

ERXI / ERXITCD User's Manual



ERXI

Encrypted Wireless IFB Confidence Monitor Receiver

Updated: 2010-02-23 - 03:02



230 West Parkway, Unit 9, Pompton Plains, NJ 07444 USA
Tel: 973-835-5000 Fax: 973-835-6633
Email: info@zaxcom.com Website: www.zaxcom.com

Maintained by: Ray M. Owen, Production Sound Mixer

Table of Contents

CHAPTER 1 – INTRODUCTION	4
What's included with the ERXI / ERXITCD:.....	4
User Manual Conventions	4
System Features.....	4
Product Support.....	4
Menu System	4
Battery Installation.....	5
Operating Frequencies	5
CHAPTER 2 – GETTING TO KNOW YOUR RECEIVER.....	6
What's the difference between the two versions:	7
ERXI	7
ERXITCD	7
Device Interface	7
Headphone Jack.....	7
For Audio Output (both models).....	7
For Timecode Output (ERXITCD only).....	7
IFB Antenna.....	8
ERXI Menus.....	8
Standard Menu.....	9
Startup Sequence.....	9
Main Display page.....	9
Extended Menu	10
Extended Startup Sequence.....	10
Entering the Extended Menu.....	10
Exiting the Extended Menu.....	10
Maximum Audio Volume page.....	10
Timecode Frame-rate page.....	10
IFB Frequency page.....	11
Audio Delay page	11
Software Update page.....	11
Remote Control Group ID page.....	11
IFB Voting Enable page.....	11
Timecode Output Enable page	12
Backlight Timer page	12
LED Brightness page.....	12
ZaxNet Output Enable page	12
Encryption Code page	12
CHAPTER 3 – FIRMWARE INFORMATION	14
Firmware.....	14
Advantages to Upgrading the Firmware.....	14
Upgrading the firmware in each unit.....	14
CHAPTER 4 – EQUIPMENT SPECIFICATIONS	16
ERXI Specifications.....	16
CHAPTER 5 – WIRING DIAGRAMS	17
ERXITCD Output TC Cable.....	17
CHAPTER 6 ZAXCOM WARRANTY POLICY AND LIMITATIONS	18
Table of Figures	
Figure 1-1 ERXI Keys.....	4
Figure 2-1 ERXI Front, Back and Top Views	6

Figure 2-2 Location of IFB Antennas..... 8
Figure 5-1 1/8" Male to LEMO-5M Timecode Output Cable..... 17

Table of Tables

Table 2-1 ERX1 Standard & Extended Menus 8
Table 3-1 ERX1 Firmware load Process 15

Chapter 1 – Introduction

What's included with the ERXI / ERXITCD:

- User manual on CD-ROM

User Manual Conventions

Throughout this manual, the following conventions are used:

- {p.##} – refers to the page number where the referenced item is located.

System Features

- Digital modulation wireless transmission
- Backlit graphic liquid crystal display
- Lightweight rugged design
- Integrated TC reader/generator
- Efficient keypad for one-handed operation
- Integrated timecode reception
- Transmission delay: 10 ms
- Battery runtime:
 - Alkaline – up to fourteen hours
 - NiMH – up to sixteen hours
 - Lithium – up to twenty hours
- Size (looking at the screen): 2.375”W x 4.563”H x 0.625”D (60.3mm x 115.9mm x 15.9mm)
- Weight: 2.3 oz (65.2 g)
- Operating frequency range (Worldwide): 2.403 to 2.475 GHz

Product Support

Download the latest **Firmware** from: http://www.zaxcom.com/support_software_updates.htm.

Download the latest **User Manual** from: http://www.zaxcom.com/support_instructional_manuals.htm.

Register your new Zaxcom Product at: http://www.zaxcom.com/support_product_registration.htm.

Submit Technical Questions at: http://www.zaxcom.com/support_submit_tech_questions.htm.

Request an **RMA #** at: http://www.zaxcom.com/support_repair_services.htm

Menu System

The user interface for each unit consists of a Liquid Crystal Display with 4 keys, as follows:

- **MENU** Key – Menu page/function select: press once to move to the next menu page.
- **INC** Key (up arrow) – Increment the current parameter selected by the **MENU** key.
- **DEC** Key (down arrow) – Decrement the current parameter selected by the **MENU** key.

