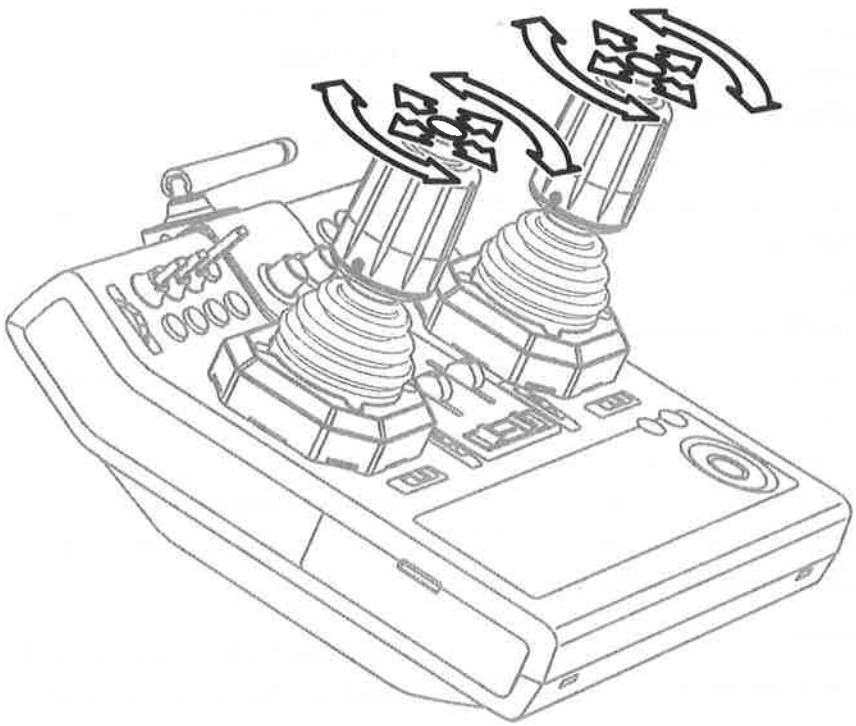
FMT-01

Futaba Advanced Spread Spectrum Technology
Extended System Telemetry

S.BUS2

2.4GHz FASSTest

FASST Extended System Telemetry



INSTRUCTION MANUAL

CE

Futaba® *Digital Proportional R/C System*

1M23N00000

TABLE OF CONTENTS

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing a Futaba® FASSTest-2.4GHz* FMT-01 series digital proportional R/C system. This system is extremely versatile and may be used by beginners and pros alike. In order for you to make the best use of your system and to fly safely, please read this manual carefully. If you have any difficulties while using your system, please consult the manual, our online Frequently Asked Questions (on the web pages referenced below), your hobby dealer, or the Futaba Service Center.

*FASSTest: Futaba Advanced Spread Spectrum Technology extend system telemetry

Due to unforeseen changes in production procedures, the information contained in this manual is subject to change without notice.

Support and Service: It is recommended to have your Futaba equipment serviced annually during your hobby's "off season" to ensure safe operation.

IN NORTH AMERICA

Please feel free to contact the Futaba Service Center for assistance in operation, use and programming. Please be sure to regularly visit the FMT-01 Frequently Asked Questions web site at www.futaba-rc.com/faq/. This page includes extensive programming, use, set up and safety information on the FMT-01 radio system and is updated regularly. Any technical updates and US manual corrections will be available on this web page. If you do not find the answers to your questions there, please see the end of our F.A.Q. area for information on contacting us via email for the most rapid and convenient response.

Don't have Internet access? Internet access is available at no charge at most public libraries, schools, and other public resources. We find internet support to be a fabulous reference for many modelers as items can be printed and saved for future reference, and can be accessed at any hour of the day, night, weekend or holiday. If you do not wish to access the internet for information, however, don't worry. Our support teams are available Monday through Friday 8-5 Central time to assist you.

FOR SUPPORT :

FUTABA Corporation of America
101 Electronics Boulevard, Huntsville, Alabama 35824, U.S.A
Fax: 1-256-461-1059
Phone: 1-256-461-9399

OUTSIDE NORTH AMERICA

Please contact your Futaba importer in your region of the world to assist you with any questions, problems or service needs.

Please recognize that all information in this manual, and all support availability, is based upon the systems sold in North America only. Products purchased elsewhere may vary. Always contact your region's support center for assistance.

Application, Export, and Modification

1. This product may be used for model airplane or surface (boat, car, robot) use. It is not intended for use in any application other than the control of models for hobby and recreational purposes. The product is subject to regulations of the Ministry of Radio/Telecommunications and is restricted under Japanese law to such purposes.

2. Exportation precautions:

(a) When this product is exported from the country of manufacture, its use is to be approved by the laws governing the country of destination which govern devices that emit radio frequencies. If this product is then re-exported to other countries, it may be subject to restrictions on such export. Prior approval of the appropriate government authorities may be required. If you have purchased this product from an exporter outside your country, and not the authorized Futaba distributor in your country, please contact the seller immediately to determine if such export regulations have been met.

(b) Use of this product with other than models may be restricted by Export and Trade Control Regulations, and an application for export approval must be submitted. This equipment must not be utilized to operate equipment other than radio controlled models.

3. Modification, adjustment, and replacement of parts: Futaba is not responsible for unauthorized modification, adjustment, and replacement of parts on this product. Any such changes may void the warranty.

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

This device, trade name Futaba Corporation, 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.

(3) 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

The RBRC. SEAL on the nickel-cadmium battery contained in Futaba products indicates that Futaba Corporation is voluntarily participating in an industry-wide program to collect and recycle these batteries at the end of their useful lives, when taken out of service within the United States. The RBRC. program provides a convenient alternative to placing used nickel-cadmium batteries into the trash or municipal waste system, which is illegal in some areas.

(for USA)

You may contact your local recycling center for information on where to return the spent battery. Please call 1-800-8BATTERY for information on Ni-Cd battery recycling in your area. Futaba Corporation involvement in this program is part of its commitment to protecting our environment and conserving natural resources.

*RBRC is a trademark of the Rechargeable Battery Recycling Corporation.

Federal Communications Commission Interference Statement (for U.S.A.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.
--Increase the separation between the equipment and receiver.
--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
--Consult the dealer or an experienced radio/TV technician for help.

CAUTION:
To assure continued FCC compliance:
Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Exposure to Radio Frequency Radiation
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.
This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Meaning of Special Markings
Pay special attention to safety where indicated by the following marks:

⚠ **DANGER** - Procedures which may lead to dangerous conditions and cause death/serious injury 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.

⃠ = Prohibited ❗ = Mandatory

Warning: Always keep electrical components away from small children.

FLYING SAFETY

WARNING

⚠ To ensure the safety of yourself and others, please observe the following precautions:

Have regular maintenance performed. Although your FMT-01 protects the model memories with non-volatile EEPROM memory (which does not require periodic replacement) and not a battery, the transmitter still should have regular checkups for wear and tear. We recommend sending your system to the Futaba Service Center annually during your non-flying-season for a complete checkup and service.

Ni-MH/Ni-Cd Battery

Charge the batteries! (See Charging the Ni-Cd batteries, for details.) Always recharge the transmitter and receiver batteries before each flying session. A low battery will soon die potentially, causing loss of control and a crash. When you begin your flying session, reset your FMT-01's built-in timer, and during the session pay attention to the duration of usage.

Stop flying long before your batteries become low on charge. Do not rely on your radio's low battery warning systems, intended only as a precaution, to tell you when to recharge. Always check your transmitter and receiver batteries prior to each flight.

Where to Fly

We recommend that you fly at a recognized model airplane flying field. You can find model clubs and fields by asking your nearest hobby dealer, or in the US by contacting the Academy of Model Aeronautics.

You can also contact the national Academy of Model Aeronautics (AMA), which has more than 2,500 chartered clubs across the country. Through any one of them, instructor training programs and insured newcomer training are available. Contact the AMA at the address or toll-free phone number below.

AMA
SINCE 1936

Academy of Model Aeronautics
5161 East Memorial Drive
Muncie, IN 47302
Tele. (800) 435-9262
Fax (765) 289-4248
or via the Internet at http:\\www.
modelaircraft.org

Always pay particular attention to the flying field's rules, as well as the presence and location of spectators, the wind direction, and any obstacles on the field. Be very careful flying in areas near power lines, tall buildings, or communication facilities as there may be radio interference in their vicinity.

Ni-MH/Ni-Cd Battery Safety and Handling instructions

IMPORTANT!
Use only the **Futaba special charger** included with this set or other chargers approved by Futaba to charge the Ni-MH batteries in the FMT-01 transmitter included with this set.

It is important to understand the operating characteristics of Ni-MH/Ni-Cd batteries.Always read the specifications printed on the label of your Ni-MH/Ni-Cd battery and charger prior to use. Failure to follow the proceeding precautions can quickly result in severe, permanent damage to the batteries and its surroundings and possibly result in a **FIRE!**

IMPORTANT PRECAUTIONS

- ⊘ Do not attempt to disassemble Ni-MH/Ni-Cd packs or cells.
- ⊘ Do not allow Ni-MH/Ni-Cd cells to come in contact with moisture or water at any time.
- ! Always provide adequate ventilation around Ni-MH/Ni-Cd batteries during charge, discharge, while in use, and during storage.
- ⊘ Do not leave a Ni-MH/Ni-Cd battery unattended at any time while being charged or discharged.
- ⊘ Do not attempt to charge Ni-MH/Ni-Cd batteries with a charger that is NOT designed for Ni-MH/Ni-Cd batteries, as permanent damage to the battery and charger could result.
- ! Always charge Ni-MH/Ni-Cd batteries in a fireproof location. Do not charge or discharge Ni-MH/Ni-Cd batteries on carpet, a cluttered workbench, near paper, plastic, vinyl, leather or wood, or inside an R/C model or full-sized automobile! Monitor the charge area with a smoke or fire alarm.
- ⊘ Do not charge Ni-MH/Ni-Cd batteries at currents greater than the "1C" rating of the battery ("C" equals the rated capacity of the battery).
- ⊘ Do not allow Ni-MH/Ni-Cd cells to overheat at any time! Cells which reach greater than 140 degrees Fahrenheit (60°C) should be placed in a fireproof location.
- ! Ni-MH/Ni-Cd cells will not charge fully when too cold or show full charge.
- ! It is normal for the batteries to become warm during charging, but if the charger or battery becomes excessively hot disconnect the battery from the charger immediately!! Always inspect a battery which has previously overheated for potential damage, and do not re-use if you suspect it has been damaged in any way.
- ⊘ Do not use a Ni-MH/Ni-Cd battery if you suspect physical damage has occurred to the pack. Carefully inspect the battery for even the smallest of dents, cracks, splits, punctures or damage to the wiring and connectors.
- ⊘ DO NOT allow the battery's internal electrolyte to get into eyes or on skin—wash affected areas immediately if they come in contact with the electrolyte. If in doubt, place the battery in a fire-proof location for at least 30 minutes.
- ⊘ Do not store batteries near an open flame or heater.
- ⊘ Do not discharge Ni-MH/Ni-Cd batteries at currents which exceed the discharge current rating of the battery.
- ! Always store Ni-MH/Ni-Cd cells/packs in a secure location away from children.

Secure Digital (SD) Memory Card Handling Instructions (SD card is not included with this set)

- ⊘ Never remove the SD card or turn off power while entering data.
- ⊘ Never store the SD card where it may be subject to strong static electricity or magnetic fields.
- ⊘ Do not expose the SD card to direct sunlight, excessive humidity or corrosive environments.
- ⊘ Do not expose the SD card to dirt, moisture, water or fluids of any kind.
- ! Always hold the SD card by the edges during installation and removal.
- ! Be certain to insert the SD card in the correct direction.

At the flying field

To prevent possible damage to your radio gear, turn the power switches on and off in the proper sequence:

1. Pull throttle stick to idle position, or otherwise disarm your motor/engine.
2. Turn on the transmitter power and allow your transmitter to reach its home screen.
3. Confirm the proper model memory has been selected.
4. Turn on your receiver power.
5. Test all controls. If a servo operates abnormally, don't attempt to fly until you determine the cause of the problem.
   Test to ensure that the FailSafe settings are correct after adjusting them. Turn the transmitter off and confirm the proper surface/throttle movements. Turn the transmitter back on.
6. Start your engine.
7. Complete a full range check.
8. After flying, bring your throttle stick to idle position, engage any kill switches or otherwise disarm your motor/engine.
9. Turn off receiver power.
10. Turn off transmitter power.

If you do not turn on your system in this order, you may damage your servos or control surfaces, flood your engine, or in the case of electric-powered or gasoline-powered models, the engine may unexpectedly turn on and cause a severe injury.

- **While you are getting ready to fly, if you place your transmitter on the ground, be sure that the wind won't tip it over. If it is knocked over,** the throttle stick may be accidentally moved, causing the engine to speed up. Also, damage to your transmitter may occur.
- 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.
- **Do not grasp the transmitter's antenna during flight.** Doing so may degrade the quality of the radio frequency transmission.
- As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the transmitter'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.
- **Don't fly in the rain!** Water or moisture may enter the transmitter through the antenna or stick openings and cause erratic operation or loss of control. If you must fly in wet weather during a contest, be sure to cover your transmitter with a plastic bag or waterproof barrier. Never fly if lightning is expected.

Features

FASSTest system

The FMT-01 transmitter has adopted the newly developed bidirectional communication system "FASSTest". Data from the receiver can be checked in your transmitter. FASSTest is a maximum 18channels (linear 16 channels + switch 2 channels) 2.4GHz dedicated system.

S.BUS2 system

By using the S.BUS2 system multiple servos, gyros and telemetry sensors are easily installed with a minimum amount of cables.

Model types

8 swash types are available for helicopters. 7 types of main wings and 3 types of tail wings are available for airplanes and gliders. Functions and mixing functions necessary for each model type are set in advance at the factory.

Ni-MH battery

FMT-01 is operated by a 7.2 V/1,800 mAh Nickel-Metal Hydride battery.

SD card (Secure Digital memory card) (Not included)

Model data can be saved to an SD card (SD:32MB-2GB SDHC:4GB-32GB). When FMT-01 transmitter software files are released, the software can be updated by using an SD card update.

Data input

Large graphic LCD and Touch Sensor substantially improve ease of setup.

Edit button

Two edit buttons are provided, and the operating screen can be immediately “Returned” to the HOME screen during operation. Setting operation can be performed easily by combining this button with a touch sensor.

Vibration function

Selects a function that alerts the operator to various alarms by vibrating the transmitter in addition to sounding a buzzer.

Contents and Technical Specifications

(Specifications and ratings are subject to change without notice.)

Your FMT-01 includes the following components:

- FMT-01 transmitter for airplanes or helicopters
- FMR-01 Receiver
- HT6F1800B Ni-MH battery & charger
- Switch harness
- Neck strap

*The set contents depend on the type of set.

Transmitter FMT-01

(2-stick, 18-channel, FASSTest-2.4G system)
Transmitting frequency: 2.4GHz band
System: FASSTest18CH, FASSTest12CH, FASST MULT, FASST 7CH, S-FHSS, switchable
Power supply: 7.2V HT6F1800B Ni-MH battery

Receiver FMR-01

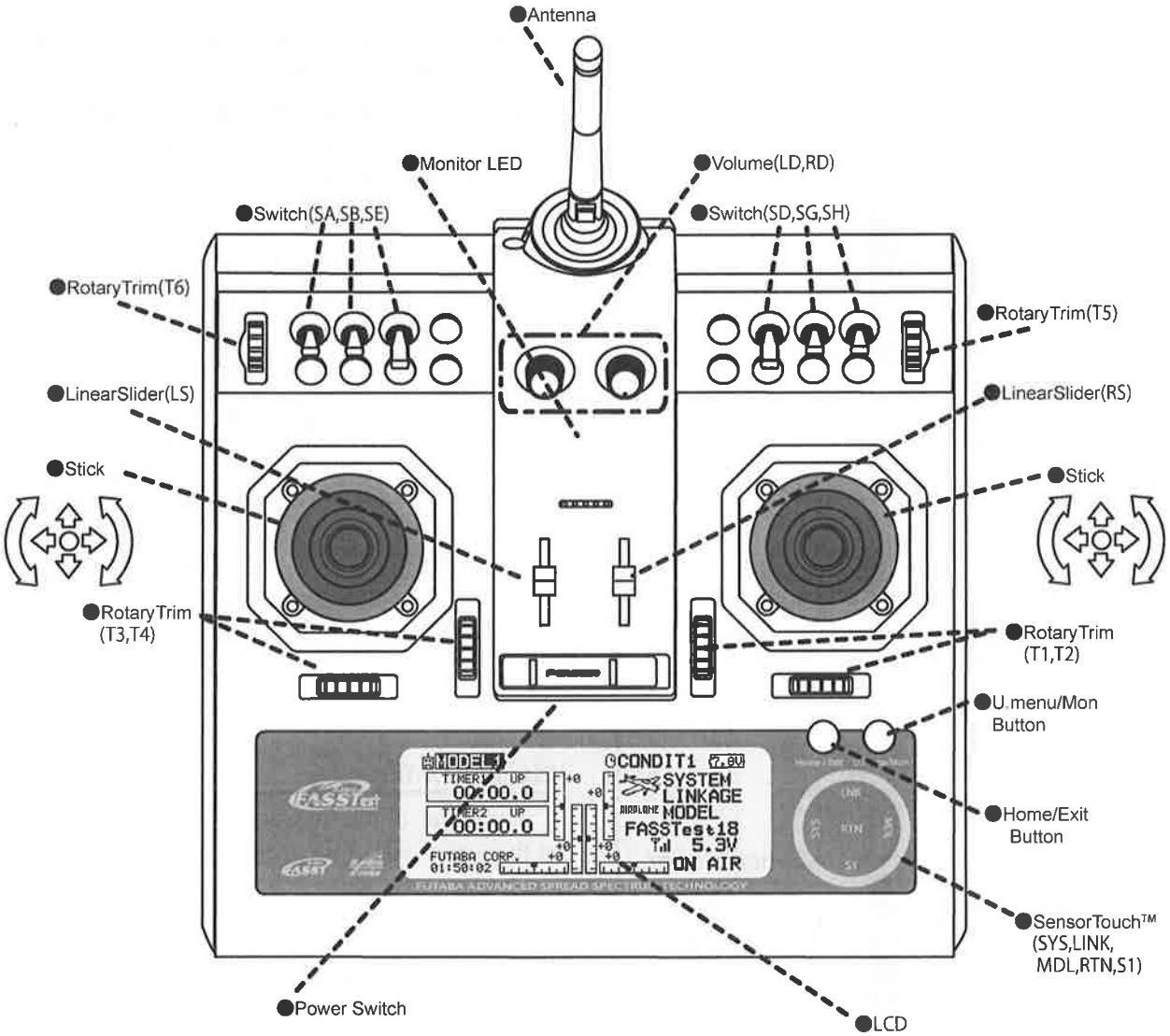
(FASSTest-2.4G system, dual antenna diversity, S.BUS/S.BUS2 system)
Power requirement: 3.7V~7.4V battery or regulated output from ESC, etc. (*1)
Size: 0.89 x 1.47 x 0.37 in. (22.5 x 37.4 x 9.3 mm)
Weight: 0.25 oz. (7.2g)
(*1) When using ESC's make sure that the regulated output capacity meets your usage application.

Note: The battery in the FMT-01 transmitter is not connected to the battery connector at initial. Please connect the battery connector before use.

The following additional accessories are available from your dealer. Refer to a Futaba catalog for more information:

- HT6F1800B transmitter battery pack - the (1800mAh) transmitter Ni-MH battery pack may be easily exchanged with a fresh one to provide enough capacity for extended flying sessions.
- Trainer cord - the optional training cord may be used to help a beginning pilot learn to fly easily by placing the instructor on a separate transmitter. Note that the FMT-01 transmitter may be connected to another FMT-01 system, as well as to any other models of Futaba transmitters. The FMT-01 transmitter uses one of the three cord plug types according to the transmitter connected. (Refer to the description at the TRAINER function instructions). The part number of this cord is: FUTM4405.
- Servos - there are various kinds of servos. Please choose from the servos of Futaba what suited the model and the purpose of using you. If you utilize a S.BUS system, you should choose a S.BUS servo. An analog servo cannot be used if "FASSTest12CH mode" is used.
- Telemetry sensor - please purchase an optional sensor, in order to utilize bidirectional communication system and to acquire the information from a model high up in the sky.
  [Temperature sensor : SBS-01T] [Altitude sensor : SBS-01A] [RPM sensor magnet type : SBS-01RM] [RPM sensor optical type : SBS-01RO] [GPS sensor : SBS-01G] [Voltage sensor : SBS-01V]
- Neckstrap - a neckstrap may be connected to your FMT-01 system to make it easier to handle and improve your flying precision since your hands won't need to support the transmitter's weight.
- Y-harnesses, servo extensions, hub,etc - Genuine Futaba extensions and Y-harnesses, including a heavy-duty version with heavier wire, are available to aid in your larger model and other installations.
- Gyros - a variety of genuine Futaba gyros is available for your aircraft or helicopter needs.
- Governor - for helicopter use. Automatically adjusts throttle servo position to maintain a constant head speed regardless of blade pitch, load, weather, etc.
- Receivers - various models of Futaba receivers may be purchased for use in other models. (Receivers for FASSTest and FASST,S-FHSS types are available.)
- Optional charger - Futaba CR-2000 NiMH/NiCd transmitter/receiver battery charger.

Transmitter controls

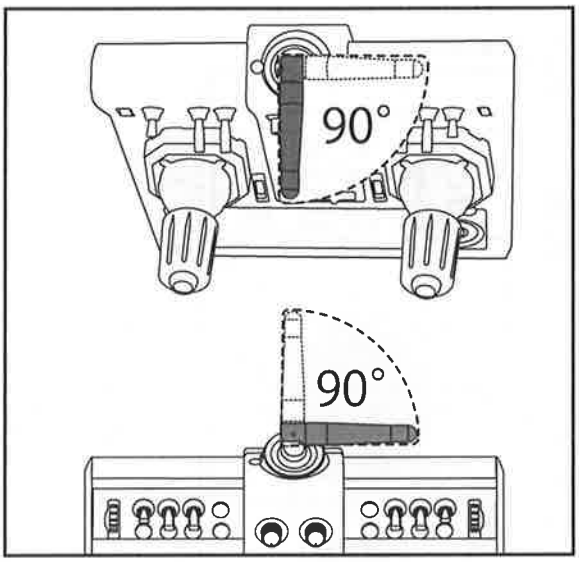


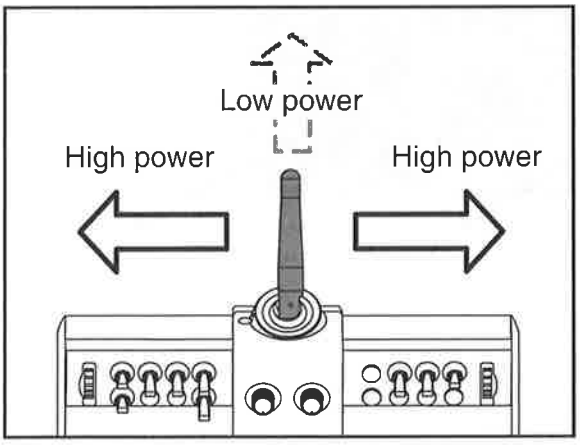
Transmitter's Antenna:

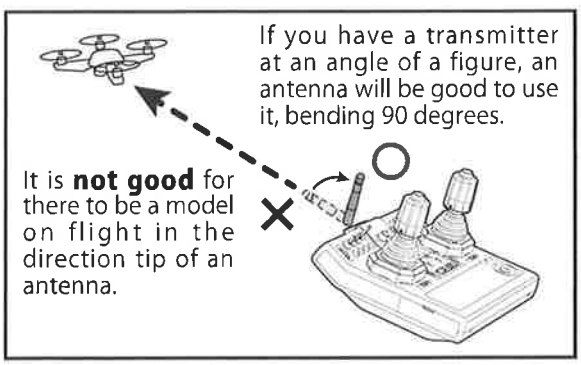
As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the transmitter's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.

•Rotating antenna

The antenna can be rotated 90 degrees and angled 90 degrees. Forcing the antenna further than this can damage it. The antenna is not removable.







⚠ CAUTION

Please do not grasp the transmitter's antenna during flight.

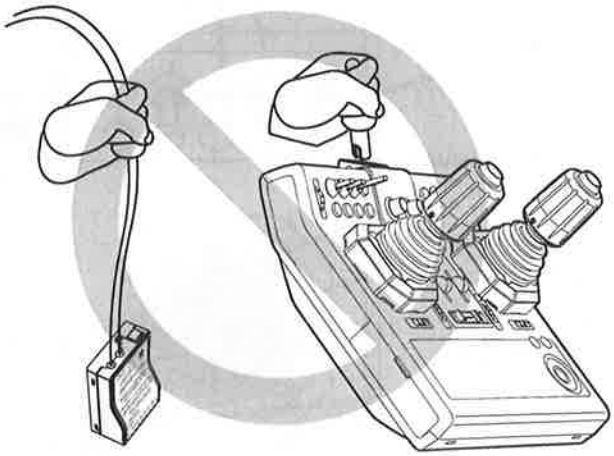
Doing so may degrade the quality of the RF transmission to the model

Do not carry the transmitter by the antenna.

There is the danger that the antenna wire will break and operation will become impossible.

Do not pull the antenna forcefully.

There is the danger that the antenna wire will break and operation will become impossible.



Monitor LED display

The status of the transmitter is displayed by LED at the upper part of the front of a FMT-01.

- ✧ FASSTest mode → Light Blue light
- ✧ FASST mode → Green light
- ✧ S-FHSS mode → Yellow-green light
- ✧ RF-OFF → Violet light
- ✧ Starting → Red light
- ✧ Trainer Student → Blue light
- ✧ Range check mode → Slow blinking
- ✧ FASSTest receiver link mode → Fast blinking

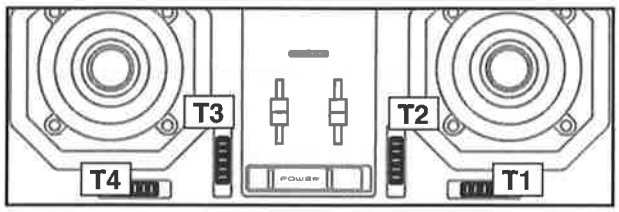
Switch (SA-SH)

(Switch Type)

- SA : 3 positions; Alternate; Short lever
- SB : 3 positions; Alternate; Short lever
- SD : 3 positions; Alternate; Long lever
- SE : 2 positions; Alternate; Long lever
- SG : 3 positions; Alternate; Short lever
- SH : 3 positions; Alternate; Short lever

*You can choose switch and set the ON/OFF-direction in the setting screen of the mixing functions.

Rotary Trims



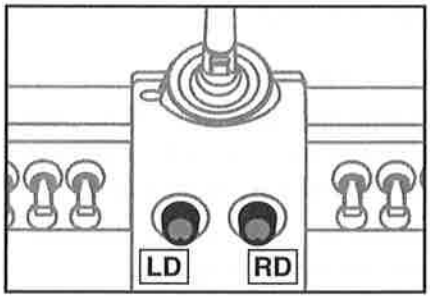
Rotary Trims T1, T2, T3 and T4:

This transmitter is equipped with four (4) rotary trims. Each time you press a trim button, the trim position moves one step. If you continue pressing it, the trim position starts to move faster. In addition, when the trim position returns to the center, the tone will change. You can always monitor trim positions by referencing the LCD screen.

*You can select the trim step amount and the display unit on the home screen on the T1-T4 setting screen within the linkage menu.

Note: The trim positions you have set will be stored in the non-volatile memory and will remain there.

Volume



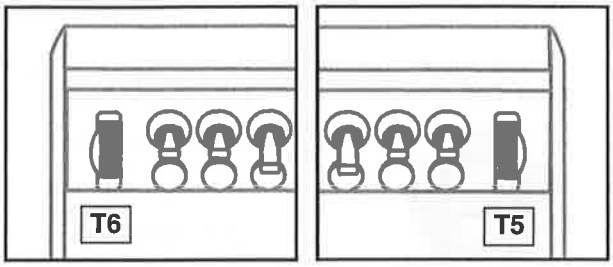
Volume LD and RD:

The volume LD and RD knobs allow analog input.

*The FMT-01 transmitter beeps when the volume knob reaches the center position.

*You can use each setting screen of the mixing functions to select volumes and define the direction of a movement.

Upper Rotary Trimmers



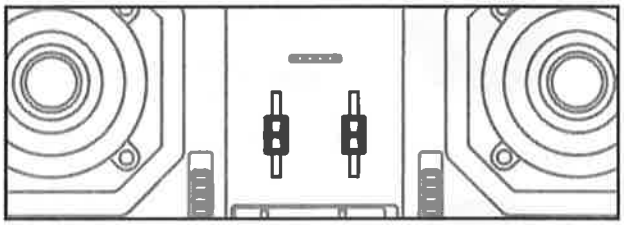
T5 (right), T6 (Left):

The upper rotary trimmers T5 and T6 offer analog input.

*The FMT-01 transmitter beeps when the lever comes to the center.

*You can select a slide lever and set the movement direction on the setting screen of mixing functions.

Linear Slider



LS (right), RS (Left):

The Linear Slider LS and RS offer analog input.

*The FMT-01 transmitter beeps when the lever comes to the center.

*You can select a slide lever and set the movement direction on the setting screen of mixing functions.

Touch sensor operation

Data input operation is performed using the touch sensor.

SensorTouch™ operation		Condition	Working
• Short 'tap' 	S1	If the screen has more than one page.	The cursor moves to the top of next page.
		If the screen have only one (1) page.	The cursor moves to the top of page.
		If the input data mode with blinking the setting data.	The input data is canceled.
	RTN	At the moving cursor mode.	Change to the input data mode.
		At the input data mode.	Change to the moving cursor mode.
		At the input data mode with blinking the setting data.	The data is entered.
• Two short 'taps' 	SYS	At all screens	Jump to **System Menu** screen directly.
	LNK	At all screens	Jump to **Linkage Menu** screen directly.
	MDL	At all screens	Jump to **Model Menu** screen directly.
• Touch and hold for one (1) second. 	S1	At the HOME screen	Key lock On or Off
	RTN	At the input data mode without blinking the setting data.	Reset to the initialized value.
• Scrolling 	Outline of "RTN"	Lightly circling the outside edge of the RTN button.	The cursor moves accordingly.
		During the data input mode.	Increases or decreases values accordingly.

Movement of cursor, value input or mode selection:

Movement of the cursor on the menu screen and movement of the cursor among items on a setup screen can be controlled by scrolling your finger to the left and right in the direction of the arrow in the scrolling diagram above. You can also go to the next page, if there is a next page.

