS: SHOW SIZE	Determines whether a **XXXMB PROCEED?** or **XXXMIN PROCEED?** dialogue will be added during the backup and export procedures.
FILE PREFS: IMPRT PROJ START	Determines the project start time setting when importing files to a new project.
FILE PREFS: EXPORT FORMAT	Sets the preference for the export file format. The choices are **WAV**, **BWAV**, and **ASK**. When **ASK** is selected as the preference the prompt will ask the user to choose a file format each time files are exported.
FILE PREFS: FILL SILENCE	Determines whether the prompt will ask to choose a fill silence option each time files are exported. During export, **FILL SILENCE** pads blank audio regions with zeros to create either one file per track or one file per region.
FILE PREFS: REFORMAT QUALITY	Sets the default quality and speed of the sample rate and bit resolution conversion for importing files, as well as exporting **STEREO CDAUDIO** files.
FILE PREFS: WRITE VERIFY	Selects between **ENABLE** and **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.

FILE PREFS: FILE NAME FORMAT	Determines file name format for BWAV files. BWAV files are created in the Audio Files sub-folder of flat backups or exports. They are named according to the **FILE NAME FORMAT** specified in the **FILE PREFS**. Two options for file name format are: **PRESET** and **CUSTOM**. If **PRESET** is selected, the following pre-defined naming conventions are available: • **TRK-NAME-STAMP** • **TRK-PROJ-STAMP** • **TRK-REGION-NAME** • **TRK-REGION-PROJ** • **PROJ-TRK-REGION** • **TRK-REGION (DOS)** If **CUSTOM** is selected, use the following menu options to create and manage custom file name templates. • **SELECT TEMPLATE** • **MAKE TEMPLATE** • **IMPORT TEMPLATE** • **EXPORT TEMPLATE** • **EDIT TEMPLATE** • **DELETE TEMPLATE**
FILE PREFS: DVD BURN MODE	Changes the burn mode of the DVD burner. If the **BUFFER UNDERRUN** error is being displayed frequently when attempting to burn a DVD-R, the mode can be changed to lower these error instances. Setting the **DVD BURN MODE** to **SAFE** will set the DVD multi-drive to use the **PROGRAMMED I/O MODE** which is more reliable for burning. After changing the setting, reboot RADAR for **SAFE** mode to take effect.
FILE PREFS: DVD BURN SPEED	Sets the speed for burning DVD-R disks. Choose speeds from **1X** through **8X**, or select **MAX** to let the DVD drive burn at its maximum possible speed. If the DVD drive or disk is not capable of burning at the speed selected, it will automatically use the closest available speed.

PROJECT MENU

MAIN/PROJ MENU: GOTO PROJECT	Shortcut keys: **Session Controller** New Recent Allows quick switching of projects. Select a project and press ENTER.

MAIN/PROJ MENU: NEW PROJECT	Shortcut keys: **Session Controller** SHIFT + New Recent (NEW) Allows for creation of a new project. When selecting **NEW PROJECT** a new project is created and is assigned the next available unused project number. Type a name for the project on the QWERTY keyboard and press the ENTER key.
MAIN/PROJ MENU: COPY PROJECT	Shortcut keys: **Session Controller** SHIFT + Save As Save (SAVE AS) Allows duplications of the current project to be made while keeping the original project intact. The copied project will be assigned the next available unused project number and be named automatically using the original project's name and an appended version number.  **COPY PROJECT** does not use more disk space.
MAIN/PROJ MENU: DELETE PROJECT	Deletes selected projects.  A project cannot be recovered once it has been deleted.
MAIN/PROJ MENU: NAME PROJECT	Allows user to name a selected project. The dialogue cursor defaults to the project number field.
MAIN/PROJ MENU: RENUMBER PROJECT	Allows user to renumber a project (1 – 999) quickly. This is often required to give restored projects the same number for **RADARLink** operation.
MAIN/PROJ MENU: SAMPLE RATE	Sets the sample rate for the selected project.  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.  This option can only be changed before audio is recorded.
MAIN/PROJ MENU: TC FORMAT	Shortcut keys (sets format and rate): SHIFT + TC Pref Chase (TC PREF) Allows the selection of either **SMPTE** or **MTC** as a timecode 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.
MAIN/PROJ MENU: TC RATE	Shortcut keys (sets format and rate): SHIFT + TC Pref Chase (TC PREF) Selects a frame rate for the current project. RADAR supports all standard timecode rates including: • 30 fps • 30 fps drop frame • 29.97 fps • 29.97 fps drop frame • 25 fps • 24 fps • 23.976 fps
MAIN/PROJ MENU: START TIME	Allows user to enter a start time for the current project.
MAIN/PROJ MENU: SYNC OFFSET	Shortcut keys: SHIFT + Offset Sync (OFFSET) Allows user to set a Sync Offset. It is often necessary to set an offset between two synchronized machines when timecodes differ. When the two machines are parked at the appropriate location to be synchronized, the offset can be calculated by subtracting the master machines timecode from the slave machines timecode. See *CONFIGURATION: TIMECODE* for information on how RADAR can capture an offset automatically.

MAIN/PROJ MENU: DISPLAY MODE	Determines which of the following units RADAR will use to display its current position: • FEET/FRAMES • BARS/BEATS • SMPTE • INT/EXT SMPTE Choose the desired format and press the ENTER key. For bars and beats operation, set the reference tempo in the **MIDI TEMPO MAP** (see the following menu reference).
MAIN/PROJ MENU: BAR/BEAT START	Allows the Bars/Beat start time to be set in relation to the SMPTE timecode counter. This is useful when the first beat of the counter needs to be at a SMPTE timecode location other than the project start time.
MAIN/PROJ MENU: MIDI TEMPO MAP	Sets the reference tempo and time signature for **BARS/BEATS** display mode.
MAIN/PROJ MENU: VARISPEED	Shortcut keys: Vari-Speed Allows Vari-Speed to be set and engaged. **VARI-SPEED** is stored independently for each project, but must be manually engaged each time the project is loaded. See *OPERATIONS: VARI-SPEED* for more details on using this feature.
MAIN/PROJ MENU: UNDO LEVEL	Determines the number of undo levels stored within RADAR. RADAR supports up to 99 levels of undo. The factory default setting is 10. Use this dialogue to customize the number of undo levels in the current project. 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.  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: STOP AT LOCATE	Allows RADAR to automatically stop playing when it reaches a locate point.
MAIN/PROJ MENU: ASYNC PLAYBACK	Allows some tracks to be played synchronously on the SMPTE timeline, while other tracks may be triggered to play on cue, either from a manual button press on RADAR's Session Controller, or via a MIDI command.
MAIN/PROJ MENU: WAVE NOISE FLOOR	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	Allows user to name a track. 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 dialogue 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	Allows automatic renumbering of locates into chronological order. Selecting **RENUMBER LOCATES** and pressing the ENTER key displays 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	Allows waveforms to be rebuilt for a particular project if the waveforms are missing or corrupt. Selecting **REBUILD WAVES** and pressing the ENTER key displays 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: RESET SLIPS	Resets all realtime slips that have been set.

MAIN/ PROJ MENU: **I/O ROUTING**	Allows the analogue and digital input-track-output routing assignment to be user defined. Aside from the default routing of one to one, it is possible to route an input to a different track or multiple tracks, as well as route a specific track to a different output or multiple outputs. The inputs can also be set to all analogue or digital or a combination of both.
I/O ROUTING: **INPUT ROUTING**	Selects which track(s) to route the current input to.
I/O ROUTING: **OUTPUT ROUTING**	Selects which output 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** **DIG IN L: 01 R:02** **OUT L: 03 R:04**	Allows the ins and outs of the 2-channel digital I/O to be assigned on tracks 1 through 24. The inputs do not have to be the same as the outputs.
I/O ROUTING: **DIGITAL INPUTS**	Allows the user 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/PROJ MENU: **PROJECT NOTES**	Allows user to edit, view, and save information about a particular project. The following information is included in the Project Notes: • RADAR TYPE • SERIAL NUMBER • SOFTWARE VERSION • PROJECT NUMBER • PROJECT NAME • START TIME • LAST RECORDING/EDIT DATE • BIT DEPTH • SAMPLE RATE • SMPTE RATE • SMPTE OFFSET • VARI-SMPTE RATE • TRACK NAME(S) • MARK IN/OUT POINTS • TEMPO AND TIME SIGNATURE

