

User Manual
Published May 2016
Software Version RX2-410



ZAXCOM.COM

SRX220
Drop Right In

- SRX220 3**
 - FRONT 3
 - REAR 4
- HOME SCREEN 5**
- MAIN MENU 6**
 - NAVIGATING THE MAIN MENU 6
 - EXITING THE MAIN MENU 6
 - FREQUENCY DISPLAY AND SELECT 6
 - FREQUENCY SCAN 6
 - Scanning for a frequency 6
 - Selecting the frequency 6
 - SETTING THE SCAN RANGE 7
 - TEST TONE OUTPUT 7
 - TIME CODE 7
- EXTENDED MENU 8**
 - NAVIGATING THE EXTENDED MENU 8
 - EXITING THE EXTENDED MENU 8
 - AUDIO OUT 8
 - OUTPUT LEVEL 8
 - MUTE TIME CODE UNTIL JAMMED 8
 - TIME CODE OUTPUT LEVEL 9
 - SOFTWARE UPDATE 9
 - MODULATION SELECT 9
 - OLED BRIGHTNESS 10
 - HIDE ENCRYPTION MENU 10
 - ENCRYPTION CODE SET 10
 - Adjusting the encryption code 10
- DB25 PIN CONFIGURATION 11**
- OPERATING FREQUENCIES 12**
 - UHF AUDIO 12
- ANTENNA CUTTING CHART 13**
- FIRMWARE 14**
 - UPDATING THE SRX220 SOFTWARE USING A TRX TRANSMITTER 15
- SPECIFICATIONS 16**
- PRODUCT SUPPORT 17**
- ZAXCOM WARRANTY POLICY AND LIMITATIONS 18**

SRX220

Front



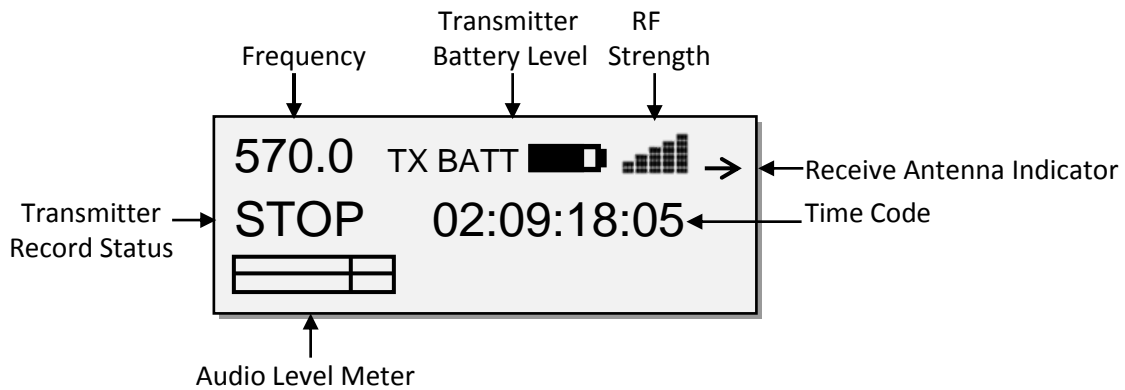
1. **OLED Display**
2. **INC Key** – Used to increase the parameters of a menu item.
3. **UHF Antenna Connectors (2)** – SMA connectors.
4. **DEC Key** – Used to decrease the parameters of a menu item.
5. **Menu Key** – Used to advance to the next menu item.
6. **Power Switch**

Rear



1. **DB-25 connector** - see wiring diagram at the end of this manual for pin configuration.

Home Screen



Frequency

This is the UHF frequency that the SRX220 is set to.

Transmitter Battery Level

The battery diagram displays a rough indication of the transmitter's battery level. For a more accurate battery reading 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.

RF Signal Strength

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

Transmitter's Record Status

This is the current recorder status on the transmitter that is feeding the SRX220

- STOP - The recorder is stopped.
- REC - The recorder is recording.
- PLAY - The recorder is playing back.

Audio Level

Displays the incoming audio level, the meter extends from the left to the right. The vertical bar is the -20dBFS mark and the far right side of the box is 0dBFS. Two meters will be displayed when a stereo signal is being received. A single thick meter will appear when a mono signal is being received.

Time Code

Displays the time code the SRX220 is receiving and outputting.

Receiving Antenna

This shows the antenna that is receiving the RF signal.

Main Menu

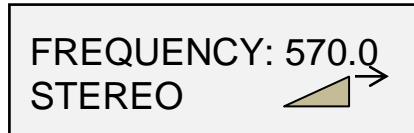
Navigating the Main Menu

- 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



The frequency select menu is where the SRX220 receive frequency is set. This frequency needs to match the frequency that is set on the corresponding transmitter. To adjust the frequency press the INC key to increase the frequency and press the DEC key to decrease the frequency. Also displayed is the modulation format.

