USER MANUAL

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ZAXCOM.COM

VTX1

VHF & ZaxNet Transmitter

Knowing your VTX1

Overview

VTX1 is a digital VHF wireless transmitter for the film, television, and broadcast industries. It features timecode, internal recording, encrypted IFB audio, a bright OLED display, and ZaxNet.

VHF Frequency Range

VTX1 operates in the VHF 192-217 MHz frequency range as a fully digital or FM transmitter for crystal clear IFB audio. The VTX1 is designed to broadcast an analog (FM) signal when the frequency is set between 215 MHz and 216.975 MHz, and broadcasts digital signal modulation when the frequency is set between 192.0 and 214.9 MHz.

**Optional freq. range available, 76-86 MHz*

ZaxNet

As a ZaxNet transmitter, the VTX1 sends high-quality, fully encrypted IFB audio, timecode, and remote control commands to Zaxcom Digital Recording Wireless transmitters and ERX receivers. The signal is carried on a single RF channel over 2.4 GHz, which can be used license-free in almost any country.

ZaxNet also allows users to remotely control core features of Zaxcom transmitters, including frequency, input level gain, output power levels, and record status.

Compatibility

VTX1 is compatible with Zaxcom's VRX1 receiver in both Digital and Analog mode. When programmed for FM audio, the VTX1 is compatible with Comtek receivers that operate in the 216 MHz frequency range. Additionally, the VTX1 can broadcast non-companded FM transmissions for compatibility with phonak receivers in the 216 MHz frequency range

Note: encrypted audio is not available in FM mode.

Encrypted Audio

VRX1 features fully encrypted IFB audio in digital mode.

Internal Recording

Audio can be simultaneously transmitted and internally recorded to a microSD card using MARF (Mobile Audio Recording Format) when the VTX is in analog mode. The MARF format eliminates file corruption common to recordings due to loss of power or early card removal.

Zaxcom GUI Bridge (ZGB)

The optional Zaxcom GUI Bridge (ZGB) combines hardware and software, giving complete control over VTX1 settings through an easy-to-use interface.

VTX1 has an RS422 port for direct connection to the ZGB, or for connection to an RX8D networked with a GUI bridge. With the ZGB, you can easily remotely change frequency, input level gain, output power levels, and record status.

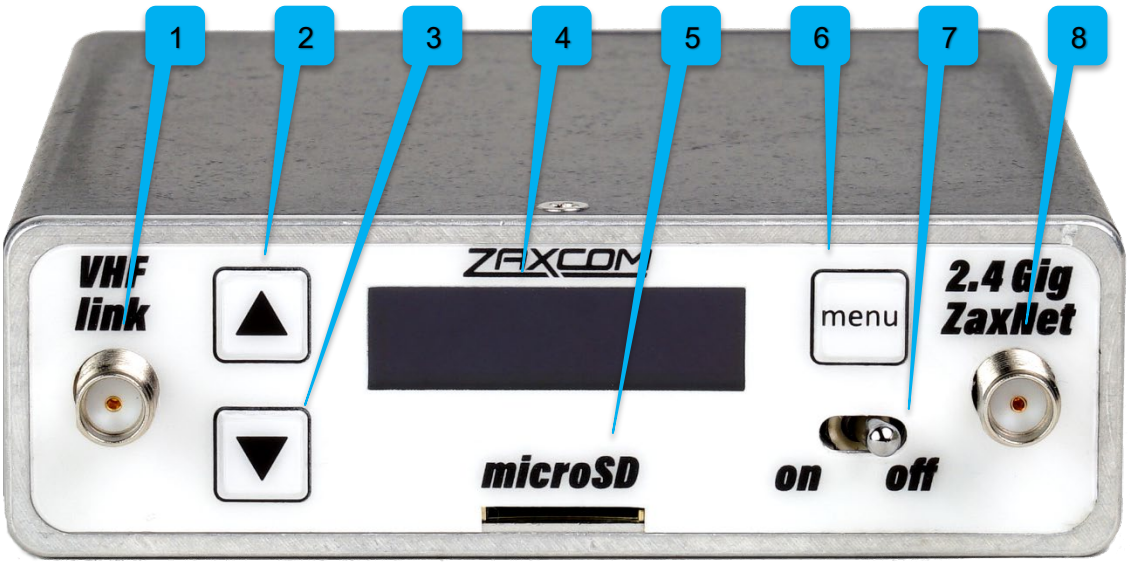
Connectivity

A TA5 audio input offers a mono line level or sample rate converted AES single pair. The BNC connector provides a timecode input.