MAIN/PROJ MENU: PROJECT PREFS	Defines the parameters that will be used every time a new project is created.
PROJ PREFS: NEW PROJ SETTNGS	Determines the settings for new projects. **TEMPLATE** will use the settings of a selected template. **ASK** will prompt the user to choose a template each time a new project is created.
PROJECT PREFS: NEW PROJ NUMBER	Controls how new projects are to be numbered. If **FROM 1** is selected, RADAR will assign the lowest available project number whenever a new project is created. If **FROM CUR** is selected, then RADAR will use the next available number starting at the current project number.
PROJECT 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.
PROJECT PREFS: DEF BIT RES	Determines the default bit-depth or bit resolution for newly created projects.
PROJECT PREFS: DEF TC FORMAT	Determines the default TC format, SMPTE or MTC, for newly created projects.
PROJECT PREFS: DEF TC RATE	Determines the default TC rate for newly created projects. All standard SMPTE/EBU formats are supported.
PROJECT PREFS: DEF START TIME	Sets the start time that will be automatically assigned to new projects.
PROJECT PREFS: DEF UNDO LEVEL	Allows a default undo level to be set for all new projects.
PROJECT PREFS: DEF WAVE NS FLR	Sets the wave-drawing noise floor for all new projects.
MAIN/PROJ MENU: TEMPLATES	Allows user to create and manage templates. See *OPERATIONS: PROJECT MANAGEMENT: PROJECT TEMPLATES* for more information.
TEMPLATES: MAKE TEMPLATE	Creates a new project template.
TEMPLATES: IMPORT TEMPLATE	Imports a project template.

TEMPLATES: EXPORT TEMPLATE	Exports a project template to a specified destination.
TEMPLATES: DELETE TEMPLATE	Deletes project templates.

EDIT MENU

MAIN/EDIT MENU: UNDO EDIT	Shortcut keys: **Session Controller**  Allows user to 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**  Allows user to redo an edit or record that was undone using the **REDO** function. **REDO** can be done as many times as the undo function was performed. 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	Allows modification of 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 For more information see *OPERATIONS: EDITING: EDITING FUNCTIONS*.

MAIN/EDIT MENU: CUT	Shortcut keys: **Session Controller**  Cuts the defined track-region to the clipboard and removes it from the project. Audio after the edit point on affected tracks will be slid backwards in the timeline to fill the space left by the cut function. For more information refer to *OPERATIONS: EDITING: EDITING FUNCTIONS*.
MAIN/EDIT MENU: COPY	Shortcut keys: **Session Controller**  Copies the defined track-region to the clipboard. Project audio is not affected in any way. For more information refer to *OPERATIONS: EDITING: EDITING FUNCTIONS*.
MAIN/EDIT MENU: PASTE	Shortcut keys: **Session Controller**  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: EDITING FUNCTIONS*.
MAIN/EDIT MENU: MOVE	Shortcut keys: **Session Controller**  Moves the defined track-region to another location without using the clipboard. Project audio will either **INSERT** or **OVERWRITE** at the **MOVE TO:** point. For more information refer to *OPERATIONS: EDITING: EDITING FUNCTIONS*.
MAIN/EDIT MENU: ERASE	Shortcut keys: **Session Controller**  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: EDITING FUNCTIONS*.

MAIN/EDIT MENU: LOOP	Shortcut keys: **Session Controller** L 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: EDITING FUNCTIONS*.
MAIN/EDIT MENU: SLIDE	Shortcut keys: **Session Controller** S 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: EDITING FUNCTIONS*.
MAIN/EDIT MENU: INSERT SILENCE	Shortcut keys: **Session Controller** I 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: EDITING FUNCTIONS*.
MAIN/EDIT MENU: REVERSE	Reverses the audio on the clipboard. For details see *OPERATIONS: EDITING: EDITING FUNCTIONS*.
MAIN/EDIT MENU: GAIN/FADE	Shortcut keys: **Session Controller** F Changes the gain of the current track-region. Start and End gain settings are independent so fade ins and fade outs can be made. For details refer to *OPERATIONS: EDITING: EDITING FUNCTIONS*.
MAIN/EDIT MENU: LISTEN	Shortcut keys: **Session Controller** Play Edit Select Auditions the audio on the clipboard.
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: 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	Disables unused tracks. The selections are **NONE** and **TRACK ARM**. The default is **NONE**. Mute tracks by selecting **TRACK ARM** and using the **Track Selection** keys to temporarily disable selected tracks.
MAIN/EDIT MENU: RECORD SAFE	Shortcut keys: **Session Controller** Safe 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.

PREFERENCES MENU

MAIN/PREFS MENU: DEF SMPTE FIELD	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	Controls 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	Sets the default **Session Controller** LED 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	Determines the Track Solo Mode settings. There are three different modes of operation for **TRACK SOLO**, which is a playback-monitoring feature available from the **Session Controller**. The three **TRACK SOLO MODE** settings are: **ADDITIVE** mode adds to any others currently being soloed each time a **Track Selection** 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 Selection** key. To solo more than one track while in **INTERLOCK SOLO** mode, simply press and hold the currently selected **Track Selection** key and select additional tracks to be soloed. **MOMENTARY** mode keeps track(s) in solo only as long as their corresponding **Track Selection** keys are held down.
MAIN/PREFS MENU: ZOOM SOLO AUDIO	Determines whether or not audio is soloed along 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	Selects the units used for the **SLIDE TIME** editing function.
MAIN/PREFS MENU: FFWD & REW RATE	Selects the speed of both the ⏩ **(Fast Forward)** and ⏪ **(Rewind)** 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 ⏩ **(Fast Forward)** or ⏪ **(Rewind)** 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 dialogue.
MAIN/PREFS MENU: MAX JOG RATE	Controls the jog rate. Select **PLAY** to limit the jog speed to normal play speed, or **MAXIMUM** to allow jogging at speeds up to 192 KHz.
MAIN/PREFS MENU: PEAK HOLD TIME	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	Determines how long the clip LEDs 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	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.  The default save state delay is 1 second. It is recommended to leave it on this setting.
MAIN/PREFS MENU: AUTO RECLAIM	Enables and disables the **AUTO RECLAIM** function. **AUTO RECLAIM** automatically frees up disk space when deleted audio “falls off” the **UNDO** list.  It is recommended to leave **AUTO RECLAIM ENABLED**.
MAIN/PREFS MENU: TRK ARM GROUPING	Allows all of the metering to be grouped together on the master machine when using multiple RADAR units together in Dual Wire or Quad Wire mode,.. For example, two RADARs operating at 96 kHz in Dual Wire mode 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 **Meterbridge** for Dual Wire **RADARLink** projects and 6 tracks of metering available per **Meterbridge** for Quad Wire projects. **COMPACT** refers to 48 tracks of metering available per single 48-channel **Meterbridge** for Dual Wire and Quad Wire **RADARLink** projects.

MAIN/PREFS MENU: IGNORE AES FLAGS	Allows RADAR to ignore incoming 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: MUTE I/O ON STOP	Allows audio to not be monitored (even on input-readied tracks) when the transport is stopped.
MAIN/PREFS MENU: ARROW KEY GOTO	Determines the functionality of the Home and End keys. They can be used to locate to the **MARK IN** and **MARK OUT** points respectively. This option allows them to be used to locate the previous and next points in the locate list (not including the **MARK IN** and **MARK OUT** points).
MAIN/PREFS MENU: SEAMLESS CYCLE	Allows the Loop Play mode to loop the selected audio seamlessly – without momentarily exiting play mode between loops.
MAIN/PREFS MENU: TRACK ARM RECALL	Allows RADAR to remember which tracks are armed in a given project when the project is exited, and recall to that state upon returning to that project.
MAIN/PREFS MENU: ZOOMLEVEL RECALL	Allows RADAR to remember the zoom level of a given project when the project is exited, and recall this zoom level upon returning to that project.
MAIN/PREFS MENU: ASSIGN FT-SWITCH	Assigns any of the macros (recorded using the MACRO keys on the Session Controller) to any of the footswitches. Up to three footswitches can be plugged in to the back of the **Session Controller**. Their default functions are **PLAY/STOP**, **LAST LOC**, and **PUNCH IN/OUT**.
MAIN/PREFS MENU: ASSIGN MMC LOC	Controls how RADAR will respond to locate commands received via MIDI Machine Control.
MAIN/PREFS MENU: ASYNC CUE TIME	Controls the cue time for the Asynchronous Playback feature.
MAIN/PREFS MENU: RECORD PREFS	Defines several recording options to help customize RADAR operation for specific situations.

