

FMT-03

Futaba Advanced Spread Spectrum Technology
Extended System Telemetry



FASST Extended System Telemetry



INSTRUCTION MANUAL

For model

1M23Z04404

Futaba® *Digital Proportional R/C System*

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Reference

FMT-03 is equipped with a stick of multi-copter exclusive use. Therefore it's unsuitable for use of an airplane, a glider and a helicopter.

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INTRODUCTION

Thank you for purchasing a Futaba® FASSTest-2.4GHz * FMT-03 series digital proportional R/C system. In order for you to make the best use of your system and to fly safely, please read this manual carefully.

*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.

FOR SUPPORT : (PROGRAMMING AND USER QUESTIONS)

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 unmanned aerial vehicle use. It is not intended for use in any application other than the control of models for unmanned aerial vehicle. 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

This device complies with part 15 of the FCC Rules. Operation is subject to the following three 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) RF Radiation Exposure Statement (For FMT-03)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

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

RF Radiation Exposure Statement (For FMR-03)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

The responsible party for the compliance of this device 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 NiCd 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.

NOTE:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. (For FMT-03)

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. (For FMR-03)

French: Cet appareil radio est conforme au CNR-210 d'Industrie Canada. L'utilisation de ce dispositif est autorisée seulement aux deux conditions suivantes : (1) il ne doit pas produire de brouillage, et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif. Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet émetteur ne doit pas être co-situé ou fonctionner conjointement avec une autre antenne ou émetteur. (For FMT-03)

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps (For FMR-03)

This radio transmitter (identify the device by certification number) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

No.	Name	Gain(Peak)	Remark
1	MEIWX-2102RSAX-2400	2.25dBi	1/2 λ Pencil type antenna

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.

FLYING SAFETY

⚠ WARNING

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

Have regular maintenance performed. Although your FMT-03 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.

Battery

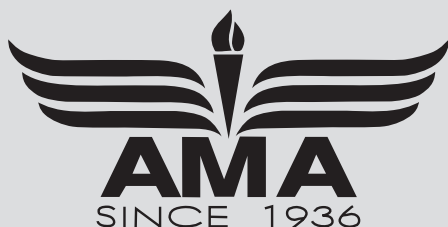
Charge the batteries! Always recharge the transmitter and receiver batteries before each flying session. A low battery will soon die potentially, causing loss of control and a crash. When you begin your flying session, reset your FMT-03's built-in timer, and during the session pay attention to the duration 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.



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.

Precautions

Application, Export, and Modification Precautions.

1. This product is only designed for use with radio control models. Use of the product described in this instruction manual is limited to radio control models.
2. Export precautions:
 - a) When this product is exported, it cannot be used where prohibited by the laws governing radio waves of the destination country.
 - b) Use of this product with other than models may be restricted by Export and Trade Control Regulations.
3. Modification, adjustment, and parts replacement

Futaba is not responsible for unauthorized modification, adjustment, or replacement of parts on this product.

 - No part of this manual may be reproduced in any form without prior permission.
 - The contents of this manual are subject to change without prior notice.
 - Futaba is not responsible for the use of this product by the customer.
 - Company and product names in this manual are trademarks or registered trademarks of the respective company.

For safe use

Please observe the following precautions to ensure safe use of this product at all times.

Meaning of Special Markings:

The parts of this manual indicated by the following marks require special attention from the standpoint of safety.

⚠ 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 Precautions

⚠ WARNING

⊘ **Never grasp the transmitter antenna while flying.**

■ The transmitter output may drop drastically.

⊘ **Always make sure that all transmitter stick movements operate all channels properly in the model prior to flight. Also, make sure that all switches, etc. function properly as well. If there are any difficulties, do not use the system until all inputs are functioning properly.**

⊘ **Never fly in the range check mode.**

■ In the dedicated range test range check mode, the transmitter output range is reduced and may cause a crash.

⊘ **While operating, never touch the transmitter with, or bring the transmitter near, another transmitter, a cellphone, or other wireless devices.**

■ Doing so may cause erroneous operation.

⊘ **Do not point the antenna directly toward the aircraft during flight.**

■ The antenna is directional and the transmitter output is weakest. (The strength of the radio waves is greatest from the sides of the antenna.)

