

# AIR-EAGLE SR PLUS

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## 36U-HHEBD-4

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### 2.4 GHz RF Transmitter



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## WARRANTY STATEMENT

BWI Eagle Inc. warrants the Air-Eagle Remote Control System, if properly used and installed, will be free from defects in material and workmanship for a period of **1 year** after date of purchase. Said warranty to include the repair or replacement of defective equipment. This warranty does not cover damage due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing. This limited warranty, and any implied warranties that may exist under state law, apply only to the original purchaser of the equipment, and last only for as long as such purchaser continues to own the equipment. This warranty replaces all other warranties, express or implied including, but not limited to, the implied warranties or merchantability and fitness for a particular purpose. BWI Eagle makes no express warranties beyond those stated here. BWI disclaims without limitation, implied warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not allow the exclusion of implied warranties so this limitation may not apply to you. To obtain warranty service, contact BWI Eagle for a return material authorization. When returning equipment to BWI Eagle, the customer assumes the risk of damage or loss during shipping and is responsible for the shipping costs incurred.

## SIGNAL RANGE

Max range statements are estimates based on a clear line of sight with few interferences. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting and receiving antennas, weather conditions, electronic interference, terrain, and physical obstacles, including but not limited to; walls, building structures, trees (foliage), metal objects, and landscape (hills, mountains).



## WIRELESS STOP SYSTEMS WORK IN CONJUNCTION WITH HARD-WIRED SYSTEMS.

Wireless Stop and E-Stop devices must work in conjunction with a hard-wired system. A wireless system should never be considered a primary life-saving device. At least one hard-wired switch must be available in the event the wireless signal is lost. Failure to comply may result in serious injury or death to personnel and damage to equipment.



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Dimensions – 4.0” L x 4.0” W x .1.6” D  
 (note: Stop button and belt clip adds 1.15” to depth)

## INTRODUCTION

The Air-Eagle SR PLUS TX is a handheld R.F. transmitter capable of operating the relays of an Air-Eagle SR Receiver located up to 600 feet away. Eight user-programmable frequencies allow multiple systems to operate simultaneously in the same area without interference. This transmitter was designed to work with the 38P-2D-ESTOP receiver.

## INITIAL OPERATION SET-UP

This transmitter comes with no frequency or unit number set and not paired to a receiver. This is to make sure the user makes a conscious decision on which frequency and unit number to use if they already have other units in use. Otherwise select frequency 1, unit number 1 and then pair with the receiver. See Menu Settings for information on these functions.

## CONTROLS & INDICATORS

<b>TX Display</b>	While transmitting a beacon the display will rotate a character around the outside of the screen to show that it's transmitting. The character will be as follows: <b>-</b> Battery is discharging <b>+</b> Battery is charging <b>L</b> Battery is discharging, Level is below 10% (LOW BATTERY) <b>F</b> Battery is charging, Level is 100% (BATTERY FULL)
<b>E-Stop Button</b>	When pressed the display will blink "STOP" and the relays in the receiver will de-energize.
<b>Pushbuttons 1, 2, 3 and 4</b>	When any of these buttons is pressed while a beacon is being transmitted, the display will show the frequency, unit # and battery level. See "Display"
<b>Pushbutton 2 (MENU)</b>	This button brings up the menu options for programming frequency, power level, or unit #. See "Menu Settings" for more information.
<b>Power/Select Button</b>	Turns power on or off when held for 3 seconds. This button also works with button 2 in the "Menu Settings".
<b>Pushbutton 4</b>	Use this button to check signal strength between the transmitter and receiver. See "Signal Strength" section for more information.
<b>Charging Jack</b>	The micro-USB connector on the left side of the unit is for charging the battery. Use the supplied micro-USB cable and any power source that can supply 5VDC at 1 amp.

