



Important: The 2.4GHz band offers different characteristics than that of the conventional 50MHz and 72MHz. As such, we strongly encourage you to read this manual carefully prior to utilizing the TM-FH and R2006GS S-FHSS system.

Thank you for purchasing the TM-FH 2.4GHz transmitter module and R2006GS receiver. This system is designed for use only with the Futaba transmitters indicated elsewhere in this manual. In order to use the TM-FH transmitter module, you will need to carefully remove the existing transmitter module and replace it with the TM-FH transmitter module. The receiver R2006GS, as the model number indicates, is capable of controlling models up to six channels. Please note: The installation of the R2006GS differs slightly from that of a typical receiver. Please pay special attention to the information contained within this manual in order to have a pleasant flying experience.

Note: Futaba S-FHSS system and FASST system are not compatible each other.

Features:

- 2.4GHz Spread Spectrum radio communication system.
- Exclusive ID code to avoid interference from other S-FHSS systems.
- Fail Safe (F/S) function (for throttle channel)-F/S, Battery F/S
- Dual antenna diversity (R2006GS)

Usage Precautions:

- 1) Prior to utilizing any radio control system, it is strongly recommended that you read and abide by the Safety Code created by the Academy of Model Aeronautics as well as any site specific rules and regulations that might exist. Doing so will greatly increase your enjoyment of the hobby.
- 2) In order to maintain complete control of your aircraft it is important that it remains visible at all times. Flying behind large objects such as buildings, grain bins, etc. is not suggested. Doing so may result in the reduction of the quality of the radio frequency link to the model.
- 3) Please do not grasp the transmitter module's antenna during flight. Doing so may degrade the quality of the radio frequency transmission.



*S-FHSS Air System
TM-FH RF Module
and
R2006GS Receiver*

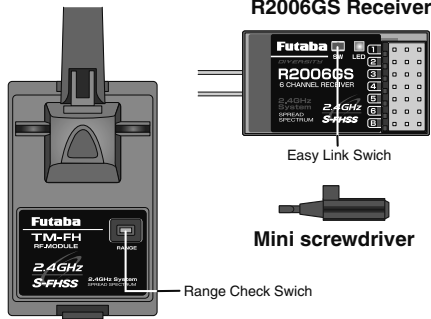
Instruction Manual

Applicable systems:
T9C, T9Zwc2, T10C



Contents and Technical Specifications

Your 2.4GHz system includes the following components:



Specifications:

TM-FH RF Module-

- Communication system: one-way communication
- Antenna: 1/2 wavelength di-pole
- Current consumption: 150mA maximum
- Setting switch for Fail Safe (F/S) setting and range check

R2006GS Receiver-

- Dual antenna diversity
- Power requirement: 4.8V or 7.4V battery or regulated output from ESC, etc. ^(*)
- F/S and Battery F/S function for throttle channel (channel three)
- Size: 1.70 x 0.98 x 0.35 in. (43.1 x 25.0 x 8.8 mm)
- Weight: 0.30 oz. (8.5g)

^(*) Be sure that when using ESC's regulated output the capacity of the ESC must meet your usage condition. Never use dry cell batteries for the R2006GS receiver as this may cause difficulties with the receiver's operation.

Special Markings:

Pay special attention to the safety at the parts of this manual that are indicated by the following marks.

[Symbol] : Prohibited : Mandatory

Mark	Meaning
DANGER	Procedures which may lead to a dangerous condition and cause death or serious injury to the user if not carried out properly.
WARNING	Procedures which may lead to a dangerous condition or cause death or serious injury to the user if not carried out properly, or procedures where the probability of superficial injury or physical damage is high.
CAUTION	Procedures where the possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.

Installing the TM-FH Module and R2006GS Receiver

Attachment of the Module

CAUTION

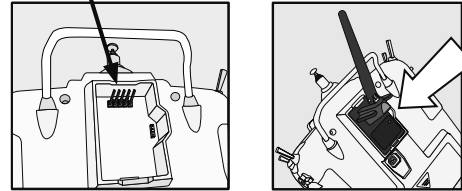
Be sure to turn off the power of the transmitter before you install or replace the module.

