

User's Manual

TRX900LA & TRX900LAS



Digital Recording Transmitter

Firmware v8.19
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Zaxcom Digital Wireless is protected under patent #'s: 7,711,443 & 7,929,902

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



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Knowing your TRX-900LA/LAS

The **TRX900LAS** is a stereo version of the TRX900LA transmitter. The LAS stereo transmitter can take two lavalier microphones via the single 3-pin LEMO connector and transmit both sources over one frequency. The LAS stereo transmitter can also be set to operate in mono mode- while the LA transmitter cannot.



1. SSMA Antenna Connector

2. LCD Display

3. Card Key

4. Media Slot

5. Microphone/ Input Connector

6. INC / Record Key

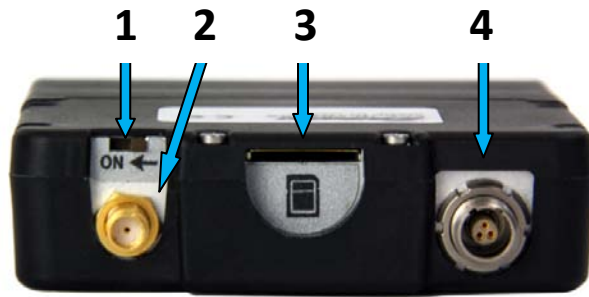
- Increases the parameters of a menu item.
- When in the Home Screen pressing **INC** with the **CARD** key will put the TRX into record.
- When in the Transport Control Screen while not recording will cause the TRX to play back.
- Press it while playing back to fast forward.
- Press and hold while in the Transport Control Screen to advance to the next segment.
- Press it in the Home Screen to display the current segment number.

7. DEC / Stop Key

- Decreases the parameters of the menu items.
- When in the Home Screen pressing **DEC** with the **CARD** key will stop the recording.
- When playing back from the Transport Control Screen will cause the TRX to stop.
- Press and hold while in the Transport Control Screen will jump back to the previous segment.
- Holding it while playing back will take you to the start of that segment.
- Pressing it in the Home Screen will display the battery voltage.

8. Menu / Play Key

- Press it to access the next menu.
- Pressing it while powering up will take you into the **Extended Menu**.
- Press it with the Card Key to Playback a segment.



1. Power Switch

2. SSMA Antenna Connection

3. Media Slot Media Slot

To insert a micro SD card, with the screen facing you, turn the card so the finger contacts are facing you and down toward the slot. Insert it into the slot and press it down until you hear a slight click. To remove it, press the card in until you hear the same click again.

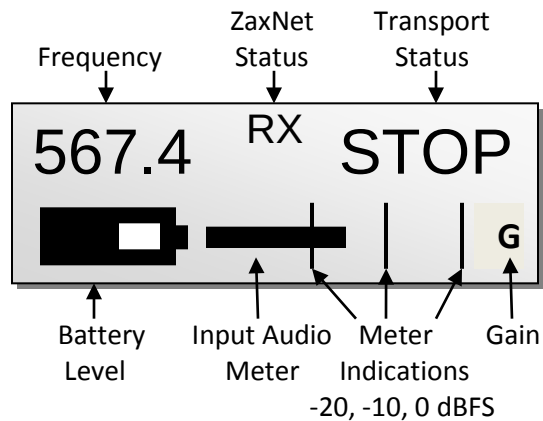
4. Microphone / Input connector.



5. Battery Compartment

The TRX-900LA/LAS will use 2 AA batteries. You can use alkaline, Lithium or NiMH batteries

Main Menu



Frequency – This is the transmit frequency of the TRX-900LA/LAS.

If the transmitter is being used in **RECORD ONLY** mode “**NOTX**” will be displayed.

ZaxNet Status

- **RX** – The transmitter is set to receive ZaxNet timecode and commands.
- **TX** – The transmitter is sending ZaxNet timecode and audio.

Transport Status - Displays the current mode of the recording feature.

- **STOP** – Recording / Playback is stopped
- **LREC** – TRX is recording and LOOP RECORD mode is enabled
- **REC** – TRX is recording and NON-LOOP RECORD mode is enabled
- **WAIT** – May appear just before going into record, or if the card is ejected while recording.

Input Audio Meter- Displays the modulation of the inputted audio signal.

In the case of a TRX-900LAS - if the transmitter is set to stereo mode you would see both the left and right audio levels.

Gain - “**G**” Appears when the transmitter is receiving change of gain commands via ZaxNet.

When in the home screen:

- Press and hold the **INC** key to display the number of record segments are on the card. Note that regardless of the size of the card it is limited to 256 segments.
- Press and hold the **DEC** key to display the current battery voltage

Main Menu

Navigating the Main Menu

- Press the MENU Button to enter the menu.
- To advance to the next menu press the MENU Button again.

Exiting the Main Menu

- To exit the menu at any time press and hold the MENU button for 1.5 seconds

Audio Gain



This menu sets the gain of the incoming audio. The meter indicates the audio signal displayed horizontally from left to right. The TRX-900LAS set to stereo mode will display two meters - one for each channel. The gain in stereo mode is applied to both sources.

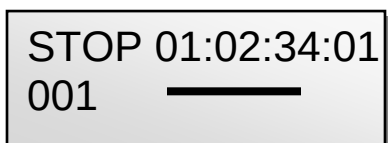
UHF Transmit Frequency



This menu sets the UHF transmit frequency of the transmitter.

- Short presses of the **INC** or **DEC** key causes the value to change by 0.1 MHz.
- Holding the **INC** or **DEC** key causes the value to change by 0.5 MHz.

Transport Control



This page displays the transport status of the transmitter.