This scrolling technique is also used for data input, value input, mode selection, and similar operations. Examples include: Value, ON, OFF, INH, ACT, etc.

RTN button:

Touch the RTN button when you want to open a setup screen or to switch between cursor move mode (reverse display) and data input mode (box display).

This button can also be used as the enter button when a confirmation message is displayed on the screen, etc.

S1 button:

When there is a next page on a menu screen or setup screen, you can go to that page by touching the S1 button. In this case, the cursor moves to the screen title item of the page.

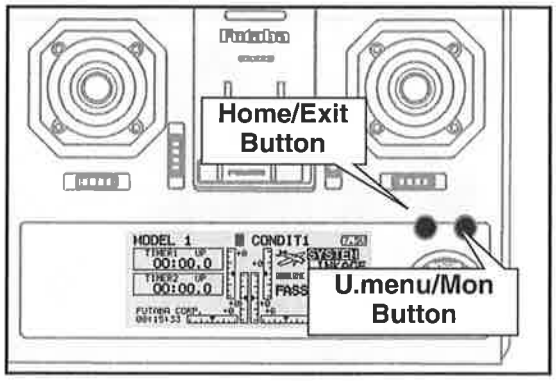
Exiting setup screen:

To end the operation on a setup screen and return to the menu screen, move the cursor to the screen title item and touch the RTN button.

To return to home screen directly, touch the Home/Exit button for 1 second.

Alternatively, move the cursor to the screen title item and touch the RTN button to return to the home screen from a menu screen.

Home/Exit and U.menu/Mon. Button



Home/Exit:

Press	Return to the previous screen
Press and hold	Return to the Home screen
It pushes from HOME screen.	To TELEMETRY display

U.menu/Mon:

Press	To Servo Monitor display
Press and hold	To Model Select display

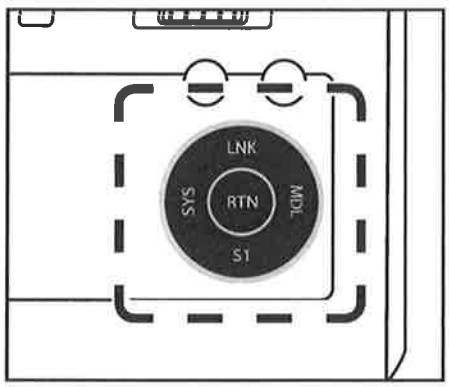
*There is no function of U.menu (user menu).
It is due to add by update.

SensorTouch ™

Note:

*Scroll operation: Circle your finger on the outside edge of the RTN button. The sensors may mis-read your touch as a reverse rotation if the circle is smaller, or performed on the inside edge of the RTN button.

* The SensorTouch™ may not operate smoothly if your hand is touching the surrounding case parts. As such, please make sure that the tip of your finger is actually operating the SensorTouch™.



* The SensorTouch™ may not operate smoothly if your hand is touching the surrounding case parts. As such, please make sure that the tip of your finger is actually operating the SensorTouch™.

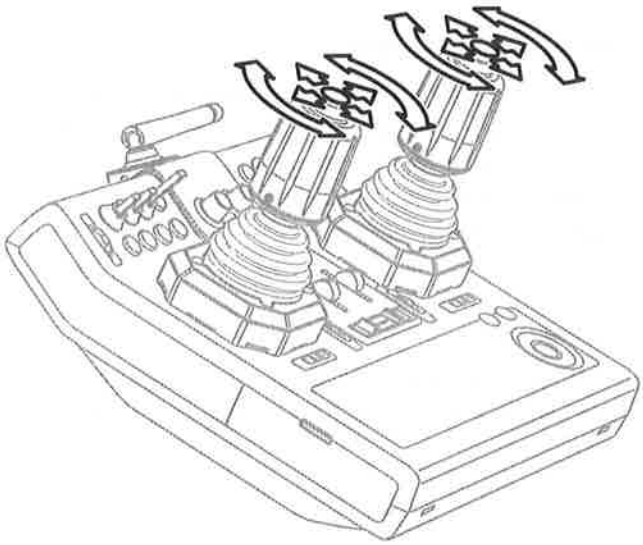
*If the SensorTouch™ does not register your input, please try again after lightly tapping your finger on the sensor once again.

*Do not operate the SensorTouch™ with gloves worn. The SensorTouch™ might not react.

⚠ CAUTION

! The touch sensor might not operate by receiving the spark noise generated from the gasoline engine etc. In this case, please operate your transmitter from the noise source apart.

3D Stick



FMT-01 is equipped with 2 sticks operated in left, right, up or down. Revolving operation was added to that.

Three of linear operation is made of one stick.

SD Card (secure digital memory card) (not included)

The FMT-01 transmitter model data can be stored by using any commonly found SD card. When FMT-01 transmitter update software is released, the software is updated using an SD card. The FMT-01 is capable of using SD cards with a memory size between 32MB and 2GB.

⚠ CAUTION

Be sure to turn off the power to the transmitter before inserting or removing the SD card.

As the SD card is a precision device, do not use excessive force when inserting.

SD card reader/writer

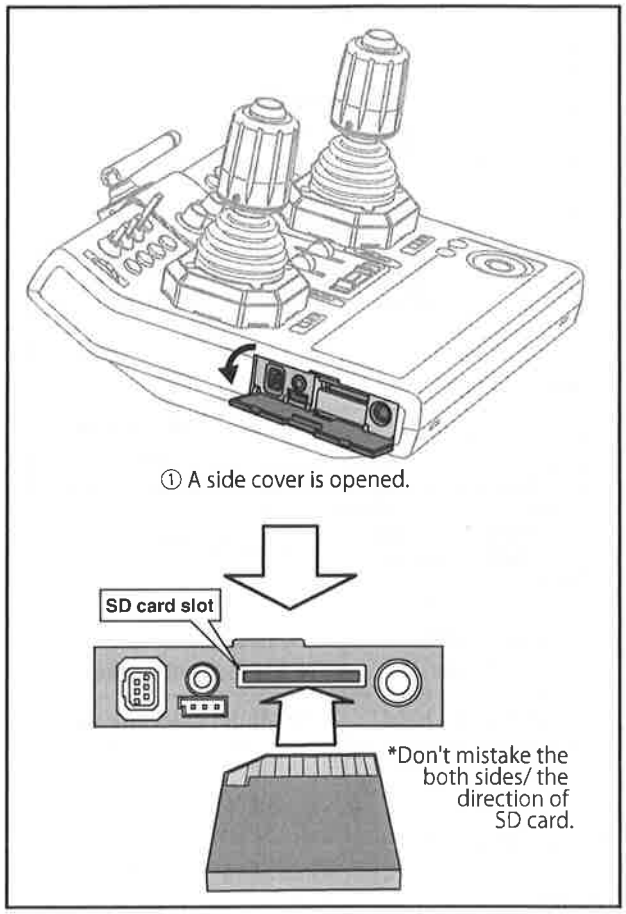
Saving model data and update files (released from Futaba) into the SD card, you can use those files on your FMT-01 transmitter. Equipment for reading and writing SD cards is available at most electronics stores.

Stored data

When you have a problem of saving or reading data after a long period of use, please get a new SD card.

*We do not have the responsibility of compensating any failure or damage to the data stored in the memory card no matter what the reason is. Be sure to keep a backup of your important data in your SD card.

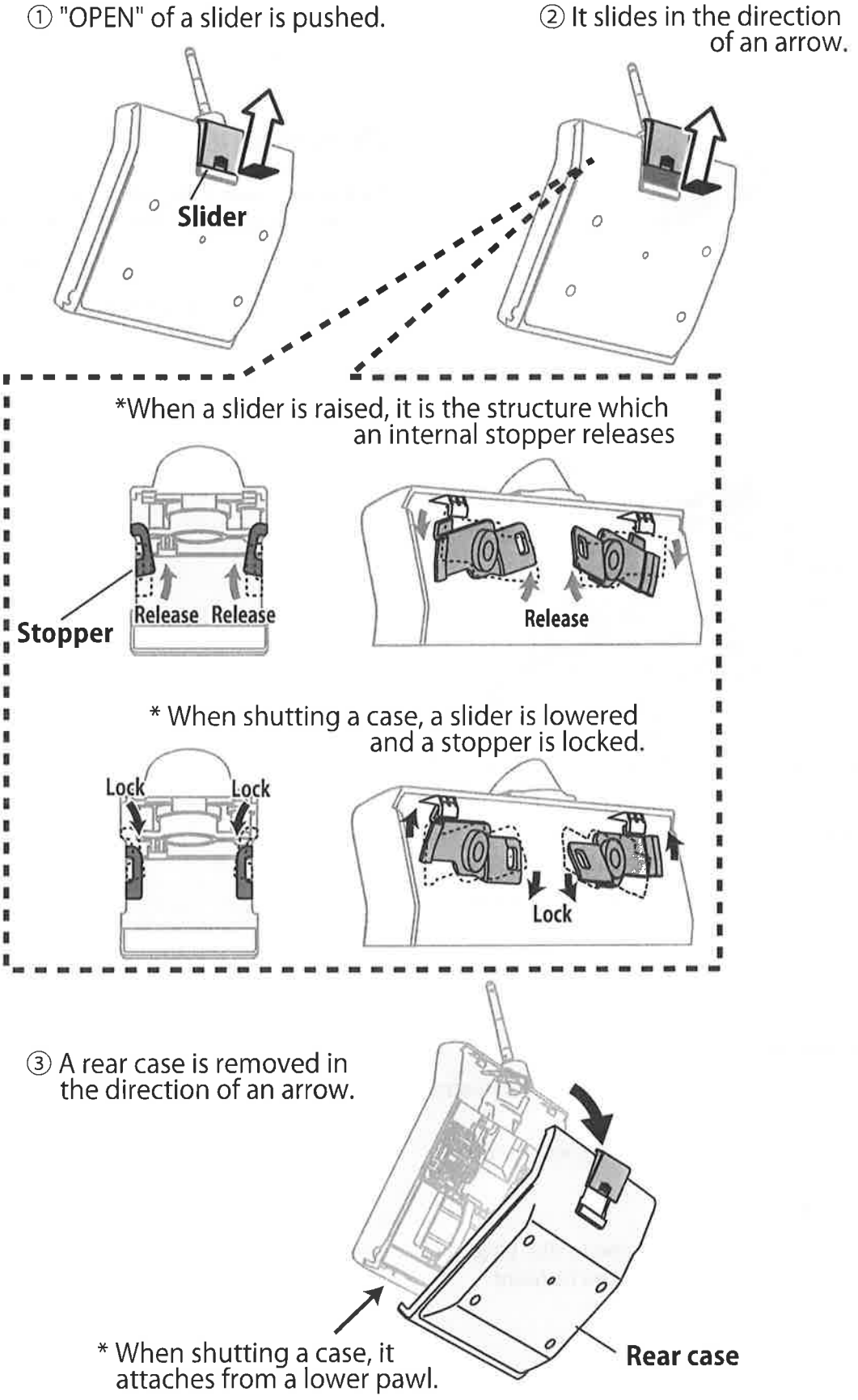
Inserting/removing the SD card



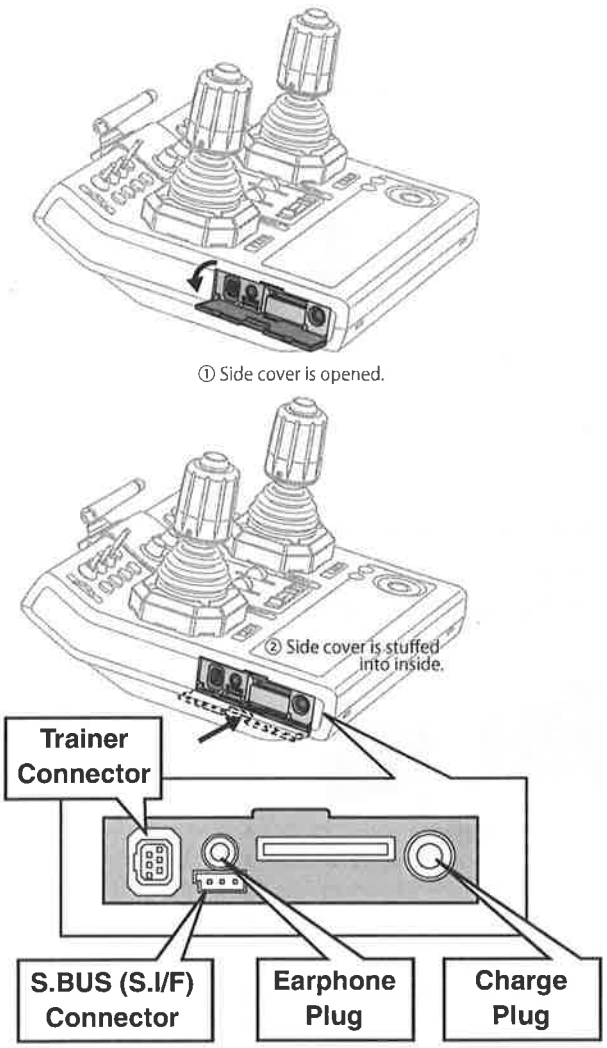
How to remove a rear case:

A rear case is removed when performing battery exchange, stick tension adjustment, and switch exchange.

Take care not to break an internal electronic board, wiring, and parts.



Connector/Plug



Connector for trainer function

When you use the trainer function, connect the optional trainer cable between the transmitters for teacher and student.

*You can set the trainer function on the Trainer Function screen in the System menu.

S.BUS connector (S.I/F)

When setting an S.BUS servo and telemetry sensor, connect them both here.

(Supply power by 3-way hub or 2-way cord.)

Earphone plug

Connecting a stereo headphone to this plug, the speech information of telemetry can be heard.

Connector for battery charger

This is the connector for charging the Ni-MH battery HT6F1800B that is installed in the transmitter. Do not use any other chargers except the attached special charger corresponding to Ni-MH battery.

⚠ WARNING

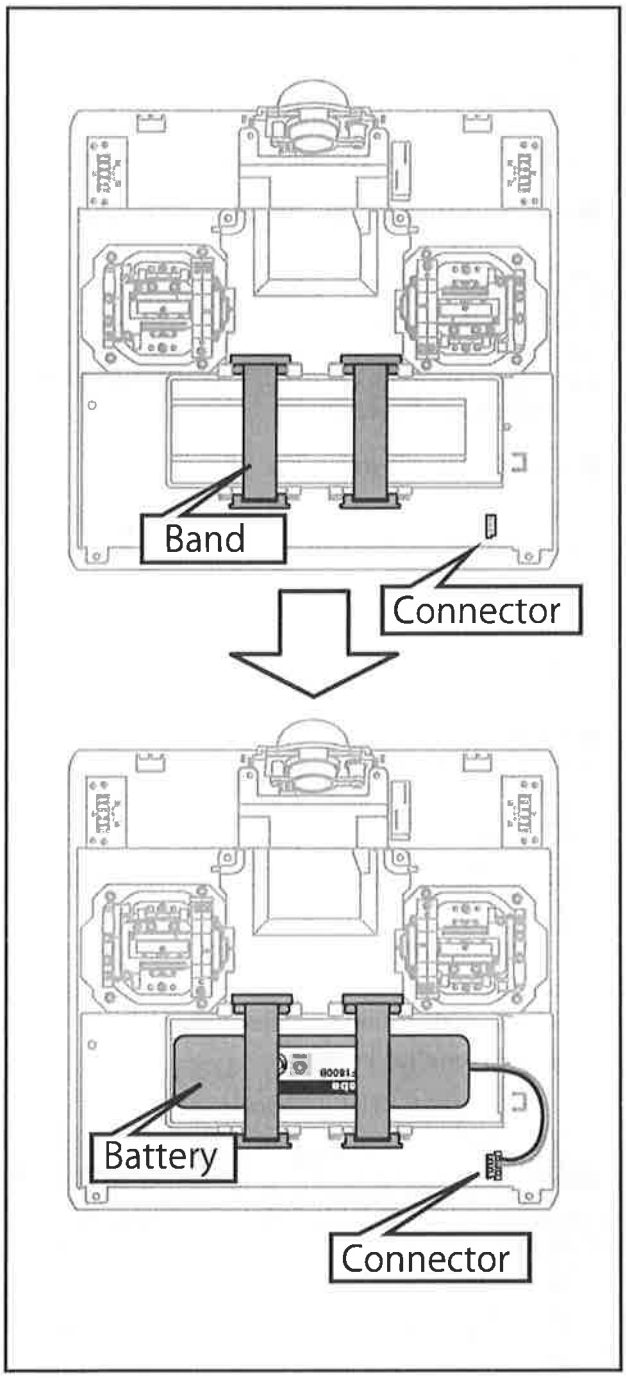
⃠ Do not connect any other chargers except the special charger to this charging connector.

*If you take out the Ni-MH battery HT6F1800B from the transmitter, you can use the optional quick charger CR-2000 corresponding to Ni-MH battery.

Installation and removal of the HT6F1800B transmitter battery

Attachment of the battery

1. Open the rear case.



2. A battery is fixed using two bands.
3. Connect the battery connector.
4. Close the rear case completely.

Battery removal

Note: If you remove the battery while the power is on, the data you have set will not be saved.

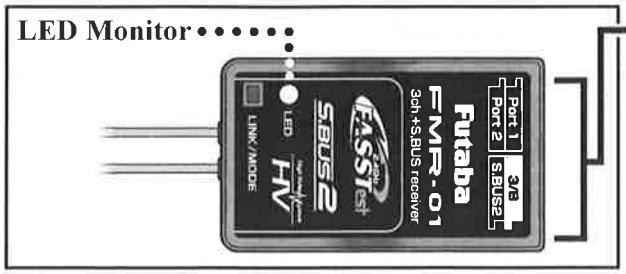
1. Open the rear case.
2. Disconnect the battery connector.
3. Two bands are removed and the remove the battery.
4. Close the rear case completely.

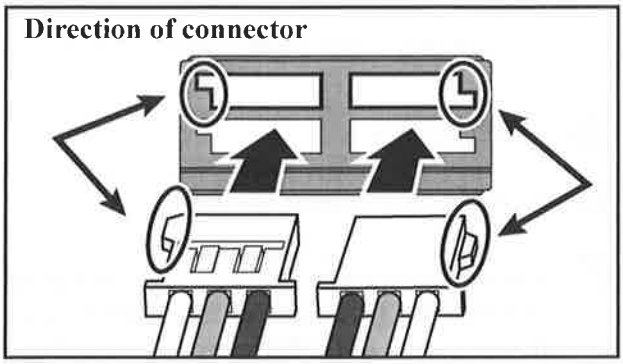
⚠ WARNING

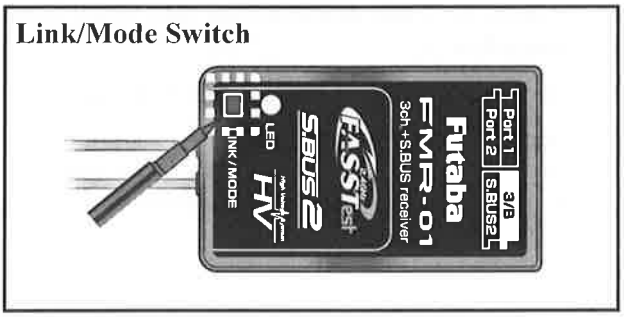
Be careful not to drop the battery.

Never disconnect the battery connector from the FMT-01 transmitter after turning off the power until the screen is completely blank and the transmitter has shut down completely.

* Internal devices such as memories may be damaged.
* If there is any problem, the message "Backup Error" will be shown the next time when you turn on the power of the transmitter. Do not use the transmitter as it is. Send it to the Futaba service center.







● **Connector**

"Port1" : S.BUS port

"Port2" : outputs of 2 channels

"3/B" : outputs of 3 channels and battery.

*A battery is connectable also with which port.

"S.BUS2" : outputs of S.BUS2 port.

[S.BUS2 Servo] [Telemetry Sensor]

● **Be careful about the direction of connector.**

⚠ WARNING

S.BUS2 connectors

⃠ Don't connect an S.BUS servo / gyro to S.BUS2 connector.

● **Link/Mode Switch**

Use the small plastic screw driver that was included with your receiver.

The Link/Mode Switch is also used for the CH mode selection.

*It is not used for a link.

● **LED Indication**

Green	Red	Status
Off	*Solid*	No signal reception
Solid	*Off*	Receiving signals
Alternate blink		Unrecoverable error (EEPROM, etc.)

FMR-01 CH Mode

The FMR-01 is capable of changing its channel allocations as described in the table below. Please choose the mode which suited the use in the following procedure from the 11 modes.

1 Press and hold down the Link/Mode button on the FMR-01 receiver. [Transmitter is always OFF]

2 Turn the receiver on while holding down the Link/Mode button. After power up, the button can be released.

3 The LED should now be blinking red with green.

4 Each press of the Mode/Link button advances the receiver to the next mode.
[Refer to CH Mode table shown below.]

5 When you reach the mode that you wish to operate in, press and hold the Mode/Link button for more than 2 seconds.

6 When LED blinks in green with red, it is the completion of a mode change.

7 Please cycle the receiver power off and back on again after changing the Channel Mode.

*5 seconds after the receiver ON, LED shows CH Mode.

FMR-01 CH Mode table

Mode	Port				LED blink
	Port1	Port2	3/B	S.BUS2	
A(Default)	S.BUS	CH2	CH3	S.BUS2	1 Red
B	S.BUS2				2 Red
C	S.BUS			S.BUS	3 Red
D	CH1				4 Red
E				S.BUS2	1 Green
F		CH4			2 Green
G	CH2				3 Green
H	CH1	CH5			4 Green
I	CH2	CH7			1 Red and Green
J	CH4	CH8			2 Red and Green
K	CH11	CH12			3 Red and Green

Measurement of Extra Voltag

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.).

1 The optional adapter for CA-RVIN-700 is purchased.

2 FMR-01 is changed into "EXT-VOL Mode" in the following procedure.

*If "EXT-VOL Mode" is used, the port 2 cannot be used as the servo CH.

3 According to the manual of CA-RVIN-700, battery wiring is branched and it connects.

4 One side of EXT-VOL CABLE is connected to the port 2 of FMR-01.

How to change FMR-01 into "EXT-VOL Mode"

1 Turn on the receiver. LED lights up red. [Transmitter is always OFF]

2 Press and hold the Mode/Link button for 5 seconds to 10 seconds.

*It becomes the mode which makes a mistake in exceeding 10 seconds. In that case, carry out power supply OFF and redo.

3 The LED should now be early blinking green. Mode/Link button is released.

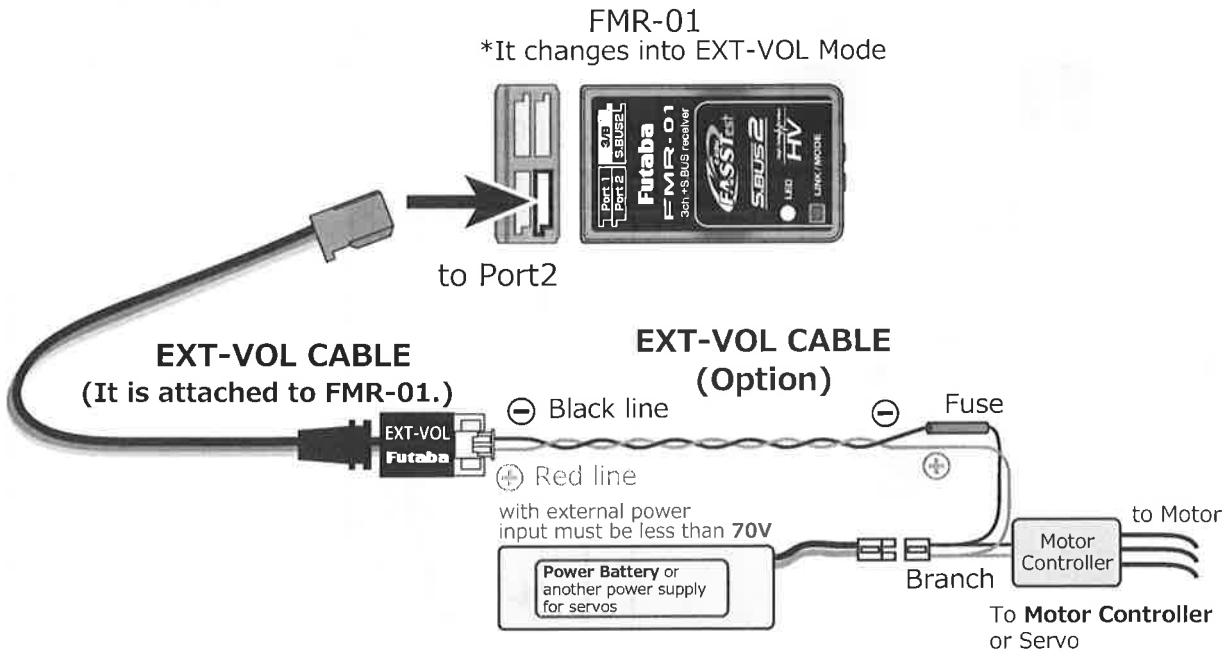
4 Each press of the Mode/Link button advances the receiver to the next mode.

5 When you reach the mode that you wish to operate in, press and hold the Mode/Link button for more than 2 seconds.

6 When LED blinks in green with red, it is the completion of a mode change.

7 Please cycle the receiver power off and back on again after changing the EXT-VOL Mode.

Mode	External voltage measurement	LED blink
Servo Mode(Default)	OFF	Green 1 time
EXT-VOL Mode	ON	Green 2 time



⚠ DANGER

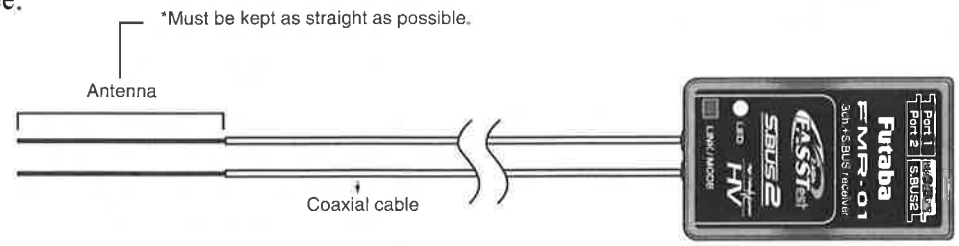
- Don't touch wiring.
  *There is a danger of receiving an electric shock.
- Do not short-circuit the battery terminals.
  *A short circuit across the battery terminals may cause abnormal heating, fire and burns.
- Please double check your polarity (+ and −) when hooking up your connectors.
  *If + and − of wiring are mistaken, it will damage, ignite and explode.

⚠ WARNING

- Don't connect to Extra Voltage before turning on a receiver.
- When not using EXT-VOL, "EXT-VOL Mode" is turned OFF.
- Don't connect EXT-VOL CABLE other than port 2 of FMR-01.

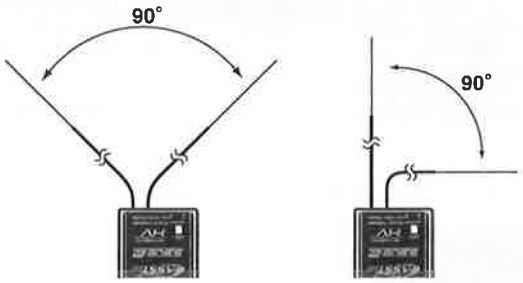
Receiver's Antenna Installation

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.



To obtain the best results of the diversity function, please refer to the following instructions:

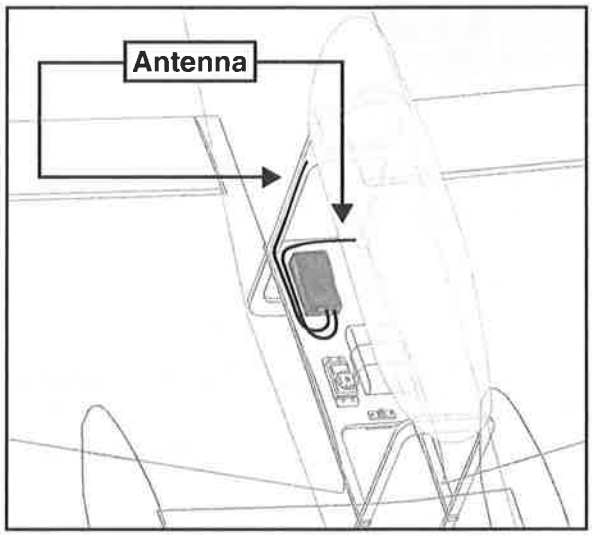
1. The two antennas must be kept as straight as possible. Otherwise it will reduce the effective range.
2. The two antennas should be placed at 90 degrees to each other.

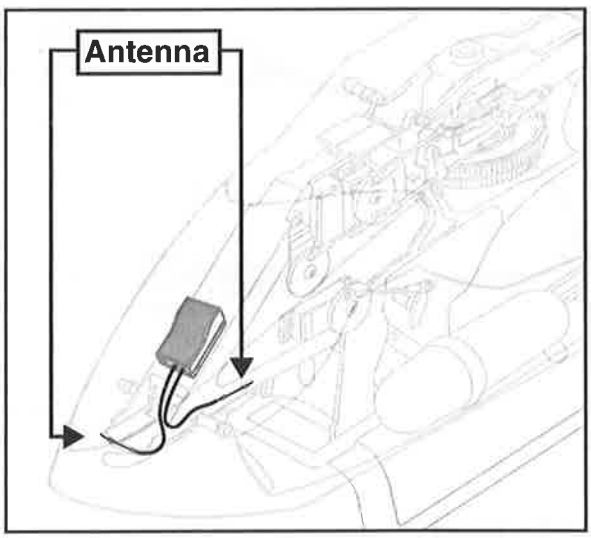


This is not a critical figure, but the most important thing is to keep the antennas away from each other as much as possible.

Larger models can have large metal objects that can attenuate the RF signal. In this case the antennas should be placed at both sides of the model. Then the best RF signal condition is obtained at any flying attitude.

3. The antennas must be kept away from conductive materials, such as metal, carbon and fuel tank by at least a half inch. The coaxial part of the antennas does not need to follow these guidelines, but do not bend it in a tight radius.
4. Keep the antennas away from the motor, ESC, and other noise sources as much as possible.



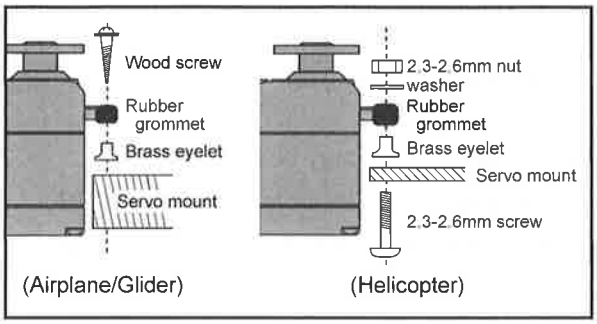


*The two antennas should be placed at 90 degrees to each other.

