User Manual

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Software QRX Version 3.73

QIFB Version 1.58

ZAXCOM

ZAXCOM.COM

QRX235

Your Sound Amplified

Knowing Your QRX235 Receiver

Front

1. **OLED Display**
2. **INC Key** - Used to increase the parameters of a menu item.
3. **UHF Antenna Connectors (2) -** SMA connectors.
4. **Dec Key** - Used to decrease the parameters of a menu item.
5. **Menu Key** - Press to advance to the next menu item.
6. **Receiver Status Indicators**
   - Solid Red - Receiver is not getting a valid signal.
   - Solid Green - Receiver is receiving a valid signal.
7. **A/B Key** - Press to alternate between receivers in dual mode.
8. **Power Key** - Press and hold for 2 seconds to power up the QRX. Press and hold for 5 seconds to power down the QRX.

Rear

1. **IFB Audio** - (available with the QIFB option) 3.5mm TRS.
   - This connector will accept external audio for IFB transmission when the QIFB is in transmit mode.
   - This connector will output ZaxNet audio when the QIFB is in receive mode.
2. **DC Power Input** - The QRX uses a Switchcraft 761K connector.

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3. **Audio out connectors (2)** - TA5M.
   These connectors will output the audio from the QRX. The same connectors can be used to output either analog audio or AES audio. The audio assignments for the TA5 connectors are set in the extended menu.
4. **Time Code In/Out** - (available with the QIFB option) 3.5mm TRS.
   This connector will input or output time code depending on how the connector is wired. Please see the wiring diagram section of this manual.
5. **Serial Loop** – The USB style connectors on the back of the QRX allow multiple QRXs to share a single common QIFB option. For example one master QRX with a QIFB option board can be connected to 3 QRXs with no option boards. The QRXs without option boards will behave as if they have an IFB option board and will send remote control commands over the serial link to the master QRX.
   Please note the USB connectors are NOT generic USB connectors that can be used as a connection to any computer. These are used to exchange RS-422/RS-485 commands and a special cable is required to do this please see the wiring diagram section of this manual for more information.

Side

Channel 1 Group

Channel 2 Group

ZaxNet Antenna SMA
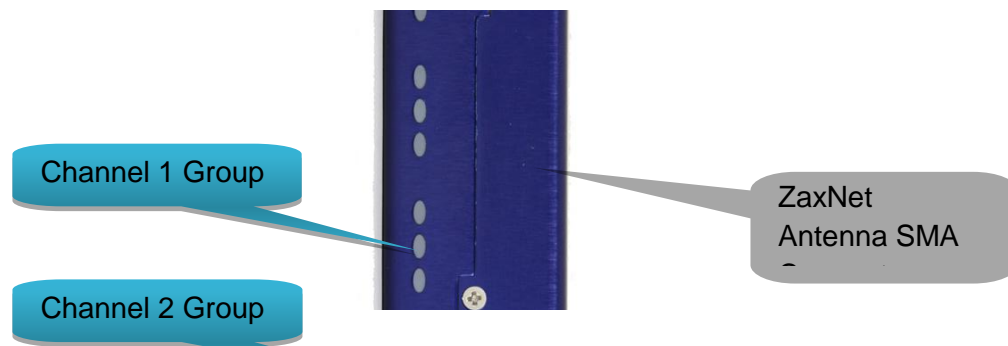
Side Mounted LEDs - The LEDs give visual indication if RF and / or audio are being received by the QRX. The LE   in the extended menu. There are three LEDs per group and one group for each r   up to the top represents channel one, the group below is channel 2, the next group is channel 3, and the group on the bottom is channel 4.

Channel 3 Group

LED r   Channel 4 Group

◯	◯	🟢	When the signal hits -40 dBFS
◯	🟢	🟢	When the signal hits -20 dBFS
🟢	🟢	🟢	When the signal hits -10 dBFS
🟡	🟡	🟡	When the signal hits - 8 dBFS
🔴	🔴	🔴	When the signal hits - 5 dBFS

ZaxNet Antenna Connector - SMA connector
When the QRX has the QIFB option installed this is where the ZaxNet antenna will be connected

Home Screen Explained

Single Mode
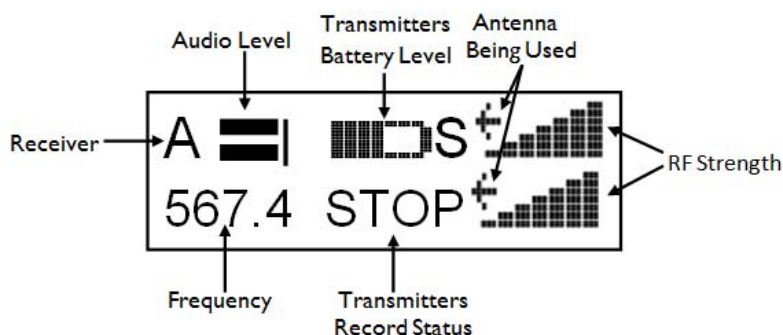
Dual Mode
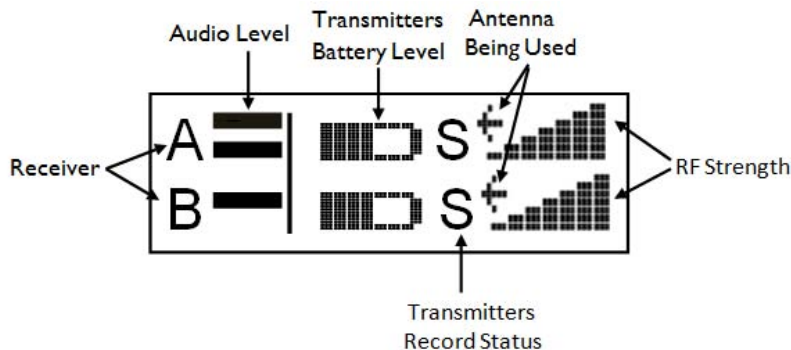
Receiver
The QRX has two individual receivers the A (left receiver) and the B (right receiver).

Audio level
Indicates the incoming audio level for each receiver, the meter extends from the left to the right. The vertical bar to the right is the -20dBFS mark. A single meter for a receiver indicates a mono signal is being received. Two meters indicate that a stereo signal is being received.

Transmitter's battery level
The battery diagram displays the transmitter's battery level. The battery type being used in the transmitter needs to be set in the TRX extended menu. The battery symbol will start to blink just before transmitter shuts down.

Transmitter's Record status
- S   (STOP) The transmitter is stopped.
- R   (REC) The transmitter is recording.
- P   (PLAY) The transmitter is playing back.
- - (NO SIGNAL) Occurs if the associated transmitter is turned "OFF"

Antenna being used

← Indicates the signal is being received by antenna 1 (left antenna connector)
→ Indicates the signal is being received by antenna 2 (right antenna connector)

RF signal strength

This shows the radio signal strength of the corresponding TRX transmitter. The RF signal is depicted as a staircase pattern with the lowest step (low signal strength) on the left and building up as it progresses to the right (higher signal strength). When more stairs are showing the stronger the signal is.

Main Menu

Navigating the Main Menu
- To enter the main menu - press the MENU key.
- To advance to the next menu press the MENU key again.