Each menu has several pages allowing you to change configuration settings. All of these settings are stored in Flash ROM immediately after making the change.



Figure 1-1 ERXI Keys

Battery Installation

Each unit requires two AA batteries.

CAUTION: Always observe the correct battery polarity. The negative contact on the battery is always connected to the spring contact.

Never use any battery that is missing insulation on its body. If you do, it can cause a short circuit in the battery compartment, causing damage to the unit.

Operating Frequencies

Current model for use Worldwide: 2.403 to 2.475 GHz

Chapter 2 – Getting to Know Your Receiver

This chapter is intended to quickly familiarize you with the functions of your ERXI receiver/TC sync box. This section was written based on firmware version 0.17.



- | | |
|------------------------|-------------------------------|
| 1. Graphic LCD Screen | 7. Battery Compartment |
| 2. DEC Key | 8. Battery Door |
| 3. INC Key | 9. 1/8" Stereo Headphone Jack |
| 4. Serial # Sticker | 10. Unit Power Switch |
| 5. MENU Key | 11. LED Indicator |
| 6. TIMECODE Key | 12. Volume Control |

Figure 2-1 ERXI Front, Back and Top Views

What's the difference between the two versions:

The ERXI is a monitor receiver with timecode capability. The unit comes in two versions: ERXI and ERXITCD.

NOTE: How do you tell them apart?:

- 1) Look at the serial number sticker on the back of the unit. If it has **TCD** in the serial number, it is an ERXITCD.
- 2) Look at the screen. If, during the boot process, **ERX-TCD** appears in the lower left corner, it is an ERXITCD.

ERXI

The ERXI has the ability to receive IFB audio and display timecode, Scene ID, Take # and user-bits on its screen. A timecode hold function is included to aid script supervisors in recording timecode based events.

ERXITCD

The ERXITCD has the added capability to output timecode from its onboard SMPTE timecode reader/generator. The TC can be output on the left, right or both headphone outputs. It can also receive IFB audio from the ZaxNet transmitter at the same time it is generating timecode. When the unit is powered-up, it will lock onto the ZaxNet signal and begin generating timecode from the received signal. If the signal is intermittent, it provides a continuous stream of timecode without any discontinuity.

It can be used to replace other timecode boxes. If timecode alone is used to synchronize an on-set device or camera, it is a cost effective and accurate solution for the synchronization of audio and video/film on set. Its timecode is always sub-frame accurate, will never drift relative to the IFB100 or the master timecode device that is feeding the IFB100, and never need to be manually jammed.

It has the ability to delay the received audio signal by up to 300 ms. This delay is used to provide a personal audio delay to match the viewing of the scene on different monitors or cameras that can have different video delays due to video signal processing.

Device Interface**Headphone Jack****For Audio Output (both models)**

Plug in a stereo capable headphone. It is designed to operate with headphones that have 32 to 200 ohms of impedance. Adjust the [Maximum Audio Volume page {p.10}](#) to compensate for your choice of headphones. This will limit the maximum allowed output level. Adjust the volume knob for a comfortable monitor level

NOTE: Do not use a mono headphone like a Comtek headset. This will cut the maximum headphone volume in half and drain the ERXI battery at a faster rate.

CAUTION: If the ERXITCD is being used to monitor the audio, be sure to turn **OFF** the [Timecode Output Enable page {p.12}](#), otherwise the TC will also be output, at a hazardous level.

The received audio is high quality. Because it is transmitted digitally, it does not suffer from the variation in quality and susceptibility to noise that analog IFB systems do. The system has no compandor, so the audio quality is comparable to that at the ZaxNet transmitter. The frequency response of the IFB audio is 60 -12,000 Hz. This is sufficient to reproduce all dialog and most musical performances for critical listening applications. The latency of the audio from the transmitter to the receiver is 10 ms. This is equivalent to 10 physical feet of distance. The delay is a benefit to almost all productions as the monitoring of audio from an actor is always greater than a distance of 10 feet on average. This brings the lipsync closer to the picture by 10 ms.

For Timecode Output (ERXITCD only)

Timecode is output at 1V P-P. The headphone volume control does **NOT** adjust the timecode audio level.

The TC output will only reflect the ZaxNet TC rate if it is within RF range of the transmitter. This is typically 500 feet without obstructions. It only needs to receive the TC signal for less than 1 second to synchronize with the ZaxNet TC.