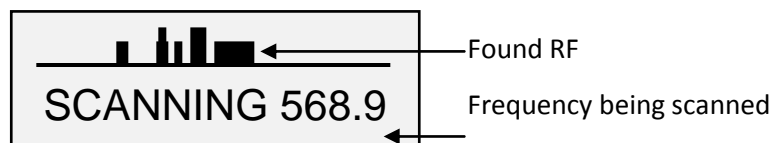
Frequency Scan



The frequency scan menu is where the SRX220 can scan the user specified frequency range and search for a clear frequency. After the scan is completed a graphic display of the RF that is present in that specified range will be shown. The SRX220 will also suggest a clear frequency. That frequency can be accepted by pressing the INC key. Or press the DEC key to skip the chosen frequency and have the SRX220 suggest another frequency.

Scanning for a frequency

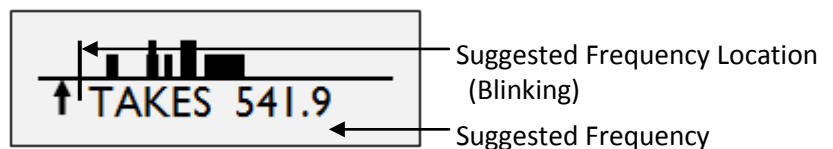
- Turn off the TRX transmitter.
- From the frequency scan menu press the INC key to initiate a scan.
- While the SRX220 is scanning, the frequency being examined is displayed in the bottom half of the screen. Once the scan has completed a graphic map of the scans will be displayed. The low end of the frequency range is on the left side and the high end is on the right. Wherever RF is found, a vertical line is drawn. The line 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 the SRX220 will draw a vertical blinking line on the display to indicate where the first suggested frequency is and the frequency in MHz will appear below the scan graphic.

- Press the INC key to accept the new frequency.



- Press the DEC key to suggest another frequency.

Setting the Scan Range

SCAN LIMIT
ALL 200 512 - 698

The scan range menu sets the frequency range that the SRX220 will scan when doing a frequency scan. Pressing the INC and DEC key will cycle through the scanning options. If the scan range is changed the SRX220 will jump back to the scanning menu when the MENU key is pressed.

Available Scan Ranges

- **All 200** - The SRX220 will scan all frequencies from 512.0MHz through 698.0MHz.
- **LO 100** - Corresponds to the frequency range of TRX2.5 transmitters, when selected the SRX220 will scan all frequencies from 512.0MHz through 614.0MHz.
- **HI 100** - Corresponds to the frequency range of TRX2.6 transmitters, when selected the SRX220 will scan all frequencies from 596.0 through 698.0MHz.
- **BLK (20 -26)** - choose to scan a specific block (Blocks 20-26).
 - Block 20 - 518-542 MHz
 - Block 21 - 536-572 MHz
 - Block 22 - 560-590 MHz
 - Block 23 - 590-614MHz (block 23 needs to be enabled)
 - Block 24 - 614-644 MHz
 - Block 25 - 638-668 MHz
 - Block 25 - 662-698 MHz

Test Tone Output

TONE:
OFF I

The test tone menu allows the SRX220 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 both outputs at -20dBFS.
- **+0dBFS** - Simultaneously sends tone to both outputs at full scale 0dBFS.

Time Code

TC: 02:09:18:05
29.97DF

The time code menu displays the time code that the SRX220 is receiving from the transmitter. The SRX220 will automatically detect and adjust and display the time code frame rate.

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 - hold the MENU key to jump to the top of the extended menu. Then press the INC key to exit the extended menu.

Audio Out



AUDIO OUT:
AES

The audio out sets the format that the SRX220 will output audio on the TA5 connector.

- **AES** - The SRX220 will output AES audio.
- **ANALOG** - The SRX220 will output analog audio.

Please note that some Sony F5 cameras may not be able to lock on to the AES signal out of the SRX220. If this is the case from the home screen of the SRX220 press the INC or DEC key to send a signal to the AES out that will cause the camera recognize and lock to the AES signal from the SRX220.

Output Level



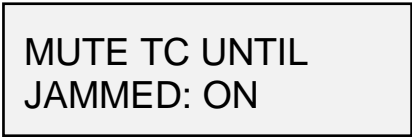
OUTPUT LEVEL:
0 dB |

The output level set the audio level of the SRX220.

The SRX220 can output audio at:

- **0dB**
- **-10dB**
- **-18dB**

Mute Time Code Until Jammed



MUTE TC UNTIL
JAMMED: ON

If mute time code is set to on, the time code out of the SRX220 is muted and will not output any time code until the SRX220 receives and locks to the time code that is being sent from the transmitter. This is to prevent incorrect time code being outputted.

