

User Manual  
Published October 2019  
Firmware Version QR2-413  
QIFB Version 1.60



ZAXCOM.COM

QRX235  
Your Sound Amplified

<b>QRX235 RECEIVER</b> .....	<b>4</b>
FRONT .....	4
REAR .....	5
SIDE .....	6
<b>HOME SCREEN</b> .....	<b>7</b>
<b>MAIN MENU</b> .....	<b>8</b>
NAVIGATING THE MAIN MENU .....	8
EXITING THE MAIN MENU .....	8
FREQUENCY ADJUST .....	8
Adjusting the receive frequency of the QRX .....	8
TRANSMITTER GAIN ADJUST .....	8
Adjusting the transmitter gain remotely .....	8
UNIT CODE SELECT .....	9
TEST TONE OUTPUT .....	9
FREQUENCY SCAN .....	10
Single mode scanning .....	10
Selecting a frequency .....	10
Dual mode scanning .....	10
<b>EXTENDED MENU</b> .....	<b>11</b>
NAVIGATING THE EXTENDED MENU .....	11
EXITING THE EXTENDED MENU .....	11
MODULATION SELECT .....	11
SINGLE / DUAL MODE SELECT .....	11
AES OUTPUT ENABLE .....	12
OUTPUT ASSIGNMENT .....	12
IFB OUTPUT MIX .....	12
IFB ENABLE .....	12
TRANSMITTER REMOTE CONTROL ENABLE .....	13
SERIAL PORT .....	13
TIME CODE SOURCE .....	13
OUTPUT ROUTING .....	13
QRX SOFTWARE UPDATE .....	14
AES RECOGNIZE .....	14
AES OUTPUT SAMPLE RATE ADJUST .....	14
LED BRIGHTNESS SET .....	14
BLUE LED SET .....	15
ENCRYPTION CODE SET .....	15
Adjusting the encryption code .....	15
<b>FREQUENCY PRESETS</b> .....	<b>16</b>
<b>IFB OPTION MENU</b> .....	<b>17</b>
NAVIGATING THE IFB OPTION MENU .....	17
IFB HOME SCREEN .....	17
IFB STATUS / TRANSMITTER TRANSPORT CONTROL .....	17
IFB INPUT MIX ASSIGN .....	18
REMOTE POWER MODE .....	19
TIME CODE SET .....	19
TIME CODE FRAME-RATE SELECT .....	20

<b>IFB EXTENDED MENU .....</b>	<b>21</b>
NAVIGATING THE IFB EXTENDED MENU .....	21
INPUT TRIM SET .....	21
OUTPUT TRIM SET .....	21
IFB FREQUENCY SET.....	21
IFB MODE SET .....	22
GROUP ID SET .....	22
IFB VOTING ENABLE .....	22
UPDATING THE IFB SOFTWARE .....	22
TIME CODE OUTPUT LEVEL SET.....	23
TIME CODE FRAME RATE SET .....	23
TIME CODE JAM MODE SET .....	23
TIME CODE DELAY SET .....	23
TIME CODE MUTE TIME SET.....	24
AUDIO DELAY SET.....	24
ZAXNET OUTPUT ENABLE.....	24
IFB TRANSMIT POWER LEVEL SET.....	24
SEND RECORD COMMANDS.....	24
IFB ENCRYPTION SET.....	25
 <b>FIRMWARE .....</b>	 <b>26</b>
UPDATING THE QRX FIRMWARE USING A TRANSMITTER.....	26
UPDATING THE QRX IFB FIRMWARE USING A IFB100/200 .....	27
UPDATING THE QRX IFB FIRMWARE USING A UHF TRANSMITTER .....	28
 <b>WIRING DIAGRAMS.....</b>	 <b>29</b>
AUDIO OUTPUT CONNECTORS .....	29
Single Analog Channel out of one TA5.....	29
Two Analog Channels out of one TA5.....	29
AES Digital out of TA5 .....	29
TIME CODE CONNECTOR - 3.5MM .....	30
Time Code in to QRX .....	30
Time Code out of QRX.....	30
IFB AUDIO CONNECTOR - 3.5MM .....	30
SERIAL LOOP CONNECTOR - USB (RS-485) .....	31
 <b>OPERATING FREQUENCIES.....</b>	 <b>32</b>
ZAXNET REMOTE CONTROL AND TIME CODE .....	32
UHF AUDIO.....	32
 <b>ANTENNA CUTTING CHART.....</b>	 <b>33</b>
 <b>SPECIFICATIONS.....</b>	 <b>34</b>
 <b>PRODUCT SUPPORT .....</b>	 <b>36</b>
ZAXCOM WARRANTY POLICY AND LIMITATIONS.....	37