Selectable Output Power

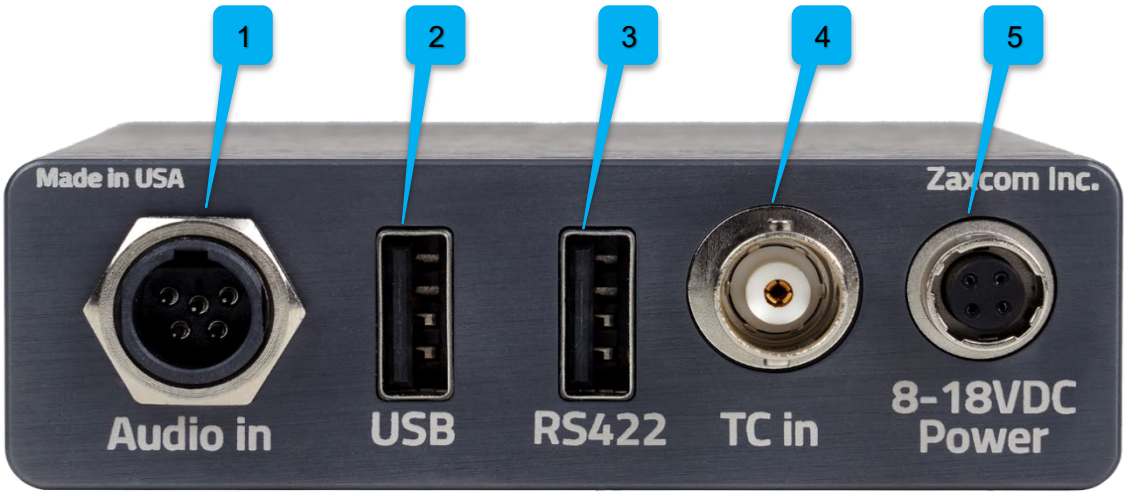
If in the United States, power output is selectable with 10, 25, and 50MW settings.

Front Panel



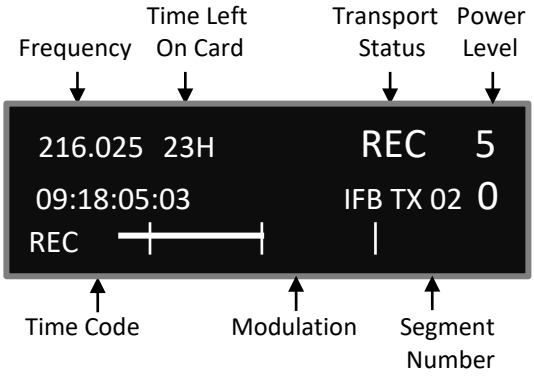
1. **VHF SMA Antenna Connector**
2. **INC / Record Key**
   - Increases the parameters of a menu item
   - When in the Home Screen:
     - Press and hold when home screen record is enabled will start recording
   - When in the Transport Control Screen:
     - When not recording a quick press will allow play back
     - A quick press while playing back will jump ahead within the same segment
     - Press and hold to advance to the next segment
3. **DEC / Stop Key**
   - Decreases the parameters of the menu items
   - When in the Home Screen:
     - Press and hold when the home to stop recording
   - When in the Transport Control Screen:
     - A quick press while playing back will stop playback
     - Press and hold while playing back will return to the start of that segment
     - A quick press while stopped will jump back to the previous segment
4. **OLED Display**
5. **Micro SD Card Slot**
   - To insert, face the contacts up and towards the unit, press in until click
   - To remove, press the memory card in until a click is heard
6. **Menu Key**
   - Press it to access the menu and to advance to the next menu item
   - Hold while powering up to access the Extended Menu
7. **Power Switch**
8. **2.4 Gig ZaxNet SMA Antenna Connector**

Rear Panel



1. **Audio In Connector** - TA5M
   - Used to input both analog and digital audio
   - Analog audio is mono one channel balanced line level
   - Digital audio is AES pair
2. **USB** – future functionality
3. **RS422** – for connection to GUI Bridge or receivers
4. **Time Code In** – BNC
5. **DC Power Input** – 8-18 Volts DC Hirose HR10A-7P-4P

Home Screen



Audio meter *Indicators at -20, -10, 0 dBFS*

Frequency

This is the VHF transmit frequency of VTX1. If used in RECORD ONLY mode "NOTX" will be displayed.

Time Left On Card

This is the remaining record time left on the memory card. Please note that regardless of how much time is left on the card, VTX1 can only record 500 segments. If 500 segments are reached the card will need to be reformatted.

Transport Status

Displays the current mode of the recorder. The recording function is only available when the VTX is in analog transmission mode.

- STOP: Recording / Playback is stopped.
- REC: VTX1 is recording.
- Segment playback is not available in the VTX1.

Transmitter Power Level

Shows the VHF transmission power level. The Camera Link can be set to transmit at 10, 25, or 50 mW.