If connected to a camera for timecode and scratch track output, use a suitable cable connected to the camera timecode input and the camera audio input.

IFB Antenna

IMPORTANT: The antennas are located behind the white faceplate sticker and along both sides as indicated below. If placed in a pocket, it should be facing out. Don't place anything in front of these areas that could block reception.



Figure 2-2 Location of IFB Antennas

ERXI Menus

There are one **Standard** and twelve **Extended** menu pages, as follows:

Standard Menu	Extended Menu
Main Display page {p.9}	Maximum Audio Volume page {p.10}
	Timecode Frame-rate page {p.10}
	IFB Frequency page {p.11}
	Audio Delay page {p.11}
	Software Update page {p.11}
	Remote Control Group ID page {p.11}
	IFB Voting Enable page {p.11}
	Timecode Output Enable page {p.12}
	Backlight Timer page {p.12}
	LED Brightness page {p.12}
	ZaxNet Output Enable page {p.12}
	Encryption Code page {p.12}

Table 2-1 ERXI Standard & Extended Menus

Each time the **MENU** key is pressed, the menu advances to the next page, in sequence.

Standard Menu

Startup Sequence

PCB REVB 0000
VER A-AAA (00)

(**A-AAA** – indicates the currently installed firmware version.)

ENCRYPTION IS ON

(**OPTIONAL PAGE:** This statement indicates that an encryption code has been entered. Verify the code is correct if unsure.)

AUDIO

ZAXCOM VA-AAA
WWWWWWW SN=ZZZZZ

(**WWWWWWW** – indicates what hardware is being initialized.)

(**ZZZZZ** – indicates the unit's serial number.)

00:00:00:00
■ ■ ■ ■ ■ ■ ■ ■ ■ ■

NOTE: If you press the **DEC** key during bootup, the screen will scroll slower than normal so you can read everything.

Main Display page

00:00:00:00
■ ■ ■ ■ ■ ■ ■ ■ ■ ■

S: (scene info)

T: (take info)

^{UB}00:00:00:00

Page purpose: This is the default page at startup and displays the following information:

- Running/Frozen timecode
- Scene ID
- Take #
- User-bits
- Battery state of charge
- Sound level before the volume control

Parameters: N/A

Pressing the **TIMECODE** key alternately freezes/unfreezes the timecode.

NOTE: The internal TC generator will continue to run unimpeded while the TC display is frozen.

Pressing the **INC** or **DEC** key cycles the display through: User-bits, Scene ID and Take #.

NOTE: ZaxNet (managed by Deva/Fusion) is required for Scene ID and Take # to be displayed.

CAUTION: If the ERXITCD is to be used to monitor the audio, be sure to turn **OFF** the **Timecode Output Enable page** {p.12}, otherwise the TC signal will also be output, at a hazardous level.

Extended Menu

These menu pages contain parameters that are infrequently changed.

Extended Startup Sequence

```
PCB REVB  0000
VER A-AAA (00)
```

```
ENCRYPTION IS ON
```

(OPTIONAL PAGE: This statement indicates that an encryption code has been entered. Verify the code is correct if unsure.)

```
EXT MENU  FEB  9
A-AAA 17:37:24
```

```
EXT MENU  FEB  9
AUDIO 17:37:24
```

```
ZAXCOM  VA-AAA
WWWWWWW SN=ZZZZZ
```

```
EXTENDED MENU
PRESS UP TO EXIT
```

Entering the Extended Menu

1. Power down the receiver.
2. Press and hold the **MENU** key while powering up the unit.
3. Once the red LED turns OFF, release the key.

Exiting the Extended Menu

- Cycle the power.
- **OR**
- Return to the top of this menu and press the **INC** key.

NOTE: All changes are saved to Flash ROM as soon as they are committed.

Maximum Audio Volume page

```
MAX
VOLUME :
00dB
```

Page purpose: This page determines the maximum gain the volume control can achieve.

Parameters: (Valid range: 00 to 23dB, Value step: 1)

Timecode Frame-rate page

```
TC FRAME RATE :
23.98
```

Page purpose: This page sets the frame-rate used by the TC Reader/Generator.