RECORD PREFS: 1-BUTTON RECORD	Enables or disables 1-Button Record mode. With this feature disabled, hold  and then press  **(Play)** on the **Session Controller** or the **Front Panel Transport Controls** in order to begin recording. If this feature is enabled, pressing only  will start recording.
RECORD PREFS: TRACK ARM ACTION	Determines the action of the **Track Selection** keys on the **Session Controller**. These keys can engage either record **READY** or instant **RECORD** status per track during playback.
RECORD PREFS: RECORD MK IN/OUT	Enables or disables the automatic mapping of record in and out times as **MARK IN** and **MARK OUT** points.
RECORD PREFS: REC XFADE TIME	Allows the crossfade time between recorded audio regions to be set.
RECORD PREFS: 24 TRKS AT 192K	Enables the ability to record all 24 tracks at sample rates up to and including 192 KHz. Seamless punching (real-time crossfades) can be done 12 tracks at a time at 192 KHz, or on all 24 tracks at 96KHz. See *OPERATIONS: DISK MANAGEMENT: RECORD 24 TRACKS AT 192 KHZ* for more information.
RECORD PREFS: LOW DISK WARNING	Allows a low-disk space alarm to be set that will alert the user 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	Determines whether or not RADAR will operate in a **RECORD VERIFY** mode when recording to the audio disk. This data verification option will slow down functionality.
RECORD PREFS: RECORD ON CHASE	Determines whether RADAR will automatically go into record when chase is established and exit record when chase lock is lost, if Record is pressed while the chase light is blinking. When RADAR is set to **CONTINUOUS** in the **RECORD ON CHASE** setting it will go back into record whenever chase is reestablished.
RECORD PREFS: PROJECT PER TAKE	Allows subsequent takes to be recorded in new projects. When **PROJECT PER TAKE** is enabled, RADAR will automatically create a new project whenever it is punched out of record.

RECORD PREFS: RECORD RECOVERY	Enables record recovery mode for live recording. This feature is disabled by default. For more information refer to *APPLICATIONS: LIVE RECORDING: RECORD RECOVERY MODE*.
MAIN/PREFS MENU: FILE PREFS	Determines preferences for certain file related functions.
FILE PREFS: SHOW SIZE	Determines whether a **XXXMB PROCEED?** or **XXXMIN PROCEED?** dialogue will be added during the backup and export procedures.
FILE PREFS: IMPRT PROJ START	Determines the project start time setting when importing files to a new project.
FILE PREFS: EXPORT FORMAT	Sets the preference for the export file format. The choices are **WAV**, **BWAV**, and **ASK**. When **ASK** is selected as the preference the prompt will ask the user to choose a file format each time files are exported.
FILE PREFS: FILL SILENCE	Determines whether the prompt will ask to choose a fill silence option each time files are exported. During export, **FILL SILENCE** pads blank audio regions with zeros to create either one file per track or one file per region.
FILE PREFS: REFORMAT QUALITY	Sets the default quality and speed of the sample rate and bit resolution conversion for importing files, as well as exporting **STEREO CDAUDIO** files.
FILE PREFS: WRITE VERIFY	Selects between **ENABLE** and **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.

FILE PREFS: FILE NAME FORMAT	Determines file name format for BWAV files. BWAV files are created in the Audio Files sub-folder of flat backups or exports. They are named according to the **FILE NAME FORMAT** specified in the **FILE PREFS**. Two options for file name format are: **PRESET** and **CUSTOM**. If **PRESET** is selected, the following pre-defined naming conventions are available: • **TRK-NAME-STAMP** • **TRK-PROJ-STAMP** • **TRK-REGION-NAME** • **TRK-REGION-PROJ** • **PROJ-TRK-REGION** • **TRK-REGION (DOS)** If **CUSTOM** is selected, use the following menu options to create and manage custom file name templates. • **SELECT TEMPLATE** • **MAKE TEMPLATE** • **IMPORT TEMPLATE** • **EXPORT TEMPLATE** • **EDIT TEMPLATE** • **DELETE TEMPLATE**
FILE PREFS: DVD BURN MODE	Changes the burn mode of the DVD burner. If the **BUFFER UNDERRUN** error is being displayed frequently when attempting to burn a DVD-R, the mode can be changed to lower these error instances. Setting the **DVD BURN MODE** to **SAFE** will set the DVD multi-drive to use the **PROGRAMMED I/O MODE** which is more reliable for burning. After changing the setting, reboot RADAR for **SAFE** mode to take effect.
FILE PREFS: DVD BURN SPEED	Sets the speed for burning DVD-R disks. Choose speeds from **1X** through **8X**, or select **MAX** to let the DVD drive burn at its maximum possible speed. If the DVD drive or disk is not capable of burning at the speed selected, it will automatically use the closest available speed.
MAIN/PREFS MENU: PROJECT PREFS	Defines the parameters that will be used every time a new project is created.
PROJ PREFS: NEW PROJ SETTNGS	Determines the settings for new projects. **TEMPLATE** will use the settings of a selected template. **ASK** will prompt the user to choose a template each time a new project is created.
PROJECT PREFS: NEW PROJ NUMBER	Controls how new projects are to be numbered. If **FROM 1** is selected, RADAR will assign the lowest available project number whenever a new project is created. If **FROM CUR** is selected, then RADAR will use the next available number starting at the current project number.

PROJECT 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.
PROJECT PREFS: DEF BIT RES	Determines the default bit-depth or bit resolution for newly created projects.
PROJECT PREFS: DEF TC FORMAT	Determines the default TC format, SMPTE or MTC, for newly created projects.
PROJECT PREFS: DEF TC RATE	Determines the default TC rate for newly created projects. All standard SMPTE/EBU formats are supported.
PROJECT PREFS: DEF START TIME	Sets the start time that will be automatically assigned to new projects.
PROJECT PREFS: DEF UNDO LEVEL	Allows a default undo level to be set for all new projects.
PROJECT PREFS: DEF WAVE NS FLR	Sets the wave-drawing noise floor for all new projects.
MAIN/PREFS MENU: NETWORK PREFS	Defines network settings. For detailed information on networking please refer to *CONFIGURATION: NETWORKING*.
NETWORK PREFS: INTERFACE PREFS	Allows RADAR to be configured for FTP and/or file sharing.
INTERFACE PREFS: HOST NAME	Creates a network name for the RADAR.
INTERFACE PREFS: DHCP SERVER	Enables or disables **DYNAMIC HOST CONFIGURATION PROTOCOL**.
INTERFACE PREFS: LOCAL IP ADDRESS	Defines the local **IP ADDRESS** of the RADAR (if DHCP disabled).
INTERFACE PREFS: SUBNET MASK	Defines the local **SUBNET MASK** of the RADAR (if DHCP disabled).
INTERFACE PREFS: GATEWAY	Allows user to enter the **IP ADDRESS** of the router (if DHCP disabled).
INTERFACE PREFS: PRIMARY DNS	Allows user to enter the **PRIMARY DNS ADDRESS** (if DHCP disabled).

INTERFACE PREFS: SECONDARY DNS	Allows user to enter the **SECONDARY DNS ADDRESS** (if DHCP disabled).
INTERFACE PREFS: SMTP HOST	Allows user to email of debug logs via a specific Internet Service Provider, as required in some situations.
INTERFACE PREFS: FTP SERVER	Allows the internal system drive (e.g., **0:ARCHIVE**) to act as an FTP server.
INTERFACE PREFS: FTP LOGIN NAME	Creates an FTP Login Name that will be required by any FTP client software (Mac or Windows) to log on to the internal system drive (e.g., **0:ARCHIVE**) once FTP is enabled.
INTERFACE PREFS: FTP PASSWORD	Creates 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., **0:ARCHIVE**) once FTP is enabled.
NETWORK PREFS: SERVER PREFS	Allows user to input the required Server information. Before RADAR can share files via Ethernet it must be configured with information about the computer/server it will be connected to.
SERVER PREFS: NETWORK PROTOCOL	Determines the **NETWORK PROTOCOL** as either **SFTP** or **FTP**.
SERVER PREFS: SERVER IP ADDR	Allows user to enter the unique IP address of the server/computer RADAR is connecting to.
SERVER PREFS: SERVER NAME	Allows user to enter a unique name for the server/computer RADAR is connecting to.
NETWORK PREFS: EMAIL PREFS	Designates the reply information when emailing debugs directly from the RADAR.
EMAIL PREFS: COMPANY NAME	Allows user to enter the company name to be included with all emailed debug logs.
EMAIL PREFS: LOCATION	Allows user to enter the location name to be included with all emailed debug logs.
EMAIL PREFS: REPLY EMAIL	Allows user to enter the reply email to be included with all emailed debug logs.