ZaxNet Status

- IFB RX: VTX1 is receiving ZaxNet. Please note the Zaxcom receive range is limited to a few feet.
- IFB TX : VTX1 is transmitting ZaxNet.

Time Code

Shows the time code from the Camera Link's time code generator.

Segment Number

Displays the number of recorded segments on the microSD card.

Audio Meter

Displays the modulation of the inputted audio signal. The meter indicators are at -20, -10, and 0dBFS.

Main Menu

To cycle through the main menu, press the MENU key.

VHF Transmit Frequency Set

This menu is where the VHF transmit frequency is set. The VTX1 is designed to broadcast an analog (FM) signal when the frequency is set between 215MHz and 216.975 MHz, and will broadcast a digital signal when the frequency is set between 192.0 and 214.9 MHz

- Short presses of the INC or DEC key will change the frequency in 0.1 MHz steps.
- Press and hold the INC or DEC key to change by the value continuously.
- When switching between digital and FM modulation, a reboot is necessary.

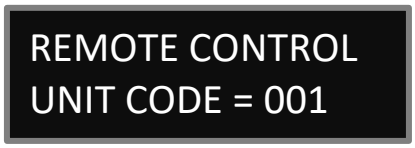
Remote Transmitter Gain Adjust

The remote gain menu adjusts the gain of the transmitter that has the same group and unit code displayed wirelessly via ZaxNet. If the transmitter is not in range of the ZaxNet signal, the gain command will have to be repeated once the transmitter comes back into range

Please note that this does not affect the gain of VTX1.

- Press the INC key to increase the gain. The display will show “++” in the top right hand corner.
- Press the DEC key to decrease the gain. The display will show “- -” in the top right-hand corner.
- Each key press will alter the gain by 2 dB.

Unit Code Set



This menu is where the unit code for the transmitter that will be controlled is adjusted. Each transmitter that is being remotely controlled will be assigned a unit code. That unit code allows for that specific transmitter to be controlled individually from VTX1. The unit code can be set to any number from 1 to 200 or “ALL” can be selected to control all transmitters at the same time.

Remote Frequency Adjust

The remote frequency adjust menu is where the VHF frequency of the transmitter that is being remote controlled is changed from.

Adjusting the transmitter frequency remotely:

- In the unit code menu set the unit code for the transmitter to be adjusted.
- Press the INC key to increase the frequency.
- Press the DEC key to decrease the frequency.
- Pressing and/or holding the INC or DEC key will change the frequency by .1 MHz.

Remote Power Mode

The remote power mode menu allows for the RF power setting of the transmitters that is being controlled 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. A transmitter set to wake will save approximately 75% of the power of normal operations. To use wake mode set the BOOT UP MODE to REMOTE STANDBY in the transmitter.
    - When powered up in remote standby VTX1 will remain in standby mode until it receives the wake command. Once the transmitter is awoken the only way for it to go back into standby mode is by a power cycle.
    - So when “WAKE” is selected in this menu the transmitter will go to full power.
- **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. The transmitter can be put into or taken out of LOW 2 mode as often as desired when selected in this menu.

Remote Power mode Settings:

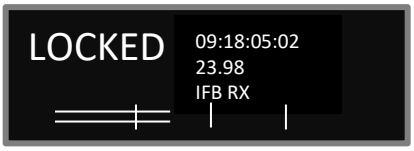
- **0: POWER=ON**: Normal operation - the transmitter will be fully powered ON.
- **1: POWER=ON**: Normal operation (same as 0) filler to prevent accidental power setting adjustment.
- **2: POWER=ON:** Normal operation (same as 0) filler to prevent accidental power setting adjustment.
- **3: POWER=ON:** 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:** Select to wake a transmitter to full power when the boot up mode is set to remote standby.
- **6: POWER=LOW2**: This setting will put the transmitter into and out of LOW2 power mode. A transmitter can come in and out of LOW2 mode as needed. When in LOW2 mode “LOW 2” will be displayed on the transmitters’ home screen. Please note LOW2 will not disable recording but audio will be muted. Once the power is set to Low2 the VTX1 can be powered down. Then when VTX1 is powered up all transmitters being controlled will automatically come up to full power since VTX1 will always boot up to the 0 Power setting.

Transport Menu (only available in Analog Mode)

Displayed is the current mode of the recorder: REC or STOP followed by the time code, then the current segment number, time code frame rate and the audio meter. Segment playback is not available in the VTX1

Lock Page

← Countdown clock starting at 5 seconds



← After the transmitter locks

This page enables a key lock function so no parameters can be changed. When the lock page is selected, a countdown clock will begin. After 5 seconds VTX1 will lock and the display will indicate that it is LOCKED. If this screen is exited before the 5 seconds are up the transmitter will not lock.