Parameters: [23.98] / [24] / [25] / [29.97NDF] / [29.97DF] / [30NDF] / [30DF]

NOTE: 1) If the unit is already outputting timecode, the frame-rate will change to the selected rate.
2) The local frame-rate can be different from the frame-rate set via ZaxNet. The 24, 25 and 30 FPS rates are interchangeable as a group. The 23.98 and 29.97 FPS rates are also interchangeable but are not compatible with the 24, 25 and 30 FPS group. This is due to the .1% speed difference in the actual timecode rate.

IFB Frequency page

```
FREQ: 2.403 RX
SIGNAL: A01 B01 ..
```

Page purpose: This page maintains the IFB transmitter's center frequency and displays the signal strength for the antennas in a numerical and graphical format.

Parameters: (Valid range: 2.403 to 2.475 GHz, Value step: 0.001)

Pressing the **TIME CODE** key while in this page changes **FREQ** to **FRONT** to **SIDE** and back to **FRONT** again.

- **FREQ** – all antennas are displayed.
- **FRONT** – only the front antennas are displayed.
- **SIDE** – only the side antennas are displayed.

While a valid signal is received, the **RX** flag is displayed on the right side of the top line.

Audio Delay page

```
DELAY :
OFF
```

Page purpose: (Requires **ERXITCD**) This page maintains the duration the audio will be delayed in milliseconds.

Parameters:

- (Valid range: 5 to 300 **MS**, Value step: 5)
- **OFF**

Software Update page

```
PRESS UP 5X TO
UPDATE SOFTWARE
```

Page purpose: This page sets up this receiver to have its program updated by over-the-air transmission from a ZaxNet transmitter.

Parameters: N/A

See [Upgrading the firmware in each unit {p.14}](#) for more information.

Remote Control Group ID page

```
REMOTE CONTROL
GROUP ID=1
```

Page purpose: This page identifies which ZaxNet transmitter is allowed to remotely control this transmitter.

Parameters: (Valid range: 0 to 99, Value step: 1)

It is highly desirable to have all wireless kits and recorders in a given group assigned to the same ZaxNet transmitter.

IFB Voting Enable page

```
IFB VOTING :
NORMAL (OFF)
```

Page purpose: This page enables/disables the IFB Voting function.

Parameters: [NORMAL (OFF)] / [2 TXERS (ON)]

To use this function, you will need a second IFB100 that is also connected by audio cable to your cart and placed some distance away in the direction you expect to travel. Set the frequency of this second IFB to 2 MHz (+ 0.002 GHz) above the first unit. Also be sure to set the [IFB Frequency page {p.11}](#) on the ERX1s to the lowest frequency assigned to the two IFB100s.

In operation, the first IFB100 will be closer to (or on) your cart and the second IFB100 will be some distance away to cover the area you anticipate using. While the ERX1 is within range of the first IFB100, it will be receiving IFB

audio on that lower IFB frequency. Once it has gone out-of-range of the first IFB and gone into-range of the second IFB, it will switch to receiving on the frequency assigned to the second IFB. If over time, the unit moves out-of-range of the second IFB and back into-range of the first IFB, it will once again start receiving on the first IFB's assigned frequency.

Timecode Output Enable page

TIMECODE OUTPUT :
OFF

Page purpose: (Requires **ERXITCD**) This page enables/disables timecode output and specifies the output location.

Parameters:

- **ON: OUT BOTH** – Sends timecode to both sides of the headphone output.
- **ON: OUT RIGHT** – Sends timecode to the right side of the headphone output.
- **ON: OUT LEFT** – Sends timecode to the left side of the headphone output.
- **OFF** – Timecode output is disabled.

Backlight Timer page

BACKLIGHT TIMER :
10 SECONDS

Page purpose: This page determines how long the LCD backlight will remain ON after a key press.

Parameters:

- **ALWAYS ON**
- (Valid range: **0** to **29 SECONDS**, Value step: **1**)

LED Brightness page

LED BRIGHTNESS :
BRIGHT

Page purpose: This page determines how bright the LED indicator will be.

Parameters: **[BRIGHT]** / **[DIM]**

ZaxNet Output Enable page

ZAXNET OUTPUT :
OFF

Page purpose: (Requires **ERXITCD**) This page enables/disables passing ZaxNet commands with the timecode output.

Parameters: **[OFF]** / **[ON]**

Encryption Code page

ID1:000 ID0:000
↑

Page purpose: This page maintains the code used to decrypt the signal at the receiver.

