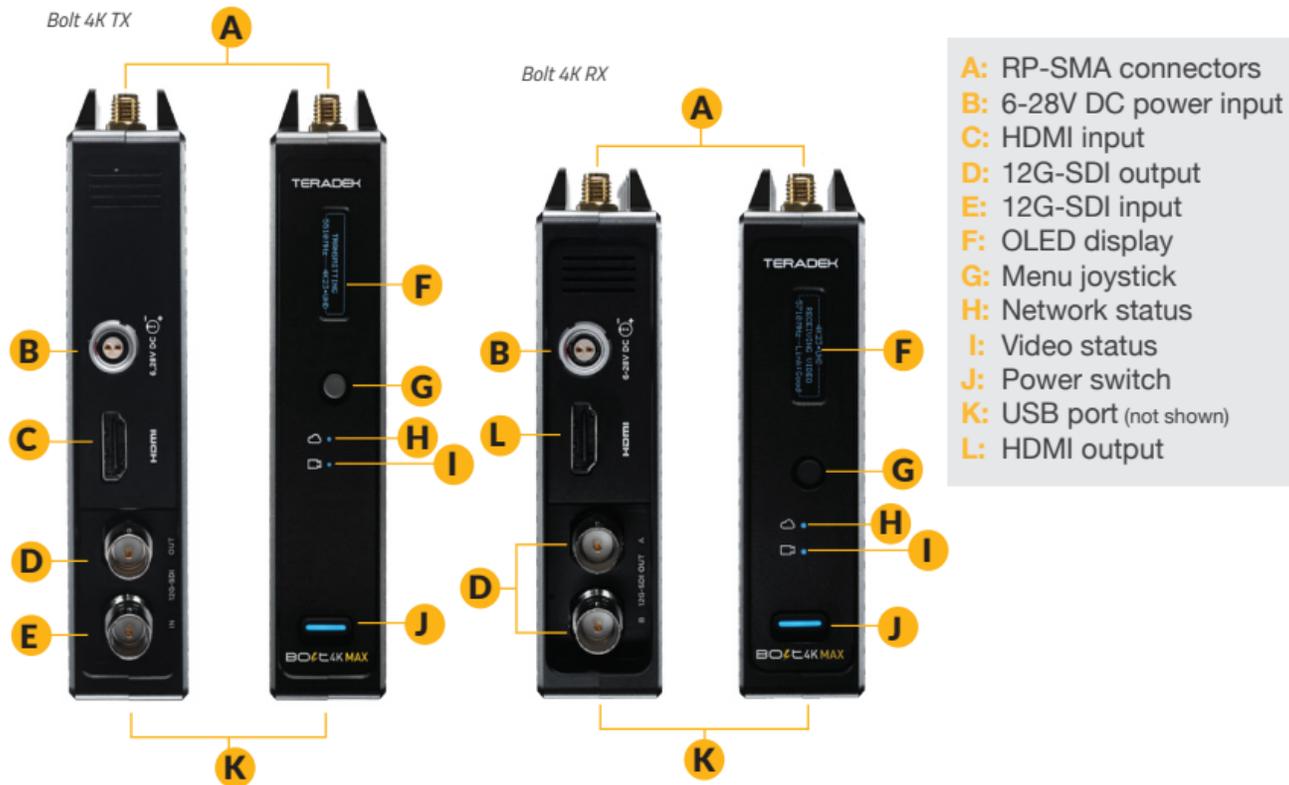


# BOLT4K

---

MAX RX and TX  
Quick Start Guide

# PHYSICAL PROPERTIES





Bolt 4K is the first 4K HDR wireless video system to provide uncompressed, zero-latency (<1ms) transmission. Bolt 4K transmits 10-bit, 4:2:2 HDR video at a range of up to 2500 ft line-of-sight (5000 ft when using the Array Antenna) over the unlicensed 5GHz band, and can multicast to 6 receivers simultaneously (unlimited receivers when using Broadcast Mode).

For HDR workflows, Bolt 4K supports the HDR-10, PQ, and HLG standards and can transport extended camera metadata, timecode, and record triggers over the wireless link.

Bolt 4K is also the first system to offer interoperability between different ranges (i.e. a Bolt 4K 750 is compatible with a Bolt 4K MAX).

## TABLE OF CONTENTS

Power and Connect .....	3
Device Operation.....	3
Bolt Connector/Pin-Out .....	4
Custom 3rd Party Cables.....	4
Mounting .....	5
Mounting Array Antenna .....	6
Array Antenna Receive Pattern .....	7
Receiver Menu .....	8
Transmitter Menu .....	10
Bolt Manager .....	11
Bolt App .....	12

## POWER AND CONNECT

---

- 1 Connect the output from your video source to either the SDI or HDMI input (**C or E**) on the Bolt transmitter. Connect either the SDI or HDMI output (**D or L**) from the Bolt receiver to the video input on your monitor.