To lock VTX1 before the 5 seconds press and hold the DEC key.

If the OLED brightness setting is set to “2” the screen will blank out when the transmitter is locked. The only thing that will be displayed is a small character displaying the status of the internal recorder.

- S: The recorder is stopped.
- R: VTX1 is recording.

Pressing the INC key when the transmitter is locked will display the group and unit code, transmit frequency, and serial number. Pressing the DEC key will display the units name and current record segment number.

To unlock the VTX1:

- Press and hold the MENU key and press INC keys 5 times.
- OR Power down and reboot the VTX1.

Sub Menus

Menu groups

The VTX1 has six sub menu groups

- **Time code**: Changes the time code parameters.
- **Transmit**: Changes the parameters of the VHF transmitter.
- **Record**: Changes the parameters of the on-board recorder.
- **ZaxNet**: Changes the ZaxNet parameters.
- **Audio**: Changes the parameters of the transmitted and recorded audio.
- **Setup**: Changes the parameters of the general operation.

Accessing and navigating the extended menu groups

- From in the home screen press the DEC key three times or hold the MENU key while booting up.
- Pressing the INC or DEC key to cycle thru the menu items.

Entering and navigating a sub menu

- When landing on the desired menu group press the MENU key to enter that menu.
- Press the MENU key to cycle thru the menu items.
- To return to the top of the menu press the MENU key to cycle to the top or press and hold the MENU key for 1.5 seconds.

Exiting the extended menus

To exit press the MENU key to cycle through the sub menu items until HOME MENU is displayed. then press the MENU key. Or cycle the power.

TIMECODE MENU

Time Code Frame Rate Set

The time code frame rate menu is where the time code frame rate is set. VTX1 will lock to and record all standard time code frame rates.

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

Time Code Source Select

The time code source menu selects how the transmitter will receive its time code.

- **IFB (RF)**: VTX1 will receive time code via ZaxNet. Please note VTX1 would need to be within a few feet of the of transmitter to receive IFB time code
- **BNC CONNECTOR:** VTX1 will receive time code via the BNC input.

TC Jam Mode Select

This menu controls if VTX1 will go into record when it receives a record run time code.

- **AUTO-JAM NORMAL:** VTX1 will continuously jam time code via ZaxNet and will go into record when receiving a record command via ZaxNet or if the unit is put into record manually by pressing the CARD and INC keys simultaneously.
- **AUTO-LOAD REC RUN:** In Auto-Load mode VTX1 will go into record when it detects rolling time code and will stop when the time code stops.

Mute Time Code Transmission Until Jammed

If the mute time code menu is set to ON, the ZaxNet transmitter will not broadcast time code over ZaxNet until VTX1 receives time code and jams its own internal time code generator. This prevents the ZaxNet from sending incorrect time code to another device.

Auto Frame Rate Enable

When turned ON, VTX1 will automatically set its frame rate to the frame rate that is feeding the VTX1. If auto frame rate is set to OFF, the frame rate will need to be adjusted manually.

Manual Time Code Entry

This menu allows for the time code to be manually entered.

To manually enter the time code:

- Press the INC and DEC keys to adjust the hours.
- Press the MENU key to advance cursor to the minutes position, press INC and DEC to adjust.
- Press the MENU key to advance the cursor to the JAM position and press the INC key.
- Please note the seconds and frames will always start at 00.
- To by-pass this menu press and hold the MENU key.

TRANSMIT MENU

VHF Transmitter Power Level Set

The VHF transmit power of VTX1 is set from this page. The transmit power can be adjusted to output 10, 25, 50mW, or turned off.

VHF Transmit Compander Set

This turns on and off the FM compander for VTX1.

Zaxnet Power Roll Mode

Power Roll will allow the transmitter to stay in a lower transmit power setting to conserve battery power, and then when triggered the transmitter will increase the output power.

- **OFF**: Power Roll is disabled and VTX1 will remain at the set power level.
- **DEVA TRIGGER**: A command from a Zaxcom recorder will cause VTX1 to go to full power.
- **RECORD TRIGGER** When the transmitter goes into record either manually or from an AUTO-LOAD trigger VTX1 will go to full power.

RECORD MENU (only available in Analog Mode_

SD Card Format

Note: This menu will only appear if a card was inserted prior to booting up.

The microSD card is erased and formatted from this menu. Please note that all cards need to be formatted in VTX1 prior to recording.

Before formatting the card, VTX1 can optionally be renamed (see set-up menu). When VTX1 is named that name is included in the recorded file name this makes it easier to differentiate files from different recorders. The card name menu is located at the end of the set-up menu. The factory default name is the transmitter's serial number.