## 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. **Menu Key** - Press to advance to the next menu item.

5. **Dec Key** - Used to decrease the parameters of a menu item.

6. **Receiver Status Indicators**

Green - Receiver is receiving a valid signal.

Red - Receiver is not getting a valid signal.

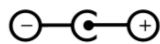
7. **A/B Key** - Press to alternate between receivers in dual mode.

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. **DC Power Input** - The QRX uses a Switchcraft 761K connector.



2. **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.

3. **IFB Audio - 3.5mm TRS** (available with the QIFB option)

- When ZaxNet is set to transmit (TX) this connector will accept external audio for IFB transmission.
- When ZaxNet is set to receive (RX) this connector will output the ZaxNet received audio.

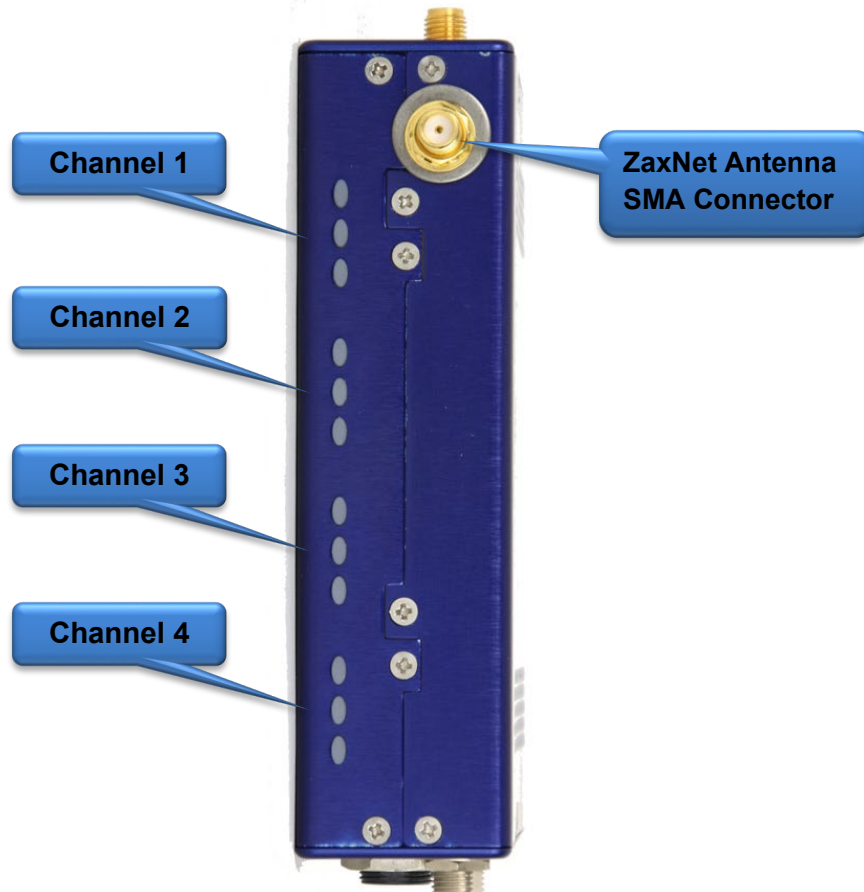
4. **Time Code In/ Out - 3.5mm TRS** (available with the QIFB option).

This connector will input or output time code depending on how the cable 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



**Side Mounted LEDs** - The LEDs give visual indication if RF and / or audio are being received by the QRX. The LED settings are adjusted in the extended menu. There are three LEDs per group and one group for each receive channel. The group 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.

