

Xtreme Power Systems

XtremeLINK™

Receiver Usage Manual

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Firmware v2.4 and later

Manual v1.0

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SECTION 1 – RECEIVER

After powering on your XtremeLink™ receiver, the STATUS LED will light red for approximately 3 seconds and then begin to flash red. Flashing red means that there is no connection to an XtremeLink™ transmitter module.

When a connection is established, the STATUS LED will light solid green. If a connection is established, and the STATUS LED is red (not green), it indicates that your transmitter module is set to the lowest power mode.

During normal operation the STATUS LED will remain green (or red). If the STATUS LED changes to orange, it indicates that you have a power problem with your system! The voltage has dropped below 4.3 volts during operation. You need to look into this issue as it is likely unsafe to use the system in this condition.

Advanced Programming Features

Advanced programming mode allows various features to be changed.

NOTE - Any transmitter with an XtremeLink™ RF module that has been “bound” to the XtremeLink™ receiver must be turned off prior to powering on the receiver. Power up your XtremeLink™ receiver and wait for the STATUS LED to begin flashing red.

To enter advanced programming mode, press and hold the programming button on the XtremeLink™ receiver until the STATUS LED changes from off to green, and then finally red. This process will take approximately 7 seconds.

NOTE - The receiver’s programming button is located on the circuit board itself and can be depressed using our radio tool, a 3/32 Allen key, or similar BLUNT object. DO NOT USE ANY TYPE OF SCREWDRIVER to press the button or damage will result! See Figure 1 for wholdocation.

Once you have entered programming mode, the STATUS LED will be solid red (the first programming option). Each time you press and release the programming button, the STATUS LED will change colors, indicating a different programming function. Below is a table of STATUS LED colors and their meanings, followed by a detailed description of each programming option.

STATUS LED	FUNCTION
Solid Red	1 - Set Channel Map
Solid Green	2 - Set Country
Solid Orange	3 - Set Output Mode
Flashing Red	4 - Set Failsafe Map
Flashing Green	5 - Set Failsafe Time
Flashing Orange	6 - Telemetry Setup



Figure 1 – XtremeLink™ receiver programming button location

SET CHANNEL MAPPING (SOLID RED)

Range: 1 to number of receiver channels

Channel mapping is a handy feature when you have a transmitter with limited functionality or you just want assign channels to different output pins. The default channel map is 1:1. This means that the transmitter's channel 1 is mapped to the XtremeLink™ receiver's output channel 1. One common use for this feature is assigning two throttle outputs. Instead of using a "Y-cable" to tie the servo outputs together, you can just assign a second output. You could use the normal throttle channel output (channel 1 for most JR), and assign it also to be a channel 10 output (providing you had a 10 channel XtremeLink™ receiver). The outputs occur at the exact same time, completely eliminating any type of "lag" that is common when using individual channels for duplicating outputs.

With the STATUS LED solid red, press and hold the programming button until the STATUS LED turns off. The STATUS LED will now flash orange the number of times equal to the current receiver servo output position, followed by a one second pause. When you first enter the channel map programming (output 1), the STATUS LED will flash once, followed by a one second pause.

Every time you press and release the programming button, the channel map position will advance by one. The channel map position begins at output 1 (one flash) and ends with the number of channels that your receiver has. So, the 8 channel XtremeLink™ has eight possible channel map positions, while the 10 channel XtremeLink™ receiver has ten possible channel map positions.

To change the channel map output, press and hold the programming button until the STATUS LED turns off, and begins flashing green. The STATUS LED will begin flashing green the number of times equal to the current transmitter channel number for that servo output position. For example, the default value of the channel map 1 would flash just once, indicating the throttle channel (for JR radios). After the STATUS LED is done flashing green, you have five seconds to enter a new channel number value. You do this by pressing and releasing the programming button the number of times equal to the new channel number. NOTE - It is possible to set the channel number to be any value from 1 to 16. This allows you to assign a channel number higher than what you receiver normally has for outputs. An example of this would be using a 6 channel XtremeLink™ receiver with channel 7 assigned to servo output position 5 (which might be a proportional control for a variable pitch propeller).