Partial Format

If the card's FAT32 file structure gets corrupt while doing a file transfer, and the card is no longer recognized by VTX1 or by ZaxConvert, a partial format can be done. The partial format rewrites the FAT32 file structure and leaves the recorded audio untouched. To do a partial format from this menu press the DEC key 9 times "PARTIAL FORMAT" will then be displayed.

Time Left on Card

Note: This menu will only appear if a card was inserted prior to booting up.

This page displays the remaining record time left on the card as well as the time already recorded on the card.

Automatic Record after Boot up

Record on boot up allows the onboard recorder to automatically start recording after VTX1 boots up.

- **ON**: The onboard recorder will automatically start to record after VTX1 boots up.
- **OFF**: The onboard recorder will wait for a ZaxNet command or a manual record trigger to start recording.

ZAXNET MENU

ZaxNet Mode

This menu sets the mode of the ZaxNet transceiver.

- **OFF**: The ZaxNet transceiver is disabled.
- **RX:** VTX1 will receive ZaxNet commands, audio, and time code. This screen will display what ZaxNet data is being received by VTX1. Including total received information packets, ZaxNet TC received, and remote-control commands received. This information is used for debugging purposes. Please note VTX1 will need to be within a few feet of the ZaxNet transmitter to receive signal.
- **TX:** VTX1 will transmit ZaxNet commands, audio, and time code.

ZaxNet Transmit Frequency Set

Note: This menu will only appear if the ZaxNet is set to transmit (TX) mode.

This is the frequency that the ZaxNet transmitter will send commands, time code and audio on.

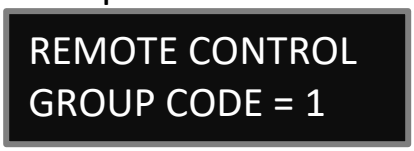
Transmitter Remote Roll Enable

This menu allows the transmitters being controlled via ZaxNet to follow the record and stop commands of VTX1. If this is set to ON and the VTX1 recording is triggered all transmitters that are being controlled from VTX1 will begin to record, and when VTX1 stops all transmitters will stop.

Follow External Record

This menu allows VTX1 to automatically go into record when a Zaxcom recorder goes into record. To do so ZaxNet needs to be enabled on the time code out of the recorder, then hardwire the time code out into the VTX1. Then when the recorder goes into record VTX1 will go into record.

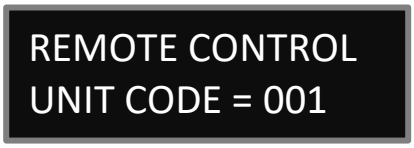
Group Code Set



The group code allows transmitters to be grouped together so a “group” of transmitters can be controlled via ZaxNet without affecting others.

For example, a VTX1 set to group 1 will control transmitter set to group 1 and a VTX1 assigned to group 2 will control group 2 transmitters. This is helpful if two or more people on set are sending ZaxNet commands. Therefore, the different group codes allow each person to be independent and not interfere with each other. Most users leave the group set to 1 on all their Zaxcom products. Group codes can be set from 1 to 99.

Unit Code Set



This menu is where VTX1 is assigned a unit code. The unit code is a unique number used to identify each transmitter within a particular group. This allows individual transmitters within the same group to be independently controlled. Each transmitter should have a different unit code. Unit codes can be assigned any number from 1 to 200.

Beep Set

Note: This menu will only appear if VTX1 is set to transmit (TX) mode.

When the record beep is set to ON, and VTX1 is recording, the confidence audio sent to the ERX via ZaxNet will have an audible beep, in variable intervals, giving conformation that VTX1 is recording. The beeps will only be heard in the ERX and will not be recorded on the card, or be sent to the VHF receiver. The intervals can be set between 2 to 18 seconds in 2 second increments.

ZaxNet Transmit Power

This menu is where the ZaxNet transmit power level is set. The ZaxNet transmitter can be set from 0 to 7.

AUDIO MENU

Zaxnet Audio Source

The Zaxnet Audio Source selection sets what audio will be transmitted from VTX1 via ZaxNet. This setting only affects the ZaxNet IFB audio and not the VHF transmitted audio. Please note that when using analog inputs, this will be mono only on the first input pair.

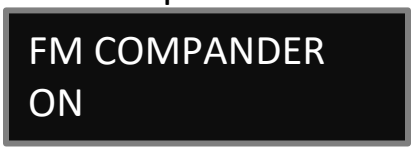
- **RIGHT ONLY**: Only audio from the Right channel of the digital input will be transmitted.
- **LEFT ONLY**: Only audio from the Left channel of the digital input will be transmitted.
- **LEFT AND RIGHT**: Both Left and right audio from the digital input will be summed to mono and transmitted.