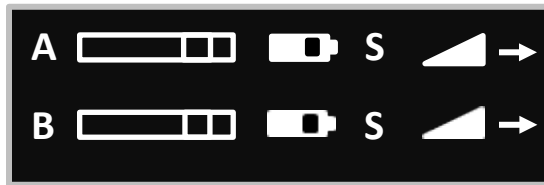
#### LED modulation colors

- ○ ● 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



### 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 bars to the right are the -20dBFS and -10dBFS marks.

### 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 transmitters 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.

### RF signal strength

This shows the radio signal strength of the corresponding 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.

### Receiving antenna

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

## Main Menu

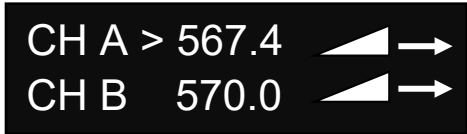
### Navigating the Main Menu

- 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 Adjust



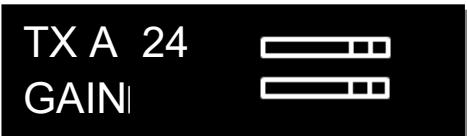
The frequency select menu is where the QRX235 receive frequencies are set. These frequencies need to match the frequencies that are set on the corresponding transmitters.

#### 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.*



The transmitter gain menu allows for the input gain on the transmitter to be remotely adjusted when the QRX235 has a QIFB option board installed the gain of the corresponding transmitters. The transmitter gain menu will display the gain level and an audio meter with a -20dBFS and -10dBFS mark on the right.


#### Adjusting the transmitter gain remotely

- Press the INC key to increase the transmitters gain. As the gain is increased "+ + +" will replace the gain level.
- Press the DEC key to decrease the transmitters gain. As the gain is decreased "- - -" will replace the gain level.
- 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: 1
RXB > UNIT: 2
```

This menu sets the unit code that will correspond to the transmitter that is being controlled. 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.

## Test Tone Output