1 Ensure that the transmitter is set to the PPM (pulse position modulation) mode. Please consult the respective owner's manual for your particular transmitter for information on how to do so.

2 While it is unlikely that the existing transmitter antenna will interfere with the radio frequency transmission of the TM-FH, we suggest removing it from the transmitter if possible as a precaution.

3 Next, with the transmitter's power off, remove the existing transmitter module and install the TM-FH module with care so that the connector pins of the transmitter won't be damaged.

Do not bend the connector pins.



Antenna of TM-FH

1 As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the TM-FH transmitter module's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.

2 Please do not grasp the transmitter's antenna during flight. Doing so may degrade the quality of the RF transmission to the model.

Easy Link

Each TM-FH transmitter module has an individually assigned unique ID code. In order to start operation, the receiver must be linked to the respective TM-FH's ID code. Once the linking is done, the ID code is stored in the receiver and the re-linking is not necessary unless the receiver is to be used with a different TM-FH module.

Additionally, it is important to note that this TM-FH and R2006GS receiver set has already been linked by the factory. Should you wish to re-link them, or if you have purchased a separate receiver and would like to link it to this TM-FH, please adhere to the following procedure.

WARNING

After the linking is done, please cycle receiver power and check if the receiver to be linked is really under the control by the transmitter to be linked.

Do not perform the linking procedure with motor's main wire is connected or the engine is operating as it may result in serious injury.

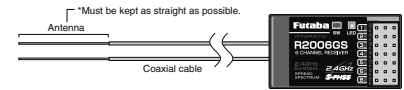
1 After the TM-FH module has been installed into the transmitter, using the aforementioned steps, turn on the transmitter. The RF output confirmation display of the transmitter is confirmed. If not, power down the transmitter and turn it on once again.

2 When the transmitter is turned on, the receiver is turned on.

3 With the receiver on, press and hold the Easy Link button, located on the receiver, for approximately two seconds and release it. Then the receiver starts linking procedure. When the linking process has been completed, the LED on the receiver will change to a solid green and the linking is established.

Receiver Installation

You will note that the R2006GS differs in appearance from the standard Futaba receiver. The R2006GS incorporates two separate antennas into its design which enables it to receive the radio frequency transmission at two different locations. Futaba's dual antenna diversity, or DAD, then seamlessly selects the best signal reception between these antennas to ensure that there is no loss of signal.

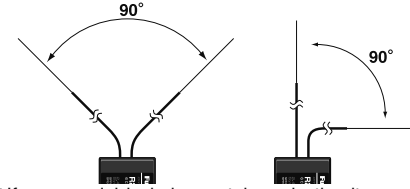


To obtain the best results from the R2006GS receiver, please refer to the following instructions and precautions:

1 Install the receiver in the aircraft using the same methodology as you would handle a standard receiver. That is, make sure that you wrap the receiver in foam rubber or other such material to make it less susceptible to vibration, etc.

2 Ensure that the two receiver antennas are kept as straight as possible. This will allow you to obtain the maximum effective range from your model.

3 If possible, please make sure that the two antennas are placed at 90 degrees to each other. Please note: This is not a critical figure, however, the most important thing is to keep the antennas away from each other as much as possible.



4 If your model includes metal conductive items which may impact the receiver's ability to clearly receive the radio frequency signal, we suggest mounting the receiver

so that the receiver antennas exit both sides of the model. This will allow the best radio frequency signal condition at any flying attitude.

5 Ensure that the antennas are at least 1/2" away from any conductive materials such as metal and carbon. Please note: this is not applicable to the coaxial portion of the antenna. It is important, however, to not bend the coax, or antenna in a tight radius.