*The illustration demonstrates how the antenna should be placed.

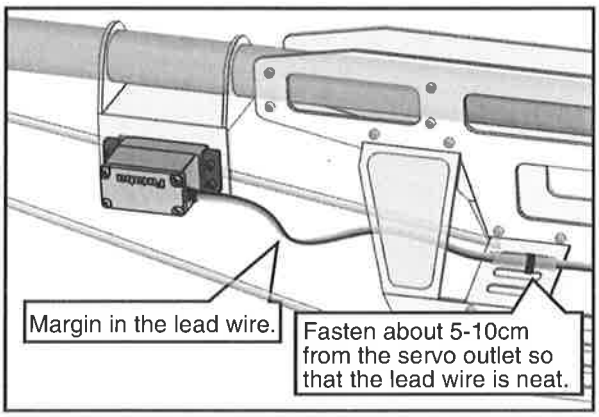
*Receiver Vibration and Waterproofing: The receiver contains precision electronic parts. Be sure to avoid vibration, shock, and temperature extremes. For protection, wrap the receiver in foam rubber or other vibration-absorbing materials. It is also a good idea to waterproof the receiver by placing it in a plastic bag and securing the open end of the bag with a rubber band before wrapping it with foam rubber. If you accidentally get moisture or fuel inside the receiver, you may experience intermittent operation or a crash. If in doubt, return the receiver to our service center for service.

Mounting the Servo



Servo lead wires

To prevent the servo lead cable from being broken by vibration during flight, provide a little slack in the cable and fasten it at suitable points. Periodically check the cable during daily maintenance.



Mounting the power switch

When mounting a power switch to an airframe, make a rectangular hole that is a little larger than the total stroke of the switch so that you can turn the switch ON/OFF without binding.

Avoid mounting the switch where it can be covered by engine oil and dust. In general, it is recommended to mount the power switch on the side of the fuselage that is opposite the muffler.

Safety precautions when you install receiver and servos

⚠WARNING

Connecting connectors

❗ Be sure to insert the connector until it stops at the deepest point.

How to protect the receiver from vibration and water

❗ Wrap the receiver with something soft such as foam rubber to avoid vibration. If there is a chance of getting wet, put the receiver in a waterproof bag or balloon to avoid water.

Receiver's antenna

⃠ Never cut the receiver's antenna. Do not bind the receiver's antenna with the cables for servos.

❗ Locate the receiver's antenna as far as possible from metals or carbon fiber components such as frames, cables, etc.

*Cutting or binding the receiver's antenna will reduce the radio reception sensitivity and range, and may cause a crash.

Servo throw

❗ Adjust your system so that pushrods will not bind or sag when operating the servos to the full extent.

*If excessive force is continuously applied to a servo, the servo could be damaged due to force on the gear train and/or power consumption causing rapid battery drain.

Mounting servos

❗ Use a vibration-proof rubber (such as rubber grommet) under a servo when mounting the servo on a servo mount. And be sure that the servo cases do not touch directly to the metal parts such as servo mount.

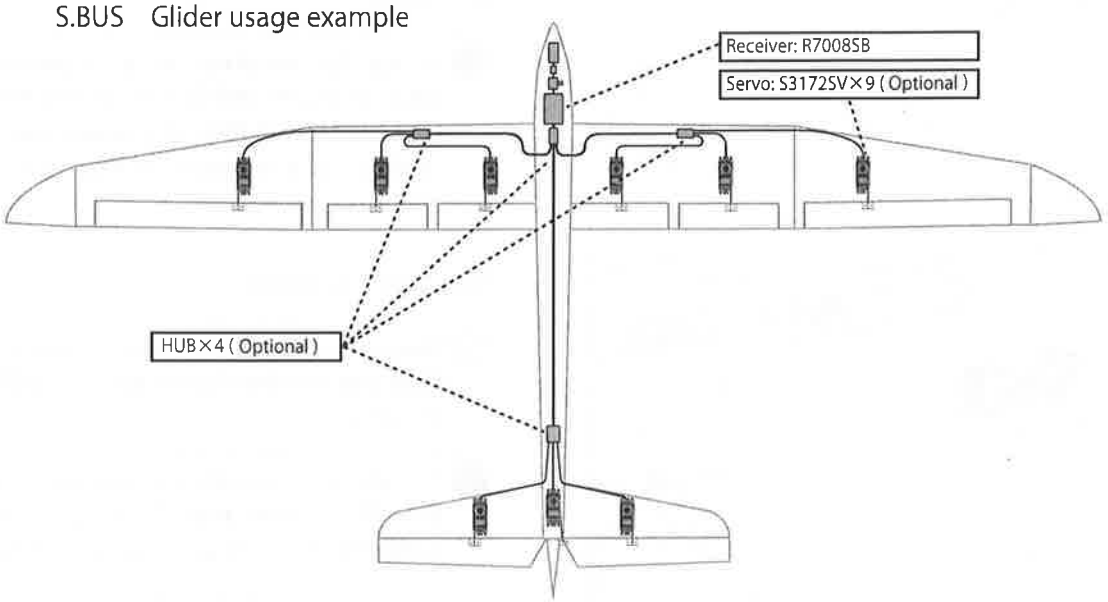
*If the servo case contacts the airframe directly, vibration will travel to and possibly damage the servo.

S.BUS/S.BUS2 Installation

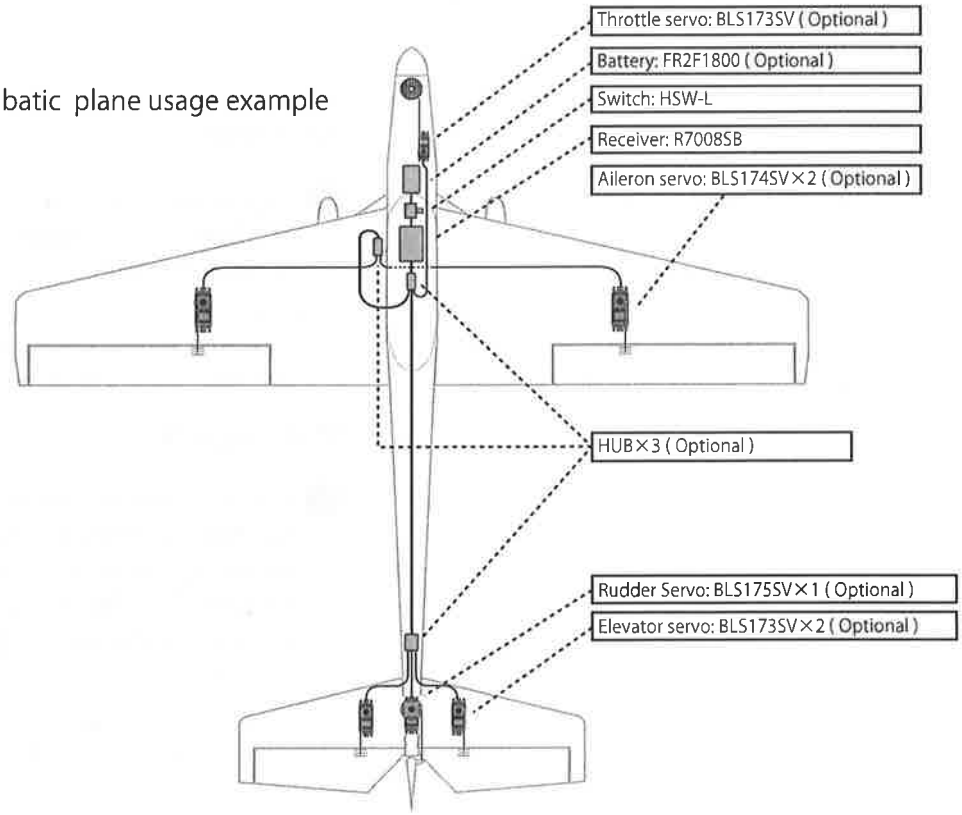
This set uses the S.BUS/S.BUS2 system. The wiring is as simplified and clean mounting as possible, even with models that use a large number of servos. In addition, the wings can be quickly installed to the fuselage without any erroneous wiring by the use of only one simple wire, even when there are a large number of servos used.

- When using S.BUS/S.BUS2, special settings and mixes in your transmitter may be unnecessary.
- The S.BUS/S.BUS2 servos memorize the number of channels themselves. (settable with the FMT-01)
- The S.BUS/S.BUS2 system and conventional system (receiver conventional CH used) can be mixed.

S.BUS Glider usage example

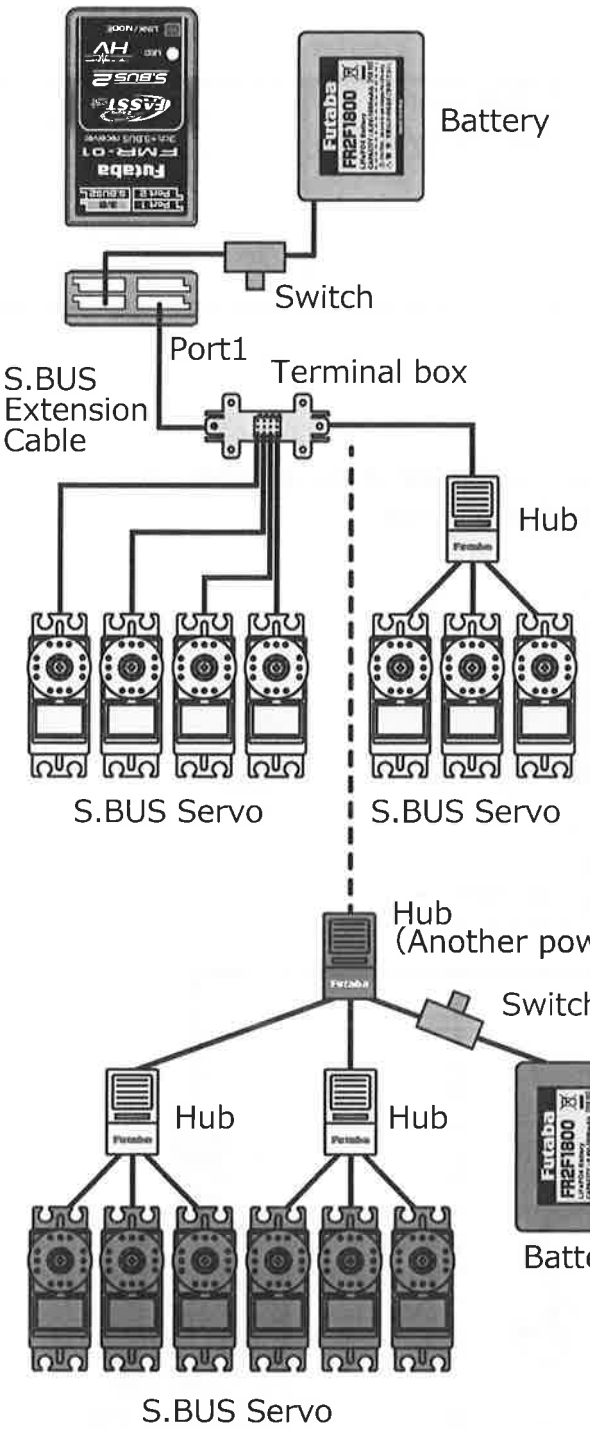


S.BUS Aerobatic plane usage example



S.BUS Wiring example

Receiver CH Mode of the mode A or mode C.

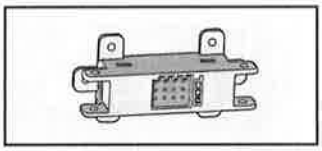


●S.BUS Servo

Since the channel number is memorized by the S.BUS itself, any connector can be used. When the SBD-1 (sold separately) is used, ordinary servos can be used with the S.BUS system.
*SBD-1 cannot be used by S.BUS2 port.

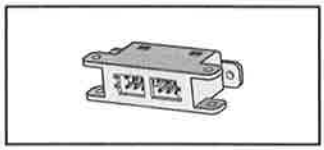
●6-Terminal box (TB16PP)

Six connectors can be inserted



●4-Terminal box

Four connectors can be inserted

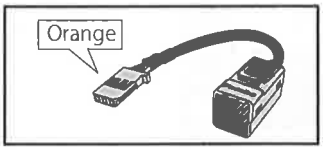


●When separate power supply used

When a large number of servos are used or when high current servos are used, the servos can be driven by a separate power supply by using a separate Power Supply 3-way hub.

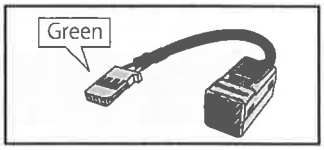
●Hub

Three connectors can be inserted.



●Hub (Another power supply)

Used when using a separate power supply battery.



⚠WARNING

Power supply

! Please make sure that you use a battery that can deliver enough capacity for the number and kind of servos used. Alkaline batteries cannot be used.

S.BUS2 System

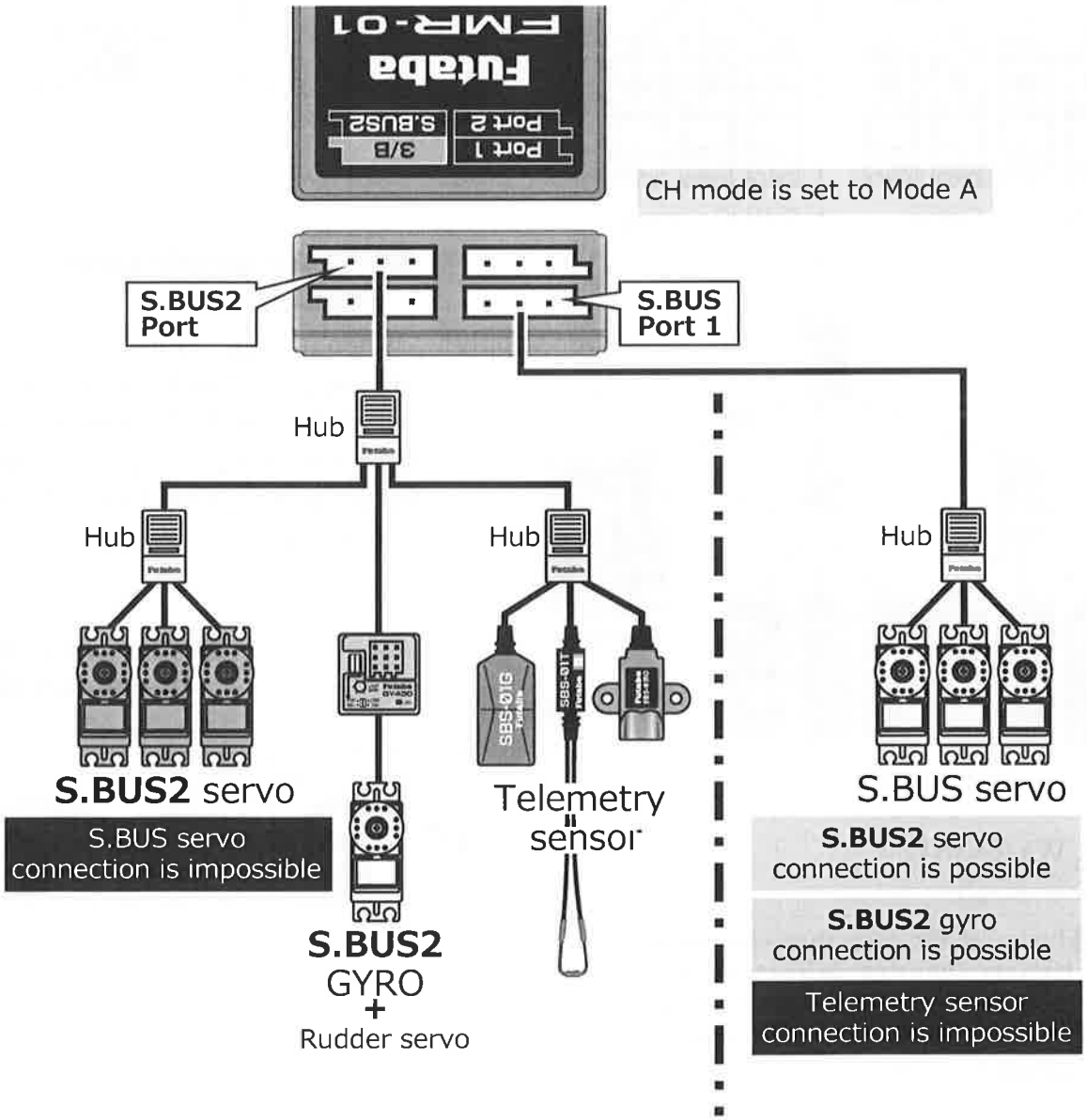
Using the S.Bus2 port an impressive array of telemetry sensors may be utilized.

S.BUS2 TABLE

Receiver port	S.BUS servo S.BUS gyro	**S.BUS2** servo **S.BUS2** gyro	Telemetry sensor
S.BUS	○	○	×
S.BUS2	× (※)	○	○

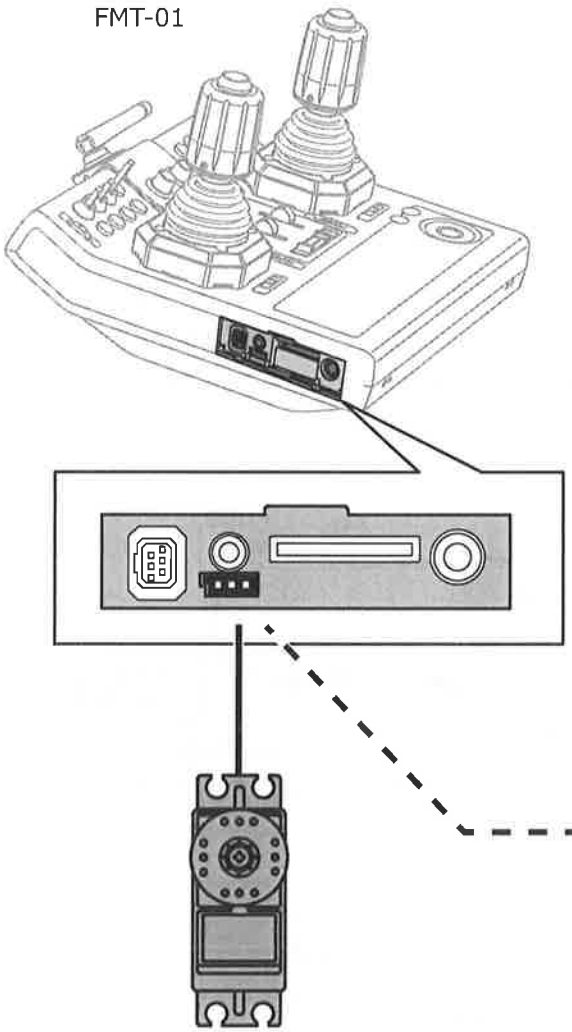
(※) Don't connect S.BUS servo,
S.BUS gyro to BUS2 connector.

S.BUS servo gyro has S.BUS correspondence and S.BUS2 correspondence.
Please confirm with a catalog or each operation manual.



S.BUS/S.BUS2 device setting

S.BUS/S.BUS2 servos or a telemetry sensor can be connected directly to the FMT-01. Channel setting and other data can be entered for the S.BUS/S.BUS2 servos or sensors.



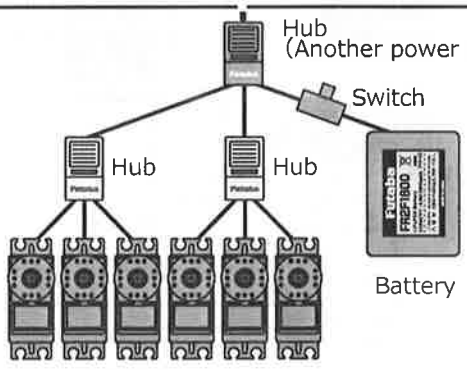
1. Connect the S.BUS device you want to set with as shown in the figure.
2. Turn on the transmitter power.
3. Call the setup screen.
   Servo: System Menu → S.BUS servo
   Sensor: Linkage Menu → Sensor
4. Perform setting in accordance with each screen.
5. This sets the channel and other data for each S.BUS servo, or telemetry device to be used with the S.BUS device or receiver.

*It is not necessary to carry out multiple connection of the battery like a T18MZ/ T14SG.

(It will damage, if it connects.)

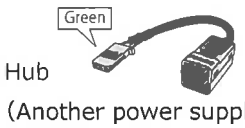
*When you connect to a transmitter many servos which consume many current, please use "Another power supply HUB".

And electric power is supplied to a servo with another power supply.



●When separate power supply used

When a large number of servos are used or when high current servos are used, the servos can be driven by a separate power supply by using a separate Power Supply 3-way hub.



(Another power supply)

Used when using a separate power supply battery.

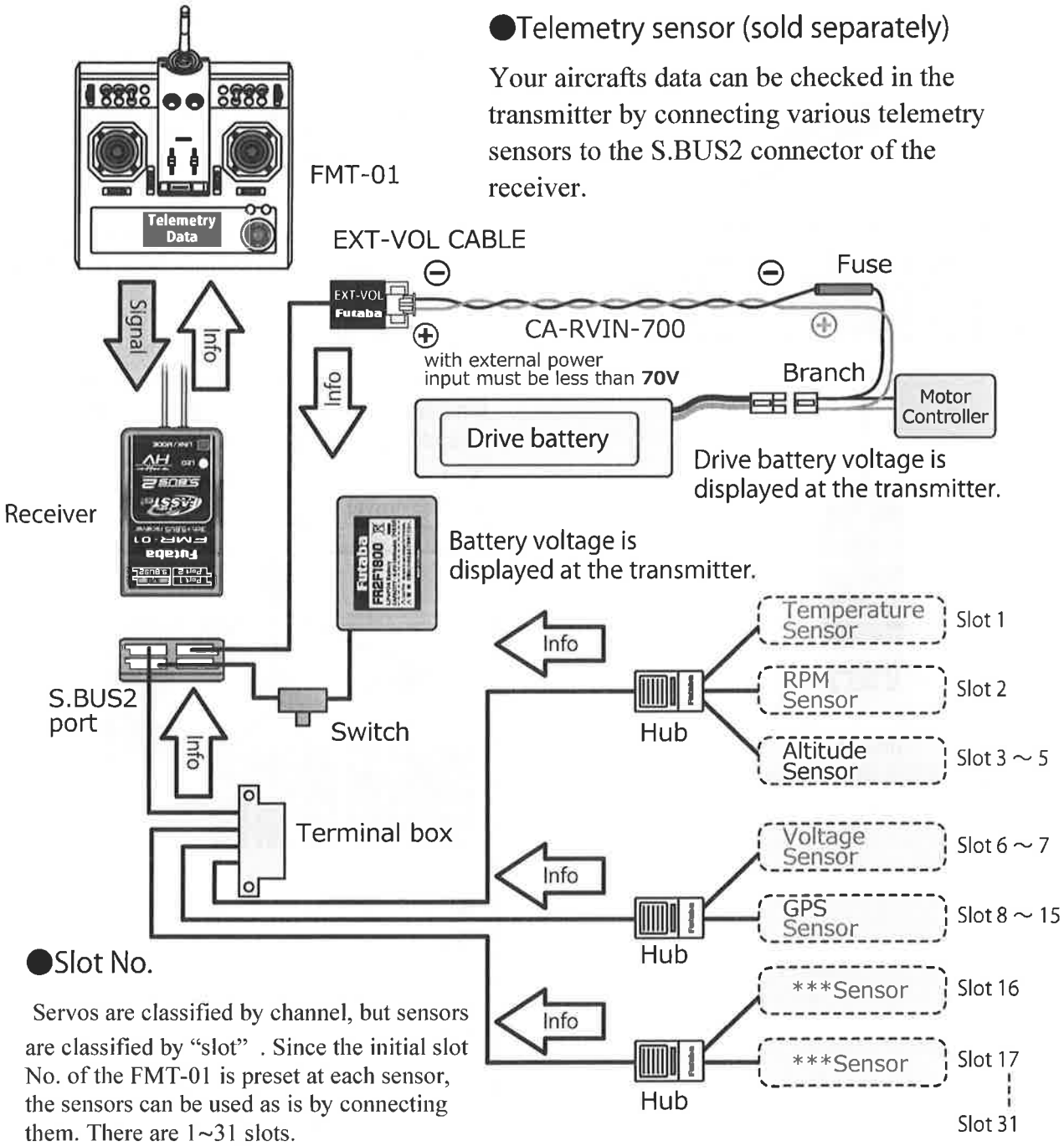
Telemetry System

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. It also includes both standard PWM output ports and S.BUS output ports.

*Telemetry is available only in the FASSTest 18CH mode. (12CH mode displays only receiver battery voltage and extra battery voltage.)

*The telemetry function requires the corresponding receiver (FMR-01).

* Telemetry display only FMT-01 ID of FMR-01 was remembered to be.



Battery Charging

Before charging batteries, read the "Cautions for handling battery and battery charger" in the section "NiMH/NiCd Battery Safety and Handling Instructions".

How to charge the NiMH battery HT6F1700B for the transmitter

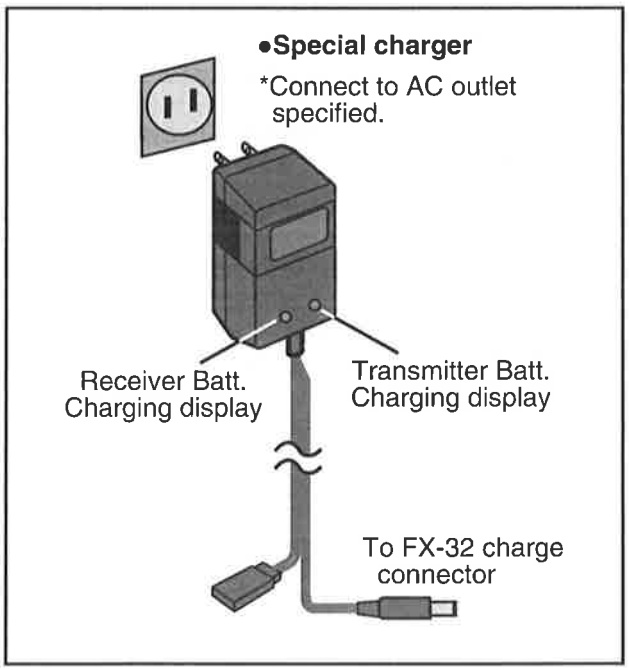
⚠ DANGER

⃠ The NiMH battery HT6F1700B is only for your FMT-01. Do not use this battery for other equipment.

❗ Be sure to use the attached special charger to charge the battery.

*If you take the NiMH battery HT6F1700B out of the transmitter, you can use the optional quick charger CR-2000 corresponding to NiMH battery.

[Method of charging battery]



1. Connect the special charger to the wall socket (AC outlet).
2. Connect the connectors to the FMT-01 charging jack.
   *Confirm that the charging indicator, LED lamp, is on.
   *Turn off the transmitter while charging the battery.
3. Remove the battery after 15 hours.
   *Battery charging will not automatically stop. Remove the battery and transmitter from the charger and remove the charger from the wall socket.

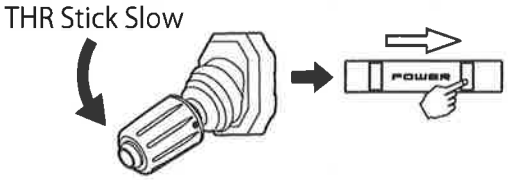
*It is recommended to reactivate the battery by cycling several times if the battery has not been used for a long period.

*In the case of NiMH/NiCd batteries, you may find poor performance of the battery if you have used the battery only for a short period or if you repeat charging while the battery is not fully discharged. It is suggested to discharge the battery to the recommended level after use. It is also recommended to charge the battery just before use.

How to turn transmitter power ON/OFF

When turning on the power, the FMT-01 transmitter will begin emmiting RF automatically after it confirms the surrounding RF conditions.

When turning on the power of the transmitter



1. Turn on the power switch of the transmitter.
   *If THR stick is high, the next WARNING screen will come out. Moreover, if a power supply is switched on while SW set by WARNING setup has been ON, it will be indicated by WARNING.

2. When the throttle stick during Power On is at the high side (or over 1/3 stick) a warning will be displayed(Airplane/Helicopter). The relevance SW is turned off if SW warning comes out.

3. The upper screen came out. Next, if "RTN" is pushed after uniting a cursor with "YES", it will send.

How to stop the transmitter

1. Turn off the power switch of the transmitter.
   *The transmitter shuts down at once.

Low battery alarm and auto shut-down

When the battery voltage reaches 7.2V, an audible alarm will sound. Land your aircraft immediately.

It can change from 6.8V to 7.6V by [SOUND] of [SYSTEM MENU].

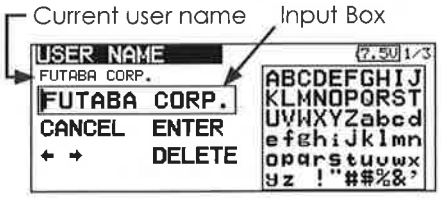
It recommends using it with an initial value.

Registration of the user's name

If so desired, the FMT-01 transmitter can indicate the owner's name.

User's name setup screen

1. Turn on the power of the transmitter.
2. Select [USER NAME] in the system menu and push the EDIT button.
   *The user name set up screen appears.



