



Designed in Kansas
Components manufactured in the
USA, Mexico, and China

castlecreations.com

Thank you for purchasing the very finest in receiver technology. This is no ordinary receiver, so make sure to read through all of these directions and tips to get the most from your new Berg by Castle Creations receiver.

Range Checking:

Start with your transmitter on and its antenna collapsed, and then activate the receiver in the aircraft. Check to see that all channels are working correctly, start walking backwards and counting your paces. For a passing range check, you should be able to get approximately 30 paces (100ft) away from the plane before seeing indications of a lost/degraded signal*.

**Special Note: The Berg by Castle Creations receivers are tuned for flying above the ground. If the antenna is very close to the ground (e.g. aircraft actually sitting on the ground), you may see a poor range check. If this is the case - Simply have a friend hold the aircraft up off the ground for you, or use a picnic table or similar object to gain a bit of elevation.*

Transmitter Signal Recognition (TSR) process:

The receiver "learns" the characteristics and specific signal signatures of your transmitter when you power it up. After that, the receiver will only listen to your transmitter*.

Note: If a similar transmitter on the same channel is powered up and is CLOSER to your receiver than your own transmitter, loss of signal/fail safe may be experienced.

True Digital Signal Processing (TDSP):

TDSP is a proprietary process developed by Peter Berg. In addition to highly advanced triple-tuned RF filtering hardware, Castle Creations' Berg receivers use a microprocessor and sophisticated software algorithms to filter the incoming signal. The system decides which signals are valid and which are not. Most standard FM receivers simply pass on the invalid signals to the servos as a "glitch".

TDSP receiver technology essentially eliminates glitches and provides a new level of confidence that you will **only** get with Berg by Castle Creations.

For warranty, troubleshooting, or application information, please contact us at:

(913) 390-6939
support@castlecreations.com

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Make all adjustments with the engine not running, or if in an electric plane, make sure that the motor is disconnected.

This is not a toy, use only under adult supervision. Observe all RMA and governmental requirements for safe operation of an RC aircraft.

Observe all traditional channel safety guidelines, do not attempt to fly or operate two RC planes on the same channel. This product is MADE IN THE USA OF U.S. and imported parts. Castle Creations, Inc. warrants this product to be free from manufacturing defects for a period of one year from date of purchase.

Safety First!

Castle Creations, Inc., is not responsible for your use of this product, or for any damages or injuries you may cause or sustain as a result of its usage. An electric motor that is connected to a battery and speed control may start unexpectedly and cause serious injuries. Keep the propeller away from your body and others at all times. Always observe local laws regarding the operation of remote controlled aircraft.

This product may contain chemicals known to the State of California to cause cancer and or birth defects or other reproductive harm. Do not ingest this product, it may hurt you.

LIGHTWEIGHT RECEIVER
USE ONLY A BERG CRYSTAL FOR BEST PERFORMANCE

castle creations
Berg4L

FOUR CHANNEL LIGHTWEIGHT RECEIVER

**FULL RANGE RECEIVER WITH
PROGRAMMABLE FAIL SAFE**

TRUE DIGITAL SIGNAL PROCESSING (TDSP)

TRANSMITTER SIGNAL RECOGNITION (TSR)



castle™

Power Requirements for Castle Creations' Berg Receivers

The microprocessor in this receiver is keeping track of your transmitter's commands in 'real time' and that may include a significant amount of digital signal processing. The algorithms used by this powerful microprocessor chip start with TSR, and are followed by adaptive TDSP, which applies increasing amounts of filtering when the signal gets weaker, or is being interfered with.

Upon power-up of the receiver, it goes into a "learning cycle" for about one second. During this period, it learns the characteristics of your transmitter including shift polarity, number of channels and frame timing. After this 'boot up' period, it will only listen to your type of transmitter. Booting up your home computer or laptop takes several minutes. Booting up the computer inside your receiver takes only a second or so. Boot up starts every time you first supply power to the receiver.