NETWORK PREFS: NETWORK CONTROL	Allows RADAR to be controlled over Ethernet via RNC (RADAR Network Control) software. The RNC program allows control of one or more RADAR machines over the Ethernet using a standard PC computer running Windows 98, NT, 2000. XP, or Vista.
MAIN/PREFS MENU: RADARVIEW PREFS	Defines preferences for the RADARView display as it appears on the LCD Touchscreen and external video monitor.
MAIN/PREFS MENU: RADARVIEW RES	Allows selection between graphics resolutions. The default is set to **1024 X 600** high resolution, which is the native resolution of the Touchscreen.
MAIN/PREFS MENU: RADARVIEW SKIN	Allows the user to select their RADARView skin from several default skins, or create their own skin from a digital image file.
MAIN/PREFS MENU: LABEL COLOUR	Allows the user to set the colour of labels on the RADARView display.
MAIN/PREFS MENU: WAVE/BAR COLOUR	Allows the user to set the colours of the waveform bars on the RADARView display.
MAIN/PREFS MENU: SCREENSAVER	Sets the screen-saver preferences. 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.
SCREENSAVER: SAVER DELAY	Determines the screen-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.
SCREENSAVER: IMAGE EFFECTS	Enables and disables the image effects applied to the RADAR screen saver.
MAIN/PREFS MENU: NUMBER OF METERS	Allows the number of meters shown on the RADARView display to be set.
MAIN/PREFS MENU: CURSOR POSITION	Allows the user to set the position of the yellow playhead cursor on the waveform view.
MAIN/PREFS MENU: CLOCK MODE	Allows the user to switch the clock mode to **24-HR** or **12-HR** (AM/PM) or switch the clock **OFF**.

DIAGNOSTICS MENU

MAIN/DIAG MENU: CHECK DISK	Selects and checks attached hard disks. See *OPERATIONS: DISK DIAGNOSTICS: CHECK DISK* for more information.
MAIN/DIAG MENU: REPAIR DISK	Selects and repairs attached hard disks. See *OPERATIONS: DISK DIAGNOSTICS: REPAIR DISK* for more information.
MAIN/DIAG MENU: CHECK PROJECT	Selects and checks projects for errors. See *OPERATIONS: DISK DIAGNOSTICS: CHECK PROJECT* for more information.
MAIN/DIAG MENU: SET STARTUP PROJ	Allows the user to specify the project that will be loaded the next time a RADAR drive is mounted. See *OPERATIONS: PROJECT MANAGEMENT: SET STARTUP PROJECT* for more information.
MAIN/DIAG MENU: REALTIME ERRORS	Displays and clears any real time errors that are experienced by the system during playback or record. See *OPERATIONS: DISK DIAGNOSTICS: REALTIME ERRORS* for more information.
MAIN/DIAG MENU: SHOW AUDIO LEVEL	Provides an accurate digital read-out of the dBFS audio level on any selected tracks.
MAIN/DIAG MENU: PING IP ADDRESS	Provides a way to test network communication by sending small packets of data across the network.  The default IP address is the server ID address set in the **SERVER PREFS**.
MAIN/DIAG MENU: CONFIGURE DEBUG	Determines the information included in the debug log. See *OPERATIONS: DISK DIAGNOSTICS: RADAR DEBUG* for more information.
MAIN/DIAG MENU: SAVE DEBUG	Allows the user to save debugs to be forwarded to iZ Support. Select from **CURRENT LOG**, **THE LAST 5 LOGS**, **LAST 20 LOGS**, **ALL LOGS**, or **SELECT** which logs to be saved. These logs can be saved in text format or as a zip file to any disk or network drive. See *OPERATIONS: DISK DIAGNOSTICS: RADAR DEBUG* for more information.

MAIN/DIAG MENU: EMAIL DEBUG	Allows the debug log to be emailed directly to iZ Support. See *OPERATIONS: DISK DIAGNOSTICS: RADAR DEBUG* for more information.
MAIN/DIAG MENU: SCREEN CAPTURE	Allows a screen capture to be saved to the System folder on the Archive partition.
MAIN/DIAG MENU: FACTORY SETTINGS	Resets RADAR settings to the factory defaults.
MAIN/DIAG MENU: INSTALL PREV VER	Provides a list of all software versions that have been previously installed. Select **OTHER** to install an older version from a CD or through the network.

HELP MENU

MAIN/HELP MENU: RELEASE NOTES	Shortcut keys: **Session Controller** Find Help or H Launches the PDF viewer and displays the current release notes. To use the **FIND** function within the on-board manual or release notes, simply begin to type the text to search for on the **Session Controller** and the **FIND** box will automatically appear. For complete details refer to *OPERATIONS: DISPLAY: ON SCREEN HELP*.
MAIN/HELP MENU: MANUAL	Shortcut keys: **Session Controller** Find Help or H Launches the PDF viewer and displays the current manual. To use the **FIND** function within the on-board manual or release notes, simply begin to type the text to search for on the **Session Controller** and the **FIND** box will automatically appear. For complete details refer to *OPERATIONS: DISPLAY: ON SCREEN HELP*.

SHUTDOWN MENU

MAIN MENU: **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.  This function is required every time the RADAR is powered off.

RADAR PDF VIEWER

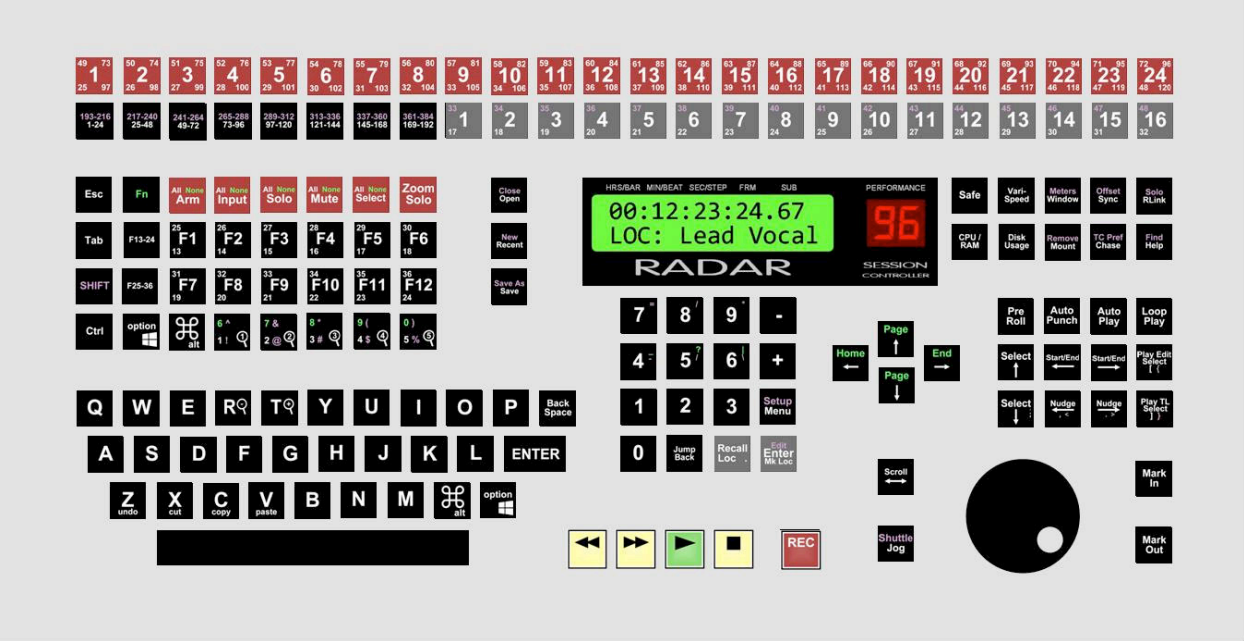
The following table shows the keystrokes for controlling and navigating the RADAR PDF viewer.