⊘ **Never fly on a rainy day, when the wind is strong, and at night.**

■ Water could lead to failure or improper functionality and poor control of the aircraft which could lead to a crash.

⊘ **Never turn the power switch on and off during flight or while the engine or motor is running.**

■ Operation will become impossible and the aircraft will crash. Even if the power switch is turned on, operation will not begin until transmitter and receiver internal processing is complete.

⊘ **Do not fly when you are physically impaired as it could pose a safety hazard to yourself or others.**

⊘ **Do not touch the engine, motor, or motor controller during and immediately after use.**

■ These items may become hot during use.

⊘ Do not fly at the following places:

- Near another radio control flying field.
- Near or above people.
- Near homes, schools, hospitals or other places where people congregate.
- Near high voltage lines, high structures, or communication facilities.

❗ For safety, fly so that the aircraft is visible at all times.

- Flying behind buildings or other large structures will not only cause you to lose sight of the aircraft, but also degrade the RF link performance and cause loss of control.

❗ From the standpoint of safety, always set the fail safe function.

- In particular, normally set the throttle channel to idle.

❗ When flying, always return the transmitter setup screen to the Home screen.

- Erroneous input during flight is extremely dangerous.

❗ Always check the remaining capacity of the transmitter and receiver battery before each flying session prior to flight.

- Low battery capacity will cause loss of control and a crash.

❗ Always check operation of each control functions and perform a range test before each flying session. Also, when using the trainer function, check the operation of both the teacher and student transmitter.

- Even one transmitter setting or aircraft abnormality cause a crash.

❗ Before turning on the transmitter:

1. Always move the transmitter throttle stick position to the minimum (idle) position.
2. Turn on the transmitter first and then the receiver.

❗ When turning off the transmitter's power switch. After the engine or motor has stopped (state in which it will not rotate again):

1. Turn off the receiver power switch.
2. Then turn off the transmitter power switch.

- If the power switch is turned on/off in the opposite order, the propeller may rotate unexpectedly and cause a serious injury.

- Also always observe the above order when setting the fail safe function.

- Maximum low throttle: Direction in which the engine or motor runs at the slowest speed or stops.

❗ When adjusting the transmitter, stop the engine except when necessary. In the case of a motor, disconnect the wiring and to allow it to continue operation. When doing so, please exercise extreme caution. Ensure that the aircraft is secured and that it will not come into contact with anything or anyone. Ensure that the motor will not rotate prior to making any adjustments.

- Unexpected high speed rotation of the motor/engine may cause a serious injury.

Battery and Charger Handling Precautions

⚠ DANGER

⊘ Do not recharge a battery that is damaged, deteriorated, leaking electrolyte, or wet.

⊘ Do not use the charger in applications other than as intended.

⊘ Do not allow the charger or battery to become wet.

- Do not use the charger when it or your hands are wet. Do not use the charger in humid places.

⊘ Do not short circuit the battery.

⊘ Do not solder or repair, deform, modify, or disassemble the battery and/or battery charger.

⊘ Do not drop the battery into a fire or bring it near a fire.

⊘ Do not charge and store the battery in direct sunlight or other hot places.

⊘ Do not charge the battery if it is covered with any object as it may become very hot.

⊘ Do not use the battery in a combustible environment.

- The gas ignite and cause an explosion or fire.

❗ Always charge the battery before each flying session.

- If the battery goes dead during flight, the aircraft will crash.

⚠ Charge the battery with the dedicated charger supplied with the set.

■ Charging the battery past the specified value may cause a fire, combustion, rupture, or liquid leakage. When quick charging, do not charge the battery above 1C.

■ Do not charge the battery while riding in a vehicle. Vibration will prevent normal charging.

⚠ When using the LiFe battery, do not connect the charger to the balance charge connector and the power connector at the same time.

■ Doing so could cause a fire, combustion, generation of heat, rupture, or liquid leakage.

⚠ WARNING

⚠ Do not touch the charger and battery for any length of time during charging.

■ Doing so may result burns.

⚠ Do not use a charger or battery that has been damaged.

⚠ Do not touch any of the internal components of the charger.

■ Doing so may cause electric shock or a burn.

⚠ If any abnormalities such as smoke or discoloration are noted with either the charger or the battery, remove the battery from the transmitter or charger and disconnect the power cord plug and do not use the charger.