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## MENU SETTINGS

Press the “MENU” button (button 2) to bring up the programming selections. Pressing the “MENU” button again will cycle through the selections as follows:

Frequency → Power Level → Unit Number → PAN ID → Paired then back to frequency if pressed again.

### FREQUENCY

When first received the Frequency will be “None”. Pressing the Power/Select button will bring up a blinking cursor and allow the frequency to be changed. Press the Power/Select button until the desired frequency is selected then Press Menu to save. The frequency number should cycle from None to 1 on the first press and increment up to frequency 8 before wrapping around to 1 again. Press the “Menu” button to save the selected frequency. The display should show Saving..... then “Done” when complete.

### POWER LEVEL

The power level, either “Low”, “Mid”, or “High”, should be displayed on the bottom line. Pressing the Power/Select button will bring up the blinking cursor and allow the power level to be changed to any of the aforementioned settings. Press the Power/Select button to change the setting then the Menu button to save the setting.

### UNIT NUMBER

When first received the transmitter Unit number will be “None”. This must be set to either Unit #1 or Unit #2 before the transmitter can be used. The Unit number will be saved in EEPROM memory so that it will always save this setting. It will be cleared back to “None” if “Clear” is selected.

Press the Power/Select button to bring up the flashing cursor. Pressing Power/Select again will cycle through Unit # 1...Unit #2...Clear. Press “Menu” when the correct unit number is selected to save the setting. You’ll see “Saving...” then “Done” when complete.

### PAN ID

The PAN ID allows multiple systems on the same frequency without interference. There are 6 different PAN IDs starting with the root number (BWI in the case of a standard unit). Pressing Power/Select will bring up a blinking cursor allowing the PAN ID to be changed. Continue pressing the power/select button to change the PAN ID. It will cycle from the root (BWI) to 1 (BWI1) then 2, etc. Press the Menu button to save the PAN ID. Only transmitters and receivers with the same PAN ID can operate with one another.

### Pairing

The transmitter must be paired up with a receiver. To do this the frequency and unit number must have been set already. You will get a warning to set them if they haven’t been already. Pressing Power/Select brings up the pairing menu with 3 selections (Pair / Clear / and Exit). Press power/select to cycle through these options. Clearing the receiver pairing will also clear the Frequency and Unit number back to ‘None’. Exit drops down to the previous menu level. To pair with a receiver, press Menu when “Pair” is selected and the receiver to be paired with is in range and powered on. There will be either a ‘Success’ or ‘Failure’ message after pairing is done. If it failed make sure to be in close proximity to the receiver since the power level is lowered while pairing. If successful the receivers serial number should be shown below “Paired:”. Up to 2 transmitters can be paired with a receiver at the same time (See UNIT NUMBER above).

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### SYSTEM ON/OFF

#### SYSTEM ON

Depress and hold the Power/Select button. The display will show 3...2...1... then “Power On” when the unit has turned on. Release the Power/Select button and the unit will begin to transmit a beacon signal to the receiver approximately every 0.5 seconds

NOTE: If a receiver hasn't been paired, the display will show “SR+ Not Paired”. See the “Pairing” section in “MENU SETTINGS”. If another transmitter is already using the same Unit number of the receiver then a message will show “Unit #x in use”, where x is the Unit number. If the receiver is out of range then an “Out of Range” message will be shown.

#### SYSTEM OFF

Depress and hold the Power/Select button. The display will count down 3...2...1 then “Power Off” when the unit has turned off. At this point the beacon will stop and a log out code will be transmitted to the receiver. This will turn off the corresponding ‘login’ relay on the receiver and allow the transmitter to log back in later

NOTE: If the Power/Select button is released at any point during the power on/off countdown the unit will stay in its current state and the countdown timer will reset.

### SIGNAL STRENGTH

The signal strength between the transmitter and receiver can be checked by using button 4. Press and hold button 4 of the transmitter. A countdown will start from 3 to 1 then START. When it says “START” release button 4. A row of dots will show up on the screen and they will disappear one by one as the signal strength is being checked. Once all of the dots disappear the receiver will calculate the signal strength and it will be transmitted back to the transmitter and displayed on the screen.