If you do not press the programming button within five seconds, or if the value you enter exceeds what is allowed, the STATUS LED will alternately flash red and green (error condition occurred) and no change will be made. At this point, you are back at the channel map position where you can advance to the next channel. There is no way to get back to the programming mode start with this feature other than by powering off the receiver and re-entering the advanced programming mode.

If you do make a change, the STATUS LED will blink green/red/orange in rapid succession to let you know that the change was successful.

SET COUNTRY (SOLID GREEN)

Range: 1 to 3

With the STATUS LED solid green, press and hold the programming button until the STATUS LED turns off. The LED STATUS will now slowly flash green the number of times equal to the current country setting. For example, the default country level is 1, so the STATUS LED will flash just once.

After the flashing stops you have five seconds to change the country. To change the country, press and release the programming button the number of times necessary to equal the country from the list below. For example, if you wanted to set the country to France, you would press and release the programming button two times.

If you do not press the programming button within five seconds, or if the value you enter exceeds what is allowed, the STATUS LED will alternately flash red and green (error condition occurred) and no change will be made. At this point, you are back at the programming mode start where you can select another programming option.

If you do make a change, the STATUS LED will blink green/red/orange in rapid succession to let you know that the change was successful.

The country selection is necessary to meet various FCC, ETSI, IC, and other guidelines.

Below is a table of allowable settings:

Country	Setting
All Countries except Europe	1
France	2
Europe	3

SET OUTPUT MODE (SOLID ORANGE)

Range: N/A

This function is not currently supported. The STATUS LED will be solid orange. It will be supported in future versions to allow different servo output modes such as sequential, grouped (for CCPM), Xtreme, TruDigital™, etc.

NOTE: SEQUENTIAL was removed with v2.4 and later and replaced with the Xtreme mode which outputs ALL of the servo channels at the exact same time, giving you absolutely no servo interaction possibilities. This means that the CCPM swash plate will have absolutely no interactions, and will be 100% identical when moving. This mode can present a problem if you are using a governing device on a gas/glow helicopter. The Curtis Youngblood v1.0 and v2.0 governors may not be compatible with this mode. V3.0 is compatible.

SET FAILSAFE MAP (FLASHING RED)

Range: 1 to number of receiver channels

It is possible to set the failsafe control for each channel output individually. You can set each channel to either hold last position, or to use the user defined position (discussed in section 4). NOTE - The default for ALL outputs is hold last position.

With the STATUS LED flashing red, press and hold the programming button until the STATUS LED turns off. The STATUS LED will now flash orange the number of times equal to the current channel output, followed by a one second pause. When you first enter the failsafe map programming (channel 1), the STATUS LED will flash once, followed by a one second pause.

Every time you press and release the programming button, the channel position will advance by one. The failsafe map position begins at channel 1 (one flash) and ends with the number of channels that your receiver has. So, the 8 channel XtremeLink™ has eight possible channel output positions, while the 10 channel XtremeLink™ receiver has ten possible channel output positions.

To change the failsafe control for that channel output, press and hold the programming button until the STATUS LED turns off and begins to flash green. The STATUS LED will flash either one time (failsafe hold) or flash two times (failsafe is user defined). After the STATUS LED is done flashing green, you have five seconds to enter a new failsafe control value. You do this by pressing and releasing the programming button one, two, or three times. Once is for **hold last position**, twice is for **user defined position**, and three times is for **PPM off**.

If you do not press the programming button within five seconds, or if the value you enter exceeds what is allowed, the STATUS LED will alternately flash red and green (error condition occurred) and no change will be made. At this point, you are back at the failsafe map position where you can advance to the next channel. There is no way to get back to the programming mode start with this feature other than by powering off the receiver and re-entering the advanced programming mode.

If you do make a change, the STATUS LED will blink green/red/orange in rapid succession to let you know that the change was successful.

If you wanted a low throttle condition and all other outputs to hold their last position with a JR radio setup, you would set the failsafe map so that channel 1 was two flashes (failsafe is user defined), and all other outputs to one flash (hold position). You would then need to set the failsafe as described in the **Setting the Failsafe** section below to obtain your low throttle position.