Exiting the Main Menu
- To exit the main menu at any time press and hold the MENU key for 1.5 seconds.

Frequency Display and Select

CH A 567.4 ◢

Single Receiver Mode

| CH A> 567.4 ◢ |
CH B   570.0 ◢
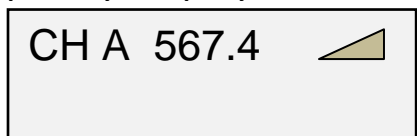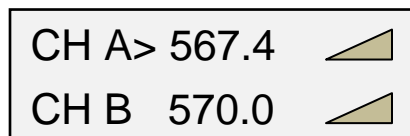
Dual Receiver Mode

The frequency select menu is where the QRX's receive frequency is set. This frequency needs to match the frequency that is set on the corresponding transmitter.

Adjusting the receive frequency of the QRX
- Press the INC key and DEC key to adjust the frequency.
- In dual receive mode pressing the A/B key will toggle between the A and B receiver.
  The **>** will indicate the receiver being adjusted.

Transmitter Gain Adjust
This menu is only available when transmitter remote control is set to "ON" in the extended menu.

TX GAIN —┼┼ ˡ

Single Receiver Mode

| TXA   —┼— ˡ |
GAIN   —┼   ˡ
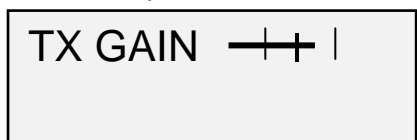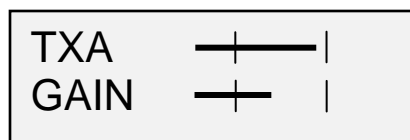
Dual Receiver Mode

The transmitter gain menu allows for remote gain adjustments of the corresponding TRX transmitter. The incoming audio levels for the transmitter that is being adjusted is displayed with marks at -20dBFS and 0dBFS.

Adjusting the transmitter gain remotely
- Press the INC key to increase the transmitters gain. As the gain is increased"+ + +" will be displayed on the QRX.
- Press the DEC key to decrease the transmitters gain. As the gain is decreased "- - -" will be displayed on the QRX.
- When in dual mode pressing the A/B key will toggle between the two transmitters.

Unit Code Select

This menu is only available when transmitter remote control is set to "ON" in the extended menu.

```
RXA  UNIT: NONE
```

```
RXA> UNIT: NONE
RXB   UNIT: NONE
```

Single Receiver Mode   Dual Receiver Mode

The unit code is a unique number used to identify a transmitter within a particular group. This allows individual transmitters that are within the same group to be independently controlled. Unit codes can be any number from 1 to 200.

Modulation Select

```
RXA FMT MONO-XR
```

```
RXA>FMT MONO-XR
RXB  FMT STEREO
```

Single Receiver Mode   Dual Receiver Mode

This menu selects which modulation mode the QRX will receive. Modulation is simply the way a transmitter "modulates", or sends, its signal to the QRX. This setting needs to match the modulation mode that the corresponding transmitter is set to - if the two setting do not match the QRX will not be able to receive and decode the signal from the transmitter.

When in dual receive mode pressing the A/B key will toggle between the A and B format. The **>** will indicate the receiver is being adjusted.

Modulation types

- **XR MONO** - Select when extended range modulation (XR) on the TRX transmitter is being used. We recommend using XR modulation whenever possible.
- **STEREO** - Select when using a TRX900CL - Camera Link, TRXLA2S, or a TRXLT2S stereo transmitter.
- **MONO** - Select when using an older mono transmitter and XR modulation is not available in the software.
- **EU** - Select when using a transmitter that is set up for European broadcast standards.

Test Tone Output

```
TONE:  :
OFF      :
```

```
TONE:   :—————┐
CHAN-ID :
```

```
TONE: ═══════
-20dBFS ══════
```

```
TONE: ═══════
+0dBFS ══════
```

The test tone menu allows the QRX to output tone from the TA5 outputs. This is useful to set levels and check routing.

Pressing the INC and DEC key will cycle through the different tone settings.

- **OFF -** No tone is being outputted.
- **-20dBFS -** Tone is simultaneously sent to all 4 outputs at -20dBFS.
- **CHAN-ID -** Tone is sequentially sent to each channel one at a time at -20dBFS.
- **+0dBFS -** Simultaneously sends tone to all 4 channels at 0dBFS (full scale)

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Frequency Scan

PRESS ↑ TO SCAN

The frequency scan menu is where the QRX can scan the specified frequency range and search for a clear frequency. After a scan a graphic display of the RF that is present in that specified range will be shown. The QRX will also suggest a clear frequency. That frequency can be accepted by pressing the INC key. Or press the A/B key or the DEC key to skip the chosen frequency and have the QRX suggest another frequency.

Single mode scanning

SCANNING 568.9

— Found RF

— Frequency being scanned
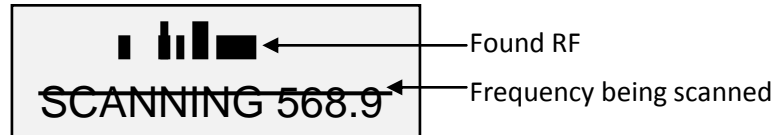
- Turn off the TRX transmitter.
- From the frequency scan menu press the INC key to s a scan.
- While the block is being scanned, the frequency being examined is displayed in the bottom half of the screen. Once the scan has completed, a graphic map of what was scanned is displayed. The low end of the frequency range is on the left side and the high end is on the right. Wherever RF is found, a vertical line is drawn. It extends from the baseline up. The length of the line indicates the level or strength of the found RF at that frequency.

Selecting the frequency

When the scan is complete QRX will draw a vertical blinking line on the display to indicate where the first suggested frequency is in the scan and displays the frequency number below the graphic.

↑ TAKES 541.9

— Suggested Frequency Location (Blinking)

— Suggested Frequency
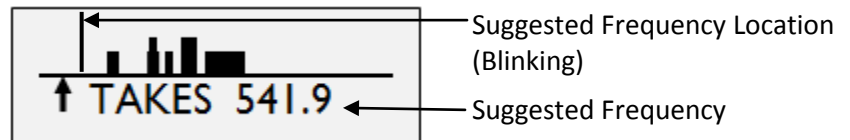
- Press the INC key to accept the new frequency.
- Press the A/B key or the DEC key to suggest another frequency.

Dual mode scanning

When the QRX235 is set to dual mode both operating frequencies will be scanned from this menu. Pressing A/B key will toggle between the two receivers

PRESS ↑ TO SCAN (RX A)

PRESS ↑ TO SCAN (RX B)

After the first scan turn on the first transmitter and set it to the chosen frequency. This way when another scan is performed for the second transmitter the QRX will not select the same, or adjacent, frequency.

Extended Menu

Navigating the Extended Menu
- Press and hold the DEC key - while in the home screen - to enter the extended menu.
- To advance to the next menu press the MENU key.
- Press and hold the MENU key at any point to return to the top of the extended menu.

Exiting the Extended Menu
- To exit the extended menu - press the POWER key briefly.