The signal strength is shown in dBm. The strongest value is -40dBm and the weakest is around -112 dBm.

If the transmitter doesn't get an acknowledgement from the receiver it will show “Out of Range”. This would happen if the receiver were completely out of the signal area or on another channel or not even powered on.

If the receiver misses too many of the transmissions, then it won't be able to do a proper calculation of signal strength and will send “Error”. If this is the case, then it is likely that either there is some strong interference in the band, or the receiver is on the fringe of being completely out of range. Try changing the frequency of the transmitter and receiver or move to a closer or less obstructed position.

### CHARGING

Use only the supplied charger or one that supplies 5V and at least 1 amp of current. When the charger is plugged into the jack the display will show “Charging” and the current battery level in %.

When pressing the power/select button normally it shows the battery level with BAT: over top of it. While the charger is plugged in the “BAT” will change to “CHG” to show that it is charging.

When the charger is unplugged, the display will show “Battery” and the current level below it to show that the charger is now unplugged. The “CHG” will change back to “BAT” in the information display.

When the battery gets to 100% charge the display will blink “Fully Charged” every few seconds until the charger is unplugged.

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While the beacon is being transmitted the display will show the charge state with a rotating character on the screen. See “TX Display” under “Controls and Indicators” above

### DISPLAY

At any time while not in a menu setting if button 1 is pressed the unit will show a status display. This shows the Frequency, Unit # and Battery Level as such:

```
FRQ-UNIT   BAT:
  1-1      95%
```

The Unit number & Frequency will show 0 if no unit number or frequency has been set up yet. BAT will change to CHG if the charger is plugged in.

Button 3 will show the PAN ID selection, Revision number and transmitter serial number:

```
VID:TER   REV:3
S/N: 4123ABCD
```

While the beacon is transmitting, button 4 will show the paired receiver’s serial number:

```
RECEIVER
S/N: 4123ABCD
```

### LOW BATTERY

When the battery goes below 10% charge level the unit will show an “L” rotating on the screen when the beacon is transmitting. It is advised to charge as soon as possible. The unit will operate normally with the charger plugged in and the display will change to a ‘+’ character for the beacon indicator.

### SPECIFICATIONS

<b>Keypad</b>	Durable Sealed Microswitch Keypad – Eliminates Dust, Dirt and Moisture Failures	
<b>Enclosure</b>	ABS Plastic	Enclosure with ring is rated IP40 *Not Waterproof
<b>Protective Ring</b>	Aluminum	
<b>Battery Type</b>	Internal non-replaceable 3.7V 2000mAh Rechargeable Lithium Ion Battery	
<b>Battery Life(Active Usage)</b>	Up to 24 Hours	
<b>Battery Life(Sleep Mode)</b>	Approx 45 Days	
<b>Charging Requirement</b>	5V @ 1amp from Micro USB Charging Cable	
<b>Charging Time</b>	Approx 3-4 Hours	
<b>Transmit Frequency</b>	2.4 GHz Spread Spectrum	
<b>RF Networks</b>	Eight Independent Network Frequencies	
<b>RF Output Power</b>	60 mW	
<b>Max Transmit Range</b>	Up to 600 Feet	
<i>Note: Range figures are estimates, based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, and terrain between receiver and transmitter, including, but not limited to, indoor and outdoor structures such as walls, metal objects, trees, buildings, hills, and mountains.</i>		
<b>Operating Temperature</b>	-40° F to +185° F	
<b>Weight</b>	Approx .6 lbs. (w/belt clip)	

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### APPROVALS

United States (FCC)	MCQ-XBEE3
Canada (IC)	1846A-XBEE3
Europe (CE)	ETSI
Australia	RCM
Brazil	ANATEL 06329-18-01209