VHF Audio Source

The VHF Audio Source selection sets what audio will be transmitted from VTX1 via VHF. This setting only affects the VHF transmitted audio. Please note that when using analog inputs, this will be mono only on the first input pair.

- **RIGHT ONLY**: Only audio from the Right channel of the digital input will be transmitted.
- **LEFT ONLY**: Only audio from the Left channel of the digital input will be transmitted.
- **LEFT AND RIGHT**: Both Left and right audio from the digital input will be summed to mono and transmitted.

FM Compander



This turns on and off the FM compander for VTX1

Audio Input Select

The audio input select sets what type of audio will be inputted to VTX1.

- **ANALOG**: Used when inputting an analog audio signal (mono only).
- **DIGITAL**: Used when inputting a digital audio signal (stereo and mono).

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SETUP MENU

Test Tone

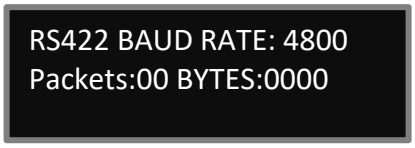
VTX1 has an internal tone generator which will generate tone so the signal chain can be properly gain staged. From this menu pressing the INC key will turn on the tone generator and cycle through the tone options which are 500Hz at -20dBFS, 1000Hz at -20dBFS or 500Hz at full scale.

RS422 Mode

This page allows the user to select the baud rate, phase, and compatibility of the RS422 connector, and a packet count allowing the user to determine that the RS422 connection is functioning properly. Press the INC and DEC key to select the baud rate, phase and compatibility. If the packets and bits are steadily increasing, then the connection is successful. See the section 'Data Cables and Connections' for more details.

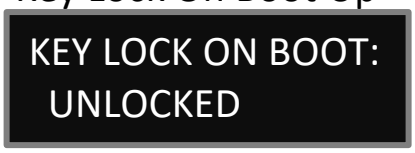
- **EXT NORMAL**: This is for connection to most Zaxnet-enabled receivers.
- **EXT RX8:** This is for connection to the RX8 via its RS422 connector using a standard USB Cable.
- **GUI BRIDGE:** This is for connection to the 3.5mm connector on the GUI Bridge.

RS422 Baud Rate Selection



This menu provides more granular selection of the RS422 baud rate, and a packet count allowing the user to determine that the RS422 connection is functioning properly. Press the INC and DEC key to select the baud rate. If the packets and bits are steadily increasing, then the connection is successful.

Key Lock On Boot Up



This menu sets what happens to the keys on the face of the VTX1 after boot-up.

- **LOCKED**: After boot-up has completed, the transmitter will automatically go into lock mode and the keys will be locked to prevent accidental changes to the settings.
- **UNLOCKED:** After boot-up the keys will remain unlocked. In unlocked mode the keys can still be locked going into the lock screen in the main menu and wait 5 seconds.
- To unlock the keys at any time, press and hold the MENU key while pressing the INC key 5 times.

Information Page

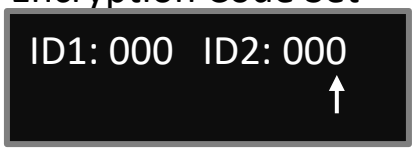
This page displays the current firmware version, the serial number, the DSP version, and the option code.

Hide Encryption Menu

This setting will hide the encryption menu. A hidden encryption menu allows for quicker navigation and prevents accidental changes.

- **HIDDEN:** The encryption menu will not appear when cycling through the menu settings.
- **DISPLAYED**: The encryption menu will appear.

Encryption Code Set



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

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

Please note that both of these codes should be set to 000 for normal un-encrypted operations

Adjusting the encryption code:

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

Hide Transmitter Name Menu

This setting will hide the name menu. A hidden name menu allows for quicker navigation and prevents accidental changes.

- **HIDDEN:** The name menu will not appear when cycling through the menu settings.
- **DISPLAYED**: The name menu will appear.

Transmitter Name Set

The transmitter name menu allows VTX1 to change the name from the default name, which is the serial number. The name becomes part of the file name and is included in the metadata of the BWF file. Naming the unit aids in identifying the files from several different recorders.

The maximum name length is 8 characters. Any letter or number can be used. If desired a space can also be used.

To set/change the transmitter name:

1. Press the INC or DEC key to change the character in the current position above the arrow.
2. Press the MENU key to proceed to the next character.
3. When finished, press and hold the MENU key to set the name.

Media

We recommend using a 4GB microSD cards. We also recommend buying a brand name card such as Transcend or SanDisk.

Note: Transcend Premium cards with the red stripe are not recommended.

Please buy all cards from a reputable dealer. Counterfeit cards exist and can cause recording issues. We also recommend that all cards are tested before taking them out into the field.