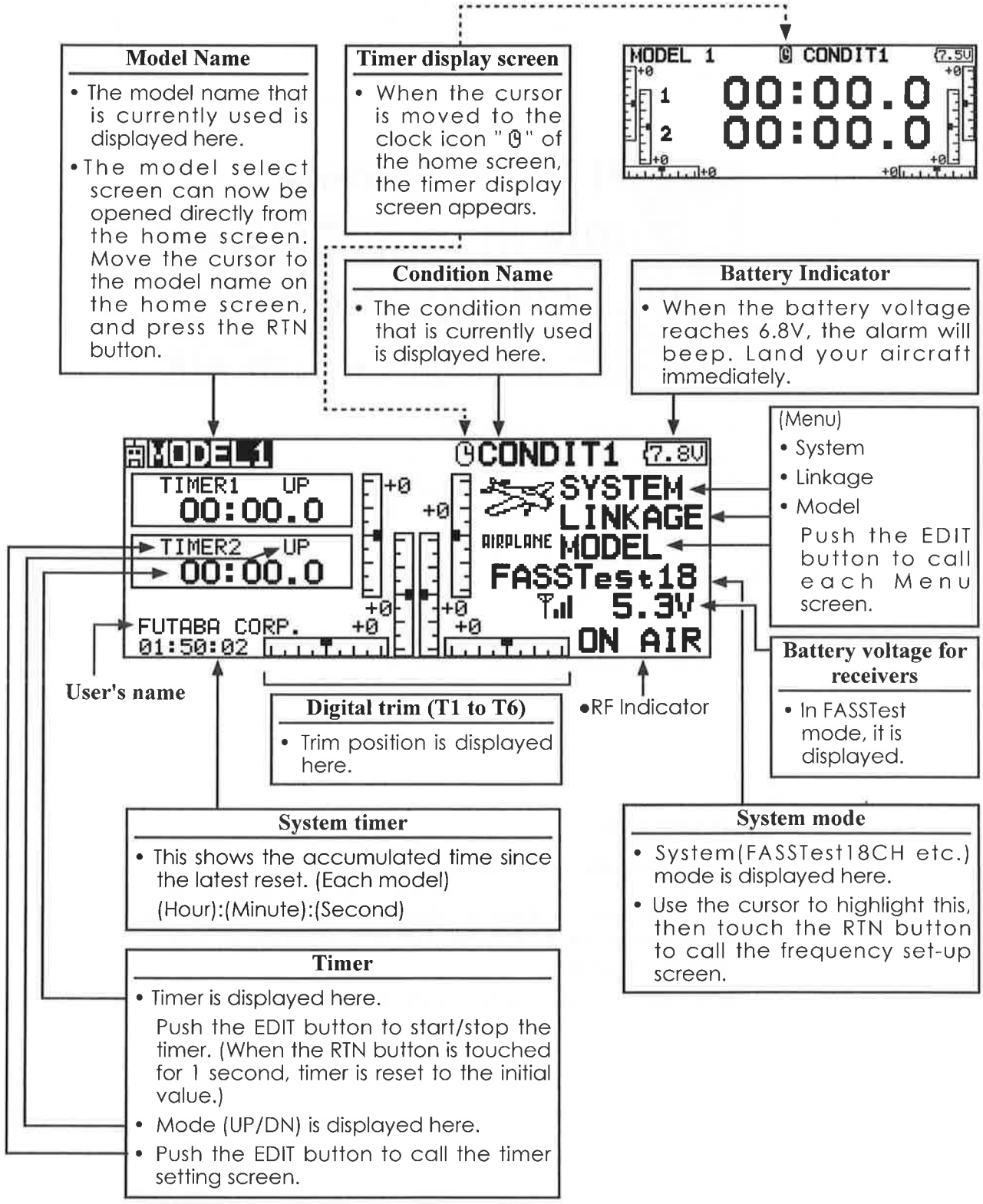
Changing the user name

1. Change the user name as described below:
   [Moving cursor in input box]
   Select [←] or [→], and push the EDIT button.
   [Deleting a character]
   When [DELETE] is selected and the RTN button is touched, the character immediately after the cursor is deleted.
   [Adding a character]
   When a candidate character is selected from the character list and the RTN button is touched, that character is added at the position immediately after the cursor.
   *A name of up to 12 characters long can be entered as the user name. (A space is also counted as 1 character.)
2. At the end of input, select [ENTER] and push the EDIT button. (To terminate input and return to the original state, select [CANCEL] and push the EDIT button.)

Home screen

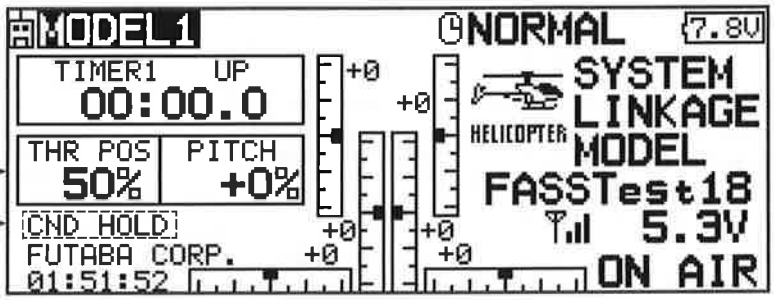
Use the touch sensor to select the following display area to call each setting screen, and push the EDIT button. The setting screen appears.

Airplane/Glider Home Screen



Throttle/Pitch Position Display

- Throttle and pitch position is displayed here.
  Push the EDIT button to call the throttle curve or pitch curve setting screen directly.



*Condition hold operation is displayed. ("IS ON")

To activate/deactivate Condition Hold:

1.Move the cursor to [CND HOLD].

2.Set the throttle stick lower than the 1/3 point and push the EDIT button to activate/deactivate the condition hold function.

*For a detailed description, refer to [COND. HOLD] function instructions.

⚠WARNING

Be sure to confirm the model name before flying your aircraft.

Check the battery voltage as often as possible and try to charge the battery earlier. If the battery alarm makes a sound, land your aircraft immediately.

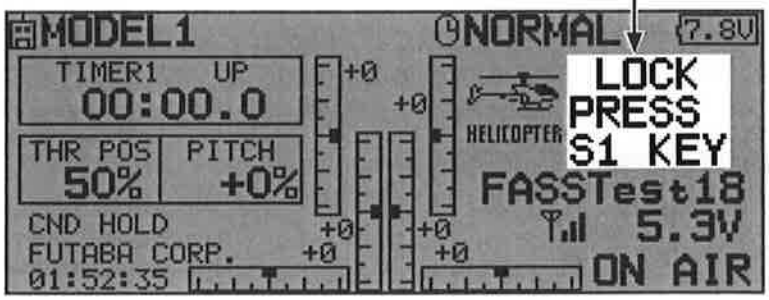
***You can adjust the LCD contrast by the display setting in the system menu.**

Screen lock

To prevent the data from being changed by erroneous touching of the touch sensor during flight, a function which makes an touch sensor impossible temporarily.

How to lock

1. The home screen is displayed.
2. Press the S1 button for about 1 second. "LOCK" is displayed and the touch sensor is disabled.



How to unlock

1. Press the S1 button for about 1 second in the touch sensor locked state. The touch sensor is enabled again.

*Two kinds of automatic locks can be chosen by **[DISPLAY]** of **[SYSTEM MENU]**.

STARTUP LOCK

Auto Lock functions automatically when the model changes or power is turned on.

*To temporarily allow access to the FMT-01 programming press and hold the S1 bitton for one second. Please note, the Auto Lock function timer will resume immediately once again.

AUTOMATIC LOCK

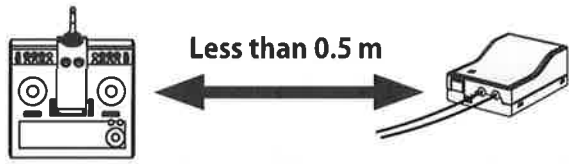
Auto Lock functions automatically when there is no operation from the HOME screen display for a chosen number of seconds.

Link procedure (FMT-01/FMR-01)

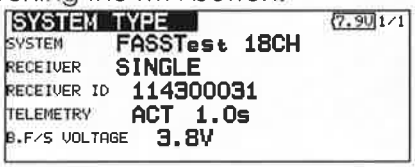
Each transmitter has an individually assigned, unique ID code. In order to start operation, the receiver must be linked with the ID code of the transmitter with which it is being paired. Once the link is made, the ID code is stored in the receiver and no further linking is necessary unless the receiver is to be used with another transmitter. When you purchase additional FMR-01 receivers, this procedure is necessary; otherwise the receiver will not work.

Link procedure

1. Place the transmitter and the receiver close to each other within half (0.5m) meter.



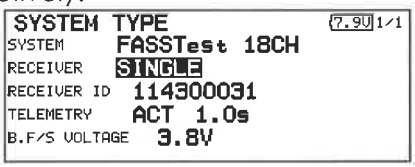
2. Turn on the transmitter.
3. Select [SYSTEM TYPE] at the Linkage menu and access the setup screen shown below by touching the RTN button.



:You can do this through the LINKAGE Menu and scroll to System and press RTN.

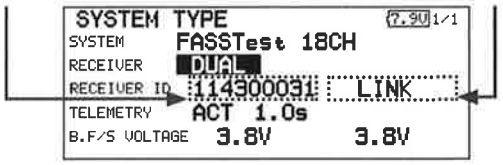
4. When you use two receivers on one model, you must change from [SINGLE] to [DUAL].

*Only two receivers can be used. In "DUAL", two setting items come out. Input, respectively.



ID of a primary receiver displays.

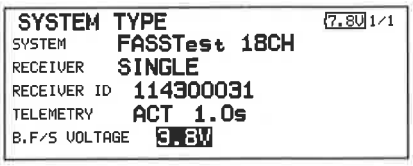
ID of a secondary receiver displays.



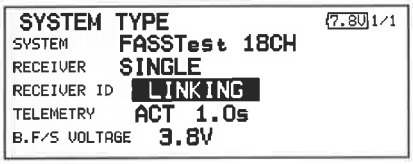
In DUAL, a primary receiver is link previously. Next, a secondary receiver is link.

5. When changing battery fail-safe voltage from the initial value 3.8V, voltage is changed here.

* Only in FASSTest Mode.



6. [RECEIVER-ID] is chosen by scrolling and the RTN button is pushed. The transmitter will emit a chime as it starts the linking process.



7. When the transmitter starts to chime, power on the receiver. The receiver should link to the transmitter within about 1 second.

In "Link" Mode

8. If linking fails, an error message is displayed. Bring the transmitter closer to the receiver and repeat the procedure above from Step 2.

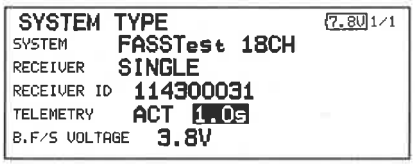
9. ACT will be chosen if telemetry is used.

It is INH when not using it.

10. When a telemetry function is enabled, the receiving interval (down-link interval) of sensor data can be changed. If a DL interval is increased, the response of the sensor data display becomes slower, but stick response will improve.

Initial value: 1.0s

Adjustment range: 0.1s~2.0s



*If there are many FASSTest systems turned on around your receiver, it might not link to your transmitter. In this case, even if the receiver's LED stays solid green, unfortunately the receiver might have established a link to one of other transmitters. This is very dangerous if you do not notice this situation. In order to avoid the problem, we strongly recommend you to doublecheck whether your receiver is really under control by your transmitter by giving the stick input and then checking the servo response.

*Do not perform the linking operation when the drive motor is connected or the engine is running.

*When you use two receivers, please be sure to setup a "primary" and "secondary" in the "dual" mode.

*Telemetry function cannot be used for the 2nd receiver.

* You must link one receiver at a time. If both power supplies to the receivers are switched on simultaneously, data is received incorrectly by the transmitter.

* You cannot link three receivers.

* Link is required when a system type is changed.

* Linking is required whenever a new model is made.

⚠ WARNING

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

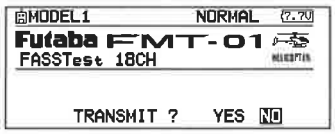
Do not perform the linking procedure with motor's main wire connected or with the engine operating as it may result in serious injury.

Range Testing Your R/C System

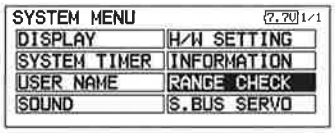
It is extremely important to range check your models prior to each flying session. This enables you to ensure that everything is functioning as it should and to obtain maximum enjoyment from your time flying. The FMT-01 transmitter incorporates a system that reduces its power output and allows you to perform such a range check.

Range check mode

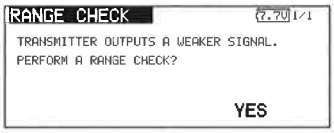
1. While pushing previously "U.menu/Mon" button.



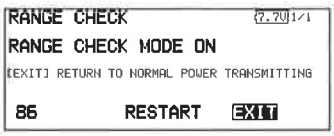
4. Scroll to "NO" and press RTN.



5. "RANGE CHECK" is chosen from "SYSTEM MENU" and press RTN.



6. "YES" is chosen from "RANGE CHECK" and press RTN.



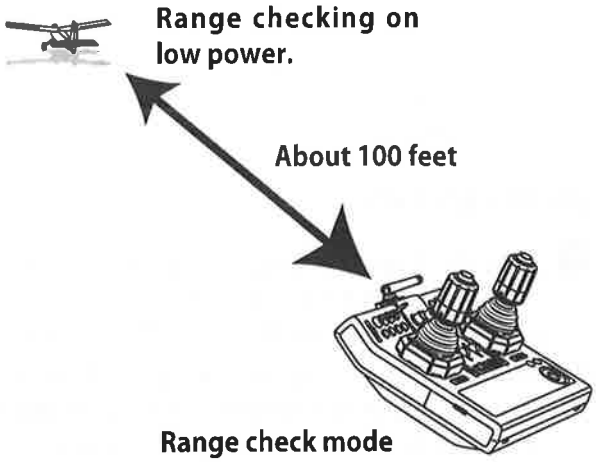
During this mode, the RF power output is reduced so the range test can be performed. In addition, when this mode is activated the right LED on the front of the transmitter starts blinking and the transmitter gives users a warning with a beeping sound every 3 seconds.

The "Range check mode" continues for 90 seconds and after that the power will return to the normal level. To exit the "Range check mode" before the 90 seconds, select the "EXIT" at the screen and touch the RTN button again. This mode is available one time only so if you need to re-use this function the transmitter power must be cycled. NEVER start flying when the "Range check mode" is active.

Should you require additional time to perform a range check, highlight Restart before your time expires and press the RTN button one time.

Range check procedure

1. With the "Range check mode" on, walk away from the model while simultaneously operating the controls. Have an assistant stand by the model to confirm that all controls are completely and correctly operational. You should be able to walk approximately 30-50 paces from the model without losing control.
2. If everything operates correctly, return to the model. Set the transmitter in a safe, yet accessible, location so it will be within reach after starting the engine or motor. Be certain the throttle stick is in the low throttle position, then start the engine or motor. Perform another range check with your assistant holding the aircraft with the engine running at various speeds. 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

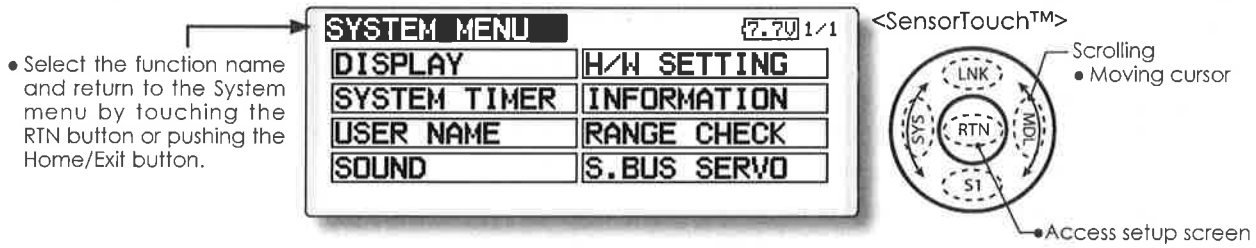
Do not fly in the range check mode.

*Since the range of the radio waves is short, if the model is too far from the transmitter, control will be lost and the model will crash.

SYSTEM MENU

The System Menu sets up functions of the transmitter: This does not set up any model data.

- Select [SYSTEM] at the home screen and call the system menu shown below by touching the RTN button.
- Scrolling the touch sensor to select the function you want to set and call the setup screen by touching the RTN button.



System Menu functions table

[DISPLAY]: LCD contrast and back light adjustment.

[SYSTEM TIMER]: Resets the accumulated timer for each model.

[USER NAME]: User name registration.

[SOUND]: Various volume control and low battery setting.

[H/W SETTING]: H/W reverse, stick mode, stick calibration, and switch position.

[INFORMATION]: Displays the program version, SD card information, and language selection.

[RANGE CHECK]: A transmitting output is lowered and the check before a flight is carried out.

[S.BUS SERVO]: S.BUS servo setting.

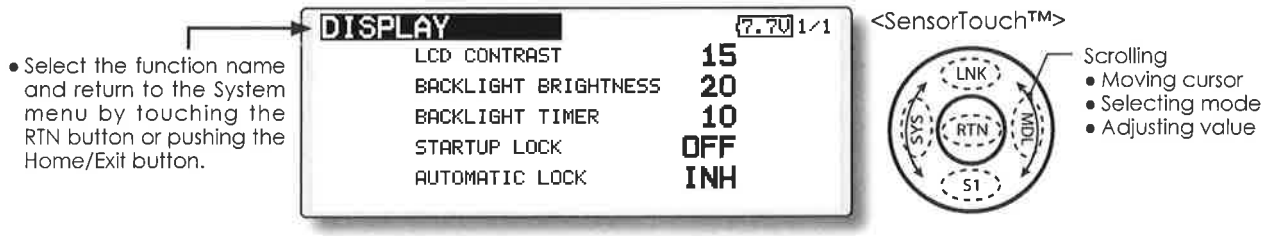
DISPLAY

LCD contrast adjustment and automatic key lock

The following LCD screen adjustments and auto power off setting are possible:

- Backlighting brightness adjustment
- Backlighting off timer adjustment
- Automatic key lock setup

- Select [DISPLAY] at the system menu and call the setup screen shown below by touching the RTN button.



LCD contrast adjustment

1. Scrolling the touch sensor to select "LCD CONTRAST" and touch the RTN button to switch to the data input mode and adjust the contrast by turning the touch sensor to the left and right.

   Setting range: (Lighter) 0 to 30 (Darker)

   Initial value: 15

   Touch the RTN button to end adjustment and return to the cursol move mode.

   *Adjust to the contrast while watching the screen display.

   *When you want to reset the contrast to the initial state, select "LCD CONTRAST" and touch the RTN button for 1 second.

Backlight brightness adjustment

1. Scrolling the touch sensor to select "BACKLIGHT BRIGHTNESS" and touch the RTN button to switch to the data input mode and adjust the contrast by turning the touch sensor to the left and right.

   Setting range: (Darker) 0 to 30 (Lighter)

   Initial value: 10

   Touch the RTN button to end adjustment and return to the cursol move mode.

   *Adjust to the brightness while watching the screen display.

   *When you want to reset the contrast to the initial state, select "BACKLIGHT BRIGHTNESS" and touch the RTN button for 1 second.

Back-light off-timer

1. Select "Back-light timer" and touch the RTN button to switch to the data input mode and adjust the back-light off-timer by scrolling the touch sensor.

   "OFF TIMER": Adjust the time when the back-light turns off after operating the touch sensor.

   Setting range: 10 to 240 sec (each 10 sec), OFF (always on)

   Initial value: 10 sec

   *When you want to reset the value to the initial state, touch the RTN button for one second.

2. Touch the RTN button to end adjustment and return to the cursor mode.

   *If the back light is on for a long time, consumption current will increase.

Start lock

Auto Lock functions automatically when the model changes or power is turned on.

*To temporarily allow access to the FMT-01 programming press and hold the S1 button for one second. Please note, the Auto Lock function timer will resume immediately once again.

1. Select "STARTUP LOCK" and touch the RTN button to switch to the data input mode and adjust the ON or OFF by scrolling the touch sensor.

   Setting range: ON or OFF

   Initial value: OFF

Automatic lock

Auto Lock functions automatically when there is no operation from the HOME screen display for a chosen number of seconds.

1. Scrolling the touch sensor to select "AUTOMATIC LOCK" and touch the RTN button to switch to the data input mode and adjust the time by turning the touch sensor to the left and right.

   Setting range: INH, 0 to 120 (s)

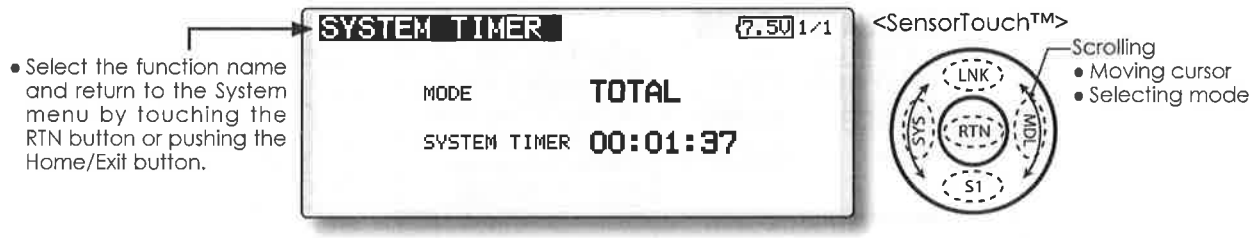
   Initial value: INH

SYSTEM TIMER Resets the accumulated timer.

This function resets the system timer displayed on the home screen.

- FMT-01 has two type system timers.
  TOTAL timer: Displays the total accumulated time on the transmitter from the last time the timer was reset.
  MODEL timer: Displays the total accumulated time on each model from the last time the timer was reset.
- System timer displayed on the home screen can be selected.

- Select [SYSTEM TIMER] at the system menu and call the setup screen shown below by touching the RTN button.



Timer selection

1. Move the cursor to the [MODE] item and touch the RTN button to switch to the data input mode.
   Select the mode by scrolling the touch sensor and touch the RTN button.
   TOTAL: Displays the total timer on the home screen.
   MODEL timer: Displays the model timer on the home screen.

Timer reset

1. Move the cursor to the [SYSTEM TIMER] item and reset the timer to "00:00:00" by touching the RTN button for 1 second. After reset, the timer restarts from "00:00:00".

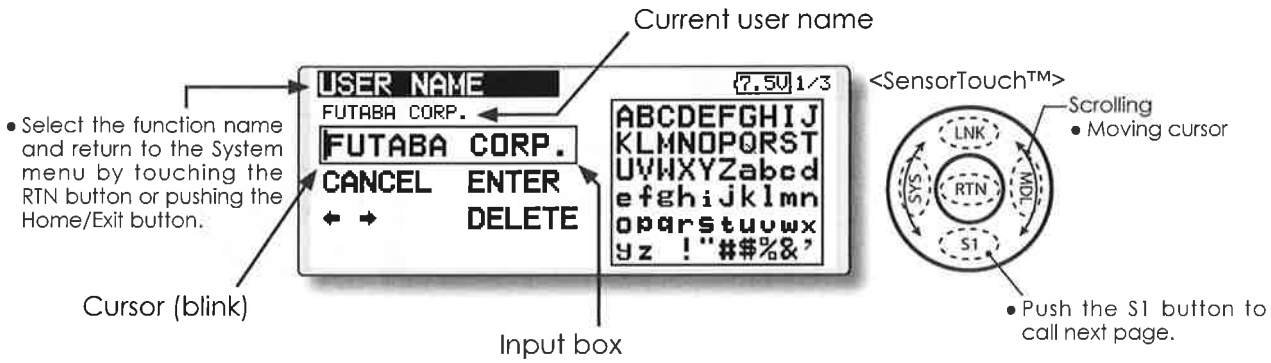
USER NAME

User name registration

This function registers the FMT-01 user name.

*A name of up to 12 characters can be entered as the user name. (Space is also counted as 1 character.)

- Select [USER NAME] at the system menu and call the setup screen shown below by touching the RTN button.



User name registration

1. Change the user name as described below:

   [Moving cursor in input box]

   Select [←] or [→], and touch the RTN button.

   [Deleting a character]

   When [DELETE] is selected and the RTN button is touched, the character immediately after the cursor is deleted.

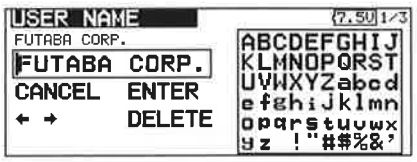
   [Adding a character]

   When a candidate character is selected from the character list and the RTN button is touched, that character is added at the position immediately after the cursor.

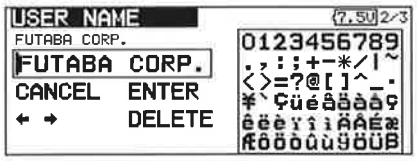
   *A name of up to 12 characters long can be entered as the user name. (A space is also counted as 1 character.)

2. At the end of input, select [ENTER] and touch the RTN button. (To terminate input and return to the original state, select [CANCEL] and touch the RTN button.)

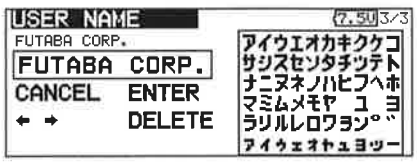
(Character list 1/3)



(Character list 2/3)



(Character list 3/3)



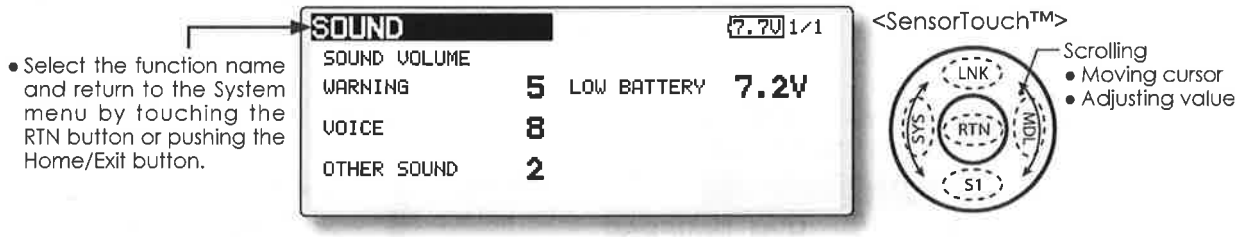
SOUND

Turns off the buzzer.

3 independent sound volumes: "WARNING", "VOICE" and others, are available.

"LOW BATTERY" adjusts low battery alarm voltage to match a battery.

• Select [SOUND] at the system menu and access the setup screen shown below by touching the RTN button.



• LOW BATTERY : 6.8V~7.6V

Sound volume operation

1. Move the cursor to the [WARNING][VOICE] or [OTHER SOUND] item and touch the RTN button to switch to the data input mode.
2. Select the volume by scrolling the touch sensor.
   *The display blinks.
3. Touch the RTN button.

Low battery voltage operation

1. Move the cursor to the [LOW BATTERY] item and touch the RTN button to voltage to the data input mode.
2. Select the voltage by scrolling the touch sensor. (6.8V-7.6V)
   *The display blinks.
3. Touch the RTN button.

H/W SETTING

Hardware reverse and stick mode, stick calibration, switch position

H/W reverse

This function reverses the operation signal of the sticks, switches, trimmer levers, and knobs.

Note: This setting reverses the actual operation signal, but does not change the display of the indicators on the display. Use the Normal mode as long as there is no special reason to use the Reverse mode.

Stick mode

This function changes the stick mode of transmitter.

Note: This will not change the throttle ratchet, etc. Those are mechanical changes that must be done by a Futaba service center.

Note: After changing the mode, it is applied when setting a new model. It is not applied to an existing model.

Stick calibration

J1-J4 stick correction can be performed.

Note: It does not carry out, when there is no necessity.

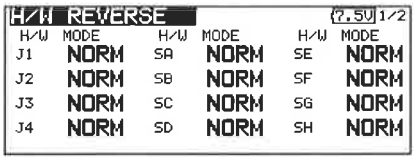
Switch

It inputs, when the kind of switch is changed or it adds.

- Select [H/W SETTING] at the system menu and call the setup screen shown below by touching the RTN button.

Operation direction reversal method

1.Select [H/W REVERSE] and call the setup screen shown below by touching the RTN button.



2.Use the touch sensor to move the cursor to the "MODE" item corresponding to the H/W (hardware) you want to reverse and touch the RTN button to switch to the data input mode.

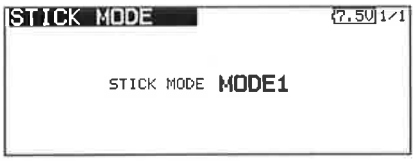
3. Change the mode by turning the touch sensor to the left or right. The display blinks. When the RTN button is touched, the operation direction is reversed. (To terminate mode change, turn the touch sensor or push the S1 button.)

"NORM": Normal operation direction

"REV" : Operation direction is reversed.

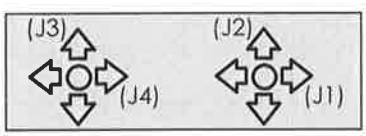
Operation direction reversal method

1.Select [STICK MODE] and call the setup screen shown below by touching the RTN button.



2. Use the touch sensor to move the cursor to the "STICK MODE" item and touch the RTN button to switch to the data input mode.

3. Change the mode by turning the touch sensor to the left or right. The display blinks. When the RTN button is touched, the stick mode is changed. (To terminate mode change, turn the touch sensor or push the S1 button.)

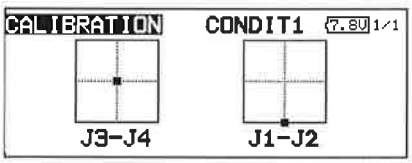


Mode	J1	J2	J3	J4
1	Aileron	Throttle	Elevator	Rudder
2	Aileron	Elevator	Throttle	Rudder
3	Rudder	Throttle	Elevator	Aileron
4	Rudder	Elevator	Throttle	Aileron

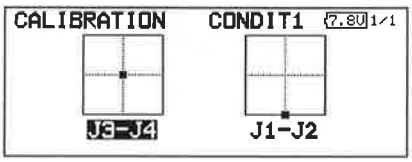
Stick calibration method

*J3 and J4 correction is described below. J1 and J2 corrections are performed using the same procedure.

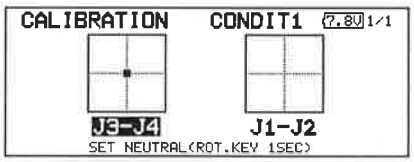
1.Select [CALIBRATION] and access the setup screen shown below by touching the RTN button.



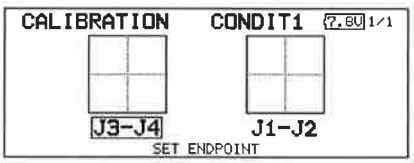
2.Move the cursor to the J3-J4 button and touch the RTN button.



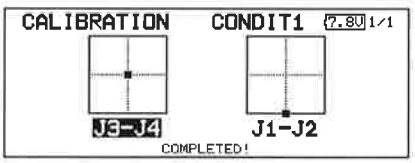
3.Move the J3 or J4 sticks to the neutral position and press the RTN button for one second.



4.Set the J3 and J4 sticks fully to the bottom right and wait until the buzzer sounds.



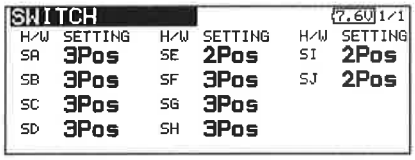
5.Set the J3 and J4 sticks fully to the top left and wait until the buzzer sounds.



6.The above completes the correction operation. Operate and check if stick correction was performed normally.

Operation switch setting method

1.Select [SWITCH] and call the setup screen shown below by touching the RTN button.