Single / Dual Mode Select
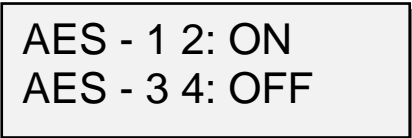
```
RX MODE:
SINGLE
```

This menu sets the QRX to receive signal from one or two transmitters.
- **SINGLE** - This configures the QRX to operate as a single receiver.
  In single mode the QRX can receive one audio channel from a mono transmitter or two audio channels from a stereo transmitter.
- **DUAL** - This configures the QRX to operate as two independent receivers.
  In dual mode the QRX can receive two audio channels from two mono transmitters, three audio channels from one stereo and one mono transmitter, or four audio channels from two stereo transmitters.

AES Output Enable
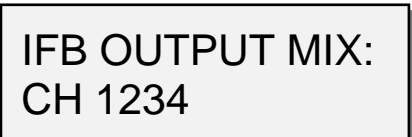
```
AES - 1 2: ON
AES - 3 4: OFF
```

AES output enable selects which connectors will output an AES signal.
- **ON** - Indicates that the TA5 will output AES audio.
- **OFF** - Indicates that the TA5 will output analog audio.

IFB Output Mix

```
IFB OUTPUT MIX:
CH 1234
```

The IFB output mix selects which audio channels will be broadcast via ZaxNet when the QIFB option is installed and set to transmit. Any combination of the 4 receive channels can be selected. The selected channels will be broadcast when "QRX" is selected in the IFB input mix menu. This setting is only for broadcasting the audio received from the UHF signal - not the audio inputted via the IFB in.

AES Output Assignment
This menu is only available when the QRX is set to dual receive mode.

> AES OUTPUTS
> NORMAL

AES output assign change the AES signal assignment.
- **NORMAL** - This will output the signal from two mono transmitters as it is labeled on each TA5 connector. So one transmitter per TA5.
- **SWAP** - This will output two mono transmitters on a single TA5 connector. The first TA5 connector which is labeled "ANALOG 1/3 AES 1/2".

QIFB Enable

> IFB ENABLE:
> YES

If the QIFB option board is installed the IFB enable turns the QIFB board ON / OFF.

Serial Port Assign

> SERIAL PORT
> ZAXLAN

The serial port assign sets the function of the serial port of the QRX
- **OFF** - No data communication will be sent to the serial connector.
- **ZAXLAN QRX**- Sets the QIFB to communicate with an RX12.
- **BLUE TOOTH** - Sets the QIFB to communicate with a ZaxMote blue tooth dongle.

Transmitter Remote Control Enable

> TX REMOTE CTRL:
> OFF

Transmitter remote control turns on the ability to remote control the corresponding TRX transmitter. When set to ON the QIFB can remotely change the gain, output power level, frequency and send transport commands to the corresponding TRX transmitter.

Time Code Source
This menu is only available when the QIFB is installed.

> USE TIME CODE
> FROM TRX900: ON

The time code source menu selects the source of external time code the QRX will use.
- **OFF** - The QRX will use and output time code received via ZaxNet.
- **ON** - The QRX will use and output the time code that is embed in the UHF signal received from a Zaxcom TRX900CL. This way the time code from the audio recorder can continuously jam the camera.

Unit Code
This menu is only available when the QIFB is installed.

> RXA >UNIT: NONE
> RXB   UNIT: NONE

Each TRX transmitter can be assigned a specific unit code. That unit code allows for that specific transmitter to be controlled individually from the QIFB. This menu allows for the unit code to be changed so an individual transmitter can be controlled. So if unit code 1 is selected in the QRX235 a TRX with its unit code set to 1 will be controlled from the QIFB. Pressing the A/B key will toggle between receiver A and B. The unit code can be set to any number from 1 to 200.

Analog Output Routing
This menu is only available when the QRX is set to single receive mode.

> OUTPUT ROUTING:
> C1 = L C2 = R

The LEFT output will be on TA5 connector 1 and the RIGHT output will be on TA5 connector 2

> OUTPUT ROUTING:
> C1 = L R

Both the LEFT and RIGHT outputs will be on TA5 connector 1 and connector 2 will not be used

The analog output routing sets the analog output assignments using the QRX in single mode.

QRX Software Update

```
  PRESS ↑ TO
UPDATE  SOFTWARE
```

This menu is where the QRX software is updated from.

When in this menu pressing the INC key will start the update process. After the INC key is pressed the QRX will wait and search for software that will be transmitted from a TRX transmitter. After the QRX receives the program from a TRX transmitter the QRX will automatically begin updating the software.

Please note If the QRX is set to dual receive mode the QRX will display "CHANGE MODE TO UPDATE SOFTWARE." In that case the QRX will need to be set to single mode before the QRX can be updated.

Modulation Select

```
RXA FMT MONO-XR
```

```
RXA>FMT MONO-XR
RXB  FMT STEREO
```

  Single Receiver Mode   Dual Receiver Mode

This menu selects which modulation mode the QRX will receive. Modulation is simply the way a transmitter "modulates", or sends, its signal to the QRX. This setting needs to match the modulation mode that the corresponding transmitter is set to - if the two setting do not match the QRX will not be able to receive and decode the signal from the transmitter.

When in dual receive mode pressing the A/B key will toggle between the A and B format. The **>** will indicate the receiver is being adjusted.

Modulation types

- **XR MONO** - Select when extended range modulation (XR) on the TRX transmitter is being used. We recommend using XR modulation whenever possible.
- **STEREO** - Select when using a TRX900CL - Camera Link, TRXLA2S, or a TRXLT2S stereo transmitter.
- **MONO** - Select when using an older mono transmitter and XR modulation is not available in the software.
- **EU** - Select when using a transmitter that is set up for European broadcast standards.

AES Recognize

```
SONY F5 AES
OFF(NORMAL AES)
```

The AES recognize is used for Sony F5 cameras that cannot recognize the AES signal from the QRX. If feeding AES to the F5 set this menu to on, then push the A/B key on the QRX. This will send a signal to the AES out that will cause the camera recognize and lock to the AES signal from the QRX. This special signal will also be sent when the QRX powers on. Leaving this feature set to on all the time should not cause any problems with other equipment.

AES Output Sample Rate Adjust

```
AES OUTPUT RATE
NORMAL
```

The AES sample rate adjust sets the sample rate of the AES output. Leaving this set to 96 kHz all the time should not cause any problems since all equipment requires a sample rate converter to convert the AES signal to its internal sample rate anyway. However it may be better to use normal when running long lengths of AES cable.

- **Normal** - The QRX will output a 32 kHz AES signal.
- **96K** – The QRX will output a 96 kHz AES signal.

Power Save

```
POWER SAVER:
OFF
```

If power saver is turned on and the QRX does not receive a RF signal from a TRX transmitter for 10 seconds the QRX will go into a low power mode and will conserve power. Then the instant the QRX detects a valid signal from a TRX transmitter it will immediately return to full power mode.

Backlight Adjust

```
BACKLIGHT TIMER
ALWAYS ON
```

The backlight timer sets how long LCD backlight stays illuminated after the last key press. Please note that the battery draw when using the backlight is minimal.

