



# Ranger

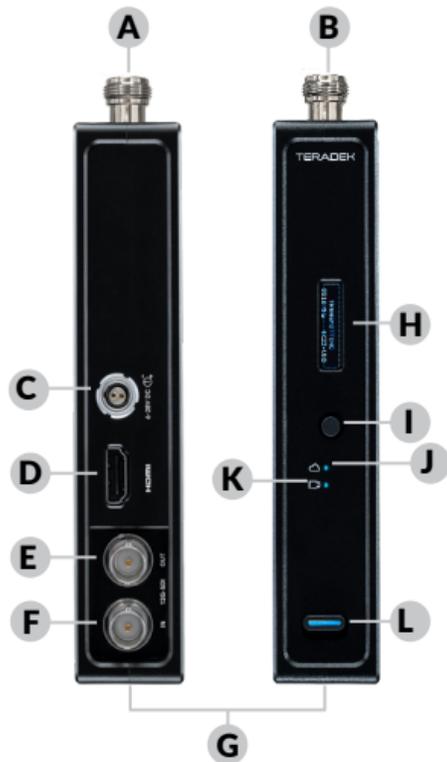
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Camera-Back Transmitter  
and Receiver

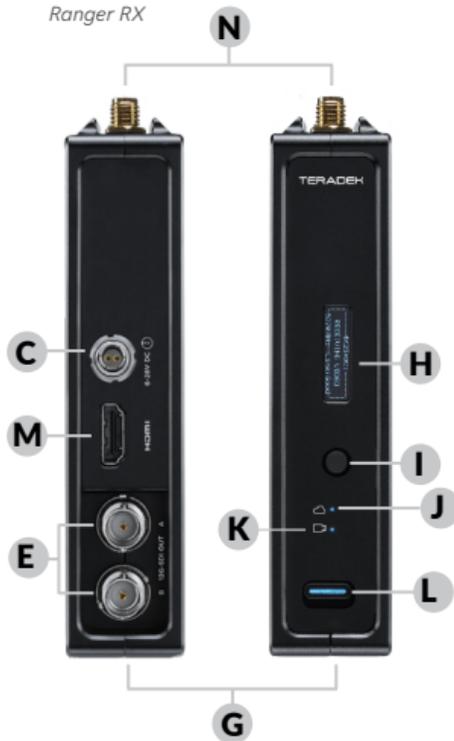
Quick Start Guide

# PHYSICAL PROPERTIES

Ranger TX



Ranger RX



- A: Type N (V) connector
- B: Type N (H) connector
- C: 6-28V DC power input
- D: HDMI input
- E: SDI output
- F: SDI input
- G: USB port
- H: OLED display
- I: Menu joystick
- J: Network status LED
- K: Video status LED
- L: Power switch
- M: HDMI output
- N: RP-SMA connectors

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## POWER AND CONNECT

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- 1 Attach the Ranger transmitter (male side) to the back of your camera.
- 2 Connect the output from your video source to either the SDI or HDMI input (**D or F**) on the transmitter. Connect either the SDI or HDMI output (**E or M**) from the Ranger receiver to the video input on your monitor.

**NOTE:** If the receiver is mounted upright on a stand above the monitor, use a right-angle SDI adapter to relieve any strain caused by the weight of the cable, and to avoid damaging the SDI output's internal connectors.

- 3 Attach a compatible battery (Gold or V mount) to the back (female side) of both the transmitter and receiver.
- 4 Attach the **H** and **V** barrel antennas to the type-N connectors on the transmitter (**A, B**). The **V** antenna attaches to the V-connector, and the **H** antenna attaches to the H-connector.
- 5 Attach the three 2dBi antennas to the receiver's center connectors and the two horizontal (mushroom) antennas to the left and right connectors (**see image**). If using an Array Antenna with the receiver, refer to the Array Antenna Quick Start Guide for installation.
- 6 Move the power switches on both the transmitter and receiver (**L**) to the ON position. Video appears within a few seconds.



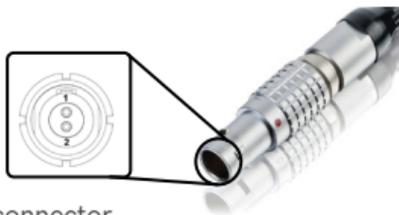
*RX antenna configuration*

## DC POWER INPUT CONNECTOR/PIN-OUT

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Ranger uses a 2-pin power connector

| <u>Pin</u> | <u>Description</u> |
|------------|--------------------|
| 1*         | GND                |
| 2          | +DC                |



\* Pin 1 is closest to the red dot on the connector

## CUSTOM/THIRD PARTY POWER CABLES

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- Test the power cable polarity with **ONLY** the power cable connected to Ranger. Do not connect video cables.
- Check the power cable for shorts and proper grounding.