ACTION	USB KEYBOARD	SESSION CONTROLLER
Start Viewer	H	Find Help or H
Return to RADARView	TAB (to highlight iZ logo), then press SPACEBAR or mouse click iZ logo	Esc
Open Bookmarks window	ALT + B	
Change items in Bookmarks	TAB + ↑ or TAB + ↓	
Select Bookmark	ENTER	
Close Bookmarks window	ESC	
Zoom in viewer	ALT + +	
Zoom out viewer	ALT + −	
Forward 10 pages		▶▶ (Fast Forward)
Back 10 pages		◀◀ (Rewind)
Scroll page forward	↓ or SPACEBAR	Page ↓ or spacebar
Scroll page backward	↑	Page ↑
Next Page	PAGE DOWN	▶ (Play)
Previous Page	PAGE UP	■ (Stop)
Last Page		SHIFT + ▶▶ (Fast Forward)
First Page		SHIFT + ◀◀ (Rewind)
Back in page History	ALT + ←	
Forward in Page History	ALT + →	
Fit to page width	ALT + /	
Fit to page	ALT + *	

ACTION	USB KEYBOARD	SESSION CONTROLLER
Focus on Find Control	TAB or ALT + F	Qwerty Keys
Find – Search	ENTER	ENTER
Find – Search Again	ALT + F	ENTER
Focus on Goto Page Control	TAB or ALT + G	Numeric Keys
Goto Page	ENTER	ENTER
Dismiss dialogs or popup messages	ESC	Esc

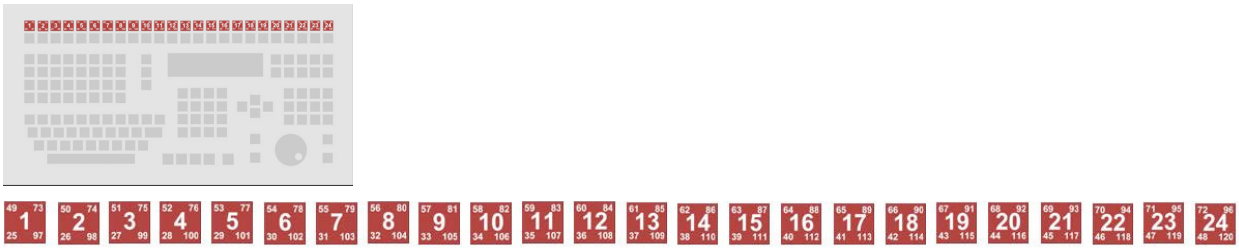
REMOTE KEYBOARD KEYS

SESSION CONTROLLER



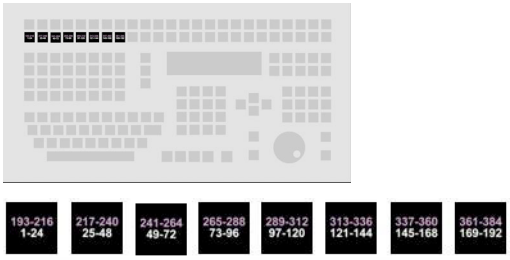
The **Session Controller** is a feature rich, professional control surface loaded with powerful features designed to help users be efficient and productive. The following section breaks the **Session Controller** keys into logical groupings and provides references to detailed information in the manual.

TRACK SELECTION KEYS



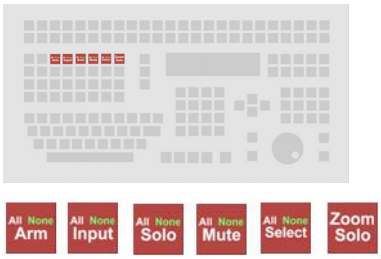
These keys perform several basic functions, depending on which **Track Select Action** key is selected. Pressing a **Track Selection** key performs an action on that track.

BANK SELECT KEYS



Use the **Bank Selection** keys with the SHIFT and **Track Selection** keys to select any of 384 tracks.

TRACK SELECT ACTION KEYS

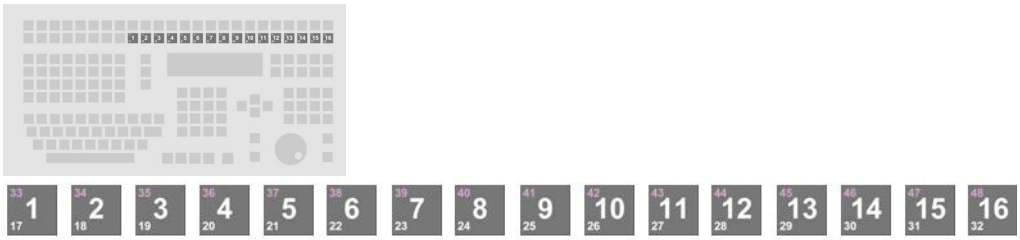


Use the **Track Select Action** keys to determine the function of the **Track Selection** keys. Use the **Track Select Action** keys in conjunction with the SHIFT key to apply the given function to all tracks. Use these keys in conjunction with the Fn key to remove the given function from all tracks. The Zoom Solo key, however, may only be used on one track at a time.

- All None Arm — Arms selected tracks for recording.
- All None Input — Sets the given tracks to Auto-Input mode when in playback. In RADAR mode, this is a global function that does not require track selection.
- All None Solo — Solos selected tracks.
- All None Mute — Selects tracks to mute.
- All None Select — Selects tracks for editing functions. Workstation mode only – Not available in RADAR mode.
- Zoom Solo — Visually solos waveforms of selected track in the display.

Refer to *OPERATIONS: RECORDING: MONITORING AND TRACK STATUS* for more information.

DIRECT LOCATE KEYS



Users can jump directly to the locate markers that have been created in a project. These 16 keys provide single-keystroke access to locates numbered 1-16, and two-keystroke access to locates numbered 17-48.

To locate to a marker numbered 1-16, simply press any of the Direct Locate 33 1 17 - 48 16 32 keys. The transport will locate to the marker numbered by the large numeral on the key.

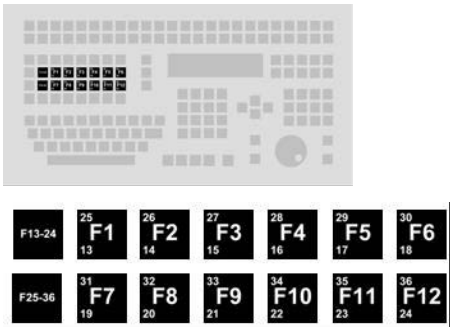
To locate to a marker numbered 17-32, double-tap any of the Direct Locate 33 1 17 - 48 16 32 keys. The transport will locate to the marker numbered by the small, white number on the bottom-left corner of the key.

To jump to a locate marker numbered 33-48, press the SHIFT key and then any of the Direct Locate 33 1 17 - 48 16 32 keys. The transport will locate to the marker numbered by the small, purple numeral on the top-left corner of the key.

Any locate marker can also be accessed with the Recall Loc . key and the numeric keypad.

Refer to *Operations: Transport Operations: Auto Locate Markers* for more information.

FUNCTION KEYS



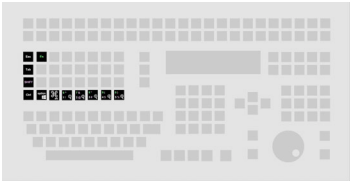
Twelve programmable function keys, along with two bank selector keys and the SHIFT key provide access to up to 60 user-programmable function keys. In RADAR mode, function keys 25 F1 13 through 32 F8 20 act as programmable macro keys.

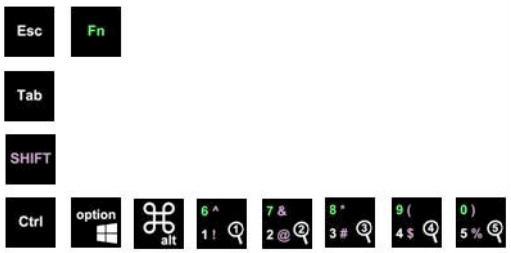
With a single key press, a macro key can recall multiple keystrokes. To store a new macro press SHIFT + 25 F1 13 – 32 F8 20. The selected Function key will begin flashing. Perform the keystrokes to record and then press the selected Function key again to store it.

Refer to *Operations: File Management: Macros* for more information.

Function keys F9 – F60 available in Workstation mode only – Not available in RADAR mode.

MODIFIER AND VIEW KEYS



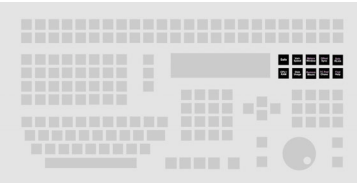


The modifier keys allow other buttons to provide multiple functions when used in conjunction with the modifier keys. They may also be used as standard Mac-layout or PC-layout modifier keys when used with RADAR running in Workstation mode.

- **Esc** Performs the Escape key function of a standard computer keyboard. Exits RADAR dialogue.
- **Tab** Performs the Tab key function of a standard computer keyboard. Workstation mode only – Not available in RADAR mode.
- **SHIFT** Performs the Shift key function of a standard computer keyboard. Used to access secondary functions of Session Controller keys. Please note that most keys that can be used with the SHIFT key for a secondary function have the secondary function written on the key in purple text.
- **Ctrl** Performs the Tab key function of a standard computer keyboard. Workstation mode only – Not available in RADAR mode.
- **option** Performs the Option key function of a Mac keyboard, and the Windows key function of a PC keyboard. Workstation mode only – Not available in RADAR mode.
- **alt** Performs the Command key function of a Mac keyboard, and the Alt key function of a PC keyboard. Workstation mode only – Not available in RADAR mode.
- **Fn** Acts as an additional modifier key, or for entering characters in text fields. For example Fn + 5 enters a question mark.
- Switches between user-set zoom levels. Used in conjunction with the SHIFT key for up to ten levels of zoom. Used in conjunction with SHIFT and Fn for character entry when in a text entry dialogue. Zoom levels Workstation mode only – Not available in RADAR mode.