**NOTE: If 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.**

- 2 Power the Bolt transmitter and receiver with the included A/C adapter, or if both devices are equipped with battery plate accessories, attach a compatible battery (Gold or V mount).
- 3 Attach antennas to the transmitter and receiver via the threaded RP-SMA connectors (**A**). If using the Bolt 4K Array Antenna, refer to the Bolt 4K Array Antenna Quick Start Guide for installation instructions.
- 4 Move the power switches on both the transmitter and receiver (**J**) to the ON position. Video appears within a few seconds.

## DEVICE OPERATION

---

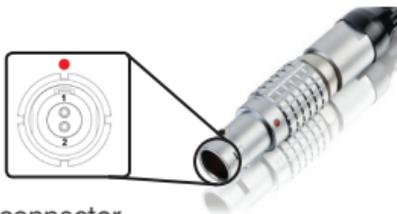
- Keep the transmitter and receiver at close range for 60 seconds after powering on the devices. This allows them to scan for and select the best wireless channel.
- For best results when using multiple Bolt systems in the same area, place the transmitters and receivers a few feet apart from each other.
- Operation of other wireless equipment may interfere with the Bolt. Try to separate other wireless transmitters and receivers as much as possible.

## BOLT CONNECTOR/PIN-OUT

---

Bolt 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 CABLES

---

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

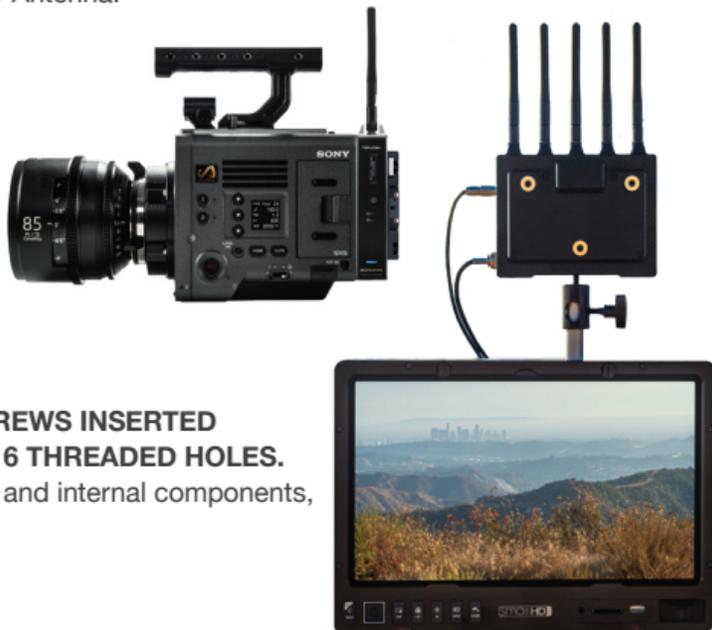
### **CAUTION:**

Using a reverse polarity or improperly-constructed power cable can damage the product and is not covered under warranty.

## MOUNTING

Bolt 4K 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, Bolt 4K MAX 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 and internal components, voiding the warranty.

## 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.

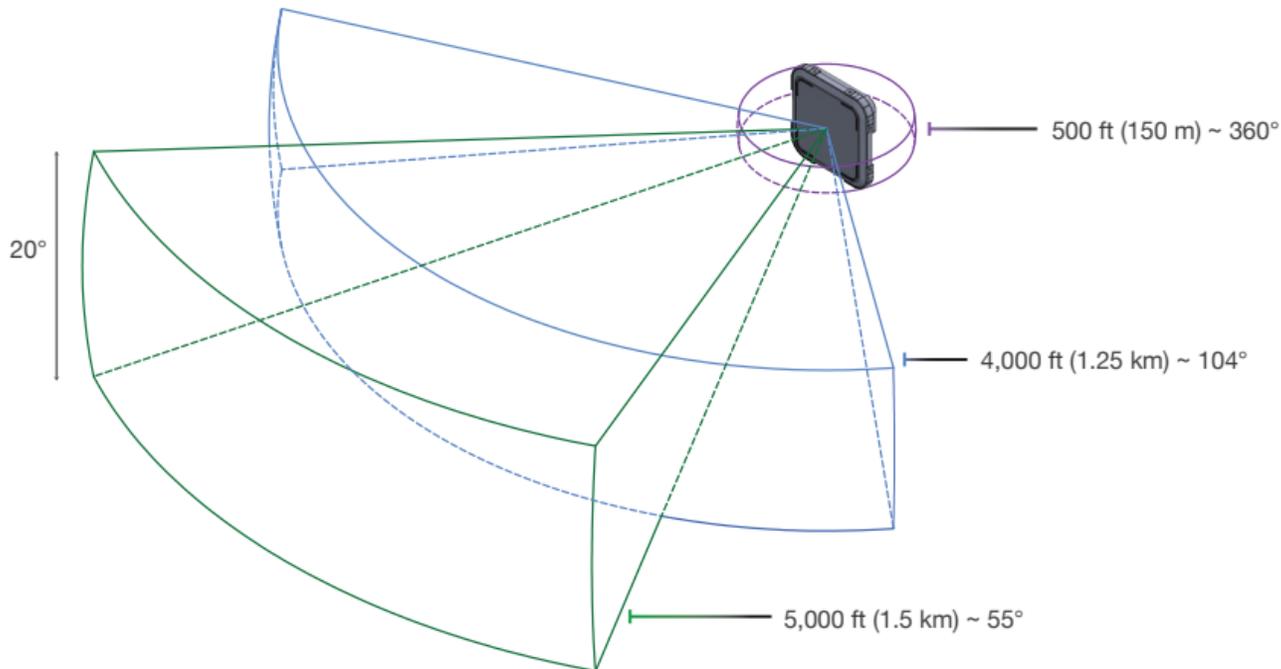
**CAUTION:** DO NOT OVERTIGHTEN  
SCREWS INSERTED INTO  
THE RECEIVER'S 3/8" THREADED HOLES.