2.Use the touch sensor to move the cursor to the "SA-SJ" item corresponding to the switch you want to change and touch the RTN button to switch to the data input mode.

3. Change the "2Pos" or "3Pos" by turning the touch sensor to the left or right. The display blinks. It will decide, if the RTN button is pushed. (To terminate mode change, turn the touch sensor or push the S1 button.)

"3Pos": 3 position switch

"2Pos" : 2 position switch

INFORMATION Displays the program version, SD card information, and product ID.

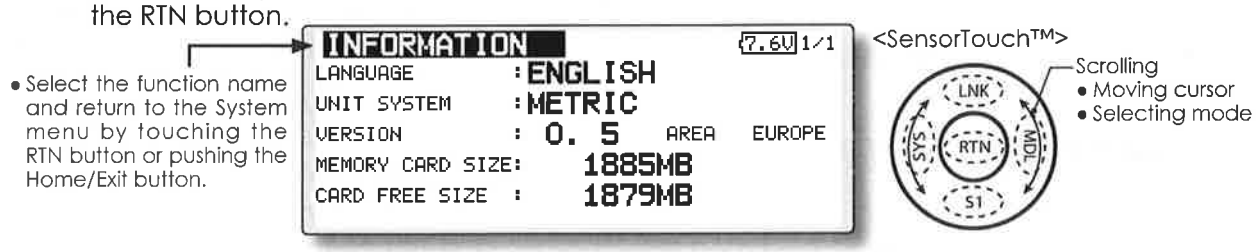
The FMT-01 system program version information, SD card information (maximum and vacant number of model data), and product ID are displayed on the Information screen.

*When the SD card is not inserted, the SD card information is not displayed.

The language displayed in home, menu, and setup screen is selectable.

Moreover, the unit of a telemetry display can also be changed.

- Select [INFORMATION] at the system menu and call the setup screen shown below by touching the RTN button.



Information

"VERSION": FMT-01 system program version information

"MEMORY CARD SIZE": Maximum number of model data (SD card)

"CARD FREE SIZE": Vacant number of model data (SD card)

Language selection

1. Use the touch sensor to move the cursor to the "LANGUAGE" item and touch the RTN button to switch to the data input mode.
2. Change the language by turning the touch sensor to the left or right. The display blinks. When the RTN button is touched, the language is changed. (To terminate mode change, turn the touch sensor or push the S1 button.)

Unit system selection

1. Use the touch sensor to move the cursor to the "UNIT SYSTEM" item and touch the RTN button to switch to the data input mode.
2. Change the unit by turning the touch sensor to the left or right. The display blinks. When the RTN button is touched, the unit is changed. (To terminate mode change, turn the touch sensor or push the S1 button.)

RANGE CHECK

Before a flight ground range check.

The 'range check mode' reduces the transmission range of the radio waves to allow for a ground range check.

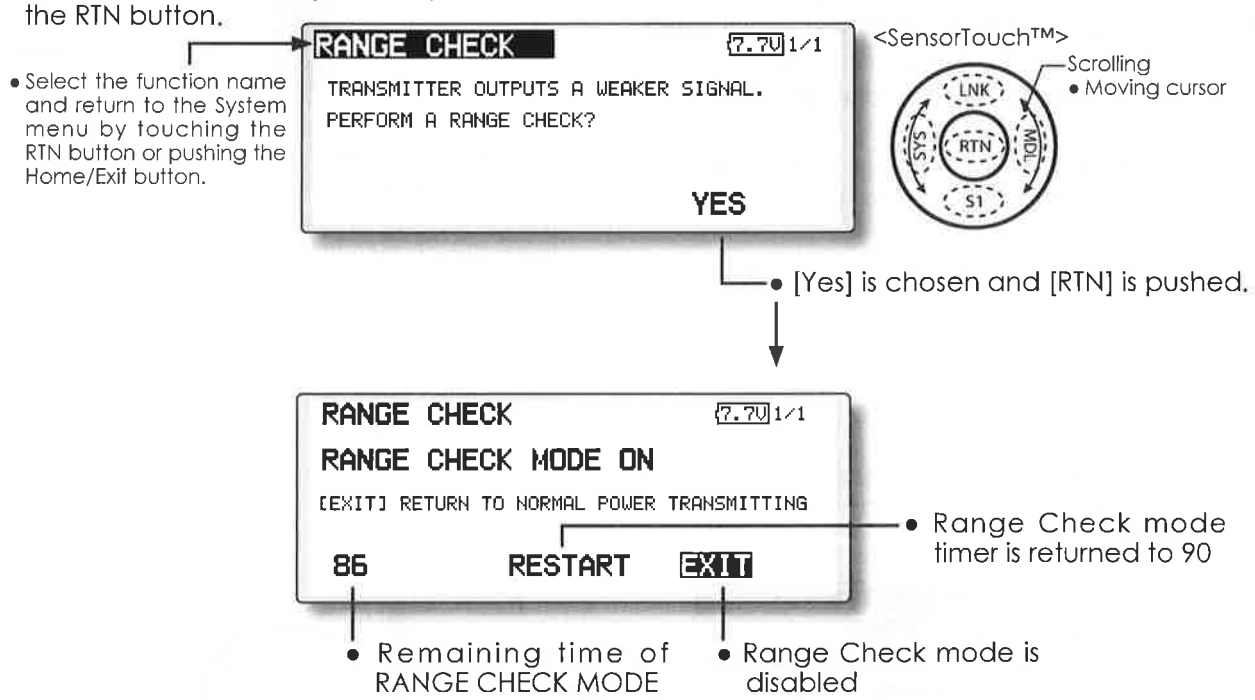
*The range check mode, when activated, will continue for90 seconds unless the user exits this mode early. When the progress bar reaches 90 second mark, the RF transmission automatically returns to the normal operating power.

⚠WARNING

Do not fly in the range check mode.

■ Since the range of the radio waves is short, if the model is too far from the transmitter, control will be lost and the model will crash.

- Pushing [U.menu/Mon]key is continued. → Turn ON the transmitter's power switch. (First, a throttle stick is made into a low position, and turns on a power supply.) It is displayed as "TRANSMIT?" . "NO" is chosen and [RTN] is pushed.
- Select [RANGE CHECK] at the system menu and call the setup screen shown below by touching the RTN button.



Rotation Range Check method

1. Pushing [U.menu/Mon]key is continued. → Turn ON the transmitter's power switch. (First, a throttle stick is made into a low position, and turns on a power supply.)

   It is displayed as "TRANSMIT?."

   "NO" is chosen and [RTN] is pushed.

   *For safety, the RANGE CHECK mode can not be selected while the RF transmission is active.

2. In the system menu, choose the 'Range Check' selection from the menu options.
3. The Range Check screen is displayed. To activate the Range Check mode press the [Yes] button. During the Range Check period, the RF power is reduced to allow the ground range tests to be performed.
4. The Range Check function automatically exits after the 90 second time limit has expired. The count down time is displayed on the transmitter's screen. Should you complete the range check before the 90 seconds has pressed, press the [Exit] button.

   *When the [RESTART] button is pressed, the range check mode timer is returned to 90.

   *Please note, upon expiration of the 90 seconds, or when [Exit] is selected, the transmitter will automatically return to the normal RF operation as noted on the display.

   *Once the FMT-01 is transmitting at full power, it is not possible to enter the Range Check mode without first switching the transmitter Off and back On. This has been designed to prevent a modeler from inadvertently flying in the Range Check mode.

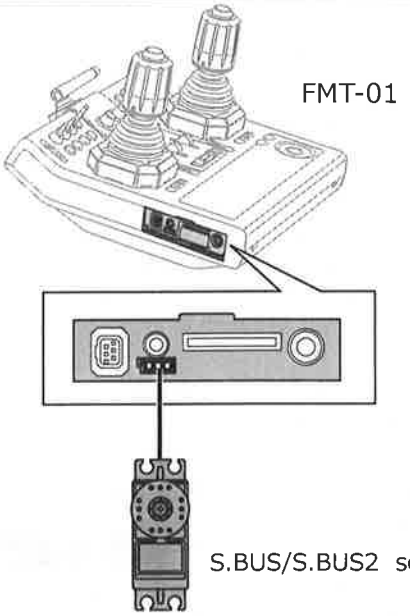
5. When the [Exit] button is pressed, the Range Check mode is disabled and the FMT-01 will begin transmitting at full power.

   *After exiting the Range Check mode, the function cannot be selected again. To select the Range Check mode again you must cycle the transmitter power switch.

S.BUS Servo

S.BUS/S.BUS2 servo setting

An S.BUS/S.BUS2 servo can memorize the channel and various settings itself. Servo setting can be performed on the FMT-01 screen by wiring the servo as shown in the figure.



* After reading completion, with connection of the above figure, if a stick is moved, the test of operation of the servo can be operated and carried out.

*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.

(It will damage, if it connects.)

*When you connect to a transmitter many servos which consume many current, please use "Another power supply HUB". And electric power is supplied to a servo with another power supply.

•Servo ID number

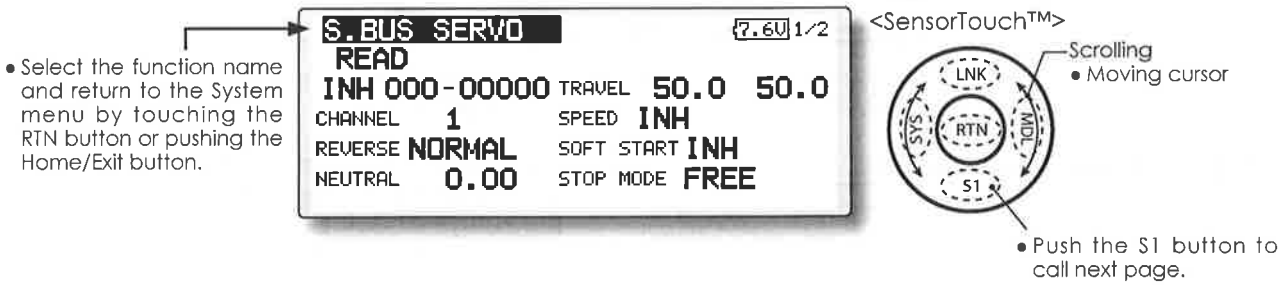
Individual ID numbers are memorized for your S.BUS servos in your FMT-01. When a servo is used (as shown at the right), the servo ID number is automatically read by the transmitter.

If you use multiple S.BUS servos and do not want to change the settings on all that are mounted in a fuselage, only the desired servo in the group can be set by entering the ID of that specific servo.

* With S.BUS/S.BUS2 servos of use, there are a function which can be used, and an impossible function and a display screen changes.

(Only the function which can be used by a servo is displayed.)

- Call the following setting screen by pressing the [S.BUS Servo] button in the System Menu.



Procedure for changing S.BUS/S.BUS2 servo setting

1. Select [S.BUS Servo] of the System Menu.
2. Wire the servo as shown in the figure above.
3. Press [READ]. The ID and current setting of that servo are displayed.
4. When multiple servos are connected change [INH] at the right side of the ID number on the screen to [ACT] and enter the ID of the servo you want to set.
5. Set each item. (Please see the next page.)
6. Press [WRITE]. The settings are changed.

S.BUS Servo Description of function of each parameter

*There are a function which can be used according to the kind of servo, and an impossible function.

- **ID**

  Displays the ID of the servo whose parameters are to be read. It cannot be changed.

- **Channel**

  Channel of the S.BUS system assigned to the servo. Always assign a channel before use.

- **Reverse**

  The direction in which the servo rotates can be changed.

- **Servo type**

  When "Retractable" is selected and the servo has been continuously stopped for 30 seconds, the dead band expands and unnecessary hold current due to external force is eliminated. When a new control signal enters, normal operation is resumed. When using the servo as a landing gear servo, select "Retractable". Also adjust the servo travel to match the landing gear movement range.

- **Soft Start**

  Restricts operation in the specified direction the instant the power is turned on. By using this setting, the first initial movement when the power is turned on slowly moves the servo to the specified position.

- **Stop Mode**

  The state of the servo when the servo input signal is lost can be specified. The "Hold" mode setting holds the servo in its last commanded position even if using AM or FM system.

- **Smoother**

  This function changes smoothness of the servo operation relative to stick movement changes. Smooth setting is used for normal flight. Select the "OFF" mode when quick operation is necessary such as 3D.

- **Neutral Offset**

  The neutral position can be changed. When the neutral offset is large value, the servo's range of travel is restricted on one side.

- **Speed Control**

  Speeds can be matched by specifying the operating speed. The speed of multiple servos can be matched without being affected by motor fluctuations. This is effective for load torques below the maximum torque.

  However, note that the maximum speed will not be exceed what the servo is capable of even if the servos operating voltage is increased.

- **Dead band**

  The dead band angle at stopping can be specified.

  [Relationship between dead band set value and servo operation]

  Small → Dead band angle is small and the servo is immediately operated by a small signal change.

  Large → Dead band angle is large and the servo does not operate at small signal changes.

  (Note) If the dead band angle is too small, the servo will operate continuously and the current consumption will increase and the life of the servo will be shortened.

- **Travel Adjust**

  The left and right travels centered about the neutral position can be set independently.

- **Boost**

  The minimum current applied to the internal motor when starting the servo can be set. Since a small travel does not start the motor, it essentially feels like the dead band was expanded. The motor can be immediately started by adjusting the minimum current which can start the motor.

  [Relationship between boost set value and servo operation]

  Small → Motor reacts to a minute current and operation becomes smooth.

  Large → Initial response improves and output torque increases. However, if the torque is too large, operation will become rough.

• **Boost ON/OFF**

OFF : It is the boost ON at the time of low-speed operation.(In the case of usual)

ON : It is always the boost ON.(When quick operation is hope)

• **Damper**

The characteristic when the servo is stopped can be set.

When smaller than the standard value, the characteristic becomes an overshoot characteristic. If the value is larger than the standard value, the brake is applied before the stop position.

Especially, when a large load is applied, overshoot, etc. are suppressed by inertia and hunting may occur, depending on the conditions. If hunting (phenomena which cause the servo to oscillate) occurs even though the Dead Band, Stretcher, Boost and other parameters are suitable, adjust this parameter to a value larger than the initial value.

[Relationship between damper set value and servo operation]

Small → When you want to overshoot. Set so that hunting does not occur.

Large → When you want to operate so that braking is not applied. However, it will feel like the servo response has worsened.

(Note) If used in the hunting state, not only will the current consumption increase, but the life of the servo will also be shortened.

• **Stretcher**

The servo hold characteristic can be set. The torque which attempts to return the servo to the target position when the current servo position has deviated from the target position can be adjusted.

This is used when stopping hunting, etc., but the holding characteristic changes as shown below.

[Relationship between stretcher and servo operation]

Small → Servo holding force becomes weaker.

Large → Servo holding force becomes stronger.

(Note) When this parameter is large, the current consumption increases.

• **Buzzer**

When the power supply of a servo is previously turned on at the time of a power supply injection without taking transmit of a transmitter, the buzzer sound of about 2.5 Hz continues sounding from a servo.

(Even when the transmit of a transmitter is taken out previously, a buzzer becomes until the signal of a servo is outputted normally, but it is not unusual.)

The transmitter has been turned OFF ahead of a servo power supply → The buzzer sound of about 1.25 Hz continues sounding as servo power supply end failure alarm.

(Do not insert or remove the servo connector while the receiver power is ON. A buzzer may sound by incorrect recognition.)

＊ Buzzer sound is generated by vibrating the motor of a servo.

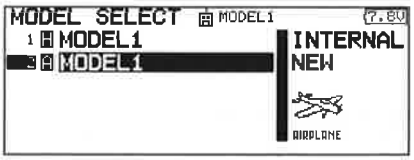
Since current is consumed and a servo generates heat, please do not operate the number more than needed or do not continue sounding a buzzer for a long time.

MODEL BASIC SETTING PROCEDURE

Airplane/glider basic setting procedure

1. Model addition and call

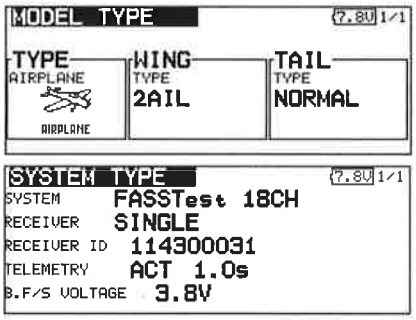
Initial setting assigns 1 model to the FMT-01 transmitter. The Model Select function of the Linkage Menu is used to add models and to select models which are already set.



The data for up to 30 models can be saved to the transmitter. Data can also be saved to the optional SD card.

The currently selected model name is displayed at the top of the screen. Before flying and before changing any settings, always confirm the model name.

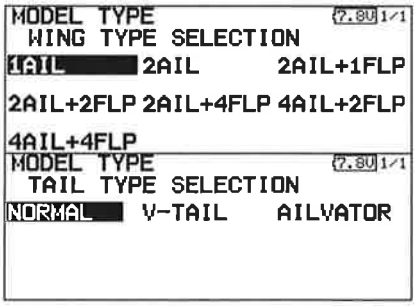
When a new model is added, the Model type select screen and System/Receiver ID setup screen automatically appear. Please be aware that the transmitter will stop transmitting when you change the model.



2. Model type selection

Select the model type matched to the aircraft with the Model Type select function of the Linkage Menu. For an airplane, select the model type from among the 2 types: airplane and glider. After the wing type is selected the tail type select screen is displayed. Select the tail type matched to the aircraft.

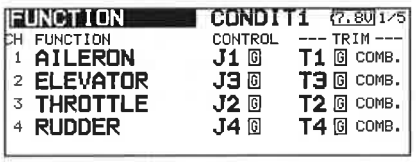
There are 13 wing types and 3 tail types for airplane and glider.



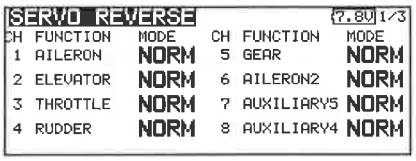
3. Fuselage linkage

Connect the ailerons, elevators, throttle, rudder, etc. in accordance with the model's instruction manual. For a description of the connection method, see the Receiver and Servos Connection.

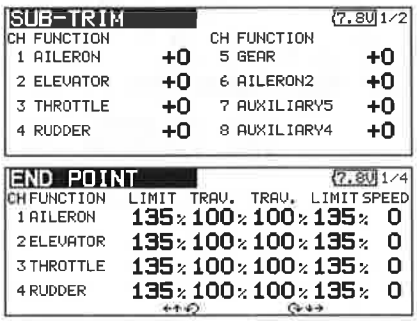
Note: The channel assignment of the FMT-01 is different from that of our existing systems. Note that even for the same "airplane model", when the wing type and tail type are different, the channel assignment may be different. (The channel assigned to each function can be checked at the Function menu of the Linkage Menu.)



- If the direction of the servo is incorrect, adjust the direction with the Reverse function of the Linkage Menu.



- Adjust the neutral position and control surface angle with the linkage, and fine tune them with the Sub Trim and End Point functions (angle adjustment). To protect the linkage, a limit position can also be set with the End Point function. The End Point function can adjust the amount of up/down and left/right movement, limit, and servo speed of each channel.

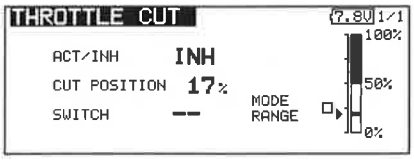


4. Throttle cut setting

Throttle cut can be performed with one touch by a switch without changing the throttle trim position.

Set throttle cut with the Throttle Cut function of the Linkage Menu. After activating the throttle cut function and selecting the switch, adjust the throttle position so that the carburetor becomes fully closed. For safety, the

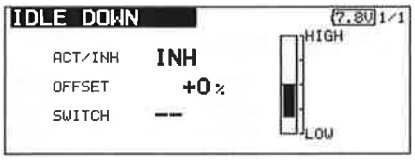
throttle cut function operates the throttle stick in the 1/3 or less (slow side) position.



5. Idle down setting

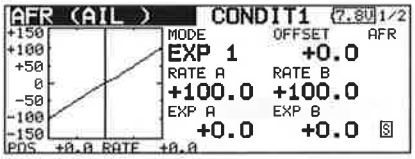
The idling speed can be lowered with one touch by a switch without changing the throttle trim position. Perform this setting with the Idle Down function of the Linkage Menu. After activating the Idle Down function and selecting the switch, adjust the idle down speed. For safety, the idle down function acts only when the throttle stick is slow side.

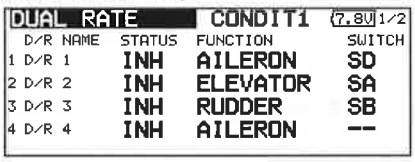
*While the Throttle Cut function is in operation, the Idle Down function does not work.



6. AFR (D/R)

AFR function is used to adjust the throw and operation curve of the stick, lever, and switch functions for each flight condition. This is normally used after End Point has defined the maximum throw directions.



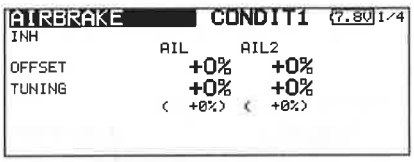


7. Airbrake

This function is used when an air brake is necessary when taking off or diving, etc.

The preset elevators and flaps (camber flap, brake flap) offset amount can be activated by a switch.

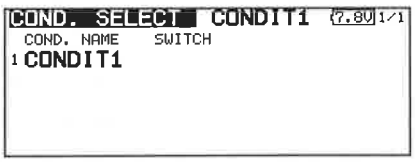
The offset amount of the aileron, elevator, and flap servos can be adjusted as needed. Also the speed of the aileron, elevator, and flap servos can be adjusted. (IN side/OUT side) A delay can be set for each condition, and a Cut switch which will turn OFF the delay can be chosen. Trim amounts can be fine-tuned by setting a VR. You can also set the Auto Mode, which will link Airbrake to a stick, switch, or dial. A separate stick switch or dial can also be set as the ON/OFF switch.



8. Addition of flight conditions

The Condition Select function automatically allocates the Condition 1 (CONDIT1) for each model. Condition 1 is the default condition and is the only one active when a new model type is defined.

If you want to add flight conditions, please refer to a description of the COND. SELECT function.



*The Condition 1 is always on, and remains on until other conditions are activated by switches.

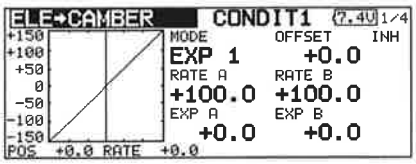
*When a new condition is added, the model data of the Condition 1 is automatically copied to the new condition.

*You can set the model data of new condition in the switch ON state. However, if the group mode (GROUP) was selected in advance, the same data will be input at all the conditions. Select the single mode (SINGLE) and adjust only the condition you want to change. For Group/Single mode switching, refer to the description at the back of this manual.

*The Condition Delay can be programmed for each channel. The Condition Delay is used to change the servo throw smoothly when switching conditions.

9. When tailless wing model selected

Tailless wing elevator operation uses elevator to camber mixing. This function cannot be performed at initial setting.

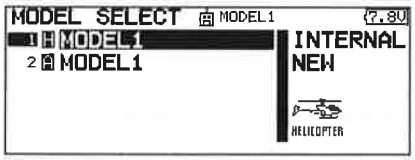


Helicopter basic setting procedure

This section outlines examples of use of the helicopter functions of the FMT-01. Adjust the actual values, etc. to match the fuselage used.

1. Model addition and call

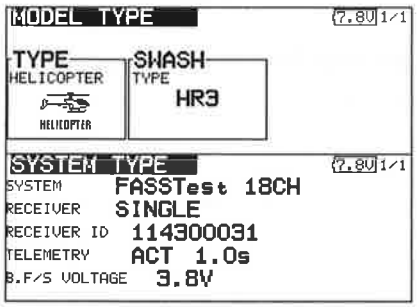
Default setting assigns 1 model to the FMT-01. To add new models or to call a model already set, use the Model Select function of the Linkage Menu.



This is convenient when calling a model after registering the model names in advance. (The data of up to 30 models can be saved at the transmitter. Data can also be saved to the optional SD card.)

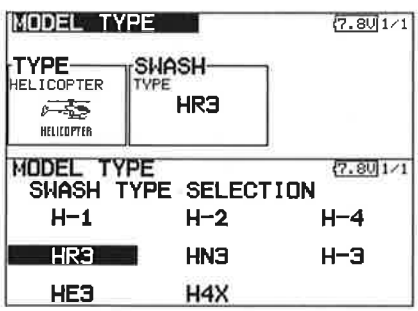
The currently called model is displayed at the top of the screen. Before flying and before changing any settings, always confirm the model name.

When a new model is added, the Model Type Select screen and Frequency/Modulation mode/ Receiver ID setup screen automatically appear. Change, or check that they match the type, frequency, and receiver type of the model used.



2. Model type and swash type selection

If a different model type is already selected, select helicopter with the Model Type function of the Linkage Menu, and then select the swash type matched to the helicopter.

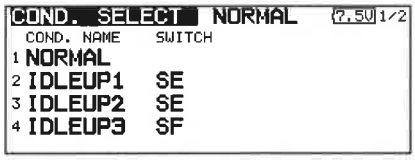


*The Model Type function automatically selects the appropriate output channels, control functions, and mixing functions for the chosen model type. Eight swash types are available for helicopters.

*For a description of the swash type selection, refer to the MODEL TYPE function.

3. Flight condition addition

The transmitter can install up to eight flight conditions per model.



The Condition Select function automatically allocates five conditions for helicopter.

(Initial setting)

- NORMAL
- IDLE UP1 (SW-E)
- IDLE UP2 (SW-E)
- IDLE UP3 (SW-F)
- HOLD (SW-G)

Note: Since you may accidentally activate the conditions that has not been setup during flight and this could cause a crash, delete the conditions not used.

*For a description of the condition deletion, refer to the COND. SELECT function.

The NORMAL condition is always on, and remains on until other conditions are activated by switches.

The priority is throttle hold/idle up 2/idle up 1/normal. Throttle hold has the highest priority.

Add other conditions, as required.

The Condition Delay can be programmed for each channel. The Condition Delay is used to change the servo throw smoothly when switching conditions.

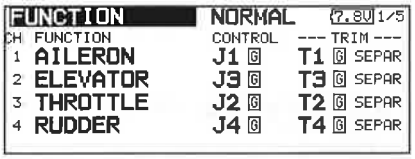
(General flight condition setting example)

- Normal: (Use initial setting conditions/operate when switch OFF)
  Use from engine starting to hovering.
- Idle up 1: (Operate at SW-E center)
  Use in 540° stall turn, loop, rolling stall turn, and other maneuvers.
- Idle up 2: (Operate at SW-E forward side)
  Use in rolls.
- Throttle hold: (Operate at SW-G forward side)
  Use in auto rotation.

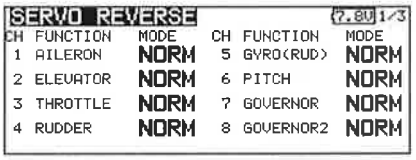
4. Fuselage linkage

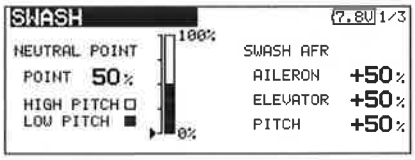
Connect the throttle rudder, aileron, elevator, pitch, and other servos in accordance with the kit instruction manual. For a description of the connection method, see "Receiver and Servos Connection".

Note: The channel assignment of the FMT-01 is different from that of our existing systems. (The channel assigned to each function can be checked at the Function menu of the Linkage Menu.)

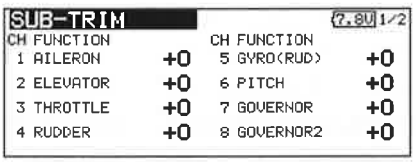


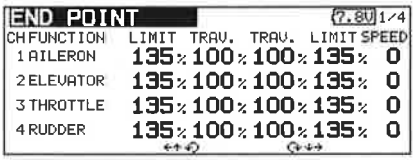
- If the direction of operation of the servo is incorrect, use the Reverse function of the Linkage Menu. Also use the swash AFR function in other than the H-1 mode.





- Adjust the direction of operation of the gyro. (Gyro side function)
- Connect the throttle linkage so that the carburetor can fully close at full trim throttle cut.
- Adjust the neutral position at the linkage side and fine tune with the Sub-Trim function and End Point function (rudder angle adjustment). To protect the linkage, a limit position can also be set with the End Point function.



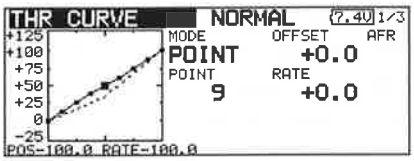


- Swash plate correction (Except H-1 mode)

*If any interactions are noticed, for a description of the linkage correction function, please refer to the SWASH function.

5. Throttle/Pitch curve setting

This function adjusts the throttle or pitch operation curve in relation to the movement of the throttle stick for each condition.



<Throttle curve setting example>

Call the throttle curve of each condition with the condition select switch.

- Normal curve adjustment
  Normal curve creates a basic throttle curve centered near hovering. This curve is adjusted together with the pitch curve (Normal) so that the engine speed is constant and up/down control is easiest.
- Idle up curve adjustment
  The low side Throttle curve creates a curve matched for aerobatics (loop, roll, 3D, etc.).
- Throttle hold curve adjustment
  The curve is not used when performing auto rotation dives.
  Confirm that the rate of the slowest position (0%) of the stick is 0% (initial setting).

<Example of pitch curve setting>

Call the pitch curve of each condition with the condition select switch.

- Pitch curve (Normal)
  Make the pitch at hovering approximately +5°~6°. Set the pitch at hovering with the stick position at the 50% point as the standard.

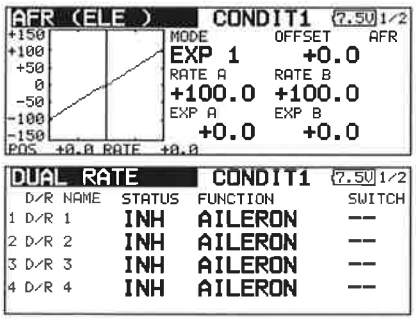
  *Stability at hovering may be connected to the throttle curve. Adjustment is easy by using the hovering throttle function and hovering pitch function together.
- Pitch curve (Idle up 1)
  The idle up 1 pitch curve function creates a curve matched to airborne flight.
  Set to -7°~+12° as standard.
- Pitch curve (Idle up 2)
  The high side pitch setting is less than idle up 1.
  The standard is +8°.
- Pitch curve (Hold)
  At auto rotation, use the maximum pitch at both the high and low sides.
  [Pitch angle setting example]
  Throttle hold: -7°~+12°

6. AFR (D/R)

AFR (D/R) function is used to adjust the throw and operation curve of aileron, elevator and rudder for each condition.