Time Code Output Level

TC OUTPUT LEVEL:
1.5 VOLTS

The SRX220 has variable time code output level and is adjustable from .01 to 1.5 volts.

Software Update

PRESS ↑ TO
UPDATE SOFTWARE

This menu is where the SRX220's software is updated from.

When in this menu pressing the INC key will start the update process, the SRX220 will wait and search for software that will be transmitted from a TRX transmitter (running software version 9.21 or higher) or a TRX900CL (running software version 1.80 or higher). After the SRX220 starts to receive the program from the transmitter the SRX220 will automatically begin updating the software.

Modulation Select

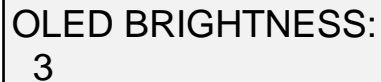
RX FORMAT:
STEREO

The modulation menu is where the receive format is set. Modulation is simply the way a transmitter "modulates", or sends, its signal to the SRX220. This setting needs to match the modulation mode that the corresponding transmitter is set to - if the two settings do not match the SRX220 will not be able to receive and decode the signal from the transmitter.

Modulation types

- **STEREO** - Select when receiving audio from a TRX900CL - Camera Link, Maxx transmitter, TRXLA2S, or a TRXLT2S stereo transmitter.
- **XR MONO** - Select when using extended range modulation (XR) on a TRXLA or TRXLT transmitter.
- **MONO** - Select when using a 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.

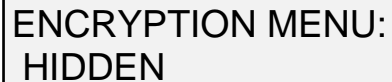
OLED Brightness



OLED BRIGHTNESS:
3

The OLED brightness menu adjusts the brightness of the OLED display. The brightness can be adjusted from 0 to 3 with 0 being the dimmest setting and 3 being the brightest.

Hide Encryption Menu



ENCRYPTION MENU:
HIDDEN

This menu allows for the encryption menu to be hidden preventing accidental changes.

- **HIDDEN** - The encryption menu does not appear when cycling through the menu settings.
- **SHOW** - The encryption menu will appear.

Encryption Code Set



ID1: 000 ID0: 000
 ↑

This menu is where 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 SRX220 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. To change the designated character, press the INC or DEC key
2. Press the menu key to advance to the next character.
3. To exit this page, press and hold the MENU key.

DB25 Pin Configuration

DB- 25 Pins	Function
1	Ground
2	Analog Ch. 1 + / AES +
3	Analog Ch. 1 - / AES -
4	Power Ground
5	Power 8 to 18 Volts DC
6	No Connection
7	No Connection
8	No Connection
9	No Connection
10	LTC
11	No Connection
12	No Connection
13	Ground
14	Ground
15	Analog Ch. 2+
16	Analog Ch. 2 -
17	No Connection
18	No Connection
19	No Connection
20	No Connection
21	No Connection
22	UART receive
23	UART transmit
24	No Connection
25	Ground

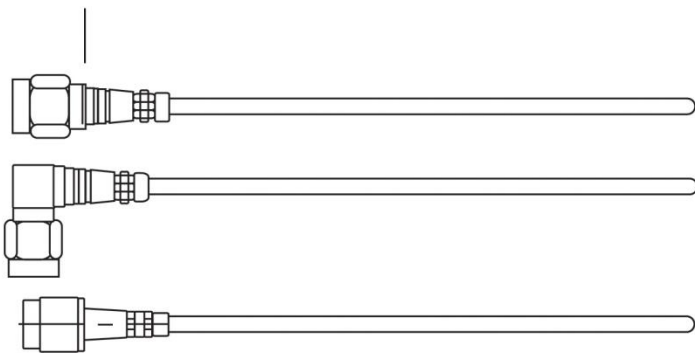
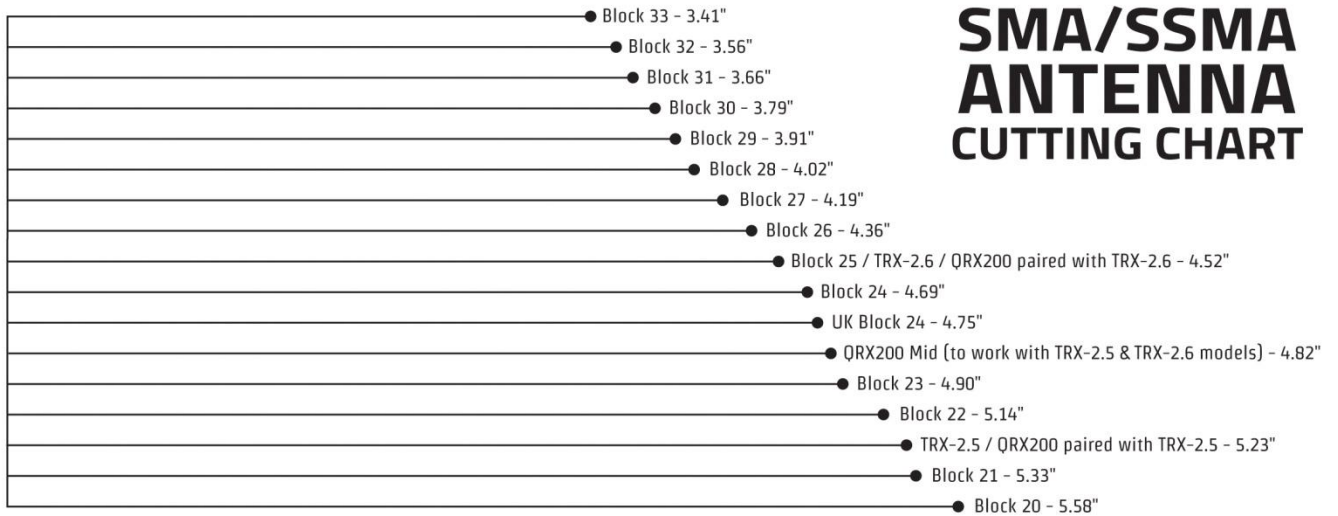
Operating Frequencies