The top line displays the current mode: **REC**, **PLAY** or **STOP** followed by the timecode. The bottom line contains the segment number and the audio level.

Playing back from the transport screen

- Pressing the **INC** key while stopped will play the segment that is displayed.
- Pressing the **INC** key while in play mode will fast forward.
- Pressing the **DEC** key while playing back will stop the playback.
- Holding the **DEC** key while playing back will take you to the start of that segment.
- Pressing the **DEC** key while stopped will rewind.

Timecode Frame Rate

TIMECODE	23.98
GEN	01:02:34:01

This menu sets the timecode frame-rate that will be recorded.

The TRX-900 will lock to and record all standard timecode frame rates.

- **23.98, 24, 25, 29.97DF, 29.97DF, 30 DF, 30 NDF**

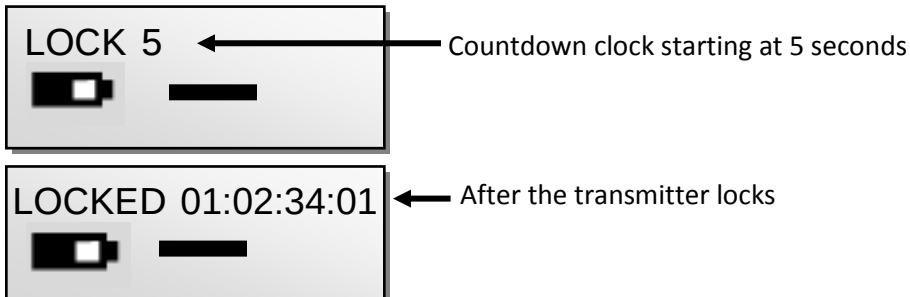
Time Left

TIME LEFT	20H
TIME USED	4H

This page displays the remaining time left on the card and the time already recorded on the card.

This page will not be displayed if no card is present.

Lock Page



This page enables a lock function to prevent any accidental changes.

When you land on this page the countdown clock will begin. After 5 seconds the transmitter will lock and the display will indicated **LOCKED**.

If you exit this screen before the 5 seconds is up the transmitter will not lock.

Even though the key's will be locked you can press the **INC** or **DEC** key to temporarily display the current battery voltage in place of the battery icon.

To Unlock

- Simultaneously press the **MENU** and **INC** keys.
Or
- Powering down the unit will clear the lock.

Extended Menu

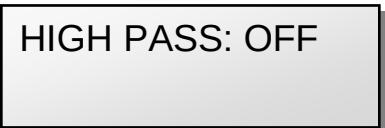
Navigating the Extended Menu

- Press and hold the **MENU** key while powering up the unit.
- Pressing the **MENU** key will advance you to the next menu item.

Exiting the Extended Menu

- Cycle the power
Or
- Hold down the **MENU** key to get back to the EXTENDED MENU home page then press the **INC** key.

High Pass Filter Adjust



HIGH PASS: OFF

This menu turns on and adjusts the frequency of the high pass filter.

- The high pass filter range is **30Hz** to **220Hz** in **10Hz** increments.

Limiter



LIMITER: OFF



LIMITER: -10dB
FROM FULL SCALE

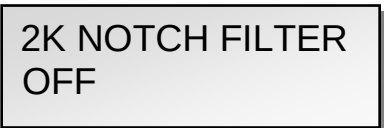
← Level when the limiter will act.

This menu enables/disables and adjusts the limiter. The limiter is pre analog to digital converter.

- Range: **-2dB** to **-30dB** in **1dB** increments.

When the input signal is too high the audio can clip and results in distortion and popping. The limiter can be used to prevent clipping.

2K Notch Filter



2K NOTCH FILTER
OFF

This menu enables/disables the 2K notch filter.

The 2K notch filter is useful in removing digital RF interference that can be introduced into the microphone.

UHF Signal Format

TX FORMAT:
US MONO

This menu adjusts the transmission format

- **US MONO** - This format is used for mono transmission. It is used by customers in the US and other countries where a 200 kHz channel is legal.
*This setting will be used with **0=US** on the Zaxcom ENG receiver or **NORMAL** on the QRX*
- **STEREO** - This format is used for stereo transmission of a TRX900LAS. It is used by customers in the US and other countries where a 200kHz channel is legal
*This setting will be used with **2=ST** on the Zaxcom ENG receiver or **NORMAL** on the QRX*
- **EUROPEAN** - This format is used for European customers and other countries where a normal width channel is NOT legal.
*This setting will be used with **1=EU** on the ENG Zaxcom receiver or **NARROW** on the QRX*
- **US MONO-R** - Similar to **US MONO**. This can be used to force mono audio to the right channel.
*This setting will be used with **0=US** on the Zaxcom receiver*

IMPORTANT: Any change to this page **REQUIRES** a reboot before the new setting takes effect.

IMPORTANT: If the Transmission Format set here and the Reception Format on the associated receiver do not match, the receiver will be unable to correctly decode the audio from this transmitter.

UHF Transmitter Power Level

TX POWER: 125 MW

This menu adjusts the UHF transmit power of the transmitter.

- The TRX-900LA/LAS can be set at 25, 50 or 125mW

Power Roll

POWER ROLL:
OFF

This menu adjusts the Power Roll setting of the TRX-900LA/LAS.

Power Roll will allow the transmitter to stay in a lower transmit power setting to conserve battery power, then when you begin to record the transmitter will increase the transmit power.

- **OFF** – Power roll is disabled
- **DIVA TRIGGER** – A command from a Zaxcom recorder will set the transmitter to full power.
- **RECORD TRIGGER** – When the transmitter goes into record either manually or from an **AUTO-LOAD** trigger the TRX-900LA/LAS will go to full power.