Parameters: (Valid range: **000** to **FFF**, Value step: **1**)

To move to the next character, momentarily press the **MENU** key. To change the designated character position, press the **INC** or **DEC** key. To exit this page, press the **MENU** key for 1 second.

NOTE: Both of these codes should always be set to **000** for normal un-coded operation.

Encryption Code Part 1 (ID1) and Encryption Code Part 0 (ID0)

On this page, 2 three-digit numbers are entered. These two numbers are formed into a single six-digit encryption code. This code is your encryption key for the ZaxNet transmitter. An identical code must be entered into each ERXI in order for the audio to be properly decoded and understood.

Enabling this function is useful when sensitive information must not be made public. Standard FM wireless transmitters can be picked up using scanners and other electronic devices. Unless an ERXI receiver is used, even an uncoded transmitter signal cannot be picked up using a scanner.

The six-digit encryption code provides a total of 16,777,216 possible choices.

Unlike the audio sent from a wireless bodypack to its associated receiver, an ERXI will only receive and decode an audio signal with a matching encryption code. When it receives an audio signal and the ERX's code does not match the code on the ZaxNet transmitter, all that will be heard is white-noise that is somewhat modulated by the input audio. To avoid this, it is necessary that both transmitter and receiver codes are set to 000:000 (uncoded) when high security communication is not required.

Chapter 3 – Firmware Information

Firmware

Each unit is shipped with the latest firmware version installed. For the ERX1, as newer firmware becomes available, it can be downloaded from the Zaxcom website (http://zaxcom.com/software_up_dates.htm).

Each time a unit is powered up, the firmware version number is displayed briefly on the LCD screen. Pressing the **DEC** key during the boot up will slow down the screen to allow easier viewing of the information.

Advantages to Upgrading the Firmware

By upgrading the software, the range and feature set have and will continue to dramatically increase over time. Zaxcom has a reputation for constantly adding additional features and user suggestions during the product's lifetime. This ensures that your wireless system will perform better and better, the longer you own it.

Upgrading the firmware in each unit

NOTE: Version TRX-6.26A or greater is required in the IFB100 to perform this process.

Perform the following:

- 1) Format a MiniSD card in an IFB100.
- 2) Delete the "DELETE.ME" file on the card.
- 3) Download the ERX software and load it into a MiniSD card's root folder.
- 4) Insert the card into an IFB100.
- 5) Insert a fresh set of batteries into the ERX1s.
- 6) Turn ON the IFB100 and all ERX1s.
- 7) At each ERX1:
 - a. Set the [IFB Frequency page](#) {p.11} to the same frequency as the IFB100.
 - b. Set the [Remote Control Group ID page](#) {p.11} to the same number as the IFB100.
 - c. Go to the [Software Update page](#) {p.11} and press the **INC** key 5 times.
 - d. The screen will display **Waiting for Program**. This indicates the receiver is ready to download the new version. Be sure to do this to all of your units, so they will be updated at the same time.
 - e. Place the ERX1 within 10' and line-of-sight of the IFB100 (it should also remain TOTALLY motionless). This is to insure they will receive a strong and undisturbed signal, and minimize the possibility of something going awry.
- 8) At the IFB100:
 - a. With the unit turned OFF, press and hold the **MENU** key while starting it.
 - b. The unit will go to the **Extended Menu**.
 - c. Set the **IFB FORMAT page** to **LOW Q** and cycle the power while holding the **MENU** key.

NOTE: If you use **LOW Q**, a download cycle will take less than 4 minutes. If you leave it at **HIGH Q**, it will take more than 25 minutes.
 - d. Go to the **Transmit ERX Program page**.
 - e. Press the **INC** key 5 times.
 - f. The unit will indicate that it found the program on the card and is sending it.

NOTE: This process will continue until manually stopped.

- 9) Look at each ERX1's screen. It should indicate that it is receiving the program.
- 10) After 1 or 2 cycles, all of the receivers should be re-programmed. (If there is a reception error, the receiver automatically waits for the next download cycle.)
- 11) For those units that have been reprogrammed, the screen will display **SUCCESS**.
- 12) On the IFB100, press the **MENU** key to stop the download process.
- 13) Cycle the power on all of the receivers and verify the new firmware version number is displayed.

