Thank you for purchasing a Futaba FMR-01 FASSTest-2.4GHz compatible receiver. The FMR-01 receiver features bi-directional communication with a FASSTest Futaba transmitter using the S.BUS2 port. Using the S.BUS2 port an impressive array of telemetry sensors may be utilized. FMR-01 has a merit which acquires the information from the model on flight by connecting an optional transmitting device. It also includes both standard PWM output port (3ch only) and S.BUS output ports.

Usage precaution

- Analog servos cannot be used with the FMR-01 in the FASSTest 12CH mode.
- The FMR-01 receiver can only be used with FASSTest capable transmitters.

**WARNING**

- Changes or modification not especially approved by the party responsible for compliance could void the user's authority to operate the equipment.
- The FMR-01 receiver should be protected from vibration by foam rubber, Velcro or similar mounting methods. Protect from moisture.
- Keep away from conductive materials to avoid short circuits.
- Don’t connect the servo or gyro which do not correspond to S.BUS2 port S.BUS2.
  - When the servo and gyro which do not correspond to S.BUS2 are connected to S.BUS2 port, there is a danger of falling by malfunction.
- Turn on the power in transmitter → receiver order. In addition, always check the operation of all the servos before flight.
- Do not insert or remove the servo connector while the receiver power is ON.
  - Since the S.BUS servo switches the operation mode automatically according to the type of signal (S.BUS signal/PWM signal) from the receiver, if the connector is inserted or removed while the power is ON, an S.BUS connected servo will be erroneously recognized and may stop.

Please refer the table below for LED status vs receiver’s condition.

### LED Indication

<table>
<thead>
<tr>
<th>Green</th>
<th>Red</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Solid</td>
<td>No signal reception</td>
</tr>
<tr>
<td>Solid</td>
<td>Off</td>
<td>Receiving signals</td>
</tr>
<tr>
<td>Alternate blink</td>
<td>Unrecoverable error (EEPROM, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

### Antenna installation precaution

- Do not cut or bundle the receiver antenna wire.
- Do not bend the coaxial cable. It causes damage.
- The antennas must be mounted in such a way that assure they are strain relieved.
- Keep the antenna as far away from the motor, ESC and other noise sources as you possibly can.
- Installation makes sure that 2 antennas won’t touch the ground.
- Be sure that the two antennas are placed at 90 degrees to each other.
  - The FMR-01 has two antennas. In order to maximize signal reception and promote safe modeling Futaba has adopted a diversity antenna system. This allows the receiver to obtain RF signals on both antennas and fly problem-free.

### Antenna installation for carbon fuselage

**WARNING**

- You must leave 30mm at the tip of the antenna fully exposed. The exposed antenna should be secured so that it cannot move around or back inside of your aircraft.

### (Typical installation)

![Typical installation diagram]

#### FMR-01 Specifications

**FASSTest-2.4GHz System S.BUS2 and S.BUS System Receiver**

- Dual antenna diversity
- Size: 0.89 x 1.47 x 0.37 in. (22.5 x 37.4 x 9.3 mm)
- Weight: 0.25 oz. (7.2g)
- Power requirement: 3.7V to 7.4V
- Battery F/S Voltage: It sets up with a transmitter
- Extra Voltage port “EXT-VOL cable and CA-RVIN-700” is used 0 to 70V DC
- Be sure that when using ESCs regulated output the capacity of the ESC must meet your usage condition.

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**Compliance Information Statement (for U.S.A.)**

This device, trade name Futaba Corporation of America, model number FMR-01, complies with part15 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.

(1) This module meets the requirements for a mobile device that may be used at separation distances of more than 20cm from human body.

To meet the RF exposure requirements of the FCC this device shall not be co-located with another transmitting device.

The responsible party of this device compliance is:
FUTABA Corporation of America
101 Electronics Boulevard, Huntsville, Alabama 35824, U.S.A
Fax: 1-256-461-1059
Phone: 1-256-461-9399

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**Applicable systems: Futaba FASSTest-2.4GHz system-transmitter**

If FMR-01 does not use S.BUS/S.BUS2 system, it can perform only operation of 1 channel. However, if S.BUS/S.BUS2 system is used, use of the maximum channel of a transmitter can be performed. You have to use S.BUS/S.BUS2 servo, in order to use S.BUS/S.BUS2 system.
### Link to the transmitter

Easy. Link ID allows FASSTest receivers to link to compatible transmitter without pressing the link button on the receiver.

1. Bring the transmitter and the receiver close to each other, within 20 inches (half meter).
2. Turn on the transmitter. Place the transmitter into the receiver linking mode.
3. Turn on the receiver.
4. When the LED of the receiver changes from blinking red to solid green, linking is complete.

Refer to the receivers operation manual for complete details on how to place the transmitter into the linking mode.

* If there are many FASSTest systems turned on in close proximity, your receiver might have difficulty establishing a link to your transmitter. This is a rare occurrence. However, should another FASSTest transmitter/receiver be linking at the same time, your receiver could link to the wrong transmitter. This is very dangerous if you do not notice this situation. In order to avoid the problem, we strongly recommend you to double check whether your receiver is really under control by your transmitter.

* If the System Type of the transmitter is changed, the receiver will need to be re-linked to the transmitter.

* Link is required when a new model is made from a model selection.

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### Measurement of Extra Voltage (Drive battery etc.)

FMR-01 can display the voltage of a receiver battery on a transmitter. Furthermore, the following procedures are required in order to display the voltage of another battery (Drive battery etc.).

#### Installation Method

1. **Cable**
   - Measure the cable and then cut it to the desired length.

2. **Fuse**
   - Cut approximately 30mm of the positive (+, black) line from the cable.
   - Solder the fuse inline on the positive wire and then reattach the section of wire that was previously removed. The fuse should be attached as close to the external power supply as possible.
   - Solder welding
   - The fuse should be attached as close to the external power supply as possible.

3. **Heat shrink tubing**
   - Place a piece of heat shrink tubing over the fuse, ensuring that it covers the soldered areas. Shrink the tubing snug to the fuse and the wire using a heat gun.

4. **The cable should be connected as shown in the diagram below.**
   - The connection is affixed to the ESC on the wires that are connected to the battery by soldering them and then protecting them with heat shrink.

5. **The manual for the Telemetry system should be referred to after the setup is complete; checking to make sure it functions as desired and that it provides the correct voltage on the display.**

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### WARNING

- Don't touch wiring.
- Don't connect Extra Voltage telemetry port before turning on a receiver.

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### FASSTest

FASSTest is a bidirectional communication system between the FMR-01 receiver and FASSTest capable transmitters. Multiple optional telemetry sensors may be connected to the S.BUS2 on the receiver and that data is in turn displayed on the transmitter.

Please see your transmitters operation manual to configure transmitter to operate with telemetry sensors.

#### S.BUS2

S.BUS2 extends S.BUS and supports bidirectional communication. Sensors are connected to the S.BUS2 port.

<table>
<thead>
<tr>
<th>Port</th>
<th>S.BUS Servo</th>
<th>S.BUS Gyro</th>
<th>S.BUS2 Servo</th>
<th>S.BUS2 Gyro</th>
<th>Telemetry sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.BUS</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.BUS2</td>
<td>× (**)</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

*Only S.BUS2 capable devices may be connected to the S.BUS2 port. Standard S.BUS servos and gyro's should not be connected to the S.BUS2 port.*