- **OFF** - The backlight will stay off.
- **ALWAYS ON** - The backlight will always stay on.
- **1** to **29 SECONDS** - Selectable from 1 to 29 seconds in 1 second increments.

LED Brightness Set

```
LED DIMMER:
OFF
```

The LED brightness menu sets the brightness of the side mount LED's.

- **OFF** - The LEDs don't illuminate.
- **Numeric Value** - (variable values) – adjustable brightness levels.
- **Bright**

Blue LED Set

```
LED METER MODE:
OFF
```

The LED meter mode sets the action of the bottom LED in each group (total of 4 groups).
The side mount LEDs were designed to give visual confirmation that audio is being received at the QRX. This menu gives the option to display that a valid RF signal is getting to the QRX even if no audio is being sent.

- **OFF** - The bottom LED will only display the audio modulation and the blue LED is disabled.
- **BLUE FULL TIME** - Turns the bottom LED blue for each channel that is receiving a valid RF signal. When the audio has gotten to the point of displaying a level for that channel, the bottom LED will continue to show blue but with a tint of the appropriate modulation color of that channel's LEDs.
- **BLUE PART TIME** - Turns the bottom LED blue for each channel that is receiving a valid RF signal. Once the audio level has gotten to the point of displaying a level for that channel, the blue color is replaced with the appropriate modulation color of that channels LEDs.

Encryption Code Set

```
ID1: 000 ID0: 000
              ↑
```

From the encryption menu the encryption is turned on and the code is set. This code needs to match the encryption code of the associated transmitters. If an encryption code is set on the transmitter the transmitted audio will be encrypted and can only be listened to if the QRX has the same matching encryption code entered. When the codes do not match, all that will be heard is white-noise.
These two sets of numbers are formed into a single six-digit encryption code which provides a total of 16,777,216 possible combinations. For non-encrypted operations all six numbers should be set to 0.

Adjusting the encryption code

1. Press the A/B 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.

IFB Option Menu
Only available if the QIFB option board is installed

Navigating the IFB Option Menu
- Press and hold the DEC key when in the home screen to display the extended menu.
- Press the DEC key to advance to the IFB option menu.
- Press the MENU key to enter into the IFB option menu
  When in the IFB option menu the screen will display a black background with white letters
- To advance to the next menu press the MENU key.
- Press and hold the MENU key at any point to return to the top of the IFB option menu.

Exiting the IFB Main Menu
- To exit the IFB option menu press the POWER key briefly.

IFB Home Screen

IFB HOME MENU
VER 1.58 TX 2.404

IFB Software   IFB Mode   ZaxNet
Version   TX or RX   Frequency
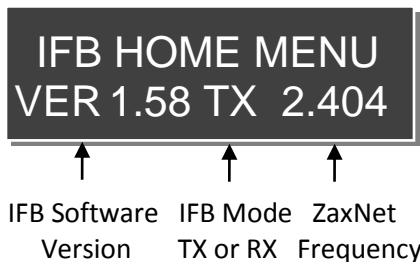
IFB Status / TRX Transport Control

2.404 TX   STOP

This menu displays the following information:
- ZaxNet IFB frequency.
- If the IFB is set to transmit (TX).
- The transport commands being sent to the TRX transmitter.
- IFB Audio Level Meter

When the IFB is set to transmit the QRX can be used to send transport commands to TRX transmitters.
Pressing the INC or DEC key will scroll through and change the transport commands being sent. Any changes to the transport will affect all the transmitters with the same group number.
- REC – the transmitters will go into record.
- - - - - - no ZaxNet commands are being sent.
- STOP – the transmitters will stop.
- PLAY – the transmitters will go into play mode.

Please note that this is the order of the commands as they appear in the QRX235. So for example to go from REC to PLAY the DEC key will need to be pressed 3 times, and to go from PLAY to STOP the INC key will need to be pressed once.

IFB Input Mix Assign

IFB INPUT MIX:
QRX ONLY

The IFB mix assign sets what audio will be broadcast via ZaxNet. That audio can be used for return confidence monitoring as well as an audio feed to ERX receivers. Any combination of the UHF receive audio or the audio inputted via the audio in connector can be selected.
Please note the "QRX" audio is set in the IFB output mix menu located in the extended menu.

- **RIGHT + QRX** - Sums the right IFB audio input with the QRX mix.
- **LEFT + QRX** - Sums the left IFB audio input with the QRX mix.
- **L + R + QRX** - Sums both IFB audio inputs and the QRX mix.
- **L - R + QRX** - Sums the difference of the left and right IFB audio inputs plus the QRX mix.
- **QRX ONLY** - QRX mix only (set in the IFB output mix menu).
- **RIGHT** - The right input of the IFB audio connector only.
- **LEFT** - The left input of the IFB audio connector only.
- **L + R** - Sums the left and right IFB audio inputs.
- **L - R** - Sums the difference of the left and right IFB audio inputs. This effectively makes the IFB audio input a balance connection.

Remote Power Mode

This menu is only available when IFB Mode is set to TX (transmit)

```
REMOTE POWERMODE
0: POWER = ON
```

The remote power mode menu allows for the RF power setting of the TRX transmitters to be adjusted.
The TRX transmitters have three selectable power settings:
- **NORMAL** - The transmitters are at full transmitting power.
- **WAKE** - If a TRX transmitter is set to REMOTE STANDBY it will power up to a non-transmitting low power mode and will use approximately 25% of the power of normal operations. A wake command will bring that transmitter to full power.
  To use wake mode set the TRX transmitters BOOT UP MODE to REMOTE STANDBY. Then when the transmitter powers up, it will remain in standby mode until it receives the wake command to bring it to full power. Once the TRX is awoken the only way for it to go back into standby mode is by a power cycle.
- **LOW 2** - Low 2 disables the RF power amplifier, RF board and microphone pre-amp on the TRX transmitter. In LOW 2 mode the transmitter will save approximately 50% of the power of normal operations. A transmitter can be put into or taken out of LOW 2 as often as desired when selected in this menu.

Settings:

0: POWER=ON – Normal operation - the TRX will be fully powered ON
1: POWER=ON – Normal operation (same as 0) filler to prevent accidental power setting adjustment.
2: POWER=ON – Normal operation (same as 0) filler to prevent accidental power setting adjustment.
3: POWER=ON – Normal operation (same as 0) filler to prevent accidental power setting adjustment.
4: POWER=ON – Normal operation (same as 0) filler to prevent accidental power setting adjustment.
5: POWER=WAKE – Selected to wake a transmitter to full power mode from remote standby mode.
6: POWER=LOW2 – Selected to put a transmitter into and out of low power mode. A transmitter can come in and out of LOW 2 mode as needed. When in LOW 2 mode "LOW 2" will be displayed on the transmitter's home screen. Please note LOW 2 will not disable recording but audio will be muted. Once the TRX power is set to Low 2 the QRX can be powered down. Then when the QRX is powered up all transmitters being controlled will automatically come up to full power since the QRX will always boot up to the 0 Power setting.
Please note if the TRX transmitter is not in range of the ZaxNet signal, the power setting command will have to be repeated once the transmitter comes back into range.