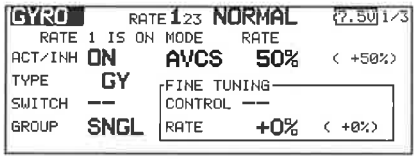
*For throttle and pitch curve settings, refer to the above-mentioned "Throttle/Pitch curve setting"

This is normally used after End Point has defined the maximum throw directions.



7. Gyro sensitivity and mode switching

The gyro sensitivity and mode switching function is dedicated gyro mixing of the Model Menu, and can be set for each condition.



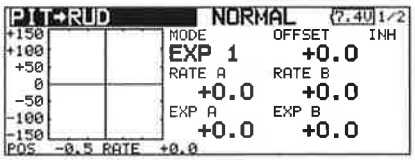
- Normal condition (hovering): Gyro sensitivity maximum
- Idle up 1/Idle up 2/Throttle hold: Gyro sensitivity minimum
- However, at auto rotation of a tail-driven helicopter, this function may not have any effect at high gyro sensitivity.

8. Pitch to RUD mixing setting

Note: When using a GY601, GY502, GY401, or other heading hold gyro, this Pitch to RUD mixing should not be used. The reaction torque is corrected at the gyro side. When operating the gyro in the AVCS mode, the mixed signal will cause neutral deviation symptoms and the gyro will not operate normally.

Use this function when you want to suppress the torque generated by the changes in the pitch and speed of the main rotor during pitch operation. Adjust it so that the nose does not swing in the rudder direction. However, when using a heading hold gyro like those shown below, do not use Pitch to RUD mixing.

Call the Pitch to RUD mixing function from the Model Menu, and set the curve for each condition. (At initial setting, this function is in the "INH" state. To use it, set it to the "ON" state.)



<Setting example>

Call the mixing curve of each condition with the condition select switch.

1. A curve setting example is shown below.

- Pitch to RUD mixing curve (Normal)
  Use the hovering system and set this curve to match take off and landing and vertical climb at a constant speed.

  *For this curve, use the initial setting [EXP1] curve type.

- Pitch to RUD mixing (Idle up 1)
  Use this curve in 540° stall turn, loop, and rolling stall turn, and adjust it so the fuselage is facing straight ahead when heading into the wind.

  *For this curve, [EXP1] curve type can be used and the entire curve can be lowered with the [Offset] function.

- Pitch to RUD mixing (Hold)
  This function is set so that the fuselage is facing straight ahead at straight line auto rotation. The pitch of the tail rotor becomes nearly 0°.

  *For this curve, [EXP1] curve type can be used and the entire curve can be lowered with the [Offset] function.

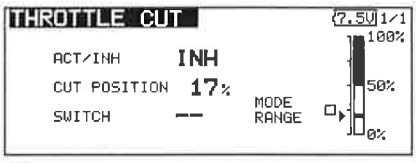
- Other settings
  The mixing rise characteristic at pitch operation can be adjusted. An acceleration function which temporarily increases and decreases the mixing amount can be set.

9. Throttle hold setting

*If throttle hold is necessary, please refer to the THR HOLD function.

10. Throttle cut setting

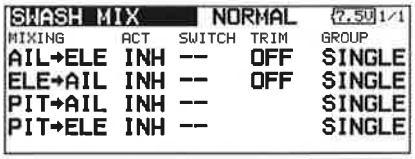
Throttle cut provides an easy way to stop the engine, by flipping a switch with the throttle stick at idle. The action is not functional at high throttle to avoid accidental dead sticks. The switch's location and direction must be chosen, as it defaults to NULL.



*With throttle stick at idle, adjust the cut position until the engine consistently shuts off, but throttle linkage is not binding.

11. Swash Mix corrects aileron, elevator and pitch interaction

The swash mix function is used to correct the swash plate in the aileron (Left/Right Cyclic) and elevator (Forward/Aft Cyclic) direction corresponding to each operation of each condition.



12. Throttle mixing setting

*If throttle mixing is necessary for a compensation for slowing of engine speed caused by swash plate operation during aileron or elevator operation, please refer to the THROTTLE MIX function.

13. Other special mixings

- Pitch to Needle mixing
  This mixing is used with engines with a construction which allows needle control during flight (fuel-air mixture adjustment). A needle curve can be set. The needle servo rise characteristics at throttle stick acceleration/deceleration operation can be adjusted. (Acceleration function)
- Governor mixing
  This mixing is dedicated governor mixing when a governor is used. Up to 3 rates (speeds) can be switched for each condition.

Servo connection by model type

The FMT-01 transmitter channels are automatically assigned for optimal combination according to the type selected with the Model Type function of the Linkage Menu. The channel assignment (initial setting) for each model type is shown below. Connect the receiver and servos to match the type used.

*The set channels can be checked at the Function screen of the Linkage Menu. The channel assignments can also be changed. For more information, read the description of the Function menu.

Airplane/glider/motor glider

•Airplane and V tail

RX CH	1AIL			2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Aileron2	Aileron2	Aileron2
6	Airbrake	Airbrake	Airbrake	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	Flap	Flap	Flap	Flap2	Flap2	Flap2
8	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	AUX5	AUX5	AUX5	Gear	AUX6	AUX6
9	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	AUX4	AUX4	AUX4	AUX5	AUX5	AUX5
10	AUX2	AUX2	AUX2	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3	AUX4	AUX4	AUX4
11	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3
12	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2
13	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
14	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
15	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
16	AUX1	AUX1	AUX1	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW

The output CH of each system

FASST 7CH

S-FHSS

FASSTest 12CH

FASSTest 18CH

FASST MULT

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Rudder	Rudder	Throttle	Rudder	Rudder	Throttle	Rudder	Rudder
4	Rudder	Aileron2	Aileron2	Rudder	Aileron2	Aileron2	Rudder	Aileron2	Aileron2
5	Gear	Flap	Flap	Gear	Aileron3	Aileron3	Gear	Aileron3	Aileron3
6	Aileron2	Flap2	Flap2	Aileron2	Aileron4	Aileron4	Aileron2	Aileron4	Aileron4
7	Flap	Flap3	Flap3	Aileron3	Flap	Flap	Aileron3	Flap	Flap
8	Flap2	Flap4	Flap4	Aileron4	Flap2	Flap2	Aileron4	Flap2	Flap2
9	Flap3	Motor	AUX7	Flap	Motor	AUX7	Flap	Flap3	Flap3
10	Flap4	AUX6	AUX6	Flap2	AUX6	AUX6	Flap2	Flap4	Flap4
11	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	Flap3	Motor	AUX7
12	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	Flap4	AUX6	AUX6
13	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5
14	AUX2	AUX2	AUX2	AUX2	AUX2	AUX2	AUX4	AUX4	AUX4
15	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly	AUX3	Butterfly	Butterfly
16	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW

The output CH of each system

FASST 7CH

S-FHSS

FASSTest 12CH

FASSTest 18CH

FASST MULT

●Ailevator

RX CH	1AIL			2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2
6	Airbrake	Airbrake	Airbrake	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2
7	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Flap	Flap	Flap	Flap	Flap	Flap
8	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	Gear	AUX6	AUX6	Flap2	Flap2	Flap2
9	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	AUX5	AUX5	AUX5	Gear	AUX6	AUX6
10	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	AUX4	AUX4	AUX4	AUX5	AUX5	AUX5
11	AUX2	AUX2	AUX2	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3	AUX4	AUX4	AUX4
12	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3
13	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2
14	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
15	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
16	AUX1	AUX1	AUX1	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW

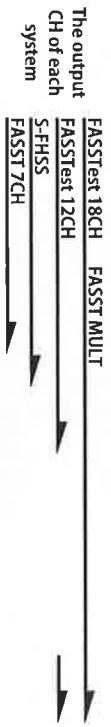
The output CH of each system
FASSTest 18CH FASST MULT
FASSTest 12CH
S-FHSS
FASST 7CH

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2
6	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2
7	Flap	Flap	Flap	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3
8	Flap2	Flap2	Flap2	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4
9	Flap3	Flap3	Flap3	Flap	Flap	Flap	Flap	Flap	Flap
10	Flap4	Flap4	Flap4	Flap2	Flap2	Flap2	Flap2	Flap2	Flap2
11	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Flap3	Flap3	Flap3
12	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	Flap4	Flap4	Flap4
13	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	Gear	AUX6	AUX6
14	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5
15	AUX2	Butterfly	Butterfly	AUX2	Butterfly	Butterfly	AUX4	Butterfly	Butterfly
16	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW

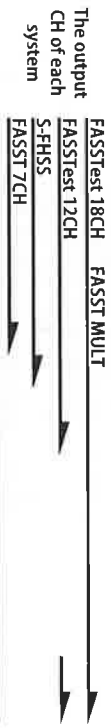
The output CH of each system
FASSTest 18CH FASST MULT
FASSTest 12CH
S-FHSS
FASST 7CH

•Tailless wing

RX CH	2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Aileron2	Aileron2	Aileron2
6	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	AUX5	AUX5	AUX5	Flap	Flap	Flap	Flap2	Flap2	Flap2
8	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5	Gear	AUX6	AUX6
9	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5
10	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3
11	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2
12	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
13	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
14	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
15	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
16	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW

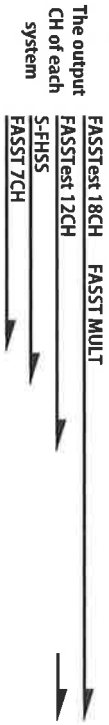


RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Flap	Flap	Flap	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3
6	Flap2	Flap2	Flap2	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4
7	Flap3	Flap3	Flap3	Flap	Flap	Flap	Flap	Flap	Flap
8	Flap4	Flap4	Flap4	Flap2	Flap2	Flap2	Flap2	Flap2	Flap2
9	AUX4	AUX4	AUX4	AUX4	AUX4	AUX4	Flap3	Flap3	Flap3
10	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Flap4	Flap4	Flap4
11	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	AUX4	AUX4	AUX4
12	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	Gear	AUX6	AUX6
13	AUX2	AUX2	AUX2	AUX2	AUX2	AUX2	AUX5	AUX5	AUX5
14	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly	AUX3	Butterfly	Butterfly
15	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
16	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW

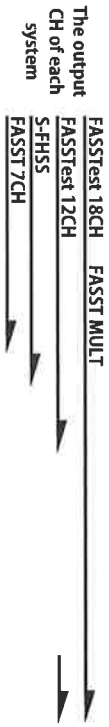


•Tailless wing Winglet 2Rudder

RX CH	2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	RUD2	RUD2	RUD2	RUD2	RUD2	RUD2	RUD2	RUD2	RUD2
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Aileron2	Aileron2	Aileron2
6	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	AUX5	AUX5	AUX5	Flap	Flap	Flap	Flap2	Flap2	Flap2
8	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5	Gear	AUX6	AUX6
9	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3	AUX5	AUX5	AUX5
10	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2	AUX3	AUX3	AUX3
11	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX2	AUX2	AUX2
12	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
13	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
14	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
15	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
16	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW



RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2	Aileron2
3	Throttle	Motor	AUX7	Throttle	Motor	AUX7	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Flap	Flap	Flap	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3	Aileron3
6	Flap2	Flap2	Flap2	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4	Aileron4
7	Flap3	Flap3	Flap3	Flap	Flap	Flap	Flap	Flap	Flap
8	Flap4	Flap4	Flap4	Flap2	Flap2	Flap2	Flap2	Flap2	Flap2
9	RUD2	RUD2	RUD2	RUD2	RUD2	RUD2	Flap3	Flap3	Flap3
10	Gear	AUX6	AUX6	Gear	AUX6	AUX6	Flap4	Flap4	Flap4
11	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	RUD2	RUD2	RUD2
12	AUX3	AUX3	AUX3	AUX3	AUX3	AUX3	Gear	AUX6	AUX6
13	AUX2	AUX2	AUX2	AUX2	AUX2	AUX2	AUX5	AUX5	AUX5
14	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly	AUX3	Butterfly	Butterfly
15	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber	Camber
16	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
DG1	SW	SW	SW	SW	SW	SW	SW	SW	SW
DG2	SW	SW	SW	SW	SW	SW	SW	SW	SW



* Output channels differ by each system of a table. When using a system with few channels, there is a wing type which cannot be used. It cannot be used when there is a function required out of the range of the arrow of a figure.

Helicopter

•FASSTest 18CH / FASST MULTI / FASST 7CH / S-FHSS

CH	H-4/H-4X Swash	All Other
1	Aileron	Aileron
2	Elevator	Elevator
3	Throttle	Throttle
4	Rudder	Rudder
5	Gyro	Gyro
6	Pitch	Pitch
7	Governor	Governor
8	Elevator2	Governor2
9	GYRO2	GYRO2
10	GYRO3	GYRO3
11	Governor2	Needle
12	Needle	AUX5
13	AUX4	
14	AUX3	
15	AUX2	
16	AUX1	
DG1 DG2	SW	

The output CH of each system
FASST 7CH
S-FHSS
FASSTest 18CH
FASST MULT

•FASSTest 12CH

CH	H-4/H-4X Swash	All Other
1	Aileron	Aileron
2	Elevator	Elevator
3	Throttle	Throttle
4	Elevator2	Rudder
5	Pitch	Pitch
6	Gyro	Gyro
7	Governor	Governor
8	Rudder	Governor2
9	GYRO2	GYRO2
10	GYRO3	GYRO3
DG1 DG2	SW	

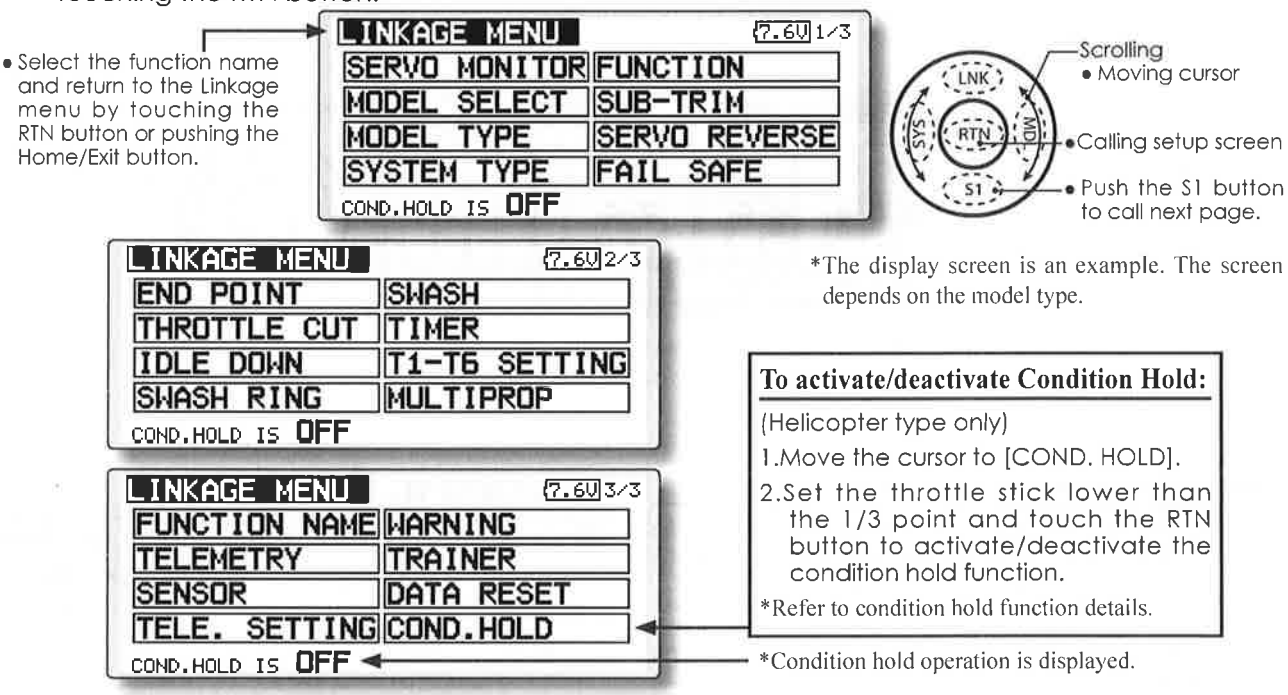
The output CH of each system
FASSTest 12CH

FUNCTIONS OF LINKAGE MENU

The Linkage Menu is made up of functions which perform model addition, model type selection, frequency setting, end point setting, and other model basic settings.

- Select [LINKAGE] at the home screen and call the linkage menu shown below by touching the RTN button.
- Use the touch sensor to select the function you want to set and call the setup screen by touching the RTN button.

The functions which can be selected depend on the model type. A typical menu screen is shown below.



*The display screen is an example. The screen depends on the model type.

To activate/deactivate Condition Hold:

(Helicopter type only)

1.Move the cursor to [COND. HOLD].

2.Set the throttle stick lower than the 1/3 point and touch the RTN button to activate/deactivate the condition hold function.

*Refer to condition hold function details.

*Condition hold operation is displayed.

Linkage Menu functions table

[SERVO MONITOR]: Displays the servo test and operation position
[MODEL SELECT]: Model addition, call, deletion, copy, model name setting
[MODEL TYPE]: Model type, wing type, swash type, etc. selection
[SYSTEM TYPE]: System mode selection, link of a transmitter and receiver, area mode selection
[FUNCTION]: Channel assignment of each function can be changed
[SUB-TRIM]: Adjusts the neutral position of each servo
[SERVO-REVERSE]: Servo direction reversal
[FAIL SAFE]: Fail safe function and battery fail safe function setting
[END POINT]: Servo basic rudder adjustment and limit setting
[THROTTLE CUT]: Stops the engine safely and easily (airplane and helicopter only)
[IDLE DOWN]: Lowers the idle speed of the engine (airplane and helicopter only)
[SWASH RING]: Limits the swash plate travel to within a fixedrange. (helicopter only)
[SWASH]: Swash AFR and linkage correction function (helicopter only)
[TIMER]: Timer setting
[T1-T6 SETTING]: Control step amount and mode selection of the digital trim
[MULTIPROP]: CH is extended by MPDX-1 of an option
[FUNCTION NAME]: Function name can be changed
[TELEMETRY]: Displays various data sent from the receiver
[SENSOR]: Various telemetry sensors setting
[TELE.SETTING]: Various telemetry sensors setting
[WARNING]: Mixing warning normal reset
[TRAINER]: Starts and sets the trainer system.
[DATA RESET]: Model memory set data reset (by item)
[COND. HOLD]: Condition hold function (helicopter only)

SERVO MONITOR

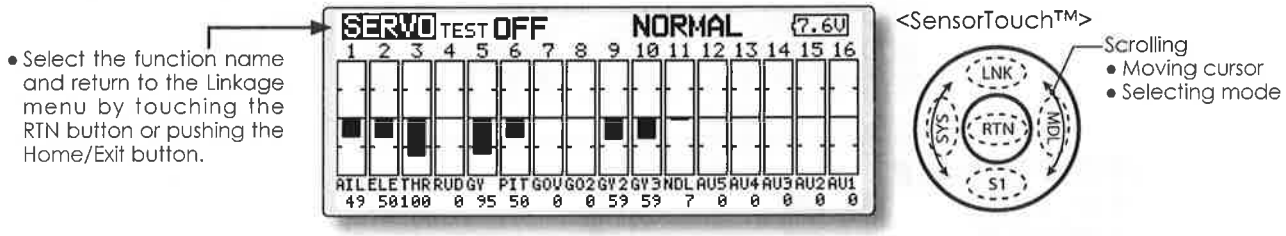
Servo Test & Graph Display / Displays servo positions.

This is used for testing servo movement. "Moving Test" (repetition mode) and "Neutral Test" (fixed position mode) are available.

The "Neutral Test" is good for finding the neutral position of a servo horn.

In order to prevent any potential difficulties, the servo test function will be inoperable, or inaccessible, under certain conditions. Specifically, the Servo Test function is not operational if the Throttle Cut is ON in either airplane or helicopter modes; or if the Throttle Hold is ON in Helicopter mode.

- Select [SERVO MONITOR] at the linkage menu and call the setup screen shown below by touching the RTN button.



*The display screen is an example. The screen depends on the model type.

Servo test operation

1. Use the touch sensor to move the cursor to the [TEST] item and touch the RTN button to switch to the data input mode.

   Select the test mode by turning the touch sensor to the left or right and touch the RTN button.

   [MOVING]: Mode which repeats operation of each servo

   [NEUTRAL]: Mode which locks each servo in the neutral position

2. Use the touch sensor to move the cursor to the [TEST] item and touch the RTN button to switch to the data input mode.

   Select the [OFF] by turning the touch sensor and touch the RTN button. Testing is stopped.

⚠ WARNING

Don't set a servo test mode when the drive motor is connected and the engine was started.

■ Inadvertent rotation of the motor or acceleration of the engine is extremely dangerous.

MODEL SELECT

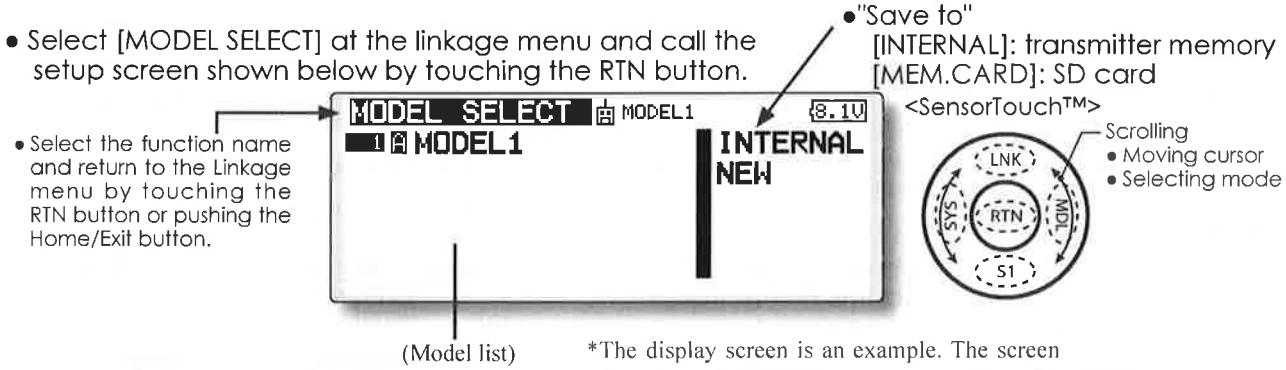
The Model Selection function performs model addition, call, deletion, copy, and model name setting.

This function is used to load the settings of the desired model into the FMT-01's memory.

The settings may be selected from either the transmitter's built-in memory or a SD card (32MB-2GB). Remember that up to 30 model memories are available in the transmitter.

The name of the model stored in the transmitter and the SD card may be changed. This can be very useful to tell different models settings apart. Each model name can be as long as 15 characters, and the model name always appears in the display screen.

The Copy function is used to copy one set of model data into a second memory within the transmitter and the SD card. It may be used for getting a head-start on setting up models with almost the same settings (only differences need to be modified, instead of entering the complete model from scratch). Also, this function may be used to make a backup copy of a model setup before any changes are made.



*The display screen is an example. The screen depends on the model type.

Model call

*Model data saved at models other than the model currently used or saved on a SD card can be called.

1. Use the touch sensor to move to the save destination ("INTERNAL" or "MEM.CARD") and touch the RTN button to switch to the data input mode.

   Select the location which is to save the desired model by turning the touch sensor to the left or right. Touch the RTN button.

   [INTERNAL]: Transmitter memory

   [MEM. CARD]: SD card
2. After using the touch sensor to move the cursor to the desired model in the model list, touch the RTN button.
3. Use the touch sensor to move to [SELECT].
4. Touch the RTN button. When a confirmation message is displayed and the RTN button is touched again, calling is complete.

*Transmission stops and a send with new model confirmation message ("TRANSMIT?") appears.

5. To start transmission, use the touch sensor to select [YES] and then touch the RTN button.

   To not transmit, select [NO] and touch the RTN button.

Model addition

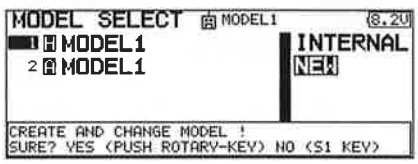
*A new model can be added to the transmitter memory or SD card.

1. Use the touch sensor to move the cursor to the save destination ("INTERNAL" or "MEM. CARD) and touch the RTN button to switch to the data input mode.

   Select the save destination by turning the touch sensor to the left or right. Touch the RTN button.

   [INTERNAL]: Transmitter memory

   [MEM. CARD]: SD card
2. Use the touch sensor to move to [NEW].
3. Press the RTN button. A confirmation message appears. Press the RTN button again.



*The model type setup screen and frequency setup screen are automatically displayed. Confirm or change the model type and frequency.

*A starting transmission with new model confirmation message ("TRANSMIT") appears.

4. To start transmission, use the touch sensor to select [YES] and then touch the RTN button.

   To not transmit, select [NO] and touch the RTN button.

*The added model appears in the model list.

Model deletion

*The model stored in the transmitter memory or a SD card can be deleted.

*The current model can not be deleted.

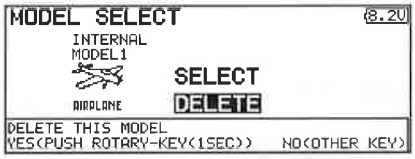
1. Use the touch sensor to move the cursor to the save destination display ("INTERNAL" or "MEM. CARD") and touch the RTN button to switch to the data input mode.

   Select the save destination by turning the touch sensor to the left or right and touch the RTN button.

   [INTERNAL]: Transmitter memory

   [MEM. CARD]: SD card

2. Use the touch sensor to move the cursor to the model you want to delete in the model list and then touch the RTN button.
3. Move the cursor to [DELETE].
4. Touch the RTN button. When a confirmation message is displayed and the RTN button is touched again, the model is deleted.

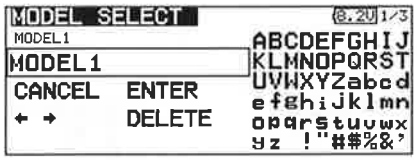


Model name change

*The current model's name can be changed.

1. Use the touch sensor to select the current model in the model list and then touch the RTN button.
2. Use the touch sensor to move to [RENAME].
3. Touch the RTN button.

   *The model name setup screen is displayed.



4. Change the model name as described below:

   [Moving cursor in input box]

   Select [←] or [→], and touch the RTN button.

   [Deleting a character]

   When [DELETE] is selected and the RTN button is touched, the character immediately after the cursor is deleted.

   [Adding a character]

   When a candidate character is selected from the character list and the RTN button is touched, that character is added at the position immediately after the cursor.

   *A name of up to 8 characters long can be entered as the model name. (A space is also counted as 1 character.)

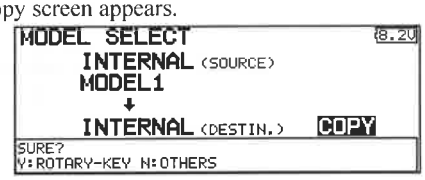
5. At the end of input, select [ENTER] and touch the RTN button. (To terminate input and return to the original state, select [CANCEL] and touch the RTN button.)

Model copy

*A copy can be made of the current model.

1. Use the touch sensor to select the current model in the model list and then touch the RTN button.
2. Move to [COPY] with the touch sensor.
3. Touch the RTN button.

   *The copy screen appears.



4. Use the touch sensor to move to the copy destination position at the bottom of the screen and touch the RTN button to switch to the data input mode.

   Select the save destination by turning the touch sensor and touch the RTN button.

5. Use the touch sensor to move to [COPY].
6. Touch the RTN button. When a confirmation message is displayed and the RTN button is touched again, the model data is copied.

*FMT-01 accepts a SD card formatted FAT file system, but it does not supports the long file name feature used in Windows or other modern operating systems. Thus FMT-01 can accept files whose name consists of only 8 characters or less. Furthermore, it supports only basic alphanumeric characters such as 'A" to 'Z", '0' to '9' and '_'.

MODEL TYPE

This function selects the model type from among airplane, helicopter, and glider.

Seven types of main wings and three types of tail wings are available for airplanes. Eight swash types are available for helicopters. Seven types of main wings and three types of tail wings are available for gliders. Functions and mixing functions necessary for each model type are set in advance at the factory.

Note: The Model Type function automatically selects the appropriate output channels, control functions, and mixing functions for the chosen model type.

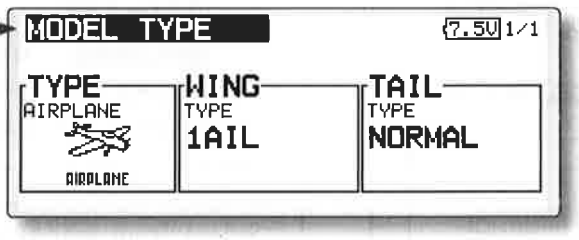
When the Model Type Selection command is accessed, all of the data in the active memory is cleared (except the following swash type.) Be sure that you don't mind losing this data, or back it up to another memory using the copying functions.

When you change the helicopter swash type within the following each group, you can leave the setting data other than the SWASH function. In this case, confirmation screen appears. However, it is initialized when you change the swash type exceeding the group.

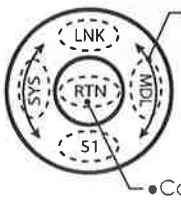
Swash type group A:
H-1, H-2, H-3, HR3, HN3, and HE3
Swash type group B:
H-4, H-4X

- Select [MODEL TYPE] at the linkage menu and call the setup screen shown below by touching the RTN button.

- Select the function name and return to the Linkage menu by touching the RTN button or pushing the Home/Exit button.



<SensorTouch™>

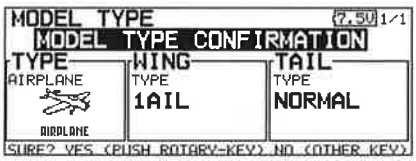


- Scrolling
- Moving cursor
- Selecting mode
- Calling setup screen

(The display screen is an example. The screen depends on the model type.)