■ Continued use may cause fire, combustion, generation of heat, or rupture.

⚠ Do not subject the battery to impact.

■ Doing so may cause fire, combustion, generation of heat, rupture, or liquid leakage.

⚠ CAUTION

⚠ Do not use the battery with devices other than the corresponding transmitter.

⚠ Do not place heavy objects on top of the battery or charger. Also, do not place the battery or charger in any location where it fall.

■ Doing so may cause damage or injury.

⚠ Do not store or use the battery and charger where it is dusty or humid.

■ Insert the power cord plug into the receptacle only after eliminating the dust.

⚠ After the transmitter has been used for a long time, the battery may become hot. Immediately remove from the transmitter.

■ Not doing so may cause a burn.

⚠ Insert the power cord plug firmly into the receptacle up to its base.

⚠ Always use the charger with the specified power supply voltage.

■ Use the special charger by connecting it to a proper power outlet.

⚠ If the battery liquid should get in your eyes, do not rub your eyes, but immediately wash them with tap water or other clean water and get treated by a doctor.

■ The liquid can cause blindness.

⚠ Use and store the battery and battery charger in a secure location away from children.

■ Doing so may cause electric shock or injury.

⚠ If the battery leaks liquid or generates an abnormal odor, immediately move it to a safe place for disposal.

■ Not doing so may cause combustion.

⚠ If the battery liquid gets on your skin or clothing, immediately flush the area with tap water or other clean water.

■ Consult a doctor. The liquid can cause skin damage.

⚠ After the specified charging time has elapsed, end charging and disconnect the charger from the receptacle.

⚠ When recycling or disposing of the battery, isolate the terminals by covering them with insulating tape.

■ Short circuit of the terminals may cause combustion, generation of heat or rupture.

⚠ Do not charge the battery in extreme temperatures.

■ Doing so will degrade the battery performance. An ambient temperature of 10 °C to 30 °C (50F to 86F) is ideal for charging.

⚠ Unplug the charger when not in use.

⚠ Do not bend or pull the cord unreasonably and do not place heavy objects on the cord.

■ The power cord may be damaged and cause combustion, generation of heat, or electric shock.

Micro SD Card (Commercial Product) Handling Precautions

*Read the instruction manual supplied with the micro SD Card for details.

⚠ WARNING

⊘ Never disassemble or modify the micro SD Card.

⊘ Do not unreasonably bend, drop, scratch or place heavy objects on the micro SD Card.

⊘ If smoke or an abnormal odor emanates from the card, immediately turn off the transmitter power.

⊘ Do not use the Micro SD Card where it may be exposed to water, chemicals, oil, or other fluids.
■ Doing so may cause a fire or electric shock by short circuit.

⚠ CAUTION

❗ Since the micro SD Card is an electronic device, be careful of static electricity.

■ Static electricity may cause erroneous operation or trouble.

⊘ Do not use the micro SD Card near radio and television sets, audio equipment, motors and other equipment that generate noise.

■ Doing so may cause erroneous operation.

⊘ Do not store the micro SD Card in the following places:

- Where the humidity is high
- Where the temperature difference is severe

- Where it is very dusty
- Where the card will be exposed to shock and vibration
- Near speakers and other magnetic devices

⊘ Do not expose the card to shock and vibration and do not remove the card from the card slot while data is being written or read.

■ The data may be damaged or lost.

•Recorded data

The data recorded on the micro SD Card cannot be compensated regardless of the contents or cause of the trouble or obstruction.

Futaba does not perform data restoration or recovery work.

Storage and Disposal Precautions

⚠ WARNING

⊘ Keep wireless equipment, batteries, aircraft, etc. away from children.

⚠ CAUTION

⊘ Do not store wireless devices in the following places:

- Where it is extremely hot (40 °C [104F] or higher) or cold (-10°C [14F] or lower)
- Where the equipment will be exposed to direct sunlight
- Where the humidity is high
- Where vibration is prevalent
- Where it is very dusty

- Where the device may be exposed to steam and heat

❗ When the device will not be used for a long time, remove the battery from the transmitter and aircraft and store them in a dry place where the temperature is between 0 and 30°C [32F and 86F].