Time Code Set

```
TC TIME ENTRY:
>H00   M00   JAM
```
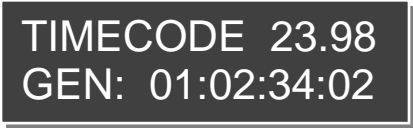
This menu allows the QRX internal time code generator to be manually set.
The **>** indicates the item that will be adjusted. To advance to the next field, press the A/B key.
- **H (Hours)** use the INC or DEC key to adjust the hours.
- **M (Minutes)** use the INC or DEC key to adjust the minutes.
- **JAM** - Use the INC key to JAM QRX time code generator with the entered time.
Please note the seconds and frames fields will automatically be entered as zero (0).

Time Code Frame-Rate Select

TIMECODE 23.98
GEN: 01:02:34:02

The time code frame-rate is set from this menu.
The QRX235 will lock to and transmit all standard time code frame rates.

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

IFB Extended Menu

Navigating the IFB Extended Menu

- From the IFB option home screen press and hold the DEC key to enter the IFB extended menu.
- Press the MENU key to advance to the next menu items.
- Press and hold the MENU key at any point to jump to the top of the IFB extended menu.

Exiting the IFB Extended Menu

- To exit the IFB extended menu at any time press the POWER key briefly.

Input Trim Set

INPUT TRIM 0dB

When the QIFB is in transmit mode the audio inputted on the 3.5mm IFB connector can be broadcast over ZaxNet. This menu adjusts the input level from the 3.5mm IFB audio in connector.
The adjustment range is from -20dB to 12dB in 1 dB increments.

Output Trim Set

OUTPUT TRIM 0dB

When the QIFB is in receive mode the audio received over ZaxNet can be outputted via the 3.5 mm connector. This menu adjusts the audio output level on that connector.
The adjustment range is from -20dB to 6dB in 1 dB increments.

IFB Frequency Set
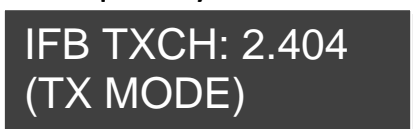
IFB TXCH: 2.404
(TX MODE) ◄─── Transmit Frequency

Transmit Mode

IFB RXCH: 2.404 ◄─── Receive Frequency`
SIGNAL: 23 ◄─── Signal Strength

Receive Mode

The IFB frequency set menu adjusts the ZaxNet transmit and receive frequency of the QRX. Depending what mode the IFB is set to (transmit or receive) will determine if the transmit or receive frequency will be displayed for adjustment. Please note that even number frequencies are recommended for better performance

IFB Mode Set

```
IFB MODE:     TX
```

This menu sets if the QRX will transmit ZaxNet or receive ZaxNet.
- **RX** - The QIFB will receive ZaxNet IFB audio and time code.
- **TX** - The QIFB will send ZaxNet commands, IFB audio and time code.

Please note that any time this parameter is changed the QRX will need to be power cycled to initialize the IFB board. Also note that when IFB mode is set to transmit (TX) a 2.4GHz antenna needs to be attached to prevent unwanted RF from interfering with the UHF reception

Group ID Set

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

The group ID sets the QIFB to a ZaxNet. This allows the QRX to control a specific group of transmitters without affecting others. So QIFB set to Group 1 will control all transmitters set to group 1 and if set to group 2 the QIFB will control all transmitters set to group 2. Most users will leave the group set to 1 on all products. Group codes can be set from 1 to 99

IFB Voting Enable
This menu is only available when the IFB MODE is set to is to (RX) Receive mode

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

```
IFB VOTING:
2 TXERS (ON)
```

IFB voting allows the QIFB to choose and switch to the stronger signal from two different ZaxNet IFB transmitters. So for example on a large set a second IFB transmitter can be placed at a different location and the QRX will choose the strongest signal. Please note that the QRX IFB voting feature sets the second receive frequency as the current frequency +2. So for example if using IFB voting and the first frequency is set to 2404 the second transmitter frequency should be set to 2406.

Updating the IFB Software
This menu is only available when the IFB MODE is set to is to (RX) Receive mode

```
PRESS UP 5X TO
UPDATE IFB SOFT
```

This menu is where the QIFB software is updated from. Please see the firmware section of this manual for additional information on how to update the QIFB software.

Time Code Output Level Set

```
TC OUTPUT LEVEL:
1.0V  (DEFAULT)
```

The time code output level sets the voltage level of the time code out of the 3.5mm time code connector. This is useful for some cameras or time code devices that may need a different level time code signal.

Time Code Frame Rate Set

```
TC FRAME RATE
 23.98
```

The time code frame-rate is set from this menu.
The QRX235 will lock to and transmit all standard time code frame rates.
  • 23.98, 24, 25, 29.97DF, 29.97DF, 30 DF, 30 NDF

Time Code Jam Mode Set

```
TC JAM MODE:
AUTO-LOAD
```

The time code jam mode sets how the QRX receives and jams its time code.
  • **MANUAL (OFF)** -This setting allows the time code to be manually entered in the QRX.
  • **AUTO-JAM** - The QRX will continuously jams time code via ZaxNet or from the UHF signal from a TRX transmitter - provided "use TC from TRX900" is set to ON in the extended menu.
  • **AUTO-LOAD** – Auto-load is used when working with record-run time code. A TRX transmitter can start and stop when it detects the record-run time code starting and stopping. If the transmitter is set to auto-load as well, and the transmitter is receiving record commands from the QRX, when the time code begins to run the transmitter will automatically go into record.

Time Code Delay Set

```
TC DELAY:
0  (NORMAL)
```

The time code delay advanced or delays the time code out of the 3.5mm time code connector up to +/-50 frames in 0.5 frame increments.

Time Code Mute Time Set

```
TCJAM MUTE TIME:
0MS (DEFAULT)
```

The time code jam mute sets the length of time that the time code is muted whenever a time code jump is detected. So if the time code changes the time code out of the QRX will be muted for the time set in this menu. This simulates removing the time code completely from a device and plugging it back in so that the receiving device recognizes that there is new time code. This was added to help the RED camera jam its time code properly. In the case of a Red camera this would normally be set this to 1000MS

Audio Delay Set

```
AUDIO DELAY:
OFF
```

This menu sets a delay to the IFB audio that is broadcasted via ZaxNet. This is useful if you need to delay the audio feed to match the video dely. Adjustable range is from 5 to 400 MS in 5 MS increments.

ZaxNet Output Enable

```
ZAXNET OUTPUT:
OFF
```

The QIFB time code output on the 3.5mm connector can contain ZaxNet commands to communicate to other Zaxcom products. This menu enables / disables the QIFB to output the commands that are embedded within the time code. If the ERX is not connected to another Zaxcom device this should be set to OFF.

IFB Transmit Power Level Set

This menu is only available when the IFB MODE is set to is to (TX)

```
IFB TX POWER: 7
```

The IFB transmit power of the QIFB ZaxNet transmitter is set from this menu. Power range is 0 through 7 with 7 being the highest

Send Record Commands

```
ALWAYS SEND REC
COMMANDS: OFF
```

This menu is where the QIFB is set to send record commands to the transmitter. To be able to start / stop the TRX transmitters recording feature via the QIFB this will need to be set to on.