```
TONE:
OFF
```

From the tone menu a 1K test tone can be enabled. That tone will be outputted from the TA5 connectors. This is used 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)

## Frequency Scan

**PRESS ↑ TO SCAN**

The frequency scan menu is where the QRX can scan and search for a clear frequency. After the scan is complete a graphical display of the RF that is present, in that specified range will be shown and the QRX235 will suggest a clear frequency. That frequency can be accepted by pressing the INC key. Or press the DEC key to skip the first chosen frequency and have the QRX235 suggest another frequency.

### Single mode scanning

- Turn off the transmitter.
- Press the INC key to initiate a scan.
- As the block is being scanned, the frequency being examined is displayed on the bottom half of the screen and a graphic map of the RF that is found will be displayed with a vertical line extending up from the baseline. The length of the line indicates the level or strength of the found RF at that frequency.



### Selecting a frequency

When the scan is complete a suggested frequency will be shown and a vertical blinking line will be drawn on the display.

At that point:

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



### Dual mode scanning

- Turn on the first transmitter and set it to the chosen frequency.
- Press the A/B key to scan the B receiver.
- Press the INC key to initiate a scan.
- Select the second frequency the same way the first frequency was selected.

## Extended Menu

### Navigating the Extended Menu

- Press and hold the DEC key from 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.

### Modulation Select

RX FMT: ZHD96

From this menu the modulation mode is selected. Modulation is simply the way a transmitter “modulates”, or sends, its signal to the QRX235. This setting needs to match the modulation mode that the corresponding transmitter is set to - if the two settings do not match the QRX will not be able to receive and decode the signal from the transmitter. Please note the QRX will need to be rebooted after a change is made to the modulation.

	STEREO	MONO	XR	ZHD 96	ZHD 48
Modulation Bandwidth	235 kHz	235 kHz	235 kHz	96 kHz	48 kHz
Minimum Channel to Channel Spacing	400 kHz	400 kHz	400 kHz	235 kHz*	100 kHz**
6 MHz TV Channel Capacity	15	15	15	30	60
Latency	6ms	3.5ms	6ms	6ms	18ms
Compatibility with a 235 Series Receiver	2 Transmitters	2 Transmitters	2 Transmitters	2 Transmitters	1 Transmitter
Compatibility with a 300-96 Receiver	NO	NO	NO	1 Transmitter	1 Transmitter
Compatibility with a 300-48 Receiver	NO	NO	NO	NO	1 Transmitter

\* When used with a QRX300-96 receiver – the minimum spacing is 300 kHz when using all other receivers.

\*\*When used with a QRX300-48 receiver – the minimum spacing is 235 kHz when using all other receivers.

### Single / Dual Mode Select

RX MODE:  
SINGLE

- **SINGLE** - This configures the QRX to operate as a single receiver. In single mode the QRX can receive one audio channel from one transmitter.
- **DUAL** - This configures the QRX to operate as two independent receivers. In dual mode the QRX can receive audio from two transmitters.

## AES Output Enable

AES - 1 2: ON  
AES - 3 4: OFF

The AES output menu enables the TA5 connectors to output an AES signal.

- **ON** - Indicates that the TA5 will output AES audio.
- **OFF** - Indicates that the TA5 will output analog audio.

## Output Assignment

*This menu is only available when the QRX is set to dual receive mode.*

OUTPUTS:  
NORMAL

The output assign menu sets what audio is outputted from each TA5 connector when the QRX is set to dual mode receiving mono transmitters.

- **SPLIT / NORMAL** - The signal from each transmitter will be outputted on individual TA5 connectors. Transmitter 1 will be outputted on TA5 1 and transmitter 2 will be outputted on TA5 2.
- **COMBINED / SWAP** - The signal from each transmitter will be combined on a single TA5 connector.

## IFB Output Mix

IFB OUTPUT MIX:  
CH 1 2 3 4

The IFB output mix selects which receive 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. Please note that this setting is only for broadcasting the audio received from the UHF signal - not the audio inputted via the IFB in.

## IFB Enable

IFB ENABLE:  
YES

IFB enable turns on the QIFB option board - when installed. Please note that the IFB option board needs to be enabled for the QRX235 to send or receive ZaxNet commands.

## Transmitter Remote Control Enable

**TX REMOTE CTRL:  
OFF**

When transmitter remote control is enabled the QRX235 can be used to remotely change the gain, UHF frequency and power level of the corresponding transmitter in addition to changing the transport status of the onboard recorder. Please note the QRX235 will need to have a QIFB option board installed for it to control TRX transmitters.

## Serial Port

**SERIAL PORT  
ZAXLAN QRX**

The serial port menu sets the function of the serial port on the QRX.

- **OFF** - No commands will be communicated to the serial port.
- **ZAXLAN QRX** - The QRX will communicate with other QRX receivers, via the serial port.
- **BLUE TOOTH** - This setting allows a QRX235 with QIFB will interface to communicate with a ZaxMote blue tooth dongle via the serial port.

## Time Code Source

*This menu is only available when the QIFB board 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 QRX235 will use and output time code received via ZaxNet or from the internal time code generator.