**CAUTION:** Using a reverse polarity or improperly-constructed power cable can damage the transmitter's SDI inputs, and is not covered under warranty. To prevent the SDI inputs from being damaged, best practice is to plug in the power cable first, THEN connect the video cable from the camera before powering on the TX unit.

## PAIRING

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Ranger sets (TX and RX), are paired by default, requiring no additional configuration. Ranger devices purchased separately need to be paired using the device's front panel (OLED) menu, **Launchpad**, or the **Launchpad App**. **NOTE: Before starting any pairing process, ensure that both the transmitter and receiver have the same firmware version and have Bluetooth enabled.**

### PAIRING VIA THE FRONT PANEL MENU

- 1 Using the Menu Joystick, navigate to the **Pairing** menu on both the transmitter and the receiver.
- 2 Select **Pairing** to begin the pairing process. The transmitter will automatically pair to the receiver.
- 3 Once paired, the front panel will indicate whether or not Pairing is successful.

### PAIRING VIA LAUNCHPAD

- 1 Connect both the transmitter and receiver(s) to your computer (Windows/Mac) via USB.
- 2 Open Launchpad, select the **Pairing** tab, then tap the **Wired Pairing** button.
- 3 Select the devices you want to pair, then click the **Pair Devices** button. Launchpad will indicate whether or not Pairing is successful.

### PAIRING VIA THE LAUNCHPAD APP

- 1 Open the Launchpad App from your iOS or Android device, then tap the Pairing button.
- 2 Select the transmitter you wish to pair, then tap the **Next** button.
- 3 Select the receiver(s) you wish to pair with the transmitter, then tap the **Pair!** button. The Launchpad App will indicate when the pairing process is completed.

## MOUNTING

Ranger devices have a 1/4"-20 threaded hole (additional 3/8"-16 threaded hole on the receiver) on the bottom for mounting the included light stand adapter or any other mounting accessory. Additionally, Ranger devices are equipped with a dual mount battery plate that allows you to attach your device to either the back of a camera, monitor, or Array Antenna.

- Mount the transmitter onto the back of your camera keeping the antennas clear of any obstructions.
- Orient the transmitter and receiver antennas so they are parallel to each other.
- For best results, orient the transmitter antennas so each one has clear line-of-sight to the receiver.

**CAUTION:** DO NOT OVERTIGHTEN SCREWS INSERTED INTO THE 1/4"-20 OR 3/8"-16 THREADED HOLES.

Doing so can damage the transmitter's chassis voiding the warranty.



*Ranger transmitters mount to the back of a compatible camera*



*Ranger receivers mount vertically on a light stand or adapter*

## MOUNTING ARRAY ANTENNA

The Array Antenna has three 3/8" threaded holes: one on the bottom for mounting the included light stand adapter or any 3/8" mounting accessory, and one on each side to mount to a yoke mount bracket assembly.

- Mount the Array Antenna vertically, keeping it clear of any obstructions.
- Orient the transmitter and receiver so they are parallel to each other.
- For best results, orient the Array Antenna so the front (with the Teradek logo) has a clear line-of-sight to the transmitter.