IFB Receive Mode

RXMODE=RX

This menu will allow the TRX to receive ZaxNet commands.

- **OFF** – The transmitter will not receive any ZaxNet commands
*If this is set to **OFF** the next 5 ZaxNet menu items will not appear.*
- **RX**– The transmitter will receive ZaxNet commands

NOTE: If the **IFB RX to TX** setting is set anything other than **Normal** you will not be allowed to set this setting to OFF.

IFB Voting Enable – *this menu will not appear if the IFB settings allow the TRX to go into transmit mode.*

IFB VOTING
NORMAL (OFF)

This menu allows you to enable / disable the IFB Voting function.

The purpose of voting is to allow the TRX-900LA/LAS to choose and switch to the stronger signal from two different ZaxNet transmitters. One purpose of this is if you are on a large set you can place a second IFB transmitter at a different location and the TRX will choose the stronger signal. Just set the second IFB transmitting frequency to exactly 2MHz higher than the first unit.

NOTE: This Page only will appear if you have the **IFB RX TO TX** mode set to **NORMAL RX** and **RX MODE** is not set to **OFF**. Meaning that if the TRX-900LA/LAS IFB will ever be in a transmit mode IFB voting no longer applies and will not be available.

IFB Receive to Transmit time

IFB RX TO TX:
NORMAL RX

← The TRX will receive ZaxNet only and **NOT** transmit ZaxNet TC and audio.

IFB RX TO TX:
0 SECS: TX ONLY

← The TRX will transmit ZaxNet TC and audio only and will **NOT** receive wireless TC.

IFB RX TO TX:
20 SECS

← Adjustable from 1 up to 20 Seconds. After boot up the TRX will search for a ZaxNet signal for XX seconds before it begins to transmit ZaxNet TC and Audio

This menu sets how long after power up that the TRX-900LA will search for ZaxNet timecode before it begins transmitting IFB audio for monitoring purposes.

IMPORTANT: After changing this setting a re-boot is required

ZaxNet IFB Receive Frequency

RXFREQ: 2.403

RXFREQ: 2.403 RX
SIGNAL: 28

When the TRX is receiving a ZaxNet signal you will also see:

← ZaxNet signal frequency and **RX** shows that it is being received

← Signal strength meter

This is where you set the ZaxNet receive frequency.

- This frequency is the frequency that the transmitter will receive wireless ZaxNet TC and commands as long as this frequency matches the frequency of the corresponding ZaxNet transmitter - which can be a Nomad or IFB100/200.
- This frequency is the frequency that the transmitter will receive TC from another TRX transmitter or a ZFR recorder as long as this frequency matches the frequency of the corresponding transmitter.

ZaxNet IFB Transmit Frequency

IFB TX FREQ:
2.420

This is where you set the ZaxNet transmit frequency. This is the frequency that the transmitter will broadcast timecode and ZaxNet audio on for the purpose of confidence audio monitoring via an ERX receiver or Nomad. Note - the expected range will be less than 30 feet.

IFB Receive Pulse – *this menu will only appear if IFB is set to go into transmit mode.*

IFB RX PULSE:
NEVER

IFB RX PULSE:
600 SECS

Note: You would need to use this setting if you are monitoring audio via an ERX receiver and you still want the transmitter to update TC

This is where you set how often the transmitter will search for Timecode while operating. When enabled this tells the TRX-900LA/LAS to leave ZaxNet transmit mode once every XX seconds to go into receive mode so it can re-jam its timecode wirelessly via ZaxNet. This has no affect on the UHF audio transmission.

- The settings are **NEVER** or any interval between **10** and **999** seconds.

NOTE: When the TRX-900 searches for TC it will temporally go out of transmit mode for approximately 1 second as it receives a TC signal.

Power-Up Mode

POWER UP MODE:
LOCKED

This menu determines if the keys will lock after power-up.

- **LOCKED** – After power-up has completed, the transmitter will automatically go into **Lock Mode** to prevent accidental changes to the settings.
- **UNLOCKED** – The keys are unlocked upon power-up. You can always lock the keys by going in to the **Lock Screen** in the Main Menu.

Unlocking the TRX-900L/LAS

Simultaneously press the **MENU** and **INC** keys.

Format Recording Card

PRESS UP KEY 5X
TO ERASE CARD

This menu will allow you to erase and format the micro SD card.

IMPORTANT: Even though many cards are sold preformatted, you must format the card in the transmitter prior to recording. Only cards formatted in the unit will work properly.

NOTE: This menu will only appear if a card was inserted prior to booting up. Also if the micro SD card is removed this page will not appear.

To Format a Card:

1. Before formatting the card, you may want to name the transmitter. Naming the card makes it easier to differentiate files from different recorders - for example you can name the card with the talents name. The name menu is located at the end of the Extended Menu (page 19 of this manual).
2. With the power 'OFF', insert the memory card into the media slot with the label to the back of the unit. Press it all the way in till it "clicks".
3. Power up the transmitter while holding the **Menu** Key to enter the Extended Menu.
4. Advance to this menu.
5. Press the **INC** key 5 times.
6. You will see **"FORMATTING FAT 32"**
7. The TRX will displays **"SUCCESS"** or **"FORMAT FAILED ERROR"**
8. If **"SUCCESS"** appears power cycle the TRX and make sure that the unit will record.

NOTE: If you see a **"FORMAT FAILED ERROR"** try to re-format the card and if it fails again **DO NOT** use that card in the transmitter.

Time Code Jam Mode

TC JAM MODE:
AUTO-JAM NORMAL

If you are using record run timecode this menu controls weather the TRX900-LA/LAS will go into record when it receives running timecode.