There are only a few cautions with the use of this receiver.

1. The supply voltage (power) should not be interrupted during the short learning period.
2. Power should not be re-applied for at least 2 seconds after you have removed it.
3. Power should not be interrupted during flight.

Should you break any of these rules, your receiver will not be damaged. But, the receiver will need to be powered up properly, in order to function as intended.

Specifications of the Berg by Castle Creations 4L Receiver

- Number of channels: 4
- Channel outputs: 1-2-3-4
- Filtering: Triple tuned RF circuitry with steep flank 8 pole IF ceramic filter set
- Filtering: TDSP filtering in the microprocessor decoder, with adaptive algorithms based on signal to noise ratio of the received signal
- Sensitivity: about 2.0µV
- Shift polarity: positive or negative (auto-detect)
- Dimensions: 0.6" x 1.35" x 0.35"
- Weight: 4 grams
- HOLD mode: (programmable on or off) all servos are held in position of last known good signal before signal loss
- Fail-Safe mode: (programmable on or off) Upon two seconds of no signal, servos move and hold pre-programmed position until the signal returns

Programming Instructions:

Always start with the transmitter on, and the receiver unpowered. The Factory default setting is Fail Safe Mode OFF.

To turn ON Fail Safe Mode:

Put a servo in channel one, and the supplied jumpers into channel 2 and 4. When the receiver is powered up in this configuration, it will activate Fail Safe Mode, and the servo will "wave" at you to confirm it has accepted this command.

To Turn OFF Fail Safe Mode:

Put a servo in channel one, and the supplied jumpers into channel 2 and 3. When the receiver is powered up in this configuration, it

will turn OFF Fail Safe Mode, and the servo will "wave" at you to confirm it has accepted this command.

If Fail Safe Mode is enabled, you MUST then program your desired servo holding positions, in the event Fail Safe Mode is engaged in flight. After the radio system is installed in the plane, and flight trimming is accomplished, follow the simple procedure below:

1. With electric aircraft, remember to REMOVE THE PROP/ ROTOR BLADES before going any further!

2. With the receiver in the aircraft and the aircraft on the bench, turn on the transmitter and receiver, operate the transmitter sticks and set all your servo directions, trim, throws, mixing etc. to those exact positions you would like to have them in should a complete loss of signal occur. Have a buddy hold your transmitter sticks in these positions for you.

3. Keeping the transmitter ON, turn the receiver OFF. Put one jumper on any channel output. (if all channels are being used, you can use a "Y" connector to add a jumper on any channel) Keep holding the desired positions on your transmitter sticks.

4. Turn the receiver ON and count to five, then remove the jumper plug from the receiver. Turn the receiver OFF and then let the transmitter sticks go back to neutral. All done!

To test Fail-Safe operation:

1. Turn transmitter and receiver ON.

2. Check for correct control of all servos on the correct channels, and then put all sticks in a random position and turn transmitter OFF. All servos should stay in their positions for two seconds. If Fail-Safe is activated all servos should move to their previously programmed positions and stay there until a signal comes back. If that doesn't happen, start the above procedure over. Channels 1 and 3 default to 1.0msec pulses when you first turn FS ON, the rest are preset to 1.5msec.

NOTE: never remove power from the transmitter or the receiver during a programming cycle. Doing so will not damage anything, but you will have to start your entire programming cycle over.

As soon as the receiver re-establishes accurate contact with the transmitter, the servos will immediately begin responding to the transmitter control inputs

NOTE: when turning OFF a computer transmitter it may take up to eight seconds for the transmitter to boot up when you turn it back ON, so the control delay may be up to eight seconds.

SUGGESTION: NEVER perform this test "in the air" by turning your transmitter OFF and then ON again or this may be your last flight of the day.

With the complexity of features and the user-programming of this receiver it is a must to perform a standard pre-flight test exercising all channels and verifying that the Fail-Safe mode does exactly what you programmed into the receiver.