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

1. Format the card in the transmitter.
2. Power cycle the transmitter.
3. Record at least 20 minutes of audio to the card with no time code source.
4. Look at the Main Screen it should still be recording in segment #1.
5. Playback and listen to the file.

Media Capacity

VTX1 can use microSD cards, up to 16 GB. While any size card will work, we recommend using 4GB cards. Please note that regardless of the size of the card the onboard recorder will only be able to record up to 500 individual segments on any given card.

Available recording times will depend on the selected modulation and are as follows:

SD Card Size	Available Record Time Mono / Stereo	Available Record Time XR
512 MB	3 hours	6.75 hours
1 GB	6 hours	13.5 hours
2 GB	12 hours	27 hours
4 GB	24 hours	54 hours
8 GB	48 hours	108 hours
16 GB	96 hours	216 hours

Please note the transmitter will **NOT** record onto the card if:

- The card was not inserted before the TRX booted up.
- If the card was removed while the power was on.
- If LOW BATTERY is being displayed.

Recording Format

The media card is formatted using a FAT32 file system. While recording, the unit places all recorded audio in a single file on the media. The files generated by the recorder (.ZAX format) can only be recognized by Zaxcom's ZaxConvert program. Using ZaxConvert will transfer the file to a Broadcast Wave or MP3 file. ZaxConvert is available to anyone for free from the Zaxcom website: **https://zaxcom.com/support/downloads/**

Firmware

VTX1 ships with the latest firmware version installed. As newer firmware becomes available, it can be downloaded from the Zaxcom website:

- https://zaxcom.com/support/downloads/

It's recommended to keep a copy of the "SNXXXX.ME" file for each transmitter. The SNXXXX.ME file contains the setup parameters of that specific transmitter - so in the event that there is a problem with the transmitter and the settings get corrupt the SNXXXX.ME file can be used to recreate the setting for that transmitter. To copy and save the SNXXXX.ME files simply format a card in each transmitter then copy and archive the SNXXXX.ME files to a computer.

Updating firmware

1. Format a microSD card in the transmitter.
2. Remove the card and with a computer delete the "SNXXXX.ME" file.
3. Download the CL firmware "CL-XXX.bin" from the Zaxcom website and copy it onto the formatted card.
4. Power down the VTX1 and insert the card.
5. Simultaneously hold down the INC and DEC keys while powering up the unit.
6. The screen will display "PRESS MENU TO BURN" with the version of firmware that will be loaded.
7. Press the MENU key and the VTX1 will start burning the firmware.
8. From power up to "DONE" will take about 30 seconds.
9. Upon completion, cycle the power and confirm that the VTX1 is running the new firmware.

WARNING: During the update do not power down the unit, if the unit should lose power during the upgrade, it may need to be sent back to Zaxcom to be reprogramed.

Audio Cables and Connections

Balanced Line Level Analog In (MONO ONLY)

Uses a Switchcraft TA5-F

Analog Audio Input		TA5 On the VTX1
Shared Ground	→	PIN 1
Signal (+)	→	PIN 2
Signal (-)	→	PIN 3
No Connection	→	PIN 4
No Connection	→	PIN 5

AES Digital in

Uses a Switchcraft TA5-F

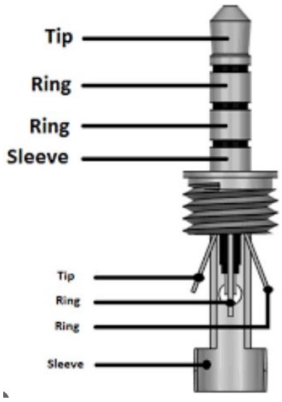
AES Input		TA5 On the VTX1
Ground	→	PIN 1
Signal	→	PIN 2
Signal	→	PIN 3
No Connection		PIN 4
No Connection		PIN 5

Data Cables and Connections

VTX1/CL4/CL5 RS422 Pinout	In "RX8" Mode	In "EXT Normal" Mode	In "GUI Bridge" Mode
PIN 1 - Red	RX- (Data IN) (Normally Low)	TX+ (Data OUT) (Normally High)	TX+ (data out) (normally high)
PIN 2 - White	TX- (Data OUT) (Normally Low)	RX- (Data IN) (Normally Low)	RX+ (data in) (normally high)
PIN 3 - Green	TX+ (Data OUT) (Normally High)	RX+ (Data IN) (Normally High)	RX- (data in) (normally low)
PIN 4 - Black	RX+ (Data IN) (Normally High)	TX- (Data OUT) (Normally Low)	TX- (data out) (normally low)
PIN 5 - Shield	GROUND	GROUND	GROUND