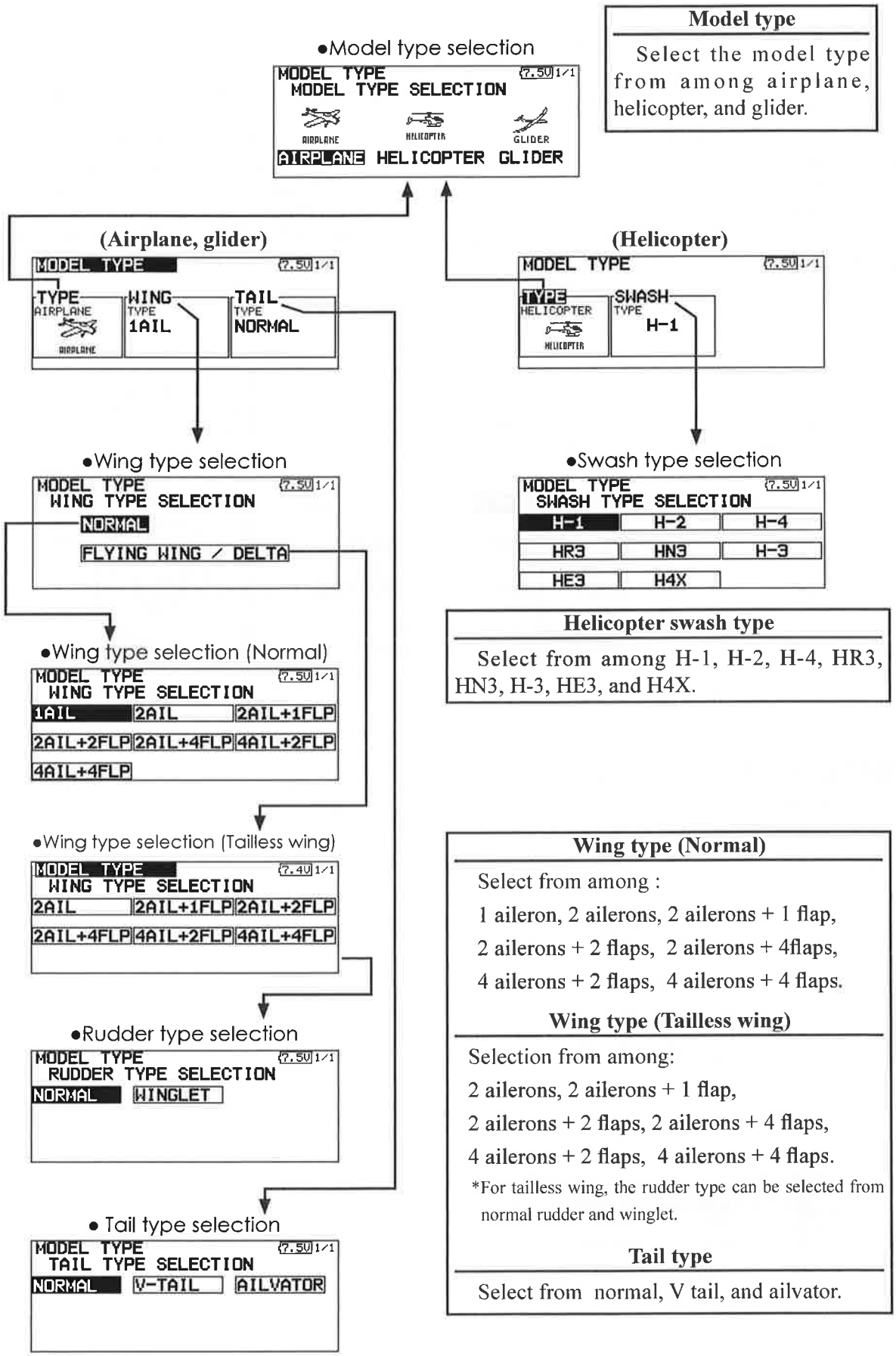
Model type selection

1. Use the touch sensor to move the cursor to the item you want to change and then call the selection screen by touching the RTN button.
   "TYPE": Model type
   "WING " (airplane/glider): Wing type
   "TAIL" (airplane/glider): Tail type
   "SWASH" (helicopter): Swash type
2. Use the touch sensor to move the cursor to the type you want to change and select the type by touching the RTN button.
   *When the model type was changed, the wing type, tail type, or swash type selection screens sequentially appear according to the model. Finally, the blinking confirmation message "MODEL TYPE CONFIRMATION" appears.



3. Touch the RTN button to execute the change. (Operate the touch sensor or S1 button to stop the change.)

*The model types which are displayed (which can be selected) depend on the type of receiver used. See Servo Connection by Model Type.



Model type

Select the model type from among airplane, helicopter, and glider.

Helicopter swash type

Select from among H-1, H-2, H-4, HR3, HN3, H-3, HE3, and H4X.

Wing type (Normal)

Select from among :

1 aileron, 2 ailerons, 2 ailerons + 1 flap,

2 ailerons + 2 flaps, 2 ailerons + 4flaps,

4 ailerons + 2 flaps, 4 ailerons + 4 flaps.

Wing type (Tailless wing)

Selection from among:

2 ailerons, 2 ailerons + 1 flap,

2 ailerons + 2 flaps, 2 ailerons + 4 flaps,

4 ailerons + 2 flaps, 4 ailerons + 4 flaps.

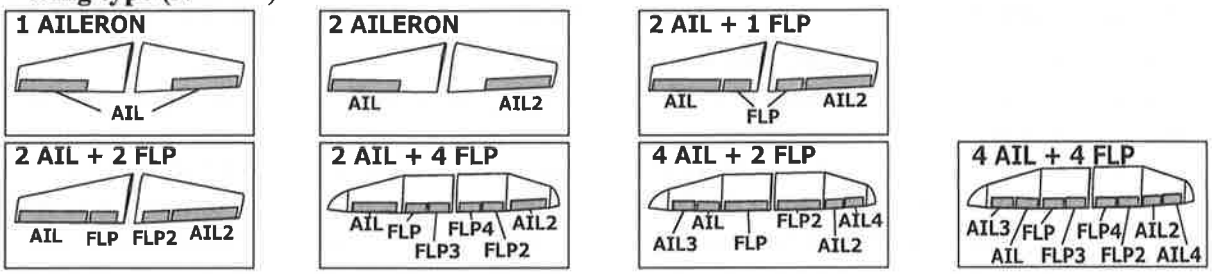
*For tailless wing, the rudder type can be selected from normal rudder and winglet.

Tail type

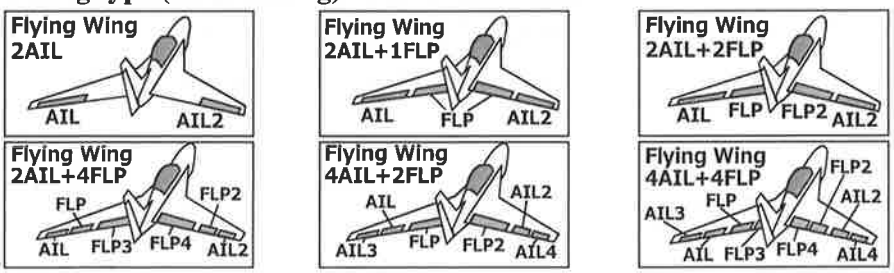
Select from normal, V tail, and ailvator.

Model type selection (Airplane, Glider)

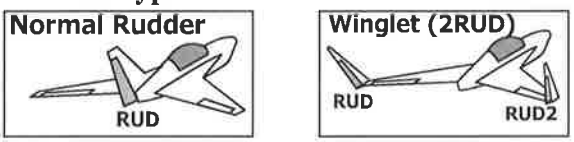
●Wing type (Normal)



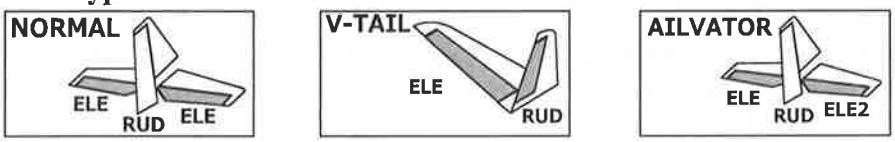
●Wing type (Tailless wing)



●Rudder type

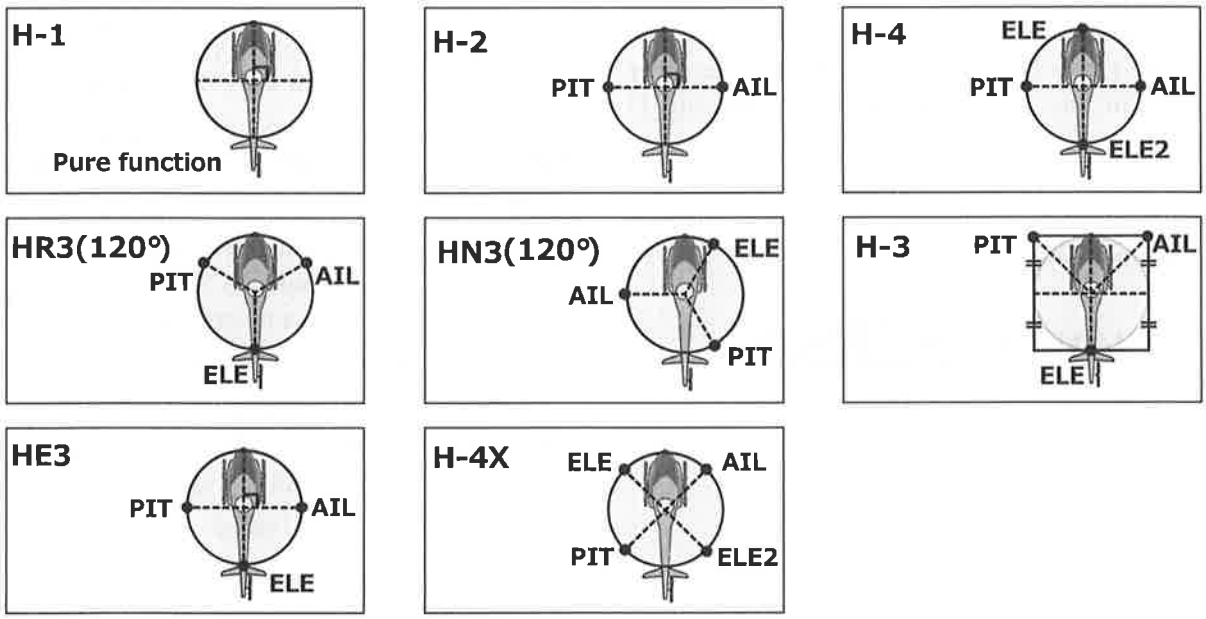


●Tail type



Model type selection (Helicopter)

●Swash type



SYSTEM TYPE

System mode setting, Receiver link

System Type selection

The FMT-01 is for 2.4GHz only. The system can be changed from among 5 choices: FASSTest 18CH, FASSTest 12CH, FASST MULTI, FASST 7CH, S-FHSS. It is FASSTest18CH and FASSTest12CH which can be chosen by FMR-01 set. The method of selection is to the next page.

*If you change the System Type, other model data is not reset.

*If a system type is changed in Helicopter mode, the transmitter will offer two selections:

[Yes] : Selection sets the channel order suitable for System Type. (We recommend here.)

[No] : The present channel order is maintained.

*After any change, remember to test the model and should fully check servo direction and a motion.

*Analog servos cannot be used with the FMR-01 in the FASSTest 12CH mode.

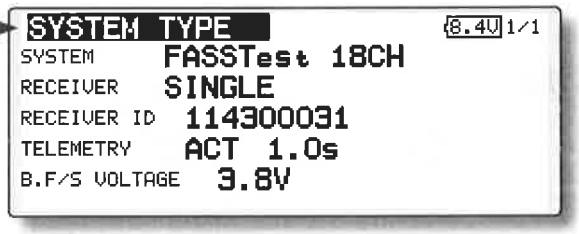
Dual receiver function (only FASSTest 18CH mode)

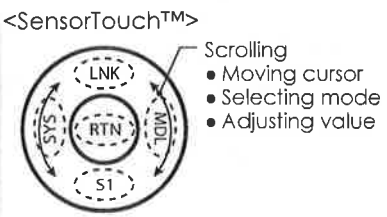
Dual receivers can be linked with the FMT-01. Two receivers are recognized individually by ID numbers. For example, in FMR-01, CH output setting function is used, by setting the first as as "1-8CH", and setting the second as "9-16CH", two sets of receivers can be used as a set in the model, allowing you 16 channels. Separate fail-safe voltage can be set to each receiver.

However, telemetry cannot be used for the 2nd receiver.

• Select [SYSTEM] in the Linkage menu and access the setup screen shown below by touching the RTN button.

• Select the function name and return to the Linkage menu by touching the RTN button or pushing the Home/Exit button.





Receiver linking

The receiver will only be controlled (without being affected by other transmitters) by the transmitter it is linked to. When using a receiver other than one purchased as a set, linking is necessary.

Moreover, a re-link is required when a new model is added by model selection, and the time of system type change.

Linking method P.36

Cases when linking is necessary:
- When using a receiver other than the initial setting.
- When the communication system was changed. (FASSTest18CH ↔ FASSTest12CH etc.)
- When a new model was created by model selection.

Battery fail-safe voltage setup (only FASSTest mode)

The voltage which battery fail-safe activates, can be set when you link. (3.5-8.4V) The receiver memorizes the setting as it was at link.

Suggested setting voltages are as follows.

- 4 cells NiCd or NiMH (Normal: 4.8v) = 3.8 v
- 2 cells LiFe (Normal: 6.6 v) = 6.0 ~ 6.2 v
- 2 cells LiPo (Normal: 7.4 v) = 7.2 ~ 7.4 v

It is a rough reference value.

Since it changes with servos carried in the condition and the model of a battery, please set to your own model in a battery consumption current.

Telemetry function (FASSTest mode only)

To use the telemetry function, set "Telemetry" to "ACT".

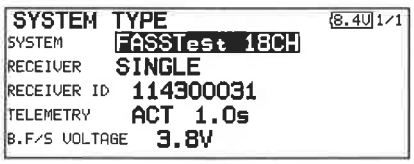
DL Interval (FASSTest mode only)

When a telemetry function is enabled, the receiving interval (down-link interval) of sensor data can be changed.

If a DL interval is increased, the response of the sensor data display becomes slower, but stick response will improve.

System Type selection procedure

1. Move the cursor to the [FASSTest-18CH] item and touch the RTN button to switch to the data input mode.



2. Select the system type by scrolling the touch sensor.

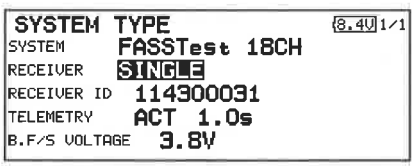
   [FASSTest-18CH][FASSTest-12CH][FASST-MULT] [FASST-7CH][S-FHSS]

   *An example of selections for each system is on the following page.

3. Touch the RTN button to end adjustment and return to the cursor mode.

Dual receiver function (only FASSTest 18CH mode) procedure

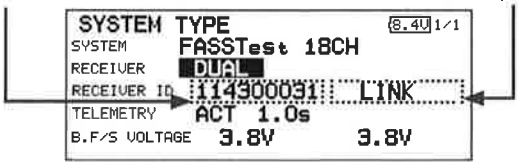
1. Move the cursor to the [SINGLE] item and touch the RTN button to switch to the data input mode.



2. Select the [SINGLE] or [DUAL] by scrolling the touch sensor.

ID of a Primary receiver displays.

ID of a Secondary receiver displays.

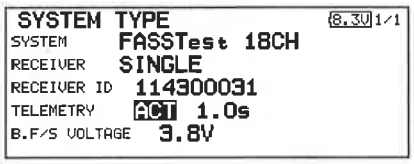


In DUAL, a primary receiver is link previously. Next, a secondary receiver is link.

3. Touch the RTN button to end adjustment and return to the cursor mode.

Telemetry ACT/INH procedure

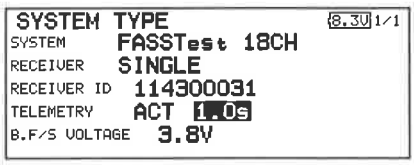
1. Move the cursor to the TELEMETRY [ACT] item and touch the RTN button to switch to the data input mode.



2. Select the [ACT]or[INH] by scrolling the touch sensor.
3. Touch the RTN button to end adjustment and return to the cursor mode.

DL Interval set procedure

1. Move the cursor to the TELEMETRY DL[1.0s] item and touch the RTN button to switch to the data input mode.



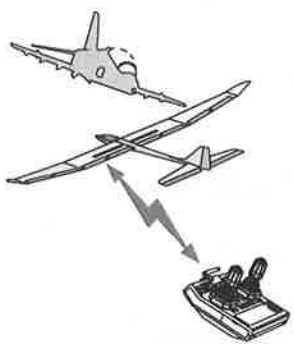
2. Select the DL time by scrolling the touch sensor. If a DL interval is increased, the response of the sensor data display becomes slower, but stick response will improve.

   Initial value: 1.0s

   Adjustment range : 0.1s~2.0s

3. Touch the RTN button to end adjustment and return to the cursor mode.

The example for choosing System Type



-Want to use more channels
-Want to use a large number of telemetry functions

FASSTest 18CH

FMR-01
R7008SB
R7003SB

-Response speed has priority over number of channels
-Telemetry requires only the current receiver battery

FASSTest 12CH

FMR-01
R7008SB
R7003SB

-Want to use a previously used receiver as is

FASST MULTI

R608FS
R6008HS
R6108SB
R6208SB
R6014HS
R6014FS
R6203SB
R6203SBE
R6202SBW
R6303SB
R6303SBE

-Want to use a miniature receiver for indoor planes

FASST 7CH

R617FS
R6004FF
R616FFM
R6106HF
R6106HFC
R6203SB
R6203SBE
R6202SBW
R6303SB
R6303SBE

(Usable receivers)
(The time of January, 2015)

-Want to use an S-FHSS system miniature receiver

S-FHSS

R2006GS
R2106GF
R2008SB

System Type

■ **FASSTest 18CH** --- FASSTest system receiver mode. Applicable with the telemetry sensor unit. Up to 18 channels (linear 16+ON/OFF2) can be used.

■ **FASSTest 12CH** --- FASSTest system receiver mode. Applicable with receiver voltage display. Up to 12 channels (linear10+ON/OFF2) can be used. Telemetry Sensor cannot be used, but the response speed is a faster than that of the 18CH mode.

• **Analog servos cannot be used with the FMR-01 in the FASSTest 12CH mode.**

■ **FASST MULTI** ---FASST-MULTI system receiver mode. Up to 18 channels (linear 16+ON/OFF2) can be used.

■ **FASST 7CH** --- FASST-7CH system receiver mode. Up to 7 channels can be used.

■ **S-FHSS** --- S-FHSS system receiver mode. Up to 8 channels can be used.

FUNCTION

Channel assignment of each function can be changed.

When you select model and wing (swash) types, you will find that the optimized combinations of servo output channels and functions have been already preset. If you would like, you can freely change combinations of servo output channels, functions (aileron, elevator, etc), and control (sticks, switches, and trim levers).

*You can also assign the same function to multiple servo output channels such as assigning elevator function to CH2 and CH3.

Channel Replacement

When the channel is replaced in the function menu, replaced channel uses the setting data (ATV, SUB-TRIM, REVERSE, F/S, and B-F/S, etc.).

Servo Output Channels

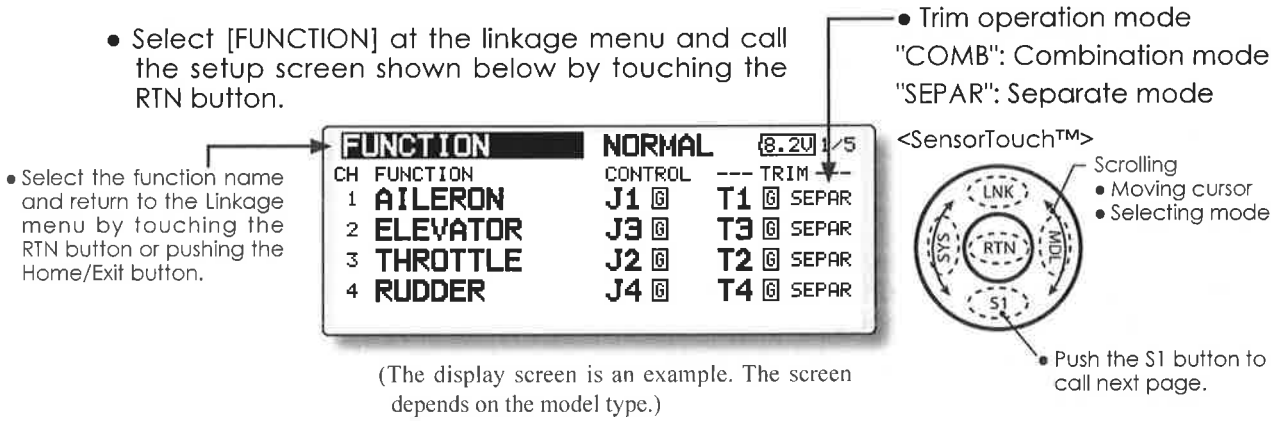
For FASSTest 14CH mode, you can set 12 linear channels and two digital channels. For FASSTest 18CH mode, you can set 10 linear channels and two digital channels. For FASST MULT mode, you can set 12 linear channels and two digital channels. For FASST 7CH mode, you can set only 7 linear channels. For S-FHSS mode, you can set only 8 linear channels.

*DG1/2 (digital channels)
These channels can function as switched channels. You can freely change combinations between servo output channels and input controls (sticks, switches, and trim levers).

Motor Function

If you have either a glider or airplane model type selected, and choose to activate the motor function, a reverse setting screen is displayed.

*If " YES" is selected, the output is reversed. If "NO" is selected, the output is normal.



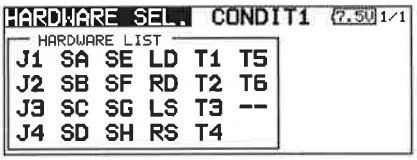
(The display screen is an example. The screen depends on the model type.)

Function change

1. Use the touch sensor to move the cursor to the "FUNCTION" item of the channel you want to change and touch the RTN button.
   *The function selection screen is displayed.
2. Use the touch sensor to move the cursor to the function name you want to set and touch the RTN button.
   *The function name blinks.
3. Touch the RTN button to execute the change. (When you want to cancel this operation, operate the touch sensor or S1 button.)
   *Multiple channels can be assigned to one function.

Operation control change

1. Use the touch sensor to move the cursor to the "CONTROL" item of the channel you want to change and touch the RTN button.
   *The control selection screen is displayed.

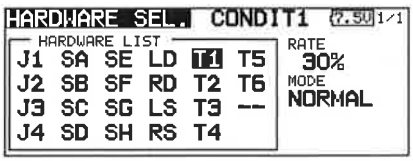


2. Use the touch sensor to move the cursor to the control you want to change, and touch the RTN button.
   *The same control can be assigned to multiple channels.
   *The setting can be changed for each condition.
   After the set mode is changed from group mode [G] to single mode [S] at the control selection screen, only that condition setting is changed by control change; setting of other conditions remains the same.

Trim setting

Use the touch sensor to move the cursor to the "TRIM" item of the channel you want to change and touch the RTN button.

*The trim setup screen is displayed.



The following items can be set at the trim setup screen:

*The setting can be changed for each condition.

After the set mode is changed from group mode [G] to single mode [S] at the control selection screen, only that condition setting is changed by control change; setting of other conditions remains the same.

Trim selection

Use the touch sensor to move the cursor to the trim, lever, etc. you want to set and touch the RTN button.

*The setting can be changed.

Trim rate setting

Use the touch sensor to move the cursor to the [RATE] item and touch the RTN button to switch to the data input mode.

Set the trim rate by turning the touch sensor.

Initial value: +30%

Adjustment range : 0~150%

(When the RTN button is touched for 1 second, the trim rate is reset to the initial value.)

Touch the RTN button to end adjustment and return to the cursol move mode.

Trim mode selection

Use the touch sensor to move the cursor to the [TRIM MODE] item and select the trim mode by turning the touch sensor.

[NORM]: Normal mode. Normal trim (parallel shift trim) operation.

[ATL]: ATL operation mode. Maximum change near center by operation normally used with throttle trim. Reverse is also possible.

[NORM]/[REV] selection is possible at the "ATL REV" item.

[CENTER]: Maximum change near center by center trim operation.

⚠ WARNING

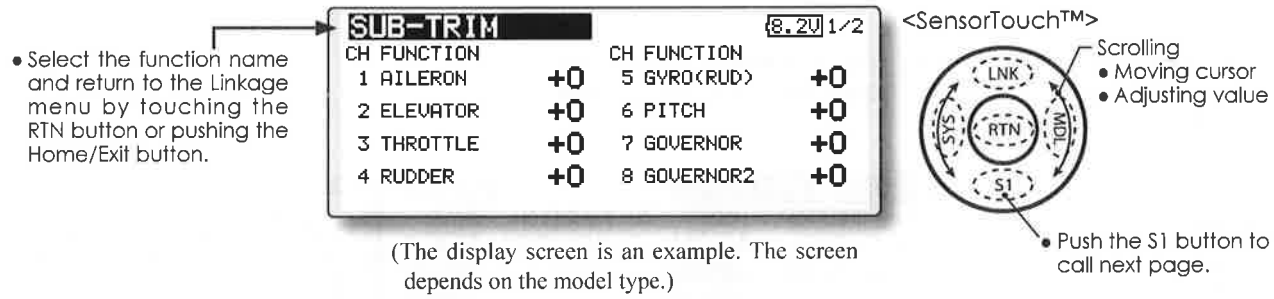
As a safety precaution to prevent the motor from starting unexpectedly, please switch off the motor accordingly. We also suggest removing the propeller from the motor as an additional precaution.

SUB-TRIM

Setting of neutral position of each servo.

The Sub-Trim function is used to set the servo neutral position, and may be used to make fine adjustments to the control surface after linkages and touchrods are hooked up. When you begin to set up a model, be sure that the digital trims are set to their center position.

- Select [SUB-TRIM] at the linkage menu and call the setup screen shown below by touching the RTN button.



(The display screen is an example. The screen depends on the model type.)

Sub trim adjustment

1. Use the touch sensor to move the cursor to the channel you want to adjust and touch the RTN button to switch to the data input mode.
2. Adjust by turning the touch sensor.
   Initial value: 0
   Adjustment range: -240~+240 (steps)
   (When the RTN button is touched for 1 second, sub trim is reset to the initial value.)
   *Before sub trim adjustment, adjustment of the linkage so that control surfaces need not use sub trim as much as possible is very important.
3. Repeat this procedure for each channel.

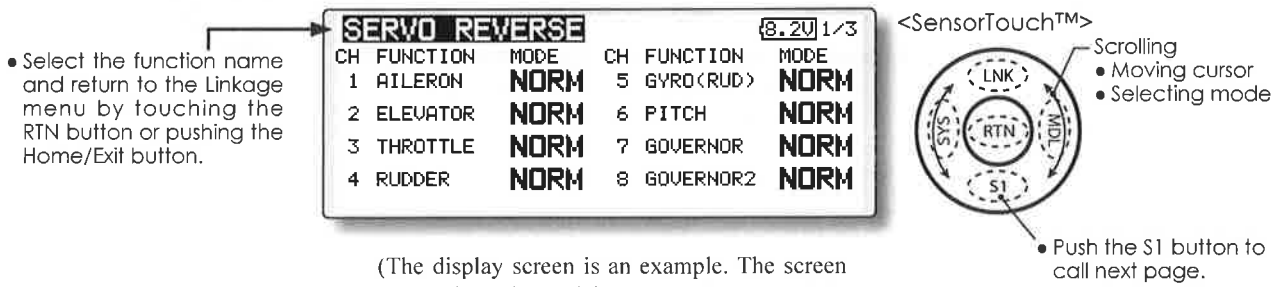
SERVO-REVERSE

Use to reverse the throw direction.

Servo Reverse changes the direction of an individual servo's response to a control stick movement.

For CCPM helicopters, be sure to read the section on Swash AFR before reversing any servos. With CCPM helicopters, always complete your servo reversing prior to any other programming. If you use pre-built Airplane/Sailplane functions that control multiple servos, it may be confusing to tell whether the servo needs to be reversed or a setting in the function needs to be reversed. See the instructions for each specialized function for further details. Always check servo direction prior to every flight as an additional precaution to confirm proper model memory, hook ups, and radio function.

- Select [SERVO REVERSE] at the linkage menu and call the setup screen shown below by touching the RTN button.



(The display screen is an example. The screen depends on the model type.)

Servo reversing procedure

*After linkage of a new model is complete, check whether or not each servo is connected to the correct channel.

*Next, determine whether you need to reverse any channels by moving each stick.

1. Use the touch sensor to move the cursor to the channel you want to reverse and touch the RTN button to switch to the data input mode.
2. Turn the touch sensor and change the display to [REVERSE] (or [NORMAL]).
   *The display blinks.
3. When the RTN button is touched, servo operation is reversed. (Operate touch sensor or S1 button to stop reversal.)
   *Repeat the operation above for each channel that must be reversed.

FAIL SAFE

Sets the servos operating position when transmitter signals can no longer be received or when the receiver battery voltage drops.

The Failsafe function may be used to set up positions that the servos move to in the case of radio interference.

You may set either of two positions for each channel: Hold, where the servo maintains its last commanded position, or Failsafe, where each servo moves to a predetermined position. You may choose either mode for each channel. (**FASST 7CH mode: CH3 only**)

The FMT-01 system also provides you with an advanced battery monitoring function that warns you when the receiver battery has only a little power remaining. In this case, each servo is moved to the defined failsafe position. (**FASST 7CH mode: CH3 only**) The battery failsafe may be released by operating a predefined control on the transmitter, do not continue to fly, land as soon as possible. Remember, if the predefined control suddenly moves to a position you did not command, land at once and check your receiver battery.

Defines servo position when signals are lost and when receiver battery voltage becomes low.

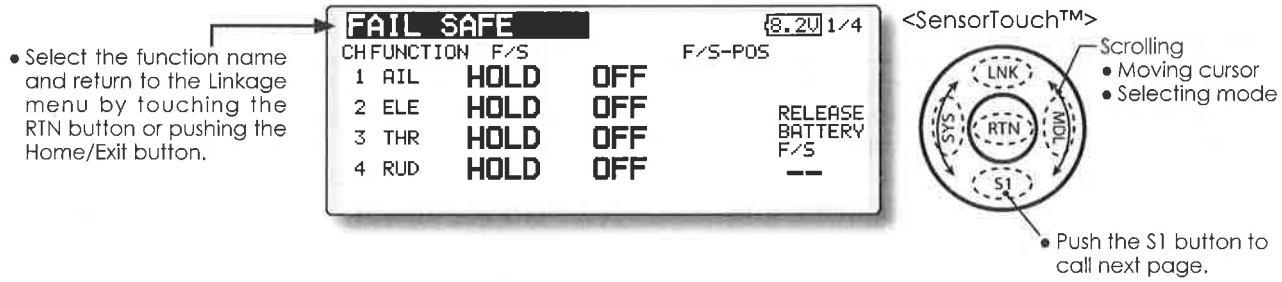
⚠ WARNING

For safety, always set the fail safe functions.