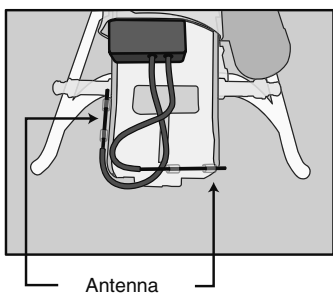
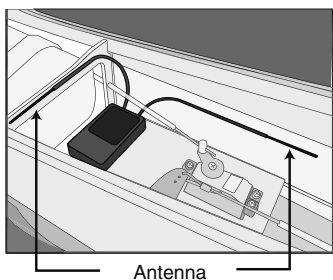
6 If the fuselage is made of conductive materials such as metal and carbon, the antennas part **MUST** be positioned so that they exit the fuselage. Additionally, do not attach the antenna itself to this fuselage.

* For example, there are many types of gliders which use carbon fuselage. When install the receiver into such models, it is imperative that the antenna precautions are adhered to strictly.

⚠ WARNING

❗ Be very careful when handling the receiver antennas. Repeated bending and flexing of the antennas or excessive force could weaken or compromise the internal antenna connections.

❗ Keep the antennas away from the motor, ESC, and other noise sources as much as possible.



The main purpose of the illustration demonstrates how the antenna should be placed. For actual installation the receiver must be wrapped with a sponge or placed with floating material to protect it from vibration.

* The receiver contains delicate electronic parts and should be protected from vibration, shock and temperature extremes.

* The receiver is not impervious to damage from moisture. If moisture should enter the receiver, intermittent operation or failure may result. To prevent this from occurring, we suggest wrapping the receiver in a plastic bag or similar protective covering. This will also protect the receiver from any fuel or exhaust residue which can work its way into the fuselage.

F/S (Fail Safe) mode setting

The F/S is suggested for use as it offers a safety factor when controlling your models. It is also possible to cancel the F/S operation if you do not wish to use it. As for F/S, only the throttle servo (3ch) works.

F/S mode

The F/S mode sets responses in case of loss of signal or low Rx battery. (ch3 only)

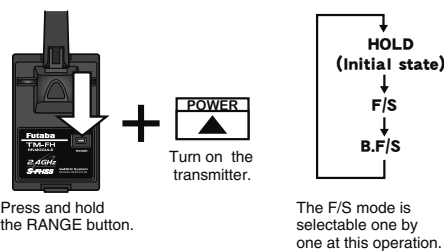
• **HOLD** : In case of loss of signal, the HOLD mode holds the throttle servo in its last commanded position. (The RF output confirmation display of the transmitter usually lights.)

• **F/S** : In case of loss of signal, the F/S mode holds the throttle servo in its last commanded position for one second and then moves the throttle servo to a predetermined position. (The RF display blinks once at power supply ON.)

• **B.F/S (Battery Fail Safe)** : When the airborne battery voltage drops below approximately 3.8V, the B.F/S mode moves the throttle servo to a predetermined position.

In case of loss of signal, the B.F/S mode holds the throttle servo in its last commanded position for one second and then moves the throttle servo to a predetermined position. (The RF display blinks twice at power supply ON.)

Setting of the F/S (Failsafe) mode



F/S position setting procedure

As mentioned at "Easy Link", the R2006GS starts linking process by press the Easy Link button more than two seconds. Meanwhile, when linking is done, the R2006GS stores 3ch(Throttle) position as the F/S position automatically. By this way, the receiver renews the F/S data for current 3ch position. Prior to doing so, ensure that the F/S is active. If not, please follow the Setting of the F/S Mode procedure as noted previously.

1 With the transmitter's throttle stick in the desired F/S position(slow), and the receiver located within one meter of the transmitter, turn on the transmitter.

2 With the transmitter on, turn on the receiver. Press and hold the Easy Link button, located on the receiver, for approximately two second.

3 Turn off the transmitter in five seconds. The throttle servo should move to the pre-determined F/S position.

Please refer to the table below for the LED status of the receiver's condition.