Please note: The R and T keys of the QWERTY keyboard also act as Zoom Out and Zoom In keys in RADAR.

SYSTEM MANAGEMENT KEYS



These keys provide quick access to system information, and allow the user to manage system settings.

Safe Enters safe mode. No recording can take place while **Safe** is engaged. Pres **Safe** while recording enables record lock. Pressing **(Stop)** or **(Play)** disable record lock. No other key press can disable recording once record loc mode has been engaged.

Vari-Speed Enables vari-speed mode. This is a dual press activation/deactivation key. Th 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-SP** To change the speed while the function is engaged, press the **Vari-Speed** key onc display the speed dialogue, change the value and hit the **Esc** key to return t transport mode. This setting may be changed while in **PLAY** mode. For furthe information please refer to *OPERATIONS: VARI-SPEED*.

Meters Window Switches between DAW windows. Pressing **SHIFT**+**Meters Window** **(METERS)** switches between mono-meters and stereo-meters mode. Stereo-meters mode is usec expand the meters view on a Meterbridge by allocating two meters for each channel. A mono channel will only use the first meter, however a stereo chan will use both meters of the two-meter pair. Workstation mode only – Not avail in RADAR mode.

Offset Sync The **Offset Sync** shortcut key allows for quick selection of an external digital sync s for digital I/O formats. The shifted **Offset Sync** **(OFFSET)** allows for a SMPTE time t entered to create an offset with other LTC synchronized devices. For details r to *CONFIGURATION: DIGITAL I/O* and *CONFIGURATION: TIMECODE*.

Solo RLink Enters ***MAIN MENU / SYNC MENU / RADARLINK / RADARLINK SOLO***.

CPU / RAM Displays RADAR's current CPU and RAM usage in bar graph and percentage

In the event that either CPU or RAM usage exceeds 90%, the L display of the Session Controller will display the CPU or RAM percentage in red. Press the **CPU / RAM** button to view both CPU and RAM usage.

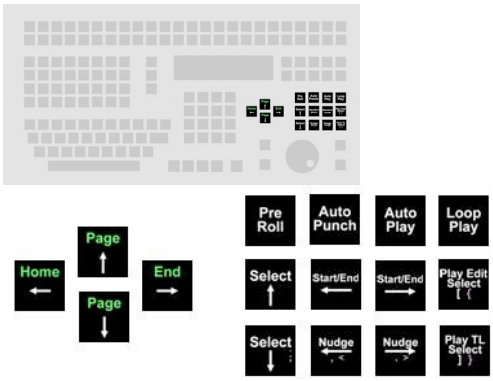
Disk Usage — Displays RADAR's current disk space usage.

Remove Mount — Enters ***MAIN MENU /DISK MENU /*** **MOUNT/UNMOUNT** dialogue.

TC Pref Chase — Enters RADAR system into **CHASE** mode using the parameters set in the ***MAI MENU / SYNC MENU /*** **TC SETTINGS** menu. The shifted function TC Pref Chase **(T PREF)** acts as a direct access shortcut to these settings. For further informati please consult *CONFIGURATION: TIMECODE*.

Find Help — Enters ***MAIN MENU /*** **HELP** menu item.

PLAY FUNCTION AND SELECTION KEYS



These keys provide access to timeline navigation, play and record, and selection functions.

Page — Acts as the up-arrow key, and doubles as the Page Up key when used with the Fn key. Page Up key Workstation mode only – Not available in RADAR mode.

Page — Acts as the down-arrow key, and doubles as the Page Down key when used with the Fn key. Also auditions audio located between Mark In and Mark Out points. Page Down key Workstation mode only – Not available in RADAR mode.

Home — Acts as the left-arrow key, and doubles as the Home key when used with the Fn key. Also locates playhead to Mark In point. Home key Workstation mode only – Not available in RADAR mode.

End — Acts as the right-arrow key, and doubles as the End key when used with the Fn key. Also locates playhead to Mark Out point. End key Workstation mode only – Not available in RADAR mode.

Pre Roll — Activates and deactivates the **PRE-ROLL** function. For detailed information please refer to *OPERATIONS: TRANSPORT OPERATIONS: PRE-ROLL*

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.

Auto Play — Initiates playback automatically once the specified timeline location has been cued when used in conjunction with any **RECALL LOCATE** functions.

Loop Play — Initiates a playback cycle using the **MARK IN** and **MARK OUT** points as a reference. Playback looping will continue until the Loop Play key or any transport key is pressed again.

Select ↑ — Moves selection focus upwards. Workstation mode only – Not available in RADAR mode.

Select ↓ — Moves selection focus downwards. Workstation mode only – Not available in RADAR mode.

Start/End ← — Moves playhead to the previous region start or end on the timeline.

Start/End → — Moves playhead to the next region start or end on the timeline.

Nudge ← , < — Nudges playhead or selection by a pre-determined value to the left on the timeline.

Nudge → . > — Nudges playhead or selection by a pre-determined value to the right on the timeline.

Play Edit Select [{ — Plays edit selection, and then stops. In RADAR mode, auditions audio on clipboard.

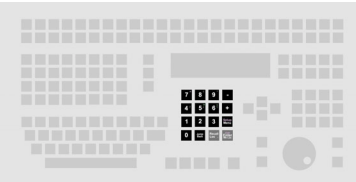
Play TL Select] } — Plays timeline selection, and then stops. In RADAR mode, auditions audio located between Mark In and Mark Out points.

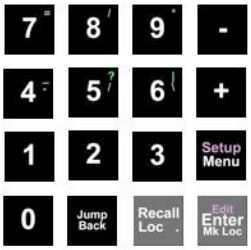
The Page ↑, Page ↓, Home ←, and End → arrow keys are multi-function keys that have many uses depending on the current context.

Uses include:

- Menu and dialogue navigation (all arrow keys).
- Value increment and decrement (Page ↑ and Page ↓ keys).
- Sub-frame positional nudge in Jog mode (Home ← and End → keys).
- Locate to **MARK IN** and **MARK OUT** in transport mode (Home ← and End → keys).
- Audition current **MARK IN** - **MARK OUT** region (Page ↓ key).
- Display remaining recording time (Page ↑ and Page ↓ keys simultaneously).

NUMERIC KEYPAD





Allows user to enter times and other values into RADAR and navigate RADAR menu structure and timeline. The plus and minus are multi-function keys, used for different purposes in different situations.

0 - 9 Enters values in dialogues and allows user to locate to a given point on the timeline. Pressing any number key 0-9 while not in a menu opens the Enter Time dialogue. To locate to a point on the timeline, enter a timeline value into the appearing dialogue and press the **ENTER** key.

- + Allows user to increment/decrement values, add/subtract, indicate positive or negative values, and enter/exit folders.

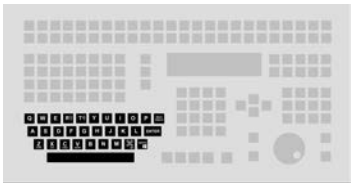
Jump Back Jumps the playhead back on the timeline by a user-defined amount of time. If in Play mode, RADAR will continue playing. If in Stop mode, RADAR will jump back on the timeline remain stopped. This feature can be very useful in playback scenarios where RADAR remains in Play mode but the user wishes to hear a section of audio repeatedly, review an edit, or step backwards in the timeline to an arbitrary point not defined by a locate marker.

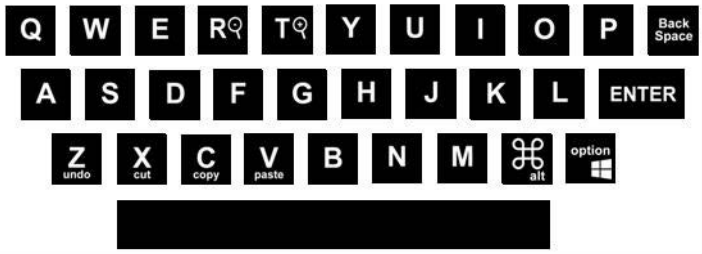
Recall Loc . Use this key in conjunction with the numeric keys, **Mark In** / **Mark Out** keys and **Edit Enter Mk Loc** to recall locate points.

Edit Enter Mk Loc Use **Edit Enter Mk Loc** in conjunction with functions, menus, and dialogs to accept selections and values. When not in a dialogue menu, this key acts as the Mark Locate button, which creates a locate marker on the timeline according to the playhead location. When used with the **SHIFT** key, **Edit Enter Mk Loc** opens the Edit Locate dialogue.