- **ON** - The QRX235 will use and output the time code that is embed in the UHF signal received from a Zaxcom transmitter.

## 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 both TA5 connector 1 and TA5 connector 2

The output routing menu sets the output assignments of the TA5 connectors when the QRX is set to single mode and is receiving a signal from a stereo transmitter.

## QRX Software Update

PRESS ↑ TO  
UPDATE SOFTWARE

The software update menu is where a firmware update for the QRX is initiated from. After the INC key is pressed the QRX will wait for firmware to be sent from a TRX transmitter. When the QRX receives the firmware the update process will automatically begin. Please note the QRX needs to be set to mono modulation and in single mode to update the firmware. Please see the firmware section in the back of this manual for additional information on updating the QRX.

## AES Recognize

SONY F5 AES  
OFF (NORMAL AES)

The AES recognize is used for some Sony F5 or F55 cameras that cannot recognize the AES signal from the QRX.

- **OFF** - The QRX will output a normal AES signal.
- **ON: AB KEY** - This setting will send a special signal to the AES out, when the A/B key is pressed. This will allow the Sony camera to recognize and lock to the AES signal from the QRX. This is the recommended setting.
- **ON: ALWAYS** - The QRX will constantly send a special recognize signal via the AES out.

## AES Output Sample Rate Adjust

AES OUTPUT RATE  
NORMAL

This menu adjusts the AES output sample rate.

- **NORMAL** - This is the recommended setting.
- **96K** - The QRX will output a 96 kHz AES signal for some mixers like the Yamaha 01V that cannot properly sample rate convert the AES signal.

## LED Brightness Set

LED DIMMER:  
OFF

This menu sets the brightness level of the side mount LED's.

- **OFF** - The LEDs do not illuminate.
- **NUMERIC VALUE** - Adjustable brightness levels.
- **BRIGHT** - The LED's will illuminate at the brightest setting.

## Blue LED Set

LED METER MODE:  
OFF

This menu 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 is received, the blue is replaced with the appropriate modulation color for that channel.

## Encryption Code Set

ID1: 000 ID0: 000  
↑

The encryption menu is where the encryption is turned on and the code is set. The encryption 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.

## Frequency Presets

**CHANNEL PRESETS**  
**PRESET 1: 543.0**

The QRX has 16 user assignable frequency presets.

### Access and navigating the channel preset menu:

- From the home screen press and hold the DEC key for 1.5 seconds which will access the extended menu, then press the DEC two more time to access the channel preset menu.
- When in the channel preset menu pressing the MENU key will cycle through the 16 presets (0 through 15).
- To adjust each preset frequencies press the INC and DEC key.
- To advance to the next preset press the MENU key.
- To exit the preset menus briefly tap the PWR key.

### Selecting preset frequencies:

- From the frequency adjust menu press and hold the DEC key until the QRX frequency reaches the minimum frequency of the block. Then continue to press the DEC key to access the 16 preset frequencies.
- Pressing the INC and DEC keys will cycle through the 16 preset frequencies.



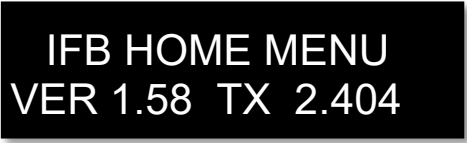
## IFB Option Menu

*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 again to advance to the IFB option menu.
- Press the MENU key to enter into the IFB option 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 IFB option menu.
- To exit the IFB option menu press the POWER key briefly.

### IFB Home Screen



IFB HOME MENU  
VER 1.58 TX 2.404

This menu displays the IFB firmware version and the state of the IFB (TX) transmit mode (TX) or (RX) receive mode, and the ZaxNet frequency.

### IFB Status / Transmitter 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 transmitter.
- IFB Audio Level Meter

When the IFB is set to transmit the QRX235 can be used to send transport commands to the 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 that is set to 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 and or 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.

Please note that ZaxNet transmitted audio is mono so all audio selected will be summed to mono.

## 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 transmitters to be adjusted. The transmitters have three selectable power settings:

- **NORMAL** - The transmitters are at full power.
- **WAKE** - If a transmitter is set to REMOTE STANDBY it will power up to a non-transmitting low power mode that 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 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 transmitter is awoken the only way for it to go back into standby mode is by power cycling the transmitter.

- **LOW 2** - Low 2 disables the RF power amplifier, RF board and microphone pre-amp on the 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 transmitter 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 since the preamp is disabled. Once the transmitter's power is set to Low 2 the QRX235 can be powered down. Then when the QRX235 is powered up all transmitters being controlled will automatically come up to full power since the QRX235 will always boot up to the 0 Power setting. Please note if the 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
```