CAUTION: After each ERX1 has received its entire program, it will erase and burn its firmware to the ROM (see the Yellow screens on the next page). During this process, which only takes a few seconds, you **MUST NOT** turn Off the unit. If the program is never fully received, it is safe to cycle the power. In this case, turn Off the IFB100 before power cycling the ERX.

UFBI00 side of process	Comments about IFBI00 side
PRESS UP 5X TO TRANSMIT PROGRAM	Once started, everything that follows happens automatically.
NO TRX OR ERX FILE ON SD CARD	This only appears if there is no MiniSD card installed or no ERX file on it.
FOUND ERX-014.BIN	Identifies what version is about to be transmitted.
SENDING ERASE ROM COMMAND	This is the start of the loop. Once the last item on this side is done, it returns here.
ERX-014.BIN SECTOR XXX OF YYY	Displayed while sending the program. XXX = current sector, YYY = total #.
SENDING BURN ROM COMMAND	Tells ERXIs to replace the old version with the new version.

ERXI side of process	Comments about ERXI side
PRESS UP 5X TO UPDATE SOFTWARE	Be sure to start this side first. The update process will be completed faster.
WAITING FOR PROGRAM	
FOUND ERX-014.BIN	Identifies what version is about to be installed.
FOUND GOOD SECTOR XXX YYY	This is displayed while receiving program. XXX = current sector, YYY = total valid
BAD SECTOR CHKSUM ZZZ	This is displayed if a sector is received incorrectly.
MISSING SECTORS XXX YYY	Displayed if 1 or more sectors was bad. XXX = # received, YYY= # good
ERASING00 ERASING01	To get here it has to be a good download. Clear out the old stored firmware version.
BURNING ROM NNNNN BYTES	Copy the received firmware into the permanent store.
SUCCESS REBOOT NOW	Process completed successfully. Next time you start up, your're on the new version.

Table 3-1 ERXI Firmware load Process

NOTE: If you receive the two errors (ERXI side, in red), it is **NOT** necessary to power cycle the unit. The unit will automatically restart the download process during the next programming cycle. Once the program has been successfully received, the screens highlighted in Yellow can't be interrupted.

Chapter 4 – Equipment Specifications

NOTE: All specifications in this chapter are subject to change without notice.

ERXI Specifications

IFB Receiver

RF Frequency Range	2.403 to 2.475 GHz
RF Modulation	Digital Spread Spectrum
RF Frequency Step	0.001 GHz (1 MHz)
RF Bandwidth	1 MHz
Channel Separation	2 MHz
Sensitivity	-96 dBm
DAC Bit-depth	24 bit
DAC Rate	48 kHz

Receiver Audio

System Group Delay	10 ms
Dynamic range	96 dB
Distortion	0.01%
Frequency Response	60 Hz to 12 kHz
Output Connector	1/8" Stereo (3.5 mm)
Compatible HP Impedance	32 to 200 ohms

Timecode Reader/Generator

Clock Accuracy	1.54 PPM (1 frame out in 6 hours)
Timecode Type	SMPTE
Timecode Frame-rates	23.98, 24, 25, 29.97NDF, 29.97DF, 30NDF, 30DF

Timecode Output

Connector	1/8" Stereo (3.5 mm)
Level Range	1 V P-P
Impedance	32 ohms

Physical

Weight	2.3 oz (65.2 grams) w/o battery
Dimensions (H x W x D)	4.563" x 2.375" x 0.625" (115.9 mm x 60.3 mm x 15.9 mm)
External Power	N/A
Internal Power	up to 20 hours (2 AA Lithium batteries)
Display	Graphic LCD panel

Chapter 5 – Wiring Diagrams

NOTE: All of the diagrams in this chapter show the solder side of each connector.

ERXITCD Output TC Cable

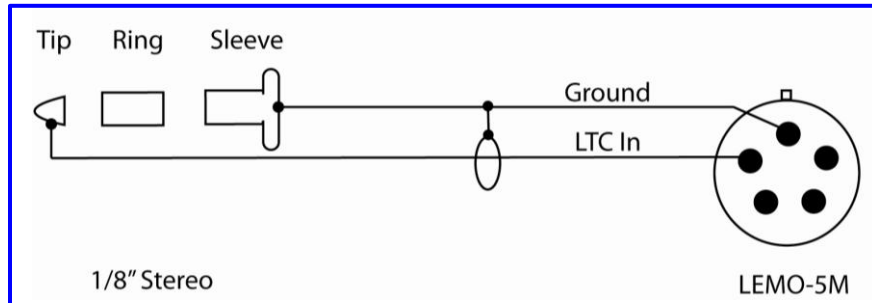


Figure 5-1 1/8" Male to LEMO-5M Timecode Output Cable

Chapter 6 Zaxcom Warranty Policy and Limitations

Zaxcom Inc. values your business and always attempts to provide you with the very best service.