Green	Red	Status
Off	Solid	No signal reception
Solid	Off	Receiving signals
Blink	Off	Receiving signals but ID is unmatched
Alternate blink		Unrecoverable failure (EEPROM, etc.)

Battery F/S function

The TM-FH transmitter module and R2006GS receiver also provides you with a second safety system, the Battery F/S (failsafe). When the airborne voltage drops below 3.8V, the battery failsafe function moves the throttle to a pre-determined F/S position. If this happens, you should land immediately! If you need to increase the throttle for your landing approach, you may temporarily reset the failsafe function by moving the throttle stick to the predetermined position, after which you'll have about 30 seconds of throttle control before the battery function reactivates.

* Please note: It is suggested that you utilize a 4-cell NiCD or NiMH receiver battery pack as it allows the effective use of the battery F/S function. Additionally, we do not suggest using dry cell batteries for the receiver pack as they may cause difficulties.

Range Check the Radio

It is extremely important to range check your models prior to each flying session. This enables you to ensure that everything is functioning as it should and to obtain maximum enjoyment from your time flying. The TM-FH transmitter module incorporates a system that reduces its power output and allows you to perform such a range check.

1 Turn on the transmitter.

2 After the radio frequency link has been established, press and hold the "F/S, Range" switch located on the rear of the TM-FH transmitter module. The RF output display of the transmitter disappears, and the buzzer of the transmitter rings. The radio frequency power has been reduced to allow for the range check.

* Note: Do not press and hold the "F/S, Range" switch prior to turning on the transmitter. This will alter the status of the F/S settings as noted previously. In order to avoid this situation, please wait for a short time after turning on the transmitter to activate the low power setting on for range checking.

3 Walk away from the model while simultaneously operating the controls. Have an assistant stand by the model to confirm that all controls are completely

FCC Information

To assure continued FCC compliance:

(1) Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC Label Compliance Statement:

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.

and correctly operational. You should be able to walk approximately 30-50 paces from the model without losing control.

4 If the servos jitter or move inadvertently, there may be a problem. We would strongly suggest you do not fly until the source of the difficulty has been determined. Look for loose servo connections or binding pushrods. Also, be certain that the battery has been fully charged.

⚠ WARNING

❗ Please make sure that you do not push and hold the F/S, Range switch when flying as this reduces the power output of the transmitter and reduces the overall range of your transmitter.

Other precautions

1 When utilizing the trainer function of the transmitter as an instructor, please do not switch to the student's control unit until the RF is active after turning the transmitter on. Failure to adhere to this procedure may result in a malfunction.

2 The outside of the host device into which the module is installed must also display a label referring to the enclosed module, This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: AZPTMFH-24G" or "Contains FCC ID: AZPTMFH-24G".

3 To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

4 This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Repair Service (in U.S.A.)

If any difficulties are encountered while setting up or operating your TM-FH transmitter module and R2006GS receiver, please consult this instruction manual first. For further assistance you may also refer to your hobby dealer, or contact the Futaba Service Center at the web site, fax or telephone number below:

<https://www.futabausa.com/>
E-mail: service@futabaUSA.com
Phone: 1-256-461-9399 FAX: 1-256-461-1059

If you are unable to resolve the issue, pack the system in its original container with a note enclosed and a thorough, accurate description of the difficulty. Include the following in your note:

- Symptoms (including when the problem occurred)
- System (transmitter, Receiver, Servos and model numbers)
- Model (Model name)
- Model numbers and quantity
- Your Name, Address and Telephone number

Send the respective items to the authorized Futaba Service Center address below:

FUTABA Corporation of America
2681 Wall Triana Hwy Huntsville, AL 35824, U.S.A.

FUTABA CORPORATION
1080 Yabutsuka, Chosei-mura, Chosei-gun, Chiba-ken, 299-4395, Japan
Phone: +81 475 32 6982, Facsimile: +81 475 32 6983