Doing so can damage the receiver's chassis,  
voiding the warranty.



## 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.



## RECEIVER MENU

---

**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.

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

- **Switch TX** - Select a different transmitter (paired transmitters only).
- **Bandwidth** - Choose between 20MHz and 40MHz bandwidth options
- **Spectrum Analyzer** - Determine which frequencies are available to use.
- **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 Bolt 4K 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.
  - **Channel Selection** - Select which frequency to use.
  - **Test Pattern** - Select a video format to output a test pattern. Remove the test pattern by pressing left on the Menu joystick.
  - **Pairing** - Pair your receiver with another transmitter. Once **Pairing** is activated on the receiver, activate **Pairing** on the transmitter.
  - **Audio Settings** - Configure Bolt'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 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.

## TRANSMITTER MENU

---

**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 Bolt App (pg. 10).

- **Wireless Settings** - Configure the transmitter's wireless settings.
  - **Enable Broadcast Mode** - Broadcast Mode enables Bolt 4K to extend its range when used with the Array Antenna, and to transmit to an unlimited number of receivers (**non-DFS** channels only).  
**NOTE: TX and RX must be paired again after enabling Broadcast Mode.**
  - **Enable Fixed Frequency** - Fixed Frequency Mode allows your Bolt 4K to designate a specific non-DFS channel for use, providing a stronger connection in difficult environments.
  - **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, **Better Quality** to reduce artifacts during complex, high-contrast scenes, or **Low Power** to reduce the amount of power your transmitter uses when your power source is low.

- 
- **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.

## **BOLT MANAGER**

---

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

**NOTE: Available configuration settings will differ between Bolt models.**

The following configuration settings are available:

- **SELECT REGION (TX)** - Configure Bolt 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 Bolt systems that are present.

# BOLT APP

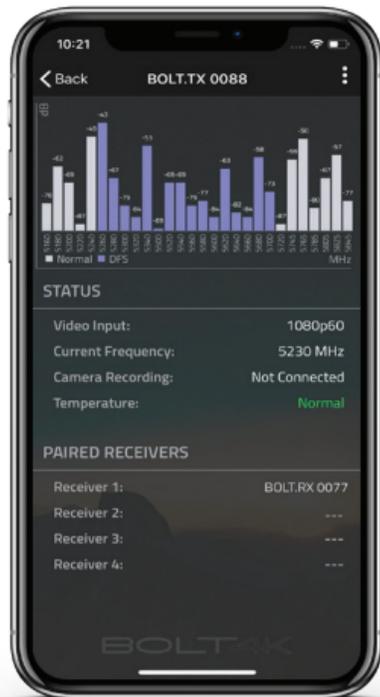
Use the Bolt App to remotely manage and monitor every parameter of the Bolt 4K including pairing, channel selection, and 3D LUTs.

## CONNECT VIA BLUETOOTH

- 1 Download the Bolt App from the App Store.
- 2 Navigate to the Bluetooth menu on both the transmitter and receiver, then select **Enable** (see pages 6-8).
- 3 Open the Bolt App from your iOS device, then tap the **Bolt Devices** button.
- 4 Select the device you want to monitor.

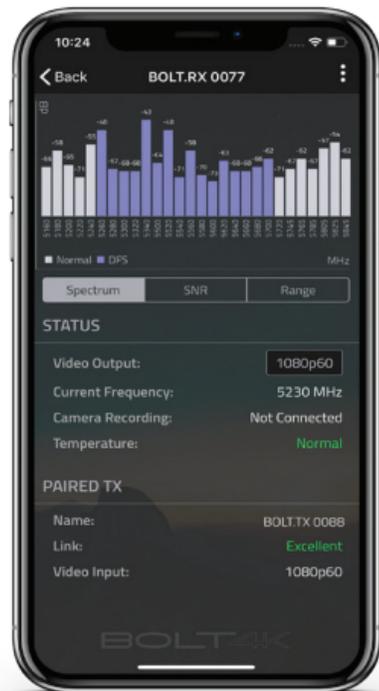
## TRANSMITTER STATUS DISPLAY

- **Settings** (Shortcut to menu items listed on pg. 8) - Tap the **⋮** button at the top of the display to customize the transmitter's various settings.
- **Status**- Displays the current input resolution, frequency, camera recording status, and temperature.



## 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.
- **Paired TX** - Displays the name, link status, and input resolution of the paired transmitter.
- **Status** - Displays the 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)



© 2019 Teradek, LLC. All rights reserved.