Setup Menu Steps in and out of the RADAR main menu system.

QWERTY KEYBOARD





These keys are used to enter names and other information into RADAR. They are also used as shortcuts in both transport and menu mode.

A - Z undo — Enters text in menu dialogues and cycles through menu selections. Some of these keys also have special shortcut functions.

Back Space — Erases entered text in menu dialogues.

ENTER — Confirms selections and enters menus. When not in a dialogue menu, locates the playhead to Locate 0, which is the project start time.

option — Performs the Option key function of a Mac keyboard, and the Windows key function of a PC keyboard. Workstation mode only – Not available in RADAR mode.

alt — Performs the Command key function of a Mac keyboard, and the Alt key function of a PC keyboard. Workstation mode only – Not available in RADAR mode.

spacebar — Acts as a spacebar when entering values or information in menu dialogues. When browsing volumes, spacebar will show the space remaining on the volume.

QWERTY KEYBOARD SHORTCUTS

E = **ERASE**

R = **HORIZONTAL ZOOM OUT**

T = **HORIZONTAL ZOOM IN**

SHIFT + R = **VERTICAL ZOOM OUT**

SHIFT + T = **VERTICAL ZOOM IN**

Fn + T = **TRIGGER ASYNCHRONOUS TRACK PLAYBACK**

I = **INSERT SILENCE**

S = **SLIDE**

Fn + S = **SCREEN SAVER LOCK** (RADAR will immediately go into screen saver mode and stay there until Fn key and S are pressed again.)

F = **GAIN/FADE**

H = Launch **HELP**

L = **LOOP**

Fn + L = **LOCK TOUCHSCREEN**

Z undo = **UNDO**

SHIFT + Z undo = **REDO**

X cut = **CUT**

C copy = **COPY**

V paste = **PASTE**

SHIFT + B = **FILE MANAGEMENT BROWSE**

N = Display the **NAME TRACK** dialogue

M = **MOVE**

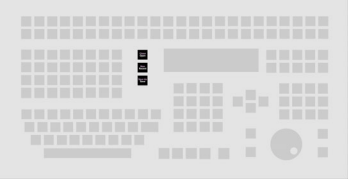
Fn + Back Space = Toggles between debug log and waveform display

Use the QWERTY keyboard to cycle through menu selections starting with that letter when in Menu mode.

Example: While in the **MAIN MENU**, repeatedly pressing S cycles through the **SYSTEM MENU**, **SYNC MENU**, and **SHUTDOWN RADAR** selections.

Refer to *OPERATIONS: QWERTY KEYBOARD* for more information.

PROJECT MANAGEMENT KEYS



Allows user to manage projects.

Close Open RADAR mode: Opens the **RESTORE FROM:** dialogue. Used with Fn to open the **IMPORT FROM:** dialogue.

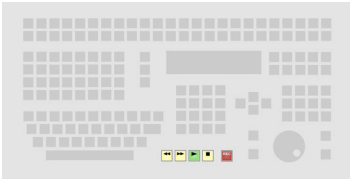
Workstation mode: Allows user to select project to open. Used with the SHIFT key to close the current project.

New Recent Allows user to select a recent project to open. Used with the SHIFT key to create a new project.

Save As Save RADAR mode: Opens the **BACKUP TO:** dialogue. Used with Fn to open the **EXPORT TO:** dialogue. Used with the SHIFT key to copy current project.

Workstation mode: Allows user to save current project. Used with the SHIFT key to save the current project under a new file name.

TRANSPORT KEYS



Simulates the transport rewind and fast-forward functions of a tape machine. Double keying the ◀◀ or ▶▶ key enters a rewind or fast-forward mode that is by 3 times the current rewind or fast-forward speed. The default speed for rewind and fast-forward is 8 times normal playback speed.

Begins audio playback from current location. Pressing ▶ while the transport is in record mode exits record mode without stopping playback. Pressing ▶ and ◀◀ together enters reverse play mode.

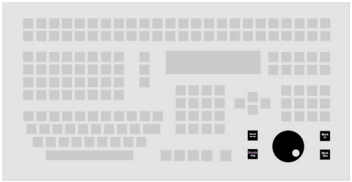
Cancels all transport operations including record and puts RADAR into ready mode.

REC Drops all record enabled tracks into record mode. The default mode requires both the ▶ 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.

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.

JOG, SHUTTLE, SCROLL, MARK IN/OUT KEYS



Scroll Allows the Jog/Shuttle wheel to be used as a left/right scroller. This is helpful when navigating a timeline window, or when scrolling through and entering text.

Shuttle Jog Engages the **JOG** function and the ability to scrub to an edit point using the **Jog/Shuttle Wheel**. When used with the **SHIFT** key, this function initiates playback with variable speed in either forward or reverse.

Mark In Defines the Mark In point used for edit selection, file management, and Auto-Punch functions. See *OPERATIONS: EDITING: MARKING A TIME REGION* for details.

Mark Out Defines the Mark Out point used for edit selection, file management, and Auto-Punch functions. See *OPERATIONS: EDITING: MARKING A TIME REGION* for details.

Jog/Shuttle Wheel Dynamically controls playback speed and direction when **Jog/Shuttle** is engaged. Also helpful when navigating a timeline window, or when scrolling through and entering text. Timeline window scrolling Workstation mode only – Not available in RADAR mode.

STANDARD KEYBOARD CONVERSION TABLE

The following table indicates the standard keyboard function and the equivalent **RADAR** function:

Keyboard Layout	RADAR Function
ESC	Cancel
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	Safe Clear
SCROLL LOCK	Track Solo
PAUSE BREAK	Auto Input

Keyboard Layout	RADAR Function
–	Vari-Speed
=	Sync
\	Chase
BACKSPACE	Back Space
TAB	Tab
Q	Q
W	W
E	E / Erase
R	R / ⊖
T	T / ⊕
Y	Y
U	U
I	I
O	O
P	P
[	Backup
]	Go To Project

Keyboard Layout	RADAR Function
NOTE: LOS = Left of Spacebar	
ROS = Right of Spacebar	
NK = Numeric Keypad	
~	Menu Prev
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
Z	Z / Undo
X	X / Cut
C	C / Copy
V	V / Paste
B	B
N	N / Name Track
M	M / Move
, *(Comma)*	,
. *(Period)*	.
/	/
LOS SHIFT	Shift
LOS CTRL	◀◀ *(Rewind)*
LOS ⊞	▶▶ *(Fast Forward)*
LOS ALT	LOS Alt
CAPS LOCK	Fn
SPACEBAR	PLAY ▶

Keyboard Layout	RADAR Function
A	A
S	S / Slide
D	D
F	F / Gain / Fade
G	G
H	H
J	J
K	K
L	L / Loop
; *(Semicolon)*	;
" *(Apostrophe)*	‘
ENTER	Enter
END	Play Edit Select
PAGE DOWN	Play TL Select
NUM LOCK	Jog / Shuttle
NK /	Mark In
NK *	Mark Out
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 0	NK 0
NK .	Recall Locate

Keyboard Layout	RADAR Function
ROS ALT	Tk Arm 13-24
ROS ⊞	STOP
ROS CTRL	REC
ROS SHIFT	ROS Shift
INSERT	Pre Roll
HOME	Auto Punch
PAGE UP	Auto Play
DELETE	Cycle

Keyboard Layout	RADAR Function
NK ENTER	NK Enter
↑	▲
↓	▼
←	◀
→	▶

Workstation Mode

As RADAR is a fully integrated device, it may be run in two modes – **RADAR Mode**, or **Workstation Mode**. Workstation mode allows users to install and run their choice of third-party software applications and plug-ins.

iZ Technology cannot offer Technical Support on third-party software or plug-ins, or on the general computing environment of Workstation mode.

Workstation Mode Screens

There are several different screens that the user should become acquainted with.

RADAR Dashboard

The RADAR Dashboard is the first screen seen after bootup. From here users may open their DAW or other software, access files, or boot into RADAR mode. The Dashboard also contains a power button, and the Menu tool.

Power Button

The power button is located on the bottom-left corner of the screen. It has a glowing ring and resembles RADAR studio's physical front panel power button. Clicking on this power button will prompt the user if they wish to turn the machine **OFF**. The user can then proceed to power off RADAR or cancel the power off by clicking on the dashboard away from the power switch.

MENU TOOL

Menu is the round button with three horizontal lines on the lower right corner of the display. Clicking on Menu once opens it. Clicking and holding Menu for a short time period unlocks its position, indicated by the colour purple, allowing the user to drag it to their desired location on the display. To reset Menu to its default location, right click it.