■ Left standing 'as is' may will cause battery deterioration, liquid leakage, etc.

Other Precautions

⚠ CAUTION

⊘ Do not directly expose plastic parts to fuel, oil, exhaust gas, etc.

■ If left in such an environment, the plastic may be attacked and damaged.

■ Since the metal parts of the case may corrode, always keep them clean.

❗ Always use genuine Futaba products such as transmitter, receiver, servo, FET amplifier, battery, etc.

■ Futaba is not responsible for damage sustained by combination with other than Futaba Genuine Parts. Use the parts specified in the instruction manual and catalog.

⊘ This product SHOULD NOT been used for the devices that is directly related to human life and/or harmful devices for human body such as below applications.

- (1) Medical Devices
- (2) Aerospace/Aviation Related Devices
- (3) Nucleated Devices e.t.c.

BEFORE USE

Features

FASSTest system

The FMT-03 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.

Waterproof:IP-64

The FMT-03 transmitter and FMR-03 receiver are waterproofing (IP-64).

S.BUS/S.BUS2 system

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

LiFe battery

FMT-03 is operated by a 6.6V/2,100mAh Lithium Ferrite battery.

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

Model data can be saved to a micro SD card (SD:32MB-2GB SDHC:4GB-32GB). When FMT-03 transmitter software files are released, the software can be updated by using a micro SD card update.

Data input

Large graphic LCD and Edit dial substantially improve ease of setup.

Edit button

Edit dial and three 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 Edit dial.

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-03 includes the following components:

- FMT-03 Transmitter
- FMR-03 Receiver
- FT2F2100BV2 LiFe battery & charger

*The set contents depend on the type of set.

Transmitter FMT-03

(2-stick, 18-channel, FASSTest-2.4GHz system)

Transmitting frequency: 2.4GHz band

System: FASSTest 18CH, FASSTest 12CH switchable

Power supply: 6.6V FT2F2100BV2 LiFe battery

Receiver FMR-03

(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: 0.92 x 1.36 x 0.42 in. (23.4 x 34.6 x 10.6 mm)

Weight: 0.11 oz. (3g)

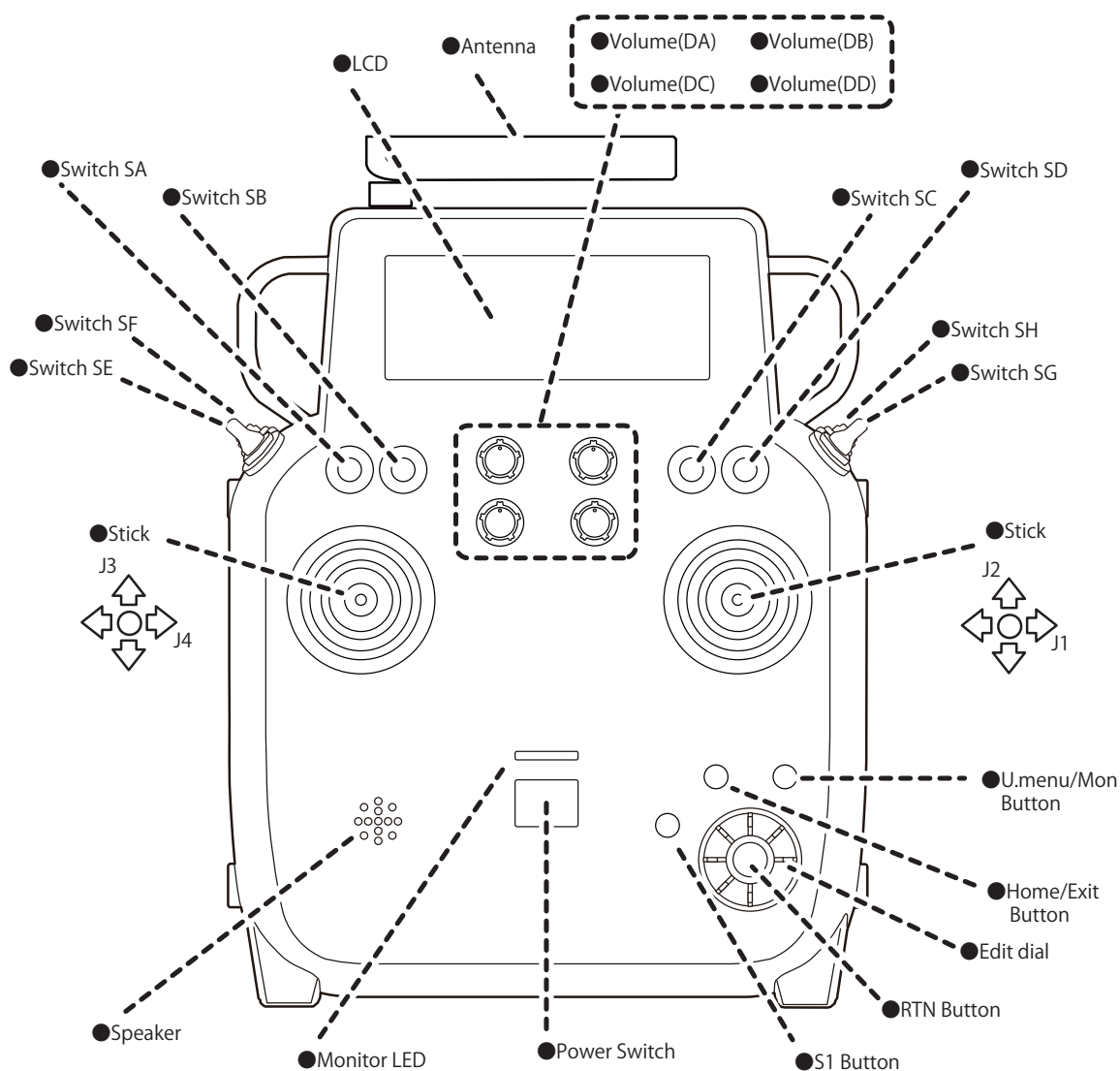
(*1) When using an ESC make sure that it is capable of your applications current draw.