No limited warranty is provided by Zaxcom unless your Zaxcom ERXI / ERXITCD ("Product") was purchased from an authorized distributor or authorized reseller. Distributors may sell Product to resellers who then sell Product to end users. Please see below for warranty information or obtaining service. No warranty service is provided unless the Product is returned to Zaxcom Inc. or a Zaxcom dealer in the region where the Product was first shipped by Zaxcom.

Warranty Policy

Zaxcom Product carries a Standard Warranty Period of one (1) year.

NOTE: The warranty period commences from the date of delivery from the Zaxcom dealer or reseller to the end user.

There are no warranties which extend beyond the face of the Zaxcom limited warranty. Zaxcom disclaims all other warranties, express or implied, regarding the Product, including any implied warranties of merchantability, fitness for a particular purpose or non-infringement. In the United States, some laws do not allow the exclusion of the implied warranties.

Return Material Authorization (RMA)

No Product may be returned directly to Zaxcom without first contacting Zaxcom for a Return Material Authorization ("RMA") number. If it is determined that the Product may be defective, you will be given an RMA number and instructions for Product return. An unauthorized return, i.e. one for which an RMA number has not been issued, will be returned to you at your expense. Authorized returns are to be shipped prepaid and insured to the address on the RMA in an approved shipping container. Your original box and packaging materials should be kept for storing or shipping your Product. To request an RMA, please visit the Zaxcom Repair Services page (www.zaxcom.com/support_repair_services.htm) and complete the form. You will receive an email or telephone call with the RMA #. Please write the RMA # on the front of the package. If you don't have internet access, you may request an RMA # by telephone. Zaxcom will return the warranty repair via 2nd day UPS or FedEx at their discretion. If overnight service is required, a FedEx or UPS account number must be provided to Zaxcom to cover shipping expenses.

Warranty Limitations

Zaxcom's limited warranty provides that, subject to the following limitations, each Product will be free from defects in material and workmanship and will conform to Zaxcom's specification for the particular Product.

Limitation of Remedies

Your exclusive remedy for any defective Product is limited to the repair or replacement of the defective Product.

Zaxcom may elect which remedy or combination of remedies to provide in its sole discretion. Zaxcom shall have a reasonable time after determining that a defective Product exists to repair or replace a defective Product. Zaxcom's replacement Product under its limited warranty will be manufactured from new and serviceable used parts. Zaxcom's warranty applies to repaired or replaced Product for the balance of the applicable period of the original warranty or thirty days from the date of shipment of a repaired or replaced Product, whichever is longer.

Limitation of Damages

Zaxcom's entire liability for any defective Product shall, in no event, exceed the purchase price for the defective Product. This limitation applies even if Zaxcom cannot or does not repair or replace any defective Product and your exclusive remedy fails of its essential purpose.

No Consequential or Other Damages

Zaxcom has no liability for general, consequential, incidental or special damages. These include loss of recorded data, the cost of recovery of lost data, lost profits and the cost of the installation or removal of any Product, the installation of replacement Product, and any inspection, testing or redesign caused by any defect or by the repair or replacement of Product arising from a defect in any Product.

In the United States, some states do not allow exclusion or limitation of incidental or consequential damages, so the limitations above may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Your Use of the Product

Zaxcom will have no liability for any Product returned if Zaxcom determines that:

- The Product was stolen.
- The asserted defect:
 1. Is not present,
 2. Cannot reasonably be fixed because of damage occurring when the Product is in the possession of someone other than Zaxcom, or
 3. Is attributable to misuse, improper installation, alteration, including removing or obliterating labels and opening or removing external covers (unless authorized to do so by Zaxcom or an authorized Service Center), accident or mishandling while in the possession of someone other than Zaxcom.
- The Product was not sold to you as new.

Additional Limitations on Warranty

Zaxcom's warranty does not cover Product, which has been received improperly packaged, altered or physically abused.