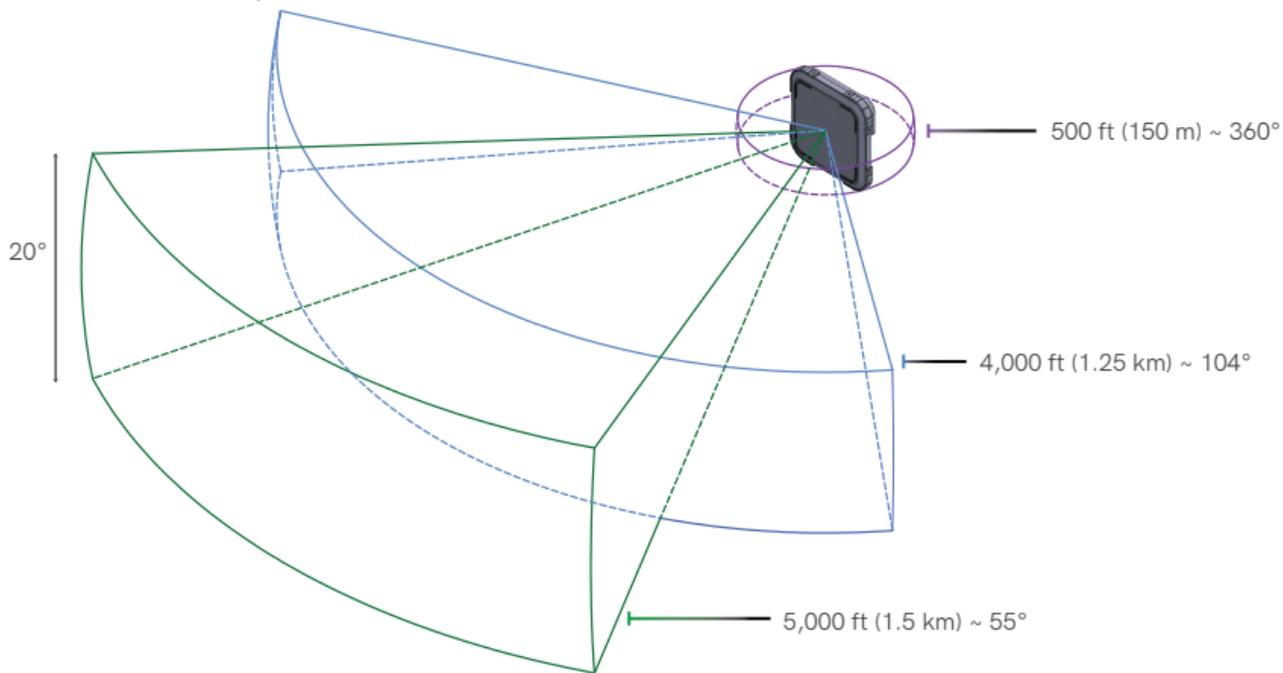
**CAUTION:** DO NOT OVERTIGHTEN SCREWS INSERTED INTO THE RECEIVER'S 3/8" THREADED HOLES. Doing so can damage the receiver's chassis, voiding the warranty.

*Ranger receivers mount to the back of an Array Antenna*



## ARRAY ANTENNA RECEIVE PATTERN

The Array Antenna has a built-in directional antenna with a receive pattern that varies based on its distance from the transmitter. The horizontal receive angle measures  $55^\circ$  at 5,000 ft (1.5 km),  $104^\circ$  at 4,000 ft (1.25 km), and is effectively omni directional at up to 500 ft (150 m). The vertical receive angle measures  $20^\circ$  at any distance.



## TRANSMITTER MENU

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**Transmitter Status Screens** - Cycle through status screens or return from the menu by pressing the Menu joystick (**G**).

- **Main Status Screen** - This screen displays the status of the wireless receiver, along with the current video resolution, frequency, link quality (if connected).
- **Info Screen** - Displays the current voltage and internal temperature of the unit.
- **HDMI Status Screen** - Displays the status of your HDMI signal.

**Menu Operation** - Launch, then navigate through the menu with the Menu joystick (**G**), or from the Ranger App (pg. 10).

- **Wireless Settings** - Configure the transmitter's wireless settings.
  - **Enable Broadcast Mode** - Broadcast Mode enables Ranger to extend its range when used with the Array Antenna, and to transmit to an unlimited number of receivers (**non-DFS** channels only).
  - **Enable Fixed Frequency** - Fixed Frequency Mode allows your Ranger to designate a specific non-DFS frequency range for use, providing a stronger connection in difficult environments.
  - **Allow Licensed Channel** - Enable or disable Licensed Channel selection under the **Frequencies**.
  - **Bandwidth** - Choose between 20MHz and 40MHz bandwidth options
  - **Frequencies** - Select which frequency to use.
  - **Video Quality** - Select a Video Quality setting to modify or balance the range and reliability of your signal. Select **Longer Distance** for situations where other sources of interference might be present, or **Better Quality** to reduce artifacts during complex, high-contrast scenes.

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- **Pair** - Pair your transmitter with another receiver. Once **Pairing** is activated on the transmitter, activate Pairing on the receiver.
  - **Unpair** - Unpair your transmitter and receiver.
  - **Bluetooth Settings**- Enable or disable Bluetooth communication.
  - **Display Settings** - Use the Display Settings to control the OLED display operation. By default, the OLED display will invert every 10 minutes. You can set the display to invert every 30 minutes (lengthens the display life), or it can dim or turn off after 10 seconds or 10 minutes.
  - **Reset All Settings** - Reset all configurable options to their factory defaults.
  - **Device Info** - Displays the model and serial number.
  - **Firmware versions** - Displays the current firmware versions for all device components.

## RECEIVER MENU

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**Receiver Status Screens** - Cycle through status screens or return from the menu by pressing the Menu joystick (G).

- **Main Status Screen** - This screen displays the status of the wireless receiver, along with the current video resolution, frequency, and link quality (if connected).
- **Time Code Screen** - Displays the current time code if received from the transmitter.
- **Info Screen** - Displays the current voltage and internal temperature of the unit.
- **TX Info** - Displays the name of the transmitter.
- **HDMI Status Screen** - Displays the status of your HDMI signal.