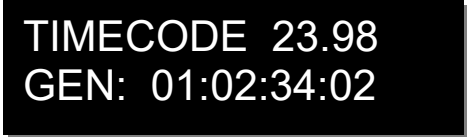
This menu allows the internal time code generator to be manually set.

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 the DEC key to enter the IFB extended menu.
- Press the MENU key to advance to the next menu item.
- Press and hold the MENU key at any point to jump to the top of 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  
SIGNAL: 23**

← Receive Frequency

← Signal Strength

Receive Mode

The IFB frequency set menu is where the ZaxNet transmit and receive frequency of the QRX235 is set. 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 the state of the ZaxNet transceiver.

- **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 potentially interfering with the UHF reception.

## Group ID Set

REMOTE CONTROL  
GROUP ID=1

The group ID sets the QIFB to a ZaxNet group. This allows the QRX235 to control a specific group of transmitters without affecting others. So for example a QIFB set to Group 1 will control all transmitters set to group 1 and a QIFB 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 receive (RX)*

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 ZaxNet receiver in the QRX235 will choose the strongest signal. Please note that the QIFB 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 Receive (RX).*

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.

### 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 of the QIFB 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 QRX235.
- **AUTO-JAM** - The QRX235 will continuously jams time code via ZaxNet or from the UHF signal from the 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 transmitter can start and stop when it detects the record-run time code starting and stopping. So 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)**

Time code jam mute sets the length of time that the time code output is muted whenever a time code jump is detected. So if there is a change in time code the time code out of the QRX235 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 delays the IFB audio that is broadcasted via ZaxNet. This is useful when a delay is needed so the audio feed can match the video delay. The 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 embedded commands that is within the time code. If the time code output is not connected or feeding 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 transmit (TX)*

**IFB TX POWER: 7**

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

### Send Record Commands

**ALWAYS SEND REC  
COMMANDS: OFF**

This menu is enables the QIFB to send record commands to the transmitter. To have the ability to start and stop the transmitters recording feature this needs 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.

### Adjusting 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.

## 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 screen.

As newer firmware becomes available, it can be downloaded from the Zaxcom website:

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

## Updating the QRX firmware using a transmitter

1. Format a micro SD card in a transmitter.
2. With a computer take the formatted card and perform the following:
  - Delete the "SNXXXX.ME" file from the card.
  - Download the new QRX firmware and load it into the card. (QR2-XXX.BIN)
3. Insert the card and a fresh set of batteries into the transmitter.
4. At the QRX:
  - Verify the QRX is set to single mode and modulation is set to mono.
  - Verify encryption is off (ID1 and ID0 are both set to 000)
  - Set the UHF Frequency to the same frequency as the programming transmitter.
  - The QRX receiver status LEDs should both be green.
  - From the extended menu go to the firmware update page and press the INC key.
  - The screen will display waiting for program. This indicates the receiver is ready to download the new firmware. This can be done to several QRXs so they will be updated at the same time.
5. At the transmitter proceed to the setup menu choose to the firmware update menu (see transmitter manual) and press the INC key.
6. Each QRX should indicate it is receiving the program.
7. After the firmware send cycle, all of the receivers should be re-programmed and "SUCCESS . . . REBOOT NOW" will be displayed. If there was a reception error, the affected receiver will automatically restart the process with the start of the next send cycle.
8. Reboot the QRX and verify the QRX is running the new firmware version.

**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.

## Updating 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 “SNXXXX.ME” file from the card.
  - Download the new QIFB software and load it into the formatted card (QOPT-XXX.BIN).
3. At each QRX:
  - 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.
4. At the IFB Transmitter:
  - Advance to the SEND ERX PROGRAM FILE page in the extended menu.
  - Press the INC key.  
The transmitter 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 QRX 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.
9. Cycle the power at each QRX and verify that the QIFB is running the new firmware version.

**WARNING:** After the QIFB 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 **DO NOT** turn 'OFF' the QRX. If the program is never fully received, it is safe to cycle the power.

## Updating the QRX IFB firmware using a UHF Transmitter

1. Format a micro SD in the transmitter.
2. With a computer take the formatted card and perform the following:
  - Delete the “SNXXXX.ME” file from the card.
  - Download the new QIFB software and load it into the formatted card (QOPT-XXX.BIN).
3. At each QRX:
  - 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.
4. At the transmitter:
  - From the ZaxNet menu set ZaxNet mode to TX (transmit).
  - From the set up menu advance to the SEND ERX PROGRAM FILE 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.
5. The QRX should indicate that it is receiving the program.
6. After the software cycle, the QRX 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.
9. Cycle the power at each QRX and verify that the QIFB is running the new firmware version.