- **AUTO-JAM NORMAL**– The TRX will continuously jam timecode via ZaxNet.
 - **AUTO-LOAD REC RUN** – The TRX will continuously jam timecode via ZaxNet and will start and stop the recording if the unit is receiving record run timecode.
- In this mode the transmitter will go into record mode when it detects rolling timecode. And the will stop when the timecode stops. If timecode is lost because the IFB signal is too weak the unit will not stop but will continue in whatever state it was in until the timecode signal is restored.

Time Code Source

TC SOURCE:
IFB (RF)

This menu selects how the TRX-900LA/LAS will receive its timecode.

- **IFB (RF)** – The transmitter will receive timecode via ZaxNet being broadcast from Nomad, an IFB100/200, another TRX transmitter or a ZFR recorder.
- **AUDIO INPUT**– The transmitter, with a proper cable, will receive timecode via the microphone input.

When timecode is connected, it takes the transmitter approximately three seconds to recognize the TC. The screen displays **TIME CODE** followed by **JAM** when it is recognized. When the word **JAM** disappears, the timecode input source can be disconnected and normal operation can be resumed.

NOTE: When using the mic input connector, the audio level of the timecode signal needs to be between -30 and -10 dBFS on the unit's meter. Any level above -10 may cause clipping, which will prevent proper reading of timecode.

Group ID

REMOTE CONTROL
GROUP ID = 1

This allows you to set your TRX-900LA/LAS to a "**GROUP**" to be controlled via ZaxNet.

So for example a transmitter set to Group 1 will control all Group 1 receivers and a Group 2 transmitter will control all Group 2 receivers. This allows you to control a group of receivers without affecting others. This will also help if two or more people on set are sending ZaxNet commands each person will be independent and won't interfere with each other. Most users leave this set to 1 on all of their Zaxcom products.

Group codes can be set from **1** to **99**

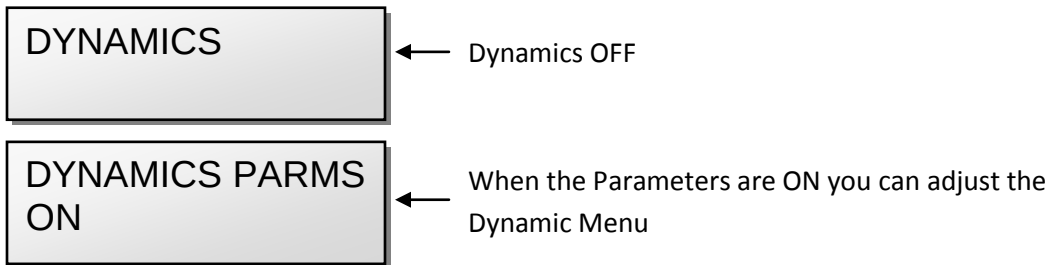
Unit ID

REMOTE CONTROL
UNIT CODE=ALL

This assigns a unique number identify the TRX-900LA/LAS within a particular group. This allows individual devices in one group to be independently controlled.

You can assign a number from **1** to **200**

Dynamics



The Dynamics is a soft knee compressor that is located after the analog to digital converter. The Dynamics will limit the dynamic range to prevent clipping during occurrences of loud audio. Dynamics is comprised of both a compressor and an expander, which operate jointly. The Compressor in Dynamics can set to mild or extreme compression and features a soft knee for more transparent operation.

To enter the Dynamics Menu

Press the **INC** or **DEC** key - “**PARMS**” will be displayed on the right.

To move to the next parameter, press the **MENU** key.

To exit this page, hold the **MENU** key for 1 second.

Dynamics Parameters

- **PARMS**(Parameters): **OFF / ON**: This turns the entire compressor/expander on or off.
- **Link L-R**: **OFF / ON**: This links the left and right of a stereo unit. So if one side of the signal needs compressing / expansion the other side will kick in to match.
- **SPEED** (Decay Speed) : **SLOWEST / SLOW / NORMAL / FAST / FASTEST**
Sets the speed in how gradual the decrease of signal level happens immediately after a signal reaches its peak. This is typically set to **FAST**.
- **ATTACK** (Attack Speed) : **SLOWEST / SLOW / NORMAL / FAST / FASTEST**
Sets the speed in how fast the gain is turned down once the signal exceeds the threshold setting. This is typically set to **FAST**.
- **CMP RATIO** (Compressor Ratio): Valid range: **1.0**: to **5.0:1**, In **0.1** steps.
The amount of gain reduction is determined by the **ratio** setting.
A compressor ratio for example of 2.0:1 means for every 1 dB above the compressor threshold the gain will be reduced 2 dB. A higher ratio setting makes the compressor more aggressive.
- **CMP THRESH** (Compressor Threshold): Valid range: **0** to **-96dB**, in **1dB** steps.
Sets the level which gain reduction occurs. This is typically set to -12dB from full scale.
- **CMP KNEE**: (Compressor Soft Knee): Valid range: **0** to **20dB**, In **1dB** steps.
Sets the compressor's soft knee. A soft knee reduces “softens” the audible change from uncompressed to compressed, especially for higher ratios where the changeover is more noticeable
- **EXP RATIO** (Expansion Ratio): Valid range: **1:1.00** to **1:4.00**, In **0.01** steps
Sets the expansion ratio. For example a 1:2.0 expansion ratio means for every 1 dB below the expansion threshold the gain will be reduced 2 dB.
- **EXP THRESH** (Expansion Threshold): Valid range: **0** to **-96dB**, in **1dB** steps.
Sets the threshold above which gain reduction occurs. This is typically set to -80dB.
- **REDUCE** (Expander Gain Reduction): Valid range: **0** to **-36dB**, in **1dB** steps.
Sets the limit on the amount of gain reduction caused by the expander. This is typically set to -6dB.
- **GAIN** (Make-up Gain): Valid range: **0** to **30dB**, In **1dB** steps.
Used to compensate for the gain reduction caused by the action of the compressor. Because the compressor is reducing the gain (or level) of the signal, the ability to add a fixed amount of *make-up gain* at the output is provided so that an optimum level can be used.

Battery Type

BATTERY TYPE:
 NIMH QRX

This menu adjusts the battery type you are using so the receiver can properly display the remaining battery capacity.

- The settings are NIMH, Lithium and Alkaline (Displayed as “ - - - -”)

NOTE: In the menu you will see “**ENG**” and “**QRX**” options for these battery types as well. This is so each type Zaxcom receiver model “**ENG**” RX-900 or “**QRX**” QRX-100 can correctly display the transmitter’s battery level.

Recording Mode

RECORD MODE:
LOOP RECORD

This adjusts what the transmitter will do after you reach the record capacity of the card.

- **NON-LOOP RECORD** (recommended setting) - Once the card has filled up, recording will stop and **FULL** will be displayed. This prevents over-writing any portion of the audio.
- **LOOP RECORD** - Once the media has filled up, the new audio will begin over-writing the oldest audio on the card.

Boot Up Mode

BOOT UP IN
NORMAL MODE

- **REMOTE STANDBY** – The transmitter boots up in Low Power Standby mode. The TRX900LA/LAS will be waiting for a ZaxNet “**WAKE**” command to come up to full power.
- **STANDBY MODE** – The transmitter boots up in Low Power Standby mode. The TRX900LA/LAS will be waiting for you to **Press Menu** to come up to full power.
- **NORMAL MODE** – The transmitter will boot up in Normal mode.

Left Right Switch

LR SWITCH MODE
OFF

This menu turns on the left / right switch mode.

This function allows the wireless user to cause the audio to switch from the left output to the right output of a stereo RX900 receiver when the key is pressed.

You can select the **UP**, **DOWN**, or **MENU** key to act as the trigger.

NOTE: This is only compatible with the RX900S Receiver

IFB Remote Control - this menu will not appear if the IFB settings allow the TRX to go into transmit mode.

ALLOW IFB REMOTE
CONTROL: ON

This menu turns ON / OFF if the TRX-900LA/LAS will accept remote control commands via ZaxNet.

IFB Jam Threshold

IFB JAM THRESH
1000 MS (DEFAULT)

This menu sets how much the timecode has to jump before a new file is forcibly created.

IMPORTANT: When a new file is created, while a take is in progress, about a half of second of the audio will be lost.

QRX Program

PRESS ↑ TO SEND
QRX PROG FILE

This is used to update the software on a QRX-100.

To Update the QRX Software:

1. With a computer copy the QRX software onto a formatted micro SD card.
2. Place the card in the transmitter
3. Power up the transmitter.
4. Advance to this menu.
5. Press the INC key.
6. The transmitter will begin to transmit the software to a QRX-100 that is set to receive the software. The transmitter will continually resend the program until you manually stop it.

Phase Invert Channel

PHASE INVER CH2
OFF

This will invert the phase of channel 2 (Right) audio to correct for a phasing issue.
This would only be used in if you had a TRX900LAS and using stereo mode.

TX Disable

TX DISABLE:
NORMAL TX MODE

- **Record Only Mode** – This will set the TRX-900LA/LAS to act as a standalone recorder and will not transmit any RF audio on the UHF band.
- **Normal TX Mode** – This will set the TRX-900LA/LAS to both transmit RF audio and record on its internal SD card.

Low Battery Stop

LOW BATT STOP:
NEVER STOP

LOW BATT STOP:
5 MINUTES

This menu sets the amount of time after a low battery warning the on-board recorder will close the current file and stop recording.

This is to prevent possible file corruption if the unit powers off and on due to a dead battery.

- **NEVER STOP** - The recorder will not stop recording unless you stop it.
- **Any interval from 1 to 99 minutes** - once the battery indicator starts blink a low battery warning the TRX-900LA/LAS will continue to record for the time set in the menu - then it will close the file and stop recording.

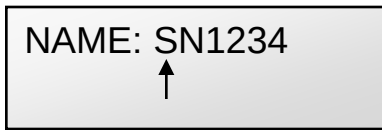
Record On Bootup

RECORD ON BOOTUP
ON

This menu will determine if the TRX-900LA/LAS will automatically go into record after the unit boots up.

- **ON** - The transmitter will automatically start to record after it boots up.
- **OFF** - The transmitter will wait for a ZaxNet command or a manual record trigger to start recording.

Name



This menu changes the name of the transmitter.

The name entered into the unit becomes part of the name of the audio files generated by the unit and is also included in the metadata of the BWF file. Naming the unit aids in identifying the files from several different wireless.

The maximum Name length is 8 characters. You can select any letter or number and can even use spaces.

To set/change the name:

1. Press the **INC** or **DEC** key to change the character in the current position.
2. Press the **MENU** key to proceed to the next character.
3. When finished, press and hold the **MENU** key set the name and leave this page or you can cycle the power.

Encryption Menu



This hides the Encryption Menu.

- **HIDDEN** the encryption menu doesn't appear when you cycle through the menu settings.
- **ON** the Encryption will appear.

Encryption Code page



If you set an encryption code the transmitted audio will be encrypted and can only be listened to if the receiver has the matching encryption code entered. When receiving an audio signal and the codes do not match, all that will be heard is white-noise or silence.

These two sets of numbers are formed into a single six-digit encryption code which provides a total of 16,777,216 possible combinations.

To adjust the encryption code

1. Momentarily press the **MENU** key to advance to the next character.
2. To change the designated character, press the **INC** or **DEC** key.
3. To exit this page, press and hold the **MENU** key for 1 second.

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

Media

While any size card will work we recommend using a 4GB micro SD card. We also recommend that you buy a brand name card such as Transcend, SanDisk, or Delkin. You should always buy your cards from a reputable dealer because counterfeit cards exist and can cause recording issues. We also recommend that you test your card before taking them out into the field.

Here is a testing procedure to determine if the card will function correctly:

1. Format the card in the transmitter.
2. Power cycle the unit.
3. Record at least 20 minutes of audio to a card with no timecode source.
4. Look at the Main Screen it should still be recording in segment #1.

Media Capacity

The TRX can use MiniSD cards, ranging in size from 128 MB to 16 GB. While any size card will work we recommend using 4GB cards.

Available recording times are as follows:

Media Size	Available Recording Time
128 MB	45 minutes
256 MB	1.5 hours
512 MB	3 hours
1 GB	6 hours
2 GB	12 hours
4 GB	24 hours
8 GB	48 hours
16 GB	96 hours

IMPORTANT: The transmitter will **NOT** record onto the card if:

- The card was not present when the unit was powered up
- If the card was removed while the power was 'ON'
- If the LOW BATTERY is being displayed.

NOTE: Regardless of the size of the card the TRX will only be able to record 254 segments on the card.

Recording Format

The media card is formatted using a FAT32 file system. While recording, the unit places all recorded audio in a single file on the media.

The files generated by the recorder can only be recognized by Zaxcom's ZaxConvert program. Using ZaxConvert will transfer the file to a Broadcast Wave or MP3 file. This utility is available to anyone for free from the Zaxcom website <http://www.zaxcom.com/software-updates>

Firmware

Each unit is shipped with the latest firmware version installed. As newer firmware becomes available, it can be downloaded from the Zaxcom website:

<http://www.zaxcom.com/software-updates>

Newer version of Beta software may be found on the Zaxcom Forums:

<http://www.zaxcom.com/forum>

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.

Updating TRX Firmware

1. Download the firmware from the Zaxcom website and load it onto a formatted card.
2. Insert the card into the TRX transmitter.
3. Simultaneously hold down the **INC** and **DEC** keys while powering up the unit.
4. The screen will display “**BURN ROM**” with the version of firmware you are loading.
5. From power up to “**DONE**” will take about 30 seconds.
6. Upon completion, cycle the power to run on the new version.

WARNING: Do not power down the unit during the upgrade process. Before upgrading the software be sure to insert a fresh set of batteries. If the unit should lose power during the upgrade, it will need to be sent back to Zaxcom for repair.

Updating an ERX with your TRX-900LA/LAS

Your transmitter can be used to update the software in a Zaxcom ERX receiver. Your transmitter must be running version 7.02 or higher to do so.

1. Format a card in your TRX.
2. With a computer perform the following:
 - A. Delete the "DELETE.ME" file on the card
 - B. Download the ERX firmware "ERX-XXX.bin" from the Zaxcom website and load it onto a card formatted by the TRX.
3. Insert the card into the TRX.
4. Check that the ERX is set to the same ZaxNet frequency that the TRX is set to. Check that the GROUP ID is set the same in both the TRX and ERX. And make sure encryption is shut off.
5. Boot up the ERX while holding the Menu key to get to the ERX EXTENDED menu.
6. On the ERX Press menu 5 times till you see the software update page.
7. Press the INC key on the ERX 5 times till you see WAITING FOR PROGRAM.
8. Power up the TRX.
9. If your TRX is running software version 8.0 or higher in the EXTENDED Menu shut off RX to TX mode.
10. Go to the LOCK page and press down 6 times quickly to get to the FACTORY Menu.
11. Press the MENU key once to get to the IFBMODE page.
12. Press the INC key 3 times till you see IFBMODE 3 TX.
13. Press MENU 3 times until you see SEND ERX PROG FILE.
14. Press the INC key to trigger the update process.
15. The ERX should indicate its progress after a few seconds.
16. When the ERX has been updated the screen will display "SUCCESS".

WARNING DO NOT LEAVE THE TRX IN IFBMODE 3 TX.

If you do the TRX may not boot up when power cycled. If this happens hold the MENU and DOWN keys while booting to force the IFB to OFF. Then go to the IFB Mode in the factory menu to set IFB mode to IFBMODE 1 RX. Though as of version 8.19 this is no longer an issue.

Inputting Audio

The TRX900LA/LAS use an unbalanced microphone input via a 3-pin micro-LEMO connector. You can use an unbalanced dynamic microphone or a powered lavalier.

You can use a line-level input though an inline pad is required.

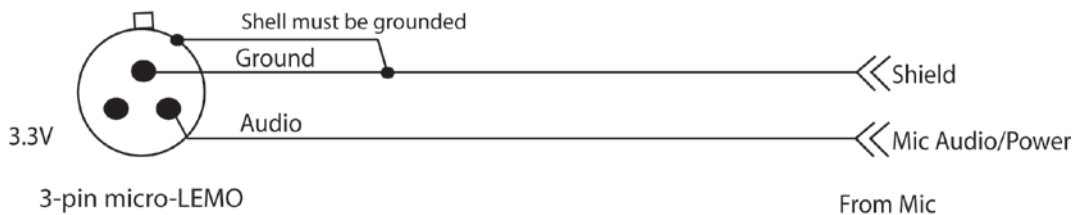
Wiring Diagrams

The following 3-pin micro-LEMO connectors mate with the microphone connector:

- FGB.00.303.CLAD.22 – has a latch with a pull release (recommended for RFI prevention).
- FVB.00.303.NLA – has a latch with a twist release.

IMPORTANT: It is recommended that the ground gets attached to the shell of the LEMO connector.

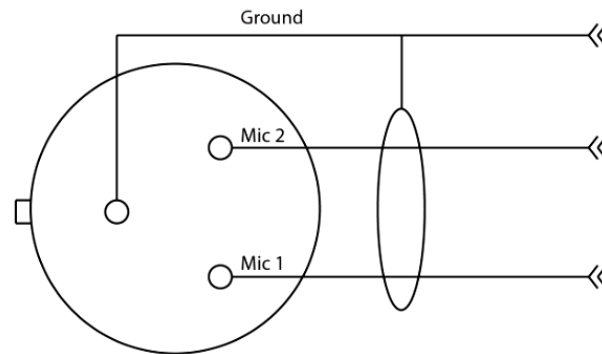
Two Wire Microphone Configuration



Three Wire Microphone Configuration

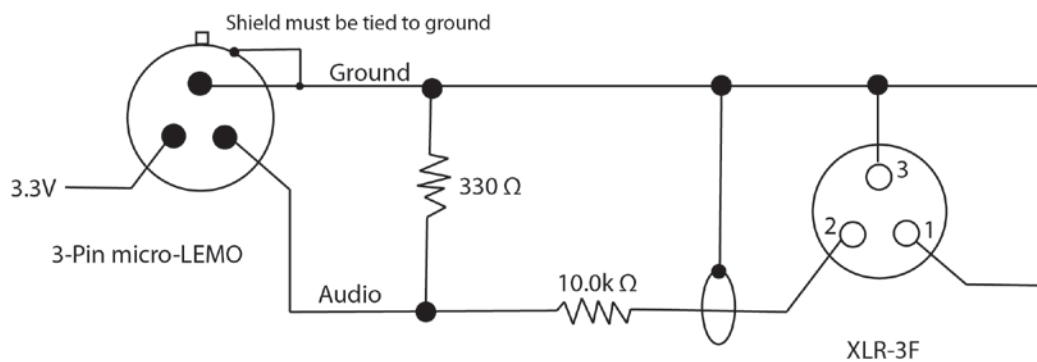
Please contact your microphone manufacturer.

Stereo Microphone Configuration



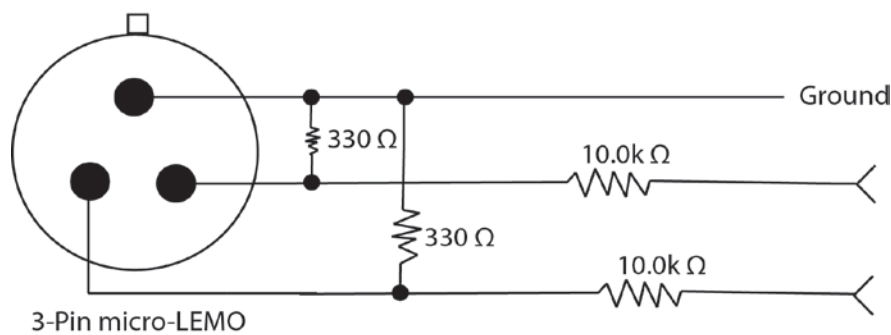
Balanced Line Level and Timecode Input

Mono line-level and/or timecode input

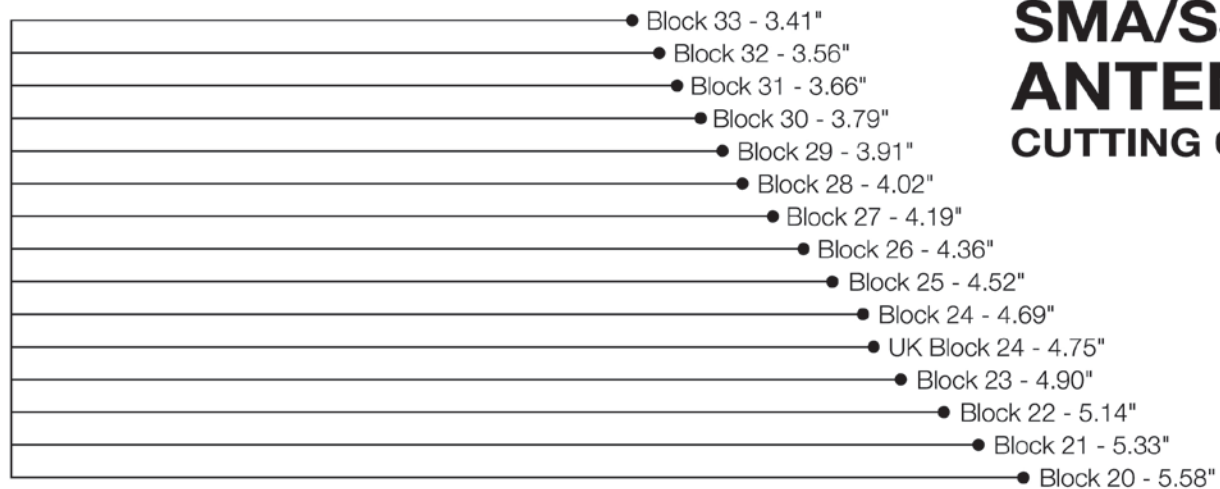


Stereo Line Level

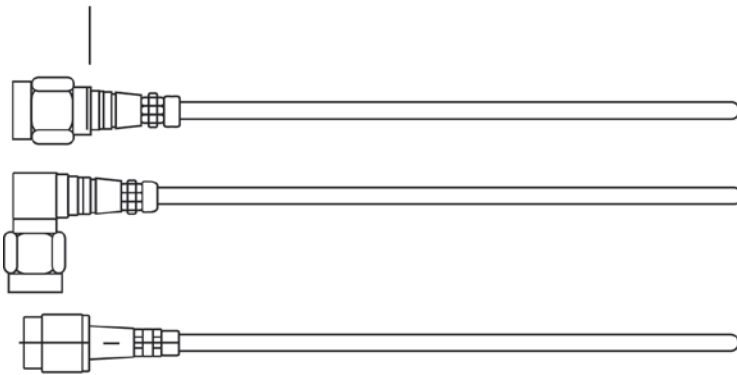
Stereo line-level input with pads



Antenna Cutting Chart



SMA/SSMA ANTENNA CUTTING CHART



230 West Parkway, Unit 9
Pompton Plains, NJ 07444 USA
Tel: 973-835-5000

www.zaxcom.com



Operating Frequencies

ZaxNet Remote Control and Timecode

2.403 to 2.475 GHz

UHF Audio

Block	Frequency Range	TV Channels
20	518.0 to 542.0	22 to 25
21	536.0 to 572.0	25 to 30
22	560.0 to 590.0	29 to 33
23	590.0 to 614.0	34 to 37
24	614.0 to 644.0	38 to 42
25	638.0 to 668.0	42 to 46
26	662.0 to 692.0	46 to 50
27	686.0 to 722.0*	50 to 55
28	722.0 to 746.0*	56 to 59
29	740.0 to 770.0*	59 to 63
30	764.0 to 794.0*	63 to 67
31	794.0 to 818.0*	68 to 71
32	818.0 to 842.0	72 to 75
33	860.0 to 872.0	79 to 80
UK	606.0 to 636.0	

**As of 12 June 2009, the USA has phased out analog television. As a result frequencies between 698.0 and 806.0 MHz will no longer be available for use in the USA.*

As of 31 August 2011, Canada has phased out analog television. As a result, frequencies between 698.0 and 806.0 MHz are no longer available for use in Canada.

Specifications

Transmitter

TRX900LA / LAS Power Output: 25 / 50 / 125 mW – Software Selectable
RF Modulation: Proprietary Digital Method
RF Frequency Range: 518.0 to 872.0 MHz (Typical Blocks are 36 MHz wide)
RF Frequency Step: 100 KHz
RF Bandwidth: 200 KHz
Channel Separation: 500 KHz (700 KHz recommended)
Antenna Connector: 50 Ω SSMA Female
Emission Designator: 180 KV2E
FCC Part: 75.861

Transmitter Audio

Dynamic Range: 106 dB
Distortion: 0.001%
Frequency Response: Mode 0: 20 Hz to 16 kHz / T & M Mode 0.2 Hz to 16 kHz
High Pass Filter: Off or 30 to 220 Hz, Steps: 10 (6 dB Per Octave)
System Group Delay: 3.5 ms
Mic Power: 3.3 VDC
Mic Connector: 3-Pin Micro LEMO
Input Range: -60 to -30 dBu
Mic Impedance: 4.7 k Ω
ADC Bit-Depth: 24 Bits

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

Internal Recording

Media: MicroSD Card (Flash Memory)
File Format: .ZAX
Recording Time: 96 Hours (16 GB Card)

2.4 GHz ZaxNet 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

Physical

Weight: 3.6 oz with Battery
Dimensions (H x W x D): 3.0" x 2.4" x .65"
Display: Graphic LCD

Battery Life

TRX900LA / LAS Battery Life: Up to 7 Hours with 2 Lithium AA at 125mW

TRX900LA / LAS Battery Life with PowerRoll: Up to 10 Hours with 2 Lithium AA

All Specifications are subject to change without notice.

Zaxcom Digital Wireless is protected under patent #'s: 7,711,443 & 7,929,902

Product Support

Register your product with Zaxcom: <http://www.zaxcom.com/product-registration>
Download the latest **Firmware** from: <http://www.zaxcom.com/software-updates>
Download the latest **User Manuals** from: <http://www.zaxcom.com/instruction-manuals>
Submit Technical Questions at: <http://www.zaxcom.com/submit-a-technical-question>
Submit information for **Repair Services** at: <http://www.zaxcom.com/repairs>
Join the **Zaxcom Forum** at: <http://www.zaxcom.com/forum>

Consumer Alert

Most users do not need a license to operate a wireless microphone system. Nevertheless, operating a microphone system without a license is subject to certain restrictions:

- the system may not cause harmful interference,
- it must operate at a low power level (not in excess of 50 milliwatts),
- it has no protection from interference received from any other device.

Purchasers should also be aware that the FCC is currently evaluating the use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at:

www.fcc.gov/cgb/wirelessmicrophones. To operate wireless microphone systems transmitting with greater than 50mW of radiated power, you must qualify as a Part 74 user and be licensed.

This alert does **NOT** apply to Part 74 users

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 **TRX-900LA/LAS** ("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

The 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.

Troubleshooting & Repair Services

No Product should be returned to Zaxcom without first going through some basic troubleshooting steps with the dealer you purchased your gear from.

To return a product for repair service, go to the Zaxcom Repair Services page (<http://www.zaxcom.com/repairs>) and fill in your information; there is no need to call the factory for an RMA. Then send your item(s) securely packed (in the original packaging or a suitable substitute) to the address that was returned on the Repair Services page. Insure the package, as we cannot be held responsible for what the shipper does.

Zaxcom will return the warranty repaired item(s) via two-day delivery within the United States at their discretion. If overnight service is required, a FedEx or UPS account number must be provided to Zaxcom to cover the shipping charges.

*Please note, a great resource to troubleshoot your gear is the Zaxcom Forum: <http://www.zaxcom.com/forum>.

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.