IFB Encryption Set

```
ID1:000  ID0:000
              ↑
```

This menu sets the encryption for the IFB transmission. For normal un-encrypted operations all six numbers should be set to zero. If the encryption code is set to any number other than all zeroes, the transmitted audio will be encrypted and can only be listened to if the receiver has the matching encryption code entered. When a receiver is getting 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 A /B 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 the MENU key.

Wiring Diagrams

Audio Output Connectors

There are two TA-5M connectors on the back panel. How they are used varies based on the output configuration in the extended menu.

Single Analog Channel out of one TA5

TA5 out on QRX	XLR into Camera or Mixer
PIN 1 ⟶	PIN 1 (Ground)
PIN 2 ⟶	PIN 2 (+)
PIN 3 ⟶	PIN 3 (−)
PIN 4	No Connection
PIN 5	No Connection

Two Analog Channels out of one TA5

TA5 Out on QRX	XLR into Camera or Mixer
PIN 1 ⟶	PIN 1 on both XLRs
PIN 2 ⟶	PIN 2 - Left (+)
PIN 3 ⟶	PIN 3 - Left (−)
PIN 4 ⟶	PIN 2 - Right (+)
PIN 5 ⟶	PIN 3 - Right (−)

AES Digital out of TA5

The TA-5 connectors can also be used to output AES digital audio. Each TA5 will output a stereo pair on connectors 1, 2 and 3 with pin 1 being ground.

When receiving audio from a mono transmitter the QRX will output the same audio on both pairs on the TA5. When receiving audio from a stereo transmitter the QRX can output both signals on a single TA5.

IMPORTANT: While sending digital audio, it is necessary that the unit on the other end (recorder, mixer, etc.) have digital inputs with sample rate convertors, as there is no way to synchronize the output data with the recorder's digital input.

TA5 out on QRX	XLR into Camera or Mixer
PIN 1 ⟶	PIN 1
PIN 2 ⟶	PIN 2
PIN 3 ⟶	PIN 3
PIN 4	No Connection
PIN 5	No Connection

Time Code Connector - 3.5mm

Time Code in to QRX

3.5 mm Connector	TC Connector
TIP	NO CONNECTION
RING	SIGNAL
SLEEVE	GROUND

Time Code out of QRX

3.5 mm Connector	TC Connector
TIP	SIGNAL
RING	NO CONNECTION
SLEEVE	GROUND

IFB Audio Connector - 3.5mm
Same wiring is used for both input and output

3.5 mm Connector	Connector
TIP	LEFT
RING	RIGHT
SLEEVE	GROUND

Serial Loop Connector - USB (RS-485)

These connectors allow a serial connection between several QRXs. This allows QRXs that do not have the IFB option to connect to a single QRX that does have the IFB option.
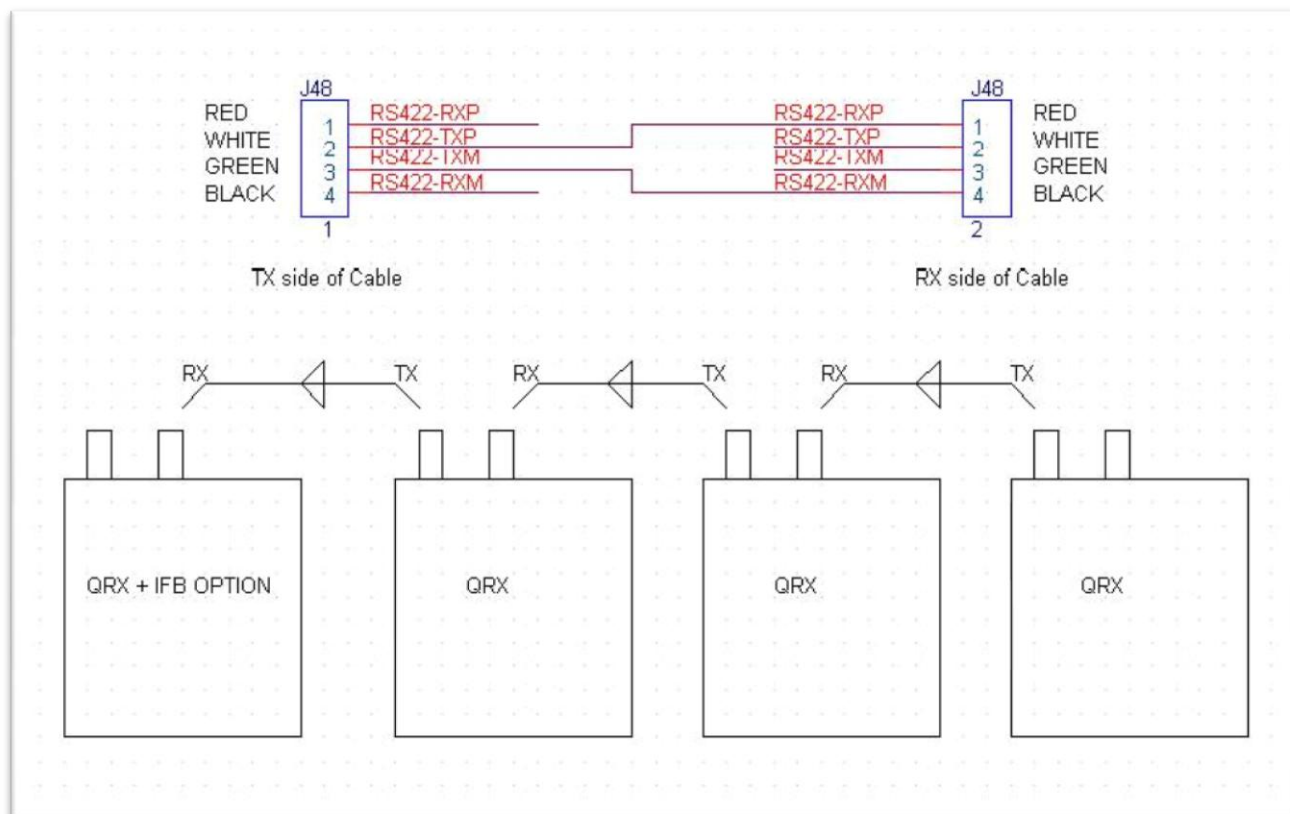
Operating Frequencies

ZaxNet Remote Control and Time Code
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