**WARNING:** After the QIFB 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 **DO NOT** turn 'OFF' the QRX. If the program is never fully received, it is safe to cycle the power.

## 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
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 pins 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 of 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

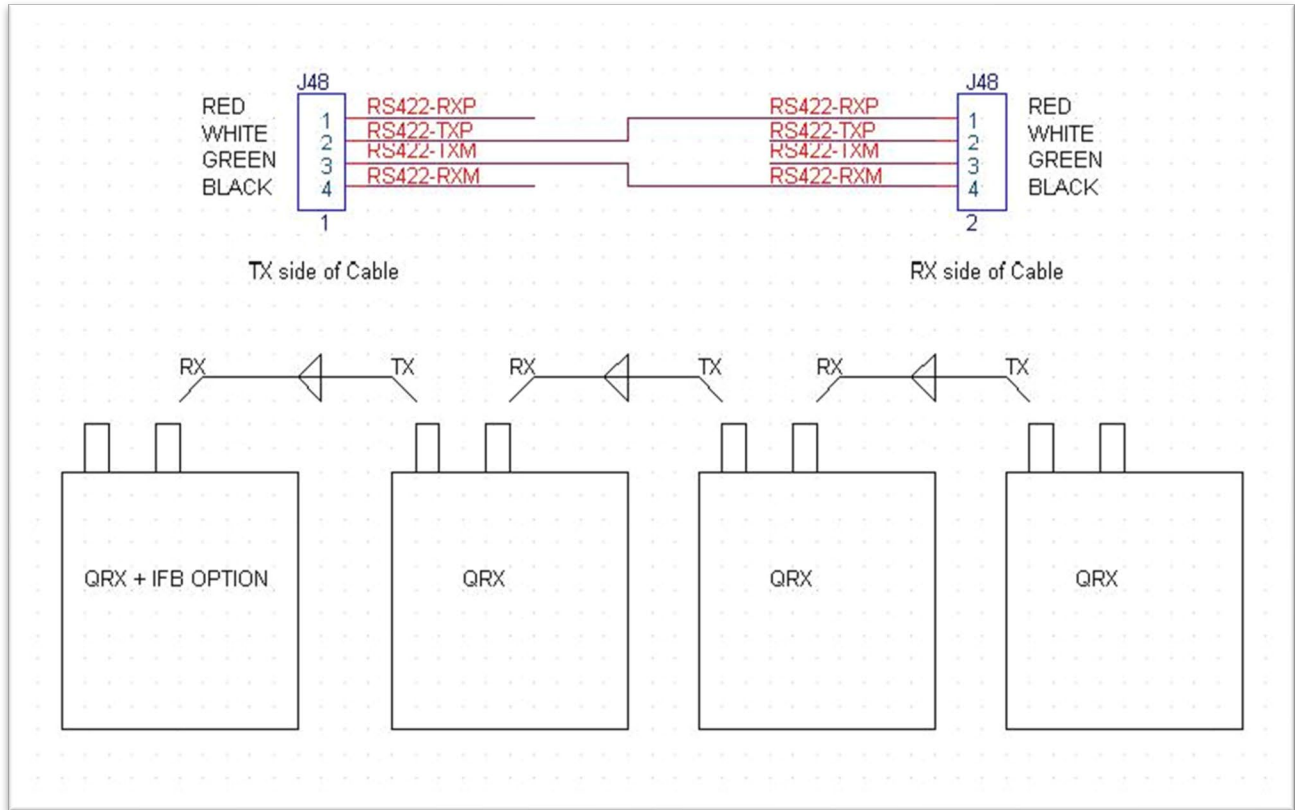
## IFB Audio Connector - 3.5mm

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 serial connectors allow for a 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. The QRX235 can also communicate to a QRX200.