If you have an autopilot or other device that monitors the PPM output and will only engage when there is a loss of PPM signal, set the failsafe map for that channel to three flashes (PPM off).

SET FAILSAFE TIME (FLASHING GREEN)

Range: 1 to 5 seconds

A failsafe condition occurs when data received by the XtremeLink™ receiver is not valid for some period of time. This time can be set from one to five seconds.

With the STATUS LED flashing green, press and hold the programming button until the STATUS LED turns off. The STATUS LED will now slowly flash green the number of times equal to the current failsafe time (in seconds). For example, if the failsafe time is set to two, so the LED will flash two times, indicating a failsafe period of two seconds.

After the flashing stops you have five seconds to change the failsafe time. To change the failsafe time, press and release the programming button one time for each additional second you would like the failsafe time to be. For example, if you wanted the failsafe time to be 1 second, you would press and release the programming button once. If you wanted the failsafe time to be 3 seconds, you would press and release the button 3 times.

If you do not press the programming button within 5 seconds, or if the value you enter exceeds what is allowed, the LED will alternately flash red and green (error condition occurred) and no change will be made. At this point, you are back at the programming mode start.

If you do make a change, the LED will blink green/red/orange in rapid succession to let you know that the change was successful.

SEUP TELEMETRY (FLASHING ORANGE)

Range: None

With the STATUS LED flashing orange, press and hold the programming button until the STATUS LED turns off. The STATUS LED will now turn solid green. Any sensor that is connected should now be in "learn" mode. Pressing the button on the sensor will cause the receiver to assign it an ID number. Please reference the instructions for the sensor(s) connected for more information.

Note: you must setup the sensors using this method. It is not possible to remotely setup sensors (using the XDP or Telemetry Station).

RESET TO DEFAULTS

It is possible to reset all of the settings to the factory defaults. When a reset is performed, ALL settings, including the binding information will be reset. This means that the receiver will have to be bound again to the XtremeLink™ transmitter module.

To perform a RESET, get into the advanced programming mode.

Now, press and HOLD the programming button for approximately 7 full seconds. During this time, the STATUS LED will turn off, and then I will start flashing red. When it begins flashing red, you can release the programming button. The RESET is now complete.

Setting the Failsafe

If no failsafe is programmed, the servos will hold their last known valid state when a failsafe condition occurs. The default failsafe time is 2 seconds.

You can program the failsafe condition for each channel as described above. Once you have set the failsafe map conditions, you can then set the user defined channels. To do this, turn on the XtremeLink™ system so that servos can be moved. Now, press and hold the programming button on the XtremeLink™ receiver until the STATUS LED goes out. The STATUS LED will begin alternately flashing red and green for about 8 seconds. During this time, move your sticks and switches to the where you would like them during a failsafe condition. NOTE - Only those channels programmed in the failsafe map will change to a user defined position. All other channels will hold their last positions when a failsafe occurs.

Servo Outputs

The 8 and 10 channel receivers do not have markings for the servo connector polarity. The servos and any battery connections can be safely plugged in either way, however, the receiver and servos will only work if the proper polarity is used. See Figure 2 for the servo output diagram.

WARNING!

PLUGGING A BATTERY INTO THE PORT LABELED 'B/T' WITH THE POLARITY REVERSED WILL RESULT IN UNPREDICTABLE OPERATION! THE RECEIVER WILL POWER UP, BUT SERVO CONTROLS WILL NOT FUNCTION PROPERLY. TWITCHING SERVOS, FLASHING RECEIVER LED AND OTHER ODDITIES WILL BE SEEN. RANGE WILL BE UNUSABLE, EVEN IF A RANGE CHECK SHOWS RANGE TO BE NORMAL.



Figure 2 – XtremeLink™ receiver servo output polarity

Contains FCC ID: OUR-XBEE / OUR-XBEEPRO * The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i.) this device may not cause harmful interference and (ii.) this device must accept any interference received, including interference that may cause undesired operation.



WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.