Menu can be used to access the main Dashboard, open a file browser, open a web browser, add applications to the Dashboard, or open the system control panel.

RADAR STUDIO CONTROL PANEL

When DAW software is run in **Workstation Mode**, the **RADAR studio Control Panel** is launched. This is an application which allows the user to control the settings of the RADAR hardware, route I/O, view system information and meters, and access the RADAR manual.

There are several different screens within the **RADAR studio Control Panel**. To access these screens, press the corresponding button on the top-row of buttons.

IZ SCREEN

The iZ Screen provides information about iZ Technology, such as a brief company description, mission statement, and contact information.

SETUP SCREEN

The Setup Screen allows access to RADAR hardware setup options. These options include Digital Input Format, Analogue Levels, Clock Source, and Meters Settings.

To switch between Digital Input Formats:

1. Use a mouse or the **LCD Touchscreen** to click on the Digital Input Format of choice. The selected format will be highlighted in purple.

To set the Analogue Input and Output Level:

1. Use a mouse or the **LCD Touchscreen** to select the reference level. Levels may be set in reference to the analogue level of +4 dBu, or the digital level of 0 dBfs.
2. Click on the Analogue Input and Output levels of choice to set.

For more information on the Reference Level, refer to *CONFIGURATION: OPERATING LEVEL*.

To select Clock Source:

1. Use a mouse or the **LCD Touchscreen** to click on the Clock Source of choice. The selected format will be highlighted in purple. If incoming clock source is invalid, the selected format button will flash. Solid purple indicates a valid clock source.

To select Meters Setting:

1. Use a mouse or the **LCD Touchscreen** to click on the Peak Hold or Clip Hold button. Each button cycles through 4 options – 0 sec, 1 sec, 5 sec, Infinite. If set to Infinite, the Peak or Clip will be held until the clips are cleared.

To select Sync Out/Through:

1. Use a mouse or the **LCD Touchscreen** to select Wordclock Out or Wordclock Through. This setting determines whether the output of RADAR's **WORDCLOCK/VIDEO OUT/THRU** connector outputs the incoming Wordclock signal, or the Wordclock signal generated by RADAR.

DIGITAL I/O SETTINGS SCREEN

The I/O Settings Screen allows access to RADAR's Digital I/O settings. Settings for each Digital I/O type can be accessed from this screen.

To set the Digital I/O Settings:

1. Use a mouse or the **LCD Touchscreen** to select the Digital I/O Type you wish to change the Digital Format Settings for. This button does not change the active Digital I/O type – it simply allows you to select which I/O type you would like to change the settings for.
2. Make the desired setting change by clicking on the corresponding button.

Each Digital I/O type has different settings which may need to be changed. For more information including specific settings for each I/O type, refer to *REFERENCE: MENU ITEM QUICK REFERENCE: I/O MENU*.

I/O ROUTING SCREEN

The I/O Routing Screen allows the physical inputs and outputs of RADAR to be routed within the RADAR system. Both Digital and Analogue inputs and outputs may be routed from this screen. Inputs and outputs may be routed independently. Each physical input may be routed to an ASIO Channel, which corresponds to the input channel of DAW software. Each physical Output may be routed from an ASIO Channel. The Input Routing side of the I/O Routing page works in reference to ASIO channels 1-24, which remains constant as inputs selected. The Output Routing side of the I/O Routing page works in reference to the physical output, which remains constant as ASIO channels are changed.

To route an input to an ASIO Channel:

1. Use a mouse or the **LCD Touchscreen** to select Analogue or Digital input for a given channel. The button will toggle between displaying an A and displaying a D, representing Analogue and Digital input respectively. Each input may only be set to Analogue or Digital, but not both.
2. Click on the ASIO Channel button for the channel you wish to route the input to. Multiple ASIO channels may be selected, as a given input may be routed to multiple ASIO channels. The selected ASIO Channel buttons will turn purple when selected.
3. A window will appear, prompting the user to ‘Assign an input to the selected ASIO Channel(s)’. Select the input number you wish to route to the selected ASIO channel or channels. The window will disappear.

Any ASIO Channel that is not set to the default 1:1 setting will remain highlighted in purple, until the routing for the individual track is set back to its default, or the Reset 1:1 button is pressed.

To reset the Input Routing:

1. Use a mouse or the **LCD Touchscreen** to click on the Reset 1:1 button under Input Routing. All input routing will be set to the default setting of 1:1.

Please note that the Reset 1:1 button does not affect the Analogue or Digital selection of any input.

To route an ASIO Channel to an output:

1. Use a mouse or the **LCD Touchscreen** to select an output number.
2. A window will appear, prompting the user to 'Assign an ASIO channel to the selected output(s)'. Select the ASIO Channel number you wish to route to the selected output. The window will disappear. A given ASIO Channel may be routed to multiple outputs.

Any output that is not set to the default 1:1 setting will remain highlighted in purple, until the routing for the individual track is set back to its default, or the Reset 1:1 button is pressed.

To reset the Output Routing:

1. Use a mouse or the **LCD Touchscreen** to click on the Reset 1:1 button under Output Routing. All output routing will be set to the default setting of 1:1.

Please note that each output number outputs Analogue and Digital signals simultaneously.

STATUS SCREEN

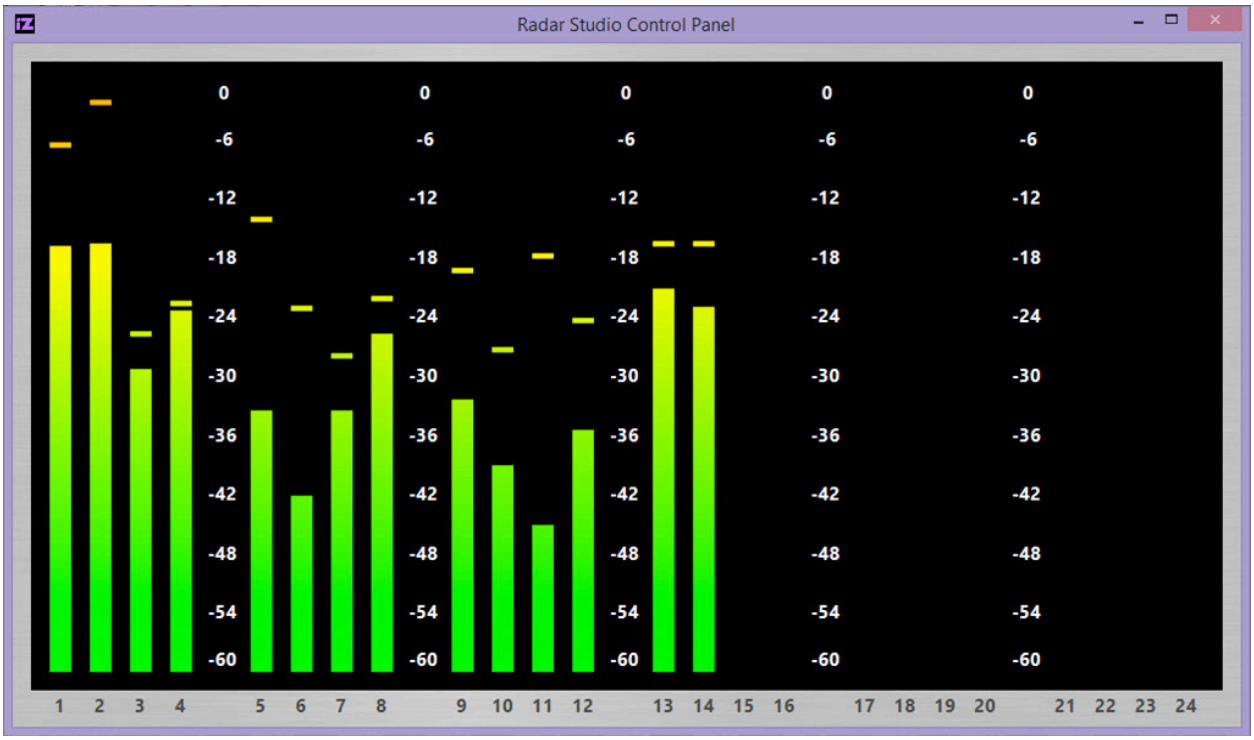
The Status Screen displays current system information. The user may view their current system and RADAR configurations and see real-time statistics on system performance such as operating temperature, CPU and RAM usage, and disk space.

MANUAL SCREEN

The Manual Screen provides instant access to RADAR's manual in PDF form.

METERS SCREEN

The Meters Screen displays real-time level meters of audio passing through RADAR's hardware. To exit the Meters screen, simply click anywhere on the meters display. The last selected control panel page will then be displayed.



APPENDIX A

INDEX

S

T

U

V

W