## Operating Frequencies

### ZaxNet Remote Control and Time Code

2.403 to 2.475 GHz

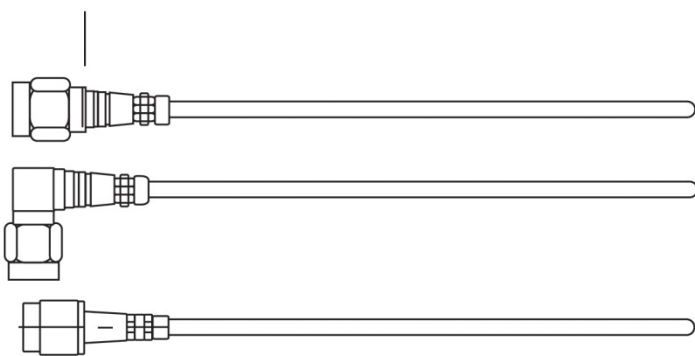
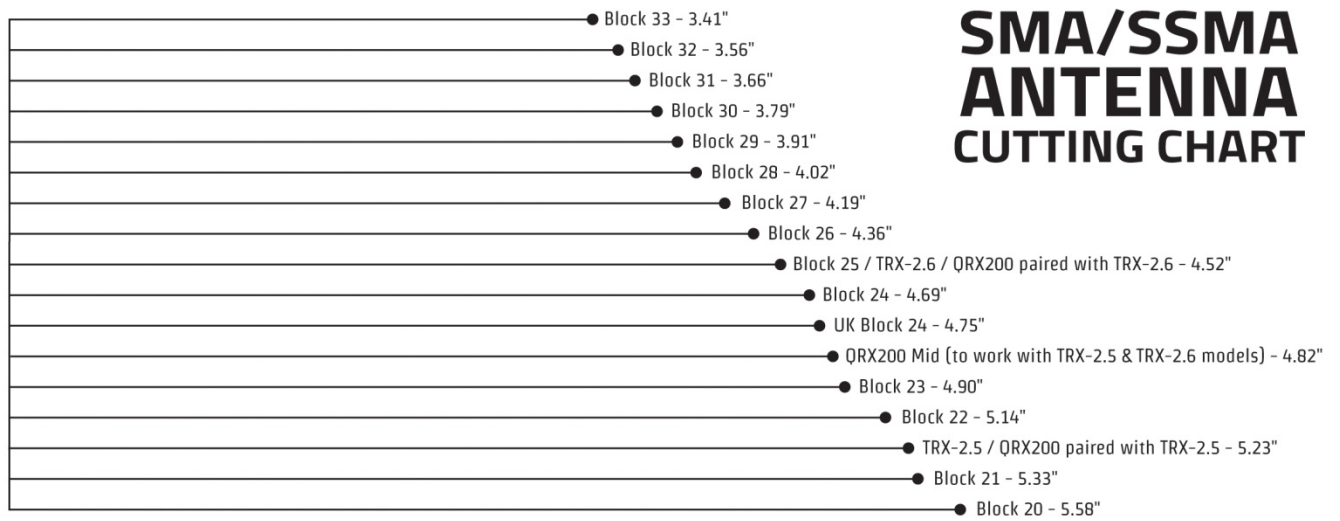
### UHF Audio

<b>Block</b>	<b>Frequency Range</b>	<b>TV Channels</b>
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



## 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:	235 KHz
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
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
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: OLED 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 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:
  - 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.

Zaxcom Digital Wireless are protected under following patent #'s:

7,711,443/7,929,902/D608,339/8,835,814 B2/ 9,336,307/10,276,207/10,901,680/D608,339/11,610,605

For a full list of patent information, please visit: <https://zaxcom.com/company/patents/>

## Declaration of Conformity

ZAXCOM, INC.  
230 West Parkway, Unit 9  
Pompton Plains, NJ 07444  
September 1, 2019

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

QRX200, QRX235, QRX212, MRX214, RX-12, RX-12R, RX200 and URX100 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  
Audio located at Elstree Film Studios, Shenley Road, Borehamwood, Herts WD61JG in  
England.



Glenn Sanders  
President  
Zaxcom, Inc.

*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.*