RX8 RS422 Pinout	In all RS422 modes: "PC-NOVA", "QRX-235", and "Camera Link"
PIN 1 - Red	TX- (Data OUT) (Normally Low)
PIN 2 - White	RX- (Data IN) (Normally Low)
PIN 3 - Green	RX+ (Data IN) (Normally High)
PIN 4 - Black	TX+ (Data OUT) (Normally High)
PIN 5 - Shield	GROUND

GUI Bridge 3.5 mm Jack	RS422 Data
Tip	TX+ (data out)(normally high)
Ring 1	TX- (data out)(normally low)
Ring 2	TX- (data out)(normally low)
Sleeve	GROUND



CABLE: GUI bridge TRRS to VTX1/TRXCL4/TRXCL5/IFB300 RS422 connector:

Set device to RS422 "GUI BRIDGE" mode or "EXT NORMAL INVERT" mode. Proper connection can be confirmed by observing the the **PACKETS** count increasing in the Setup menu of the device.

GUI Bridge 3.5 mm Jack	TRXCL4/TRXCL5/IFB300 RS422 Connector
Tip	USB pin 2: White
Ring 1	USB pin 3: Green
Ring 2	NULL
Sleeve	USB pin 5: Shield (ground)

Operating Frequencies

ZaxNet - Remote Control and Time Code

2.403-2.475 GHz

VHF – Analog Mode

VTX1.5

215.000 to 216.975 MHz in .025 MHz increments

VHF – Digital Mode

VTX1.5

192.100 to 214.9 MHz in .1 MHz increments

Product Support

Product Registration:	http://www.zaxcom.com/product-registration
Download Firmware:	http://www.zaxcom.com/software-updates
Download User Manuals:	http://www.zaxcom.com/instruction-manuals
Submit Technical Questions:	http://www.zaxcom.com/submit-a-technical-question
Repair Services:	http://www.zaxcom.com/repairs
Zaxcom Forum:	http://www.zaxcom.com/forum

Specifications

Transmitter
Power output: 10/ 25 / 50mW – Firmware Selectable
RF Modulation: Proprietary Digital Method
RF Frequency Range

- 192.100-216.975 MHz

Antenna Connector: 50 Ω SMA Female
Emission Designator: 180 KV2E, 180KF3E
FCC Part: 74 and 60

Transmitter Audio
Dynamic Range: 114 dB
Distortion: 0.002%
Frequency Response: Mode 0: 20 Hz to 16 kHz
System Group Delay: 3 ms
Analog Input Range: -10 to +4 dBu
Analog input type balanced line level
Audio input Impedance: 4.7 k Ω
ADC Bit-Depth: 24 Bits
ADC Sampling-Rate: 32 kHz
AES input Balanced with sample rate conversion
Sample rate range 32-96 Khz

Time code Reader/Generator
Clock Accuracy: 1.54PPM (1 Frame Out in 6 Hours)
Time code Type: SMPTE
Time code Frame Rates: 23.98, 24, 25, 29.97NDF, 29.97DF, 30NDF, 30DF

Recording
Media: microSD Card (Flash Memory)
File Format: .ZAX
Recording Time: Up to 216 Hours (16 GB card)

2.4 GHz ZaxNet Receiver
RF Frequency Range: 2.403-2.475 GHz
RF Modulation: Digital Spread Spectrum
RF Frequency Step: 0.001 GHz (1 MHz)
RF Bandwidth: 1 MHz
Channel Separation: 2 MHz
Sensitivity: -96 dBm

Physical / Power
Weight: 7.3 oz
Dimensions (H x W x D): 1”x 3.55” x 3.23”
Display: OLED
Power consumption: 2.13 watts

All Specifications are subject to change without notice.

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 VTX1 ("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.

NOTICE:

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

- the system may not cause harmful interference,
- it must operate at a low power level (not in excess of 100 milliwatts),
- it has no protection from interference received from any other device.

Purchasers should also be aware that the FCC is currently evaluating the use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at: ***www.fcc.gov/cgb/wirelessmicrophones.*** To operate wireless microphone systems transmitting with greater than 50mW of radiated power, you must qualify as a Part 74 user and be licensed.

Warning: Changes or modifications to this device not expressly approved by Zaxcom Inc. could void the user's authority to operate the equipment.

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. This 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 to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter (contains the module PR6-VTX) and has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
Quarter Wave Whip Antenna, 5.19dBi gain, 50 Ohms

Le présent émetteur radio (PR6-XRT) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Quarter Wave Whip Antenna, 5.19dBi gain, 50 Ohms

USA - FCC Part 74 and 90, FCC Identifier PR6VTX
Canada - Industry Canada RSS 210, IC:12755A-VTX

Zaxcom Digital Wireless are protected under following patent #'s:
7,711,443/7,929,902/8,835,814 B2/9,094,636/8,878,708 9,336,307/10,276,207/10,901,680/9,406,224/10,230,342/ 11,610,605

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