**Menu Operation** - Launch, then navigate through the menu with the Menu joystick (G), or from the Ranger App (pg. 10).

- **Switch TX** - Select a different transmitter (paired transmitters only).
- **Wireless Settings** - Configure the transmitter's wireless settings.
  - **Enable Fixed Frequency** - Fixed Frequency Mode allows your Ranger to designate a specific non-DFS frequency range for use, providing a stronger connection in difficult environments.
  - **Allow Licensed Channel** - Enable or disable Licensed Channel selection under the **Frequencies**.
  - **Select Bandwidth** - Choose between 20MHz and 40MHz bandwidth options
  - **Select Frequency** - Select which frequency to use.
- **Spectrum Analyzer** - Determine which frequencies are available to use.
- **Signal Quality Graph** - Determine the quality and reliability of the signal being received.

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- **Pair** - Pair your transmitter with another receiver. Once **Pairing** is activated on the transmitter, activate Pairing on the receiver.
  - **Unpair** - Unpair your transmitter and receiver.
  - **HDMI/SDI Out Format** - Select the video output format. You can choose to match the video source resolution by selecting **Same as Input**, or choose from the resolutions listed. If using Ranger receiver with a recorder or monitor that is sensitive to video signal changes, choose **Continuous Output** to ensure the signal stays constant even if the link is interrupted. Note that this adds a small delay to the video output.
  - **HDMI Settings** - Select the HDMI color output.
  - **3D LUT Settings** - Select and apply a specific look.
  - **Test Pattern** - Select a video format to output a test pattern. Remove the test pattern by pressing left on the Menu joystick.
  - **Audio Settings** - Configure Ranger's Audio settings. If **Beep on REC** is activated, you will hear a short tone whenever the camera begins or stops recording. The Mute Settings allow you to select between completely muting the audio, not muting the audio, or muting the audio while recording.
  - **Bluetooth** - Enable or disable bluetooth communication.
  - **Video OSD Settings** - Choose when to display the OSD. By default, the OSD is displayed when no video is received. Selecting the **Never show** option disables the OSD. The **Show when operating** option hides the OSD until it is activated by the joystick. Selecting **Show when no video** will display the OSD when there is no video feed, and will hide OSD when video appears (default). If **Always show OSD** is selected, the OSD will always be displayed unless temporarily deactivated by the Menu joystick.
  - **Display Settings** - Use the Display Settings to control the OLED display operation. By default, the

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OLED display will invert every 10 minutes. You can set the display to invert every 30 minutes (lengthens the display life), or it can dim or turn off after 10 seconds or 10 minutes.

- **Reset All Settings** - Reset all configurable options to their factory defaults.
- **Device Info** - Displays the model and serial number.
- **Firmware versions** - Displays the current firmware versions for all device components.

## LAUNCHPAD

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Launchpad allows you to configure, pair, and upgrade your Ranger device. Launchpad is available as software for Mac and Windows at [www.teradek.com/pages/downloads](http://www.teradek.com/pages/downloads).

The following configuration options are available:

- **Pairing** - Pair or unpair your devices.
- **Settings** - Select the operating region (TX) and modify the RX/TX name.
  - **Select Region (TX)** - Configure Ranger to comply with your region's regulations governing use of the 5GHz spectrum.
  - **Select TX/RX Name** - Modify the transmitter or receiver's name to make it easier to identify among other Ranger systems that are present.
- **Color Processing** - Allows you to apply 3D LUTS to the receiver's video output
- **Upgrade** - Update your devices with the latest firmware.
- **Status** - Displays detailed information about configuration and update statuses.
- **About** - Displays the software version and License Agreement.



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## RECEIVER STATUS DISPLAY

- **Settings** (Shortcut to menu items listed on pg. 6) - Tap the  button at the top of the display to customize the receiver's various settings such as the output format, audio, display and OSD.
- **SNR** (Signal to Noise Ratio) - Compare the signal power level to the noise power level from the attached antennas.
- **Range** (Quality/Range Analyzer) - Displays the transmission distance between the transmitter and receiver.
- **Spectrum** (Spectrum Analyzer) - Detect congestion in the area and determine which frequencies are available to use.
- **Status** - Displays the paired TX name, link status, current output resolution, frequency, camera recording status, and temperature.

Teradek regularly releases new firmware versions to improve performance, add new features, or to fix vulnerabilities. Visit [teradek.com](http://teradek.com) to update your device with the latest firmware.

### NEED MORE HELP?

**SUPPORT:** <http://support.teradek.com> → Contains tips, information and all the latest firmware & software updates.

**TERADEK SUPPORT STAFF:** [support@teradek.com](mailto:support@teradek.com) or call 888-941-2111 ext. 2 (Mon-Fri 6am to 6pm PST)