Note: The battery in the FMT-03 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:

- FT2F2100BV2 transmitter battery pack - the (2,100mAh) transmitter LiFe 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: FMT-03 is connected by an exclusive trainer code by FMT-03 fellow. It isn't possible to connect with a transmitter of the different model.
- Servos - FMR-03 can use only futaba S.BUS2 servos.
- 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/TE] [Altitude sensor : SBS-01A] [RPM sensor magnet type : SBS-01RM][RPM sensor optical type : SBS-01RO] [RPM sensor brushless motor type : SBS-01RO] [GPS sensor : SBS-01G] [Voltage sensor : SBS-01V] [S.BUS servo sensor : SBS-01S] [Current sensor : SBS-01C]
- 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.
- Receivers - various models of Futaba receivers may be purchased for use in other models. (Receivers for FASSTest types are available.)

Transmitter controls



CAUTION

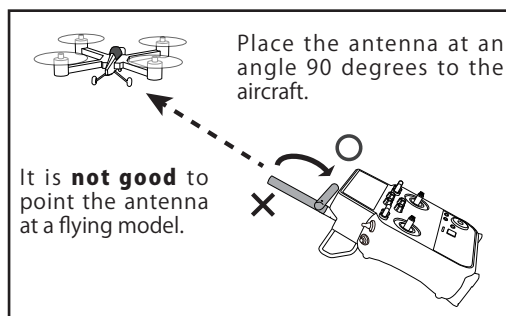
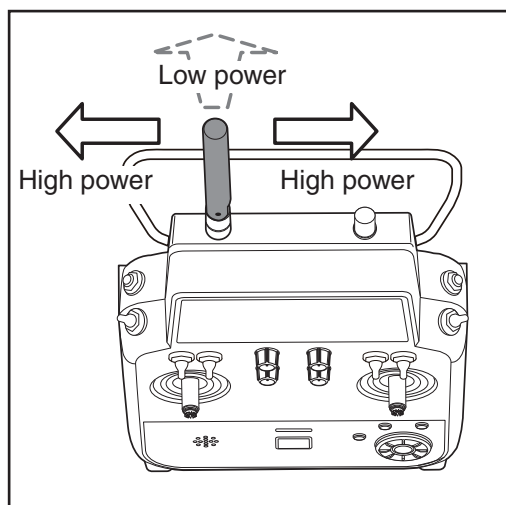