UHF Audio

512.0 MHz to 698.0 MHz (Blocks 20 through 26)

Antenna Cutting Chart

SMA/SSMA ANTENNA CUTTING CHART



ZAXCOM

www.zaxcom.com



Firmware

Each SRX220 is shipped with the latest firmware version installed.

Each time the SRX220 is powered up, the firmware version number is displayed briefly on the 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 SRX220 software using a TRX transmitter

Please note the TRX needs to be running software version 9.21 or higher or TRX900CL running 1.80 or higher.

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 SRX220 software and load it into the card (RX2-XXX.BIN).
3. At the SRX220:
 - Verify the receiver mode is set to mono 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.
 - 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.
 - Place the SRX220 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.
4. At the transmitter:
 - Insert the card.
 - Press and hold the MENU key while powering up the transmitter.
 - If the receiver has a good connection, the status indicator on the SRX220 will be green.
 - Verify the allow IFB remote control is set to OFF - if applicable.
 - Advance 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.
5. The SRX220 should indicate it is receiving the program.
6. After the software cycle, all of the SRX220 should be re-programmed. If there is a reception error, the SRX220 automatically restarts the process with the start of the next cycle.
7. When the SRX220 is done updating the software “SUCCESS . . . REBOOT NOW” will be displayed.
8. 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.
9. At the SRX220:
 - Cycle the power
 - Verify the new firmware version number is displayed during the boot process

WARNING: After the SRX220 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 SRX220.

Do not turn off the SRX220 until “SUCCESS . . . REBOOT NOW” has been displayed.

If the program is never fully received, it is safe to cycle the power.

Specifications

Receiver

Receiver RF Channels: 1
Diversity method: antenna switching
RF Modulation: proprietary digital method
RF Frequency Range: 518 to 698 MHz
RF Frequency Step: 100 KHz
RF Signal Bandwidth: 200 KHz
Channel Separation: 500 KHz (700 KHz recommended)
Sensitivity: -114 dBm
Antenna Connector: 50-ohm SMA female (x 2)

Receiver Audio – Analog Output (x 2)

Dynamic Range: 116 dB
Distortion: 0.002%
Frequency Range: 20Hz to 16kHz
DAC Bit-depth: 24 bits
Connector: DB25
Audio Output: Active analog balanced
Audio Output Level: -18dBm, -10dBm (consumer) or 0dBm (line)

Receiver Audio – Digital Output

Signal Format: AES Balanced
AES dynamic range: 123dB
Frequency Range: 20Hz to 16kHz
AES output: AES3 balanced at 96KHz
Audio Output Connector: DB25

Timecode

Timecode output connector: DB25
Timecode output level: .01VPP, .2VPP, .5VVP, .9VPP, 1.5VPP
Time code output rate: 23.98, 24, 25, 29.97 ND, 29.97 DF, 30

Power

External Power: 6 to 18 VDC (140mA @ 12VDC)
Power Connector: DB25

Miscellaneous

Weight: 4.9 oz.
Dimensions: .73" x 2.7" x 3.75"
Display: Graphic White 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 SRX220 ("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.

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
Audio located at Elstree Film Studios, Shenley Road, Borehamwood, Herts WD61JG in
England.



Glenn Sanders
President
Zaxcom, Inc.

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.