- **Remember to set the throttle channel fail safe function so that the servo moves to the maximum slow side for airplanes and to the slow side from the hovering position for helicopters. Crashing of the model at full high when normal radio waves cannot be received due to interference, etc., is very dangerous.**
- **If the battery fail safe is reset by the throttle stick, it may be mistaken for an engine malfunction and will be reset at throttle slow and the model will continue to fly. If you have any doubts, immediately land.**

- Select [FAIL SAFE] at the linkage menu and call the setup screen shown below by touching the RTN button.

(The display screen is an example. The screen depends on the model type.)



Fail safe setting procedure

1. Move the cursor to the "F/S" item of the channel you want to set and touch the RTN button to switch to the data input mode.
2. Select the F/S mode by scrolling the touch sensor. A confirmation message appears.
   *The display blinks.
3. Touch the RTN button. (Touch the S1 button to stop setting.)
   *The channel switches to the F/S mode.
4. Move the cursor to the "POS" item.
   Hold the corresponding stick, knob, slider, etc. in the position you want the servo to move to when the fail safe function is activated and touch the RTN button for one second.
   *The set position is displayed in percentage.
   *If you want to return that channel to the hold mode, move the cursor to the "F/S" item and touch the RTN button to switch to the data input mode. Select the F/S mode by scrolling the touch sensor. A confirmation message appears and then change the mode by touching the RTN button.

Battery fail safe setting procedure

Battery fail safe can be set for each channel by the same method as the fail safe setting procedure. Select and set the "B.F/S" item.

[ON]: Battery fail safe function ON

[OFF]: Battery fail safe function OFF

Battery fail safe release switch setting

This function temporarily releases the battery fail safe function, so the fuselage can recover after the battery fail safe function was activated by a drop in the receiver battery voltage. This setting selects the switch which releases the battery fail safe function.

1. Move the cursor to the [RELEASE B.F/S] item in the setup screen (last page).
2. Touch the RTN button.
   *The switch selection screen is called.
   *For a detailed description of the switch selection and ON/OFF direction setting method, see [Switch Setting Method] at the back of this manual.

END POINT

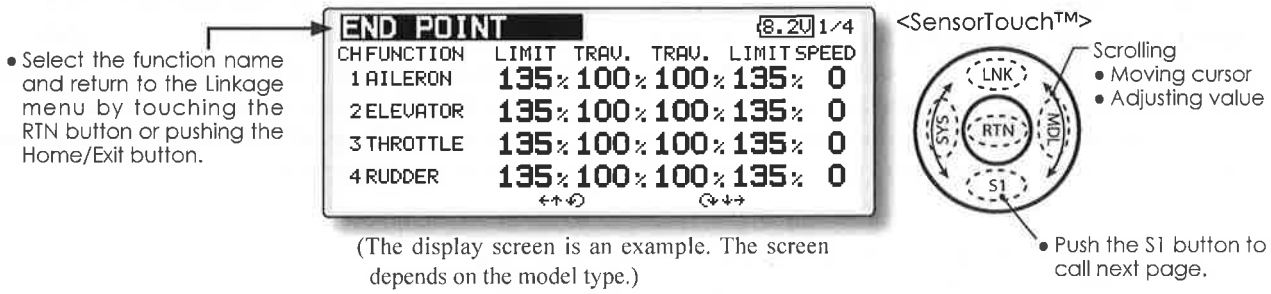
Sets the travel, limit point, and speed of each servo.

The End Point function adjusts the left and right servo throws, generates differential throws, and will correct improper linkage settings.

The travel rate can be varied from 30% to 140% in each direction on channels 1 to 12. Also, the limit point where servo throw stops may be varied from 0% to 155%.

NOTE: The servo speed setting is used to set the servo delay for each channel, from channel 1 to channel 12. The system uses the programmed speed (delay) to slow down servo position changes. The servo speed setting can be varied from 0 to 27 in each channel.

- Select [END POINT] at the linkage menu and call the setup screen shown below by touching the RTN button.



(The display screen is an example. The screen depends on the model type.)

Servo travel adjustment

1. Use the touch sensor to move the cursor to the "TRAV." item of the channel you want to adjust and touch the RTN button to switch to the data input mode.
2. Turn the touch sensor to adjust the rate.
   Initial value: 100%
   Adjustment range: 30%~140%
   (When the RTN button is touched for 1 second, the rate is reset to the initial value.)
   Touch the RTN button to end adjustment and return to the cursol move mode.
3. Repeat this procedure for each rate.

Limit point adjustment

1. Use the touch sensor to move the cursor to the "LIMIT" item of the channel you want to adjust and touch the RTN button to switch to the data input mode.
2. Turn the touch sensor to adjust the limit point.
   Initial value: 135%
   Adjustment range: 0%~155%
   (When the RTN button is touched for 1 second, the limit point is reset to the initial value.)
   Touch the RTN button to end adjustment and return to the cursol move mode.
3. Repeat this procedure for each limit point.

Servo speed setting

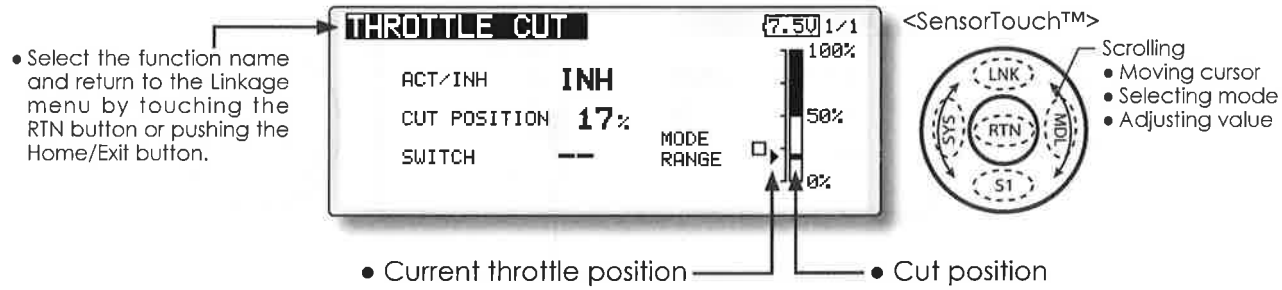
1. Use the touch sensor to move the cursor to the "SPEED" item of the channel you want to adjust and touch the RTN button to switch to the data input mode.
2. Turn the touch sensor to adjust the servo speed.
   Initial value: 0
   Adjustment range: 0~27 (steps)
   (When the RTN button is touched for 1 second, the servo speed is reset to the initial value.)
   Touch the RTN button to end adjustment and return to the cursol move mode.
3. Repeat this procedure for each channel.

THROTTLE CUT

Stops the engine safely and easily.(airplane and helicopter only)

Throttle cut provides an easy way to stop the engine, by flipping a switch with the throttle stick at idle. The action is not functional at high throttle to avoid accidental dead sticks. The switch's location and direction must be chosen, as it defaults to NULL.

- Select [THROTTLE CUT] at the linkage menu and call the setup screen shown below by touching the RTN button.



Throttle cut setting procedure

*Perform the following settings before using the touch sensor to move the cursor to the item to be set.

1. Activate the function:

   Move the cursor to the [ACT/INH] item and touch the RTN button to switch to the data input mode.

   Turn the touch sensor to the left until the blinking changes from "INH" to "ACT" and then touch the RTN button.

2. Switch setting:

   Move the cursor to the [SWITCH] item and call the switch setup screen by pressing the RTN button and select the switch and ON direction.

   (For a detailed description of the setting method, see [Switch Setting Method] at the back of this manual.)

3. Throttle cut position setting:

   Move the cursor to the [CUT POSITION] item and touch the RTN button to switch to the data input mode.

   Adjust the servo operation position at throttle cut operation by turning the touch sensor to the left or right.

   Initial value: 17%

   Adjustment range: 0%~50%

(When the RTN button is pressed for 1 second, the servo operation position is reset to the initial value.)

Touch the RTN button to end adjustment and return to the cursol move mode.

*With the selected cut switch ON and the throttle stick at idle; adjust the rate until the engine consistently cuts off.

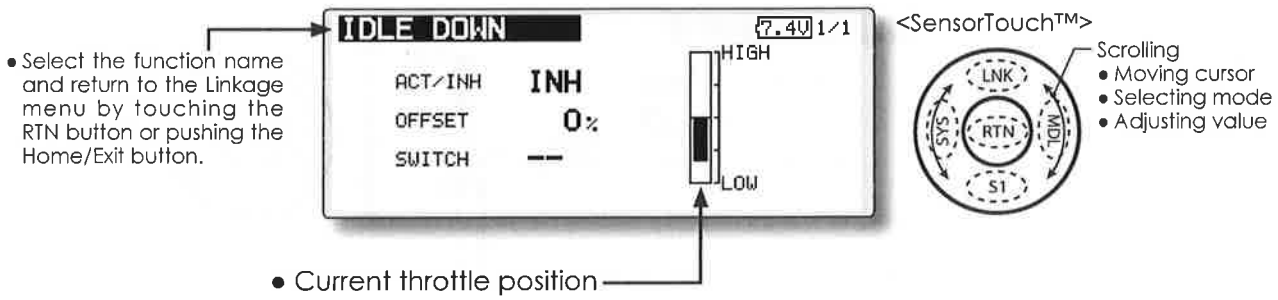
However, be sure that the throttle linkage is not pulled too tight and unreasonable force is not applied to the servo.

IDLE DOWN

Lowers the engine idling speed.(airplane and helicopter only)

The Idle Down function lowers the engines idle by flipping a switch with the throttle stick at idle. The action is not functional at high throttle to avoid accidental dead sticks. The switch's location and direction must be chosen, as it defaults to NULL.

- Select [IDLE DOWN] at the linkage menu and call the setup screen shown below by touching the RTN button.



Idle down setting procedure

*Perform the following settings after using the touch sensor to move the cursor to the item you want to set.

1. Activate the function:

   Move the cursor to the [ACT/INH] item and touch the RTN button to switch to the data input mode.

   Switch the blinking from "INH" to "ACT" by turning the touch sensor to the left and then touch the RTN button.

2. Switch setting:

   Move the cursor to the [SWITCH] item, call the switch setup screen by touching the RTN button, and select the switch and ON direction.

   (For a detailed description of the setting method, see [Switch Setting Method] at the back of this manual.)

3. Offset rate setting:

   Move the cursor to the [OFFSET] item and touch the RTN button to switch to the data input mode.

   Adjust the servo offset rate at idle down operation by turning the touch sensor to the left or right.

   Initial value: 0%

   Adjustment range: -100%~100%

   (When the RTN button is touched for 1 second, the offset rate is reset to the initial value.)

*Maximum offset amount is near maximum slow.

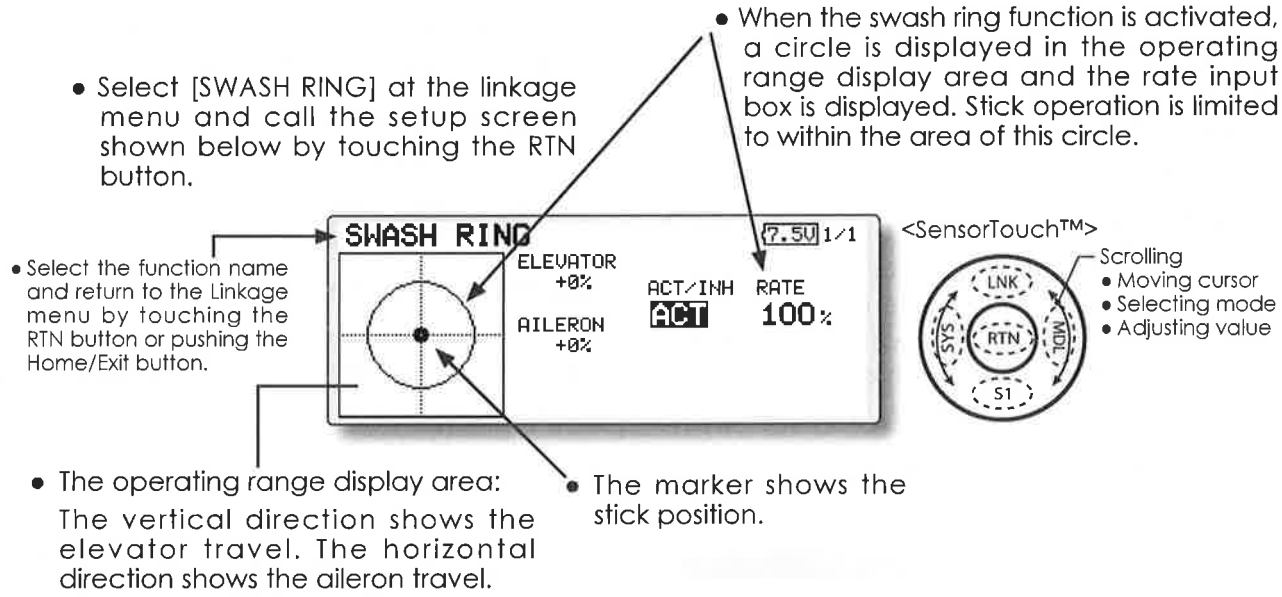
*When a minus rate is input, offset is applied to the high side.

Touch the RTN button to end adjustment and return to the cursol move mode.

SWASH RING

Limits the swash plate travel to within a fixed range. (Helicopter only)

This function limits the swash travel to within a fixed range to prevent damaging of the swash linkage by simultaneous operation of the ailerons and elevators. It is effective in 3D aerobatics which use a large travel.



Swash ring setting procedure

*Perform the following settings after using the touch sensor to move the cursor to the item you want to set.

1. Activate the function:

   Move the cursor to the [ACT/INH] item and touch the RTN button to switch to the data input mode.

   Switch the blinking from "INH" to "ACT" by turning the touch sensor to the left and then touch the RTN button.

2. Rate setting:

   Use the touch sensor to move the cursor to the [RATE] item touch the RTN button to switch to the data input mode.

   Use the touch sensor to set the rate.

   Initial value: 100%.

   Adjustment range: 50% to 200%.

   *Adjust the rate to maximum swash tilt.

   (When the RTN button is touched for 1 second, the rate is reset to the initial value.)

   Touch the RTN button to end adjustment and return to the cursol move mode.

SWASH

Swash operation linkage correction function.(helicopter only, except swash type H-1)

Neutral Point

At your linkages, if the servo horn deviates from a perpendicular position at neutral, the linkage compensation functions in this menu may not compensate effectively. To correct this use the neutral point function. This will move the neutral point of the servos to the actual perpendicular position. However, this adjustment changes only the axis point of the compensation functions in this menu, and does not affect the neutral position of other functions.

Swash AFR

Swash AFR function reduces/increases/reverses the rate (travel) of the aileron, elevator and collective pitch functions, by adjusting or reversing the motion of all servos involved in that function, only when using that function.

Mixing Rate

This compensation mixing is used to correct the tendency of the swash-plate for each control. The following compensation mixing is possible; PIT to AIL, PIT to ELE, AIL to PIT, ELE to AIL, and ELE to PIT (HR3 mode.) It adjusts the swash-plate to operate correctly for each control using the corresponding compensation mixing.

Linkage Compensation

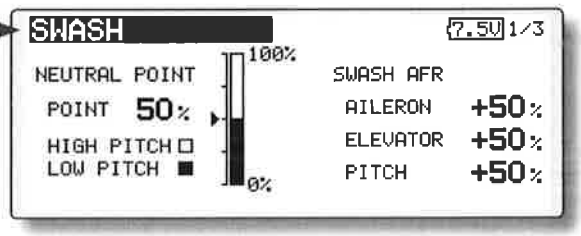
This compensation mixing is used to correct the tendency of the swash-plate for pitch control at low pitch and high pitch.

Speed Compensation

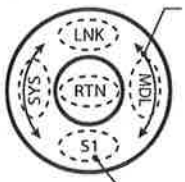
This function is used to cancel the reaction that is generated by the difference of the operation amount of each servo when the swash-plate moves.

- Select [SWASH] at the linkage menu and call the setup screen shown below by touching the RTN button.

- Select the function name and return to the Linkage menu by touching the RTN button or pushing the Home/Exit button.



<SensorTouch™>



- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

*Before making the following settings, use the touch sensor to move the cursor to the item you want to set.

Neutral point setting procedure

The neutral point becomes the correction standard point.

*Adjusting the servo horn so that the neutral point is near the 50% position makes the mixing amount small.

1. Neutral point setting

   Move the cursor to the [POINT] item and hold the pitch operation so that the servo horn is at a right angle to the linkage rod and touch the RTN button for 1 second and read the neutral position.

   *The neutral point can also be displayed by bar graph.

   After reading the neutral point, use the other correction functions to make further adjustments.

Swash AFR setting procedure

The swash AFR function makes adjustments so that the servos travel the specified amount by [AILERON], [ELEVATOR], and [PITCH] operation.

1. Use the touch sensor to move the cursor to the function you want to adjust and touch the RTN button to switch to the data input mode.
2. Adjust the AFR rate by turning the touch sensor to the left or right.

   Initial value: +50%

   Adjustment range: -100%~+100%

   (When the RTN button is touched for 1 second, the AFR rate is reset to the initial value.)

   Touch the RTN button to end adjustment and return to the cursol move mode.

Mixing rate setting procedure

The HR-3 is taken as an example to describe mixing rate setting. Mixing applied in other swash modes is different, but the setting procedure is the same.

*Set the throttle stick to the preset neutral point. Adjust the length of the linkage rod so that the swash plate is horizontal at this position.

*The sub trim function can be used to make small adjustments.

*Adjust so that the pitch curve is a straight line and pitch operation is maximum.

*When making the following setting, use the touch sensor to move the cursor to the item you want to set and touch the RTN button to switch to the data input mode. Touch the RTN button to end adjustment and return to the cursol move mode.

1. Adjustment at aileron operation [AIL to PIT]

   Adjust the AIL to PIT rate so there is no interference in the elevator or pitch direction when the aileron stick is moved to the left and right.

   *Adjust by turning the touch sensor to the left or right.

   *The left and right sides can be adjusted individually.

2. Adjustment at elevator operation [ELE to AIL]/[ELE to PIT]

   Adjust the ELE to AIL and ELE to PIT rates so there is no interference in the aileron or pitch direction when the elevator stick is moved up and down.

   *Adjust by turning the touch sensor to the left and right.

   *The up and down sides can be adjusted individually.

3. Adjustment at pitch operation [PIT to AIL][PIT to ELE]

   Adjust the PIT to AIL and PIT to ELE rates so that the swash plate moves to the horizontal position when the throttle stick was moved to maximum slow and full high.

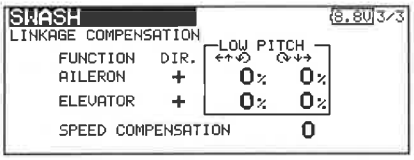
   *Adjust by turning the touch sensor to the left and right.

   *The slow and high sides can be adjusted individually.

Linkage compensation setting procedure

*Perform linkage compensation setting after mixing rate setting.

*Linkage compensation compensates for interference by aileron operation with the elevator or elevator operation with the aileron at collective pitch control for low pitch and high pitch.



*When making the following setting, use the touch sensor to move the cursor to the item you want to set and touch the RTN button to switch to the data input mode. Touch the RTN button to end adjustment and return to the cursol move mode.

1. Compensation at aileron operation [AILERON]

   Set the throttle to the maximum slow position. Move the aileron stick to the left and right and adjust the aileron compensation amount so that interference in the elevator or pitch direction at that time is minimum.

   *Adjust the touch sensor to the left and right.

   *The left and right sides can be adjusted individually.

   *When the interference increases when the compensation amount was increased, make adjustments with the compensation direction [DIR] as "-".

2. Compensation at elevator operation [ELEVATOR]

   Adjust the elevator compensation amount so that the aileron or pitch direction interference when the elevator stick was moved up and down is minimum.

3. Regarding steps 1 and 2 above, perform aileron and elevator compensation similarly at the full high side of the throttle stick also.

Speed compensation setting procedure

1. Use the touch sensor to move the cursor to the "SPEED COMPENSATION" item and touch the RTN button to switch to the data input mode.

2. Set the throttle stick to the neutral point position. Quickly move the elevator stick and adjust the speed compensation amount [SPEED COMPENSATION] for minimum interference in the pitch direction.

   *Adjust by turning the touch sensor to the left and right.

   Touch the RTN button to end adjustment and return to the cursol move mode.

TIMER

Timer setting

The Timer function may be set for any desired time, i.e. engine run time, specified times for competitions, etc. Two independent timers are provided for your use. The timers are stored independently with each model, meaning that when you switch between model setups, the timer associated with the new model is brought up automatically.

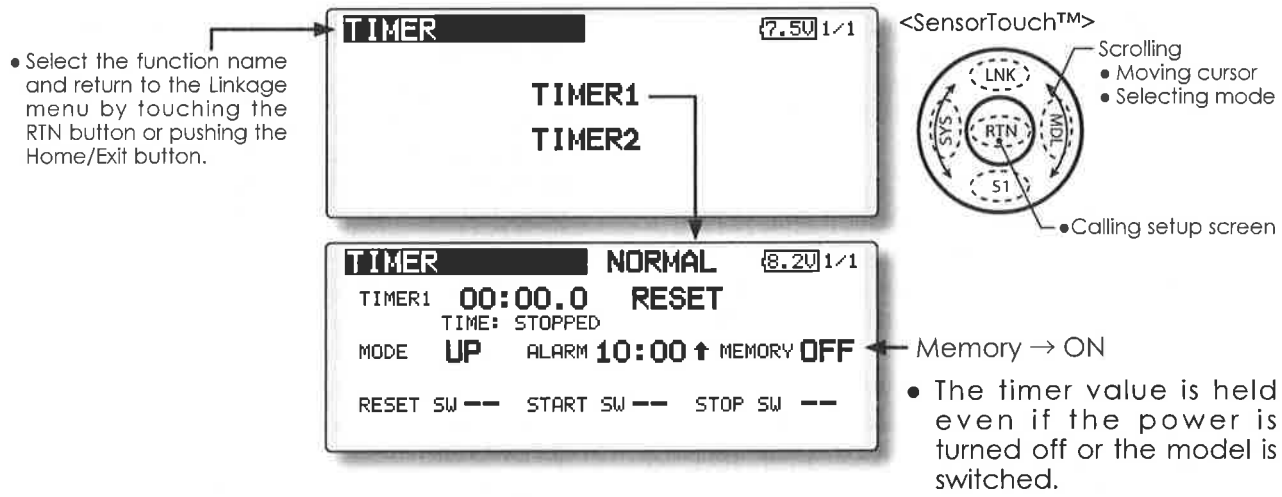
The timers may be set to start and stop from the motion of any switch or stick. You may set the ON and OFF directions freely. Each timer has a capacity of up to 59 minutes 59 seconds.

Each timer may be set for count-down or count up operation with a target time.

If a target time is set and the timer reaches the set time, a buzzer sound for each count is generated.

Countdown timers sound one short beep during the last twenty seconds and two short beeps during the last ten seconds before reaching the target, then a long tone at the target time, and continue counting with displaying a minus (-) sign. Count-up timers also beep the last twenty and ten seconds, beep the target time, and keep counting upwards until shut down.

- Select [TIMER] at the linkage menu and call the setup screen shown below by touching the RTN button.



Timer setting

*Perform the following settings after using the touch sensor to move the cursor to the item you want to set.

1. Up timer/down timer setting

   Move the cursor to the [MODE] item and touch the RTN button to switch to the data input mode.

   Select the mode by moving the touch sensor to the left or right and touch the RTN button.

   [UP]: Up timer

   [DOWN]: Down timer

2. Timer time setting

   Move the cursor to the [10]:[100] item and touch the RTN button to switch to the data input mode.

   Set the time by turning the touch sensor to the left or right.

   [00]:[00]:[min]:[sec]

   Touch the RTN button to end adjustment and return to the cursol move mode.

3. Switch setting

   Move the cursor to the item of the switch you want to set, call the switch setup screen by touching the RTN button, and select the switch and ON direction.

   [For a detailed description of the setting method, see [Switch Setting Method] at the back of this manual.]

   [RESET SW]: Reset switch

   [START SW]: Start switch

   [STOP SW]: Stop switch

Timer operation

- Timer 1 and Timer 2 are started/stopped by pre-selected start/stop switch.
- To reset a timer, operate the pre-selected reset switch, or move the cursor to the [RESET] display on the timer screen and touch the RTN button.

Alarm mode

*A mode which sounds an alarm every minute during the remaining time up to the timer alarm time.

1. Change the setting by pressing ↑ or ↓ button.

   [↑]: An alarm sounds every minute of the elapsed time from timer start. (Conventional mode)

   [↓]: An alarm sounds every minute of the remaining time up to the alarm time.

HOUR mode

*An HOUR mode counts up to 99 hours 50 minutes to the timer modes.

- This mode is convenient when used at engine maintenance period and other long term measurements.
- When the HORU mode is set, "xx(hour) : xx(minute)" is displayed on the count time display. Seconds are not displayed.
- When the HORU mode is set, " : " blinks each second during timer operation.
- When the HORU mode is set, the alarm function/lap time measurement function are inhibited.

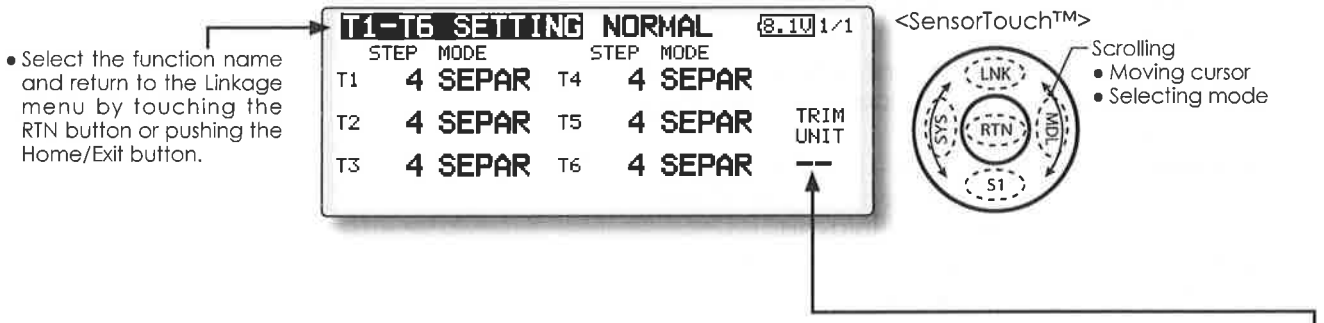
T1-T6 SETTING

Digital trim settings

This function adjusts the digital trim's control step amount and operation mode (T1~T6.)

When the flight conditions are set, the trim operation can be coupled with among all the conditions which combination mode is selected.

- Select [T1-T6 SETTING] at the linkage menu and call the setup screen shown below by touching the RTN button.



Control step amount setting

1. Use the touch sensor to move the cursor to the [STEP] item and touch the RTN button to switch to the data input mode.

   Set the control step amount by turning the touch sensor.

   Initial value: 4

   Adjustment range: 1~200

   (When the RTN button is touched for 1 second, the control step amount is reset to the initial value.)

   *When the value is made large, the change per step becomes larger.

2. Touch the RTN button to end adjustment and return to the cursol move mode.

Separate/combination mode selection

1. Use the touch sensor to move the cursor to the [SEPA./COMB.] item and change to blinking by turning the touch sensor and select the mode by touching the RTN button.

   [COMB]: Combination mode. The trim data are reflected at all the flight conditions.

   [SEPAR]: Separate mode. Trim adjustment for each flight condition.

Trim display units

- Percentage(%) display can be selected at trim.

1. Select "TRIM UNIT" and turn the dial and switch the display to [%] or [--].

   *The display blinks.

   [%]: Trim is displayed in % units.

   [--]: Trim is displayed numerically as in the past.

2. When the RTN button touched, the setting is changed.

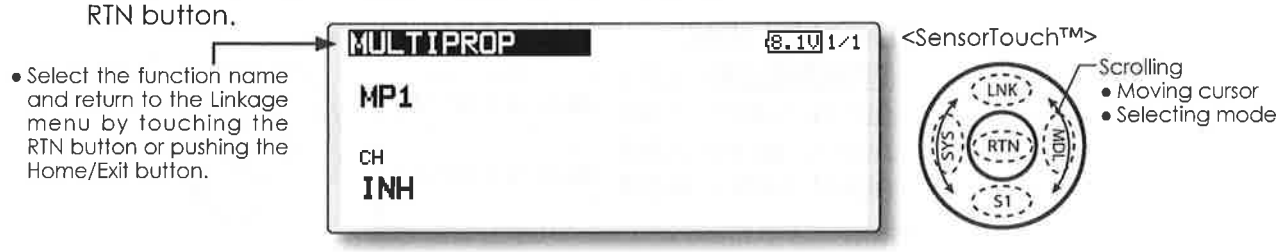
MULTIPROP

CH is extended by MPDX-1 of an option

The system has compatible with the Futaba MPDX-1 multiprop decoder. One channel can be expanded to 8 channels by using the MPDX-1 multiprop decoder. Up to two MPDX-1 can be used.

*The trim step amount and trim rate are not reset.

- Select [MULTPROP] at the linkage menu and call the setup screen shown below by touching the RTN button.



Multiprop selection

1. Select the Linkage Menu multiprop setting [MULTIPROP] and touch the RTN button.
2. The MULTIPROP setup screen is displayed.
3. Select [MP1] and touch the RTN button.
4. Scrolling the touch sensor and switch the display to [MP1] or [MP2].
   *The display blinks.
   [MP1]: Multiprop 1
   [MP2]: Multiprop 2
5. Touch the RTN button.

Channel setting

1. Select [CH] and touch the RTN button. Scrolling the touch sensor and display the channel to which the MPDX-1 is connected.
   *To turn off the multiprop function, set [--] at CH.
2. When the activated channel is selected and touch the RTN button, the multiprop setting contents are displayed.

Control setting

1. Select the "CONTROL" row of the multiprop channel whose control you want to set and touch the RTN button.
2. A hardware selection screen is displayed. Select the hardware which is to set control and touch the RTN button.

Servo reverse setting

1. Select the "REVERSE" row of the multiprop channel which is to be reversed and touch the RTN button.
2. Scrolling the touch sensor and switch the display to [NORM] or [REV].
   *The display blinks.
   [NORM]: Normal mode
   [REV]: Reverse mode
3. Touch the RTN button.

End Point Setting

1. Select the " ← ↑ " row or " ↓ → " row of the multiprop channel whose end point is to be set and switch to the data input mode by touch the RTN button.
2. Adjust the end point by scrolling the touch sensor .
   Initial value : 100%
   Adjustment range : 30-100%
3. After adjustment, touch the RTN button.