Antenna Cutting Chart

SMA/SSMA ANTENNA CUTTING CHART

- Block 33 – 3.41"
- Block 32 – 3.56"
- Block 31 – 3.66"
- Block 30 – 3.79"
- Block 29 – 3.91"
- Block 28 – 4.02"
- Block 27 – 4.19"
- Block 26 – 4.36"
- Block 25 / TRX-2.6 / QRX200 paired with TRX-2.6 – 4.52"
- Block 24 – 4.69"
- UK Block 24 – 4.75"
- QRX200 Mid (to work with TRX-2.5 & TRX-2.6 models) – 4.82"
- Block 23 – 4.90"
- Block 22 – 5.14"
- TRX-2.5 / QRX200 paired with TRX-2.5 – 5.23"
- Block 21 – 5.33"
- Block 20 – 5.58"
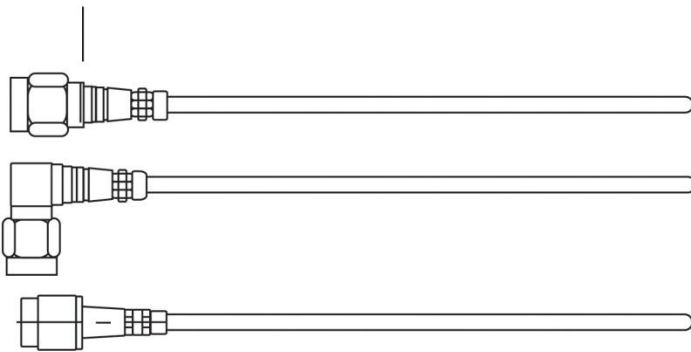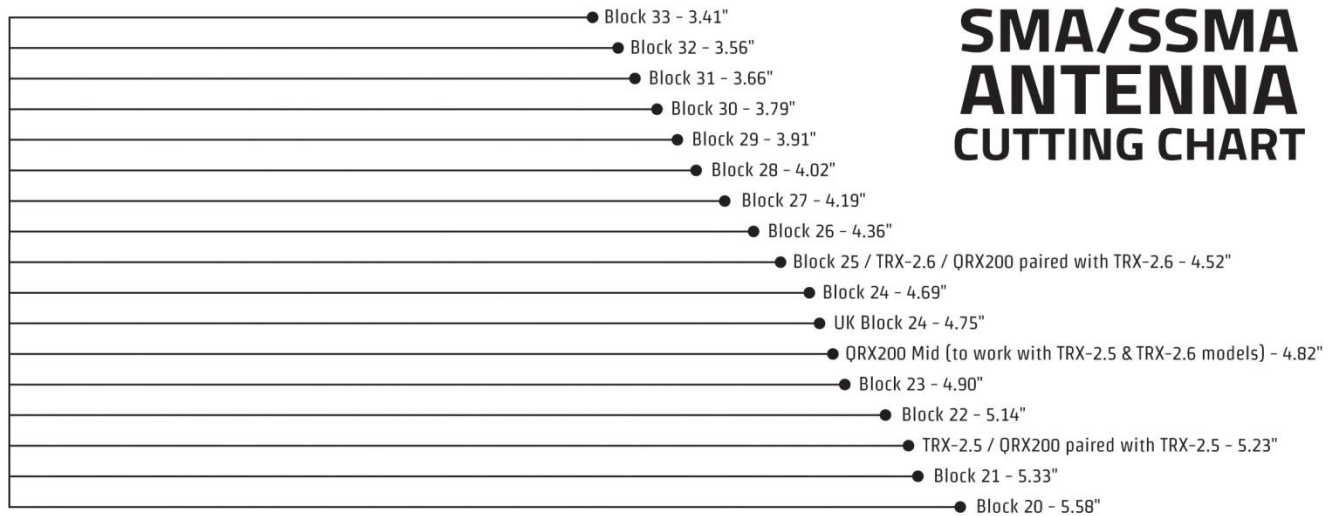
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www.zaxcom.com

Firmware

Each unit is shipped with the latest firmware version installed.

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.

As newer firmware becomes available, it can be downloaded from the Zaxcom website
http://www.zaxcom.com/software-updates

Updating the QRX software using a TRX transmitter

1. Format a micro SD card in a TRX transmitter.
2. With a computer take the formatted card and perform the following:
   - Delete the "DELETE.ME" file from the card.
   - Download the new QRX software and load it into the card. (QRX-XXX.BIN)
3. Insert the card and a fresh set of batteries into the TRX transmitter.
4. Turn 'ON' the transmitter and all QRXs.
5. At the QRX:
   - Verify the receiver mode is set to single mode.
   - Verify encryption is off (ID1 and ID0 are both set to 000)
   - Set the UHF Frequency to the same frequency as the programming transmitter.
   - If the receiver has a good connection, the LEDs for the A and B Status Indicators will be green. If they are red, check that the programming transmitter has zeroes in the encryption code, and the UHF signal format in both the TRX and QRX are set the same.
   - From the extended menu go to the software update page and press the INC key.
   - The screen will display waiting for program. This indicates the receiver is ready to download the new version. This can be done to several QRXs so they will be updated at the same time.
   - Place each QRX within 10' and line-of-sight of the programming transmitter. All of the units should remain motionless to insure they receive a strong and undisturbed signal.
6. At the transmitter:
   - Press and hold the MENU key while powering up the TRX.
   - Verify the Allow IFB Remote Control is set to OFF.
   - Go to the Send QRX Program menu.
   - Press the INC key.
   - The TRX will indicate that it found the program on the card and has started sending it. Please note the transmit process will cycle over and over until manually stopped.
7. Each QRX should indicate it is receiving the program.
8. After the software cycle, all of the receivers should be re-programmed. If there is a reception error, the affected receiver automatically restarts the process with the start of the next cycle.
9. If the receiver that have been reprogrammed displays READ RELEASE NOTES.
   Press A/B KEY to get rid of the warning.
10. At the Programming Transmitter:
    - Press the MENU key to stop the download process.
    - If appropriate, change the Allow IFB Remote Control back to ON.
    - Cycle its power.
11. At each QRX:
    - Cycle the power
    - Verify the new firmware version number is displayed during the boot process
    - If appropriate, set the Receiver Mode to DUAL.

WARNING: After the QRX has received its entire program, it will erase and burn its firmware into the ROM. During this process, which only takes a few seconds, you **MUST NOT** turn 'OFF' the QRX.
If the program is never fully received, it is safe to cycle the power.

Upgrading the QRX IFB Firmware (using a IFB100/200)

1. Format a micro SD in the IFB transmitter.
2. With a computer take the formatted card and perform the following:
   - Delete the "DELETE.ME" file from the card.
   - Download the new QIFB software and load it into the card.
   - Insert the card into the IFB transmitter.
3. At each QRX:
   - Turn 'ON' and advance to the IFB EXTENDED MENU.
   - Set the IFB MODE to RX (receive).
   - Set the IFB FREQUENCY to the same frequency as the IFB transmitter.
   - Set the GROUP CODE to the same number as the IFB transmitter.
   - Go to the IFB SOFTWARE UPDATE and press the INC key 5 times.
     The QRX will display Waiting for Program. This indicates the receiver is ready to download the new version of software. This can be done to multiple units, so they will be updated at the same time.
   - Place the QRX within 10' and line-of-sight of the IFB transmitter.
4. At the IFB Transmitter:
   - Power up while pressing and holding the MENU key to boot up to the extended menu.
   - Advance to the Send ERX Program page.
   - Press the INC key.
   - The LCD screen will indicate that it found the program on the card and has started sending it the IFB will continuously resend the program until manually stopped.
5. The QRX should indicate that it is receiving the program.
6. After the software cycle, the receiver should be re-programmed. If there is a reception error, the affected receiver automatically restarts the process with the start of the next download cycle.
7. For those receivers that have completed reprogramming, the screen will display SUCCESS.
8. Once ALL units have displayed SUCCESS, at the Programming Transmitter:
   - Press the MENU key to stop the download process.
   - Cycle its power.
9. At each QRX unit:
   - Cycle the power
   - Verify the new firmware version number is displayed.

WARNING: After the QRX has received its entire program, it will erase and burn its firmware into the ROM. During this process, which only takes a few seconds, you **MUST NOT** turn 'OFF' the QRX. If the program is never fully received, it is safe to cycle the power.

Upgrading the QRX IFB Firmware using a TRX Transmitter

1. Format a micro SD card in the TRX transmitter.
2. With a computer take the formatted card and perform the following:
   - Delete the "DELETE.ME" file on the card.
   - Download the new QIFB software and load it into the card.
3. Insert the card into the TRX transmitter.
4. At each QRX:
   - Turn 'ON' and advance to the IFB EXTENDED MENU.
   - Set the IFB MODE to RX (receive).
   - Set the IFB FREQUENCY to the same frequency as the IFB transmitter.
   - Set the GROUP CODE to the same number as the IFB transmitter.
   - Go to the IFB SOFTWARE UPDATE and press the INC key 5 times.
     The QRX will display Waiting for Program. This indicates the receiver is ready to download the new version of software. This can be done to multiple units, so they will be updated at the same time.
   - Place the QRX within 10' and line-of-sight of the IFB transmitter.
5. At the TRX transmitter:
   - Advance to the Factory Menu (go to the LOCK page and quickly press the DEC key 6 times)
   - Set the IFB Mode to 3 TX.
   - Advance to the Send ERX Program menu.
   - Press the INC key.
   - The display will indicate that it found the program on the card and has started sending it. The TRX will continue to send the program until manually stopped.
6. The QRX should indicate that it is receiving the program.
7. After the software cycle, the receiver should be re-programmed. If there is a reception error, the affected receiver automatically restarts the process with the start of the next download cycle.
8. For those receivers that have completed reprogramming, the screen will display SUCCESS.
9. Once ALL units have displayed SUCCESS, at the Programming Transmitter:
   - Press the MENU key to stop the download process.
   - Cycle its power.
10. At each QRX unit:
    - Cycle the power
    - Verify the new firmware version number is displayed.

WARNING: After the QRX has received its entire program, it will erase and burn its firmware into the ROM. During this process, which only takes a few seconds, you **MUST NOT** turn 'OFF' the QRX. If the program is never fully received, it is safe to cycle the power.

Specifications

Receiver

Receiver Type:	True / antenna diversity (mono or stereo)
RF Modulation:	Proprietary digital method
RF Frequency Range:	518.0 to 692.0 MHz
RF Frequency Step:	100 KHz
RF Bandwidth: US Mode:	200 KHz
European Mode:	125 KHz
Channel Separation:	500 KHz (700 KHz recommended)
Sensitivity:	-110 dBm
Antenna Connector:	50-ohm SMA female

Receiver Audio - Analog Outputs

Channels:	Up to 4
Audio Level:	Line Level 0 dBu active balanced
Dynamic Range:	114 dB
Distortion:	0.001%
DAC Bit-depth:	24 bit
DAC Rate:	48 kHz
Connector (x 2):	TA-5M

Receiver Audio - Digital Outputs

Channels:	Up to 4
Sample-rate:	32 kHz / 96 kHz
AES Reference:	Wordclock and AES reference
Connector:	TA-5M

Serial Control

Protocol:	RS-422, RS-485
Connector (x 2):	USB

IFB Transmitter/Receiver (optional)

Transmitter

RF Power Output:	50 mW
Emission Designator:	180 KV2E
FCC Part:	CFR Title 47, Part 18
Receiver Sensitivity:	-96 dBm
Frequency Response:	20 Hz to 12 kHz
RF Modulation:	Digital Spread Spectrum
RF Frequency Range:	2.403 to 2.475 GHz
RF Frequency Step:	0.001 GHz (1 MHz)
RF Bandwidth:	1 MHz
Channel Separation:	2 MHz
Antenna Connector:	50-ohm SMA female

IFB Audio
ADC Bit-depth: 24 bit
ADC Rate: 48 kHz
Dynamic range: 103 dB
Distortion: 0.01%
Frequency Response: 20 Hz to 12 kHz
System Group Delay: 10 ms

IFB Audio Input/Output
Connector: 1/8" Stereo (3.5 mm)
Type: Unbalanced
Level: -10 to +8 dBu
Impedance: 10k ohms

Time code Input/Output (common connector)
Input
Level Range: 1 to 5V, P-P

Output
Level Range: .2 to 3V, P-P

Connector: 1/8" Stereo (3.5 mm) Stereo
Type: Unbalanced
Impedance: 10 k ohms

Time code Reader/Generator
Clock Accuracy: 1.54 PPM (1 frame out in 6 hours)
Time code Type: SMPTE
Time code Frame-rates: 23.98, 24, 25, 29.97NDF, 29.97DF, 30NDF, 30DF

Physical
Weight: 6.0 oz. (170 grams)
Dimensions   (H x W x D): 1.25" x 3.25" x 5.25" (32mm x 83mm x 133mm)
External Power: 9 to 18 VDC (270 mA @ 12 VDC – no side LEDs, 390 mA – w/ LEDs illuminated)
Internal Power: N/A
Display: Graphic LCD panel

Product Support

Register your product with Zaxcom: *http://zaxcom.com/support/product-registration/*
Download the latest **Firmware** from: *http://zaxcom.com/support/updates/*
Download the latest **User Manuals** from: *http://zaxcom.com/support/updates/*
Submit Technical Questions at: *http://www.zaxcom.com/submit-a-technical-question*
Submit information for **Repair Services** at: *http://www.zaxcom.com/support/repairs*
Join the **Zaxcom User Forum** at: *http://www.zaxcom.com/forum/forum.php*
Join the **Zaxcom Face Book User Group** at: *https://www.facebook.com/groups/682199065139938/*

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 QRX ("Product") was purchased from an authorized distributer or authorized reseller. Distributers 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:
- Is not present,
- Cannot reasonably be fixed because of damage occurring when the Product is in the possession of someone other than Zaxcom, or
- 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.

Declaration of Conformity

ZAXCOM, INC.
230 West Parkway, Unit 9
Pompton Plains, NJ 07444
September 1, 2015

We certify and declare under our sole responsibility that the following product:

QRX200, QRX235, RX-12 and RX200 wireless microphone receivers
Restrictive use for residential, office and professional use only

Conforms with the essential requirements of the EMC Directive 2004/108/EC and
R&TTE Directive 99/5/EC, based on the following specifications applied:

EN 300 422-2 v1.3.1 Radio Parameters
EN 301 489-9 v1.4.1 Immunity
EN 60950: 2006/A1:2011 Product Safety (low voltage directive)
EN 50566: 2013 RF Exposure Safety

Our authorized representative in Europe is Mr. Roger Patel, Director of Everything
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England.

Glenn Sanders
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07444 USA

zaxcom.com
973.835.5000 (tel)
973.835.6633 (fax)

FCC Notice:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna • Increase the separation between the equipment and receiver • Connect the equipment into an outlet on a circuit different from that which the receiver is connected • Consult the dealer or an experienced radio/TV technician for help. Changes or modifications to this equipment not expressly approved by Zaxcom, Inc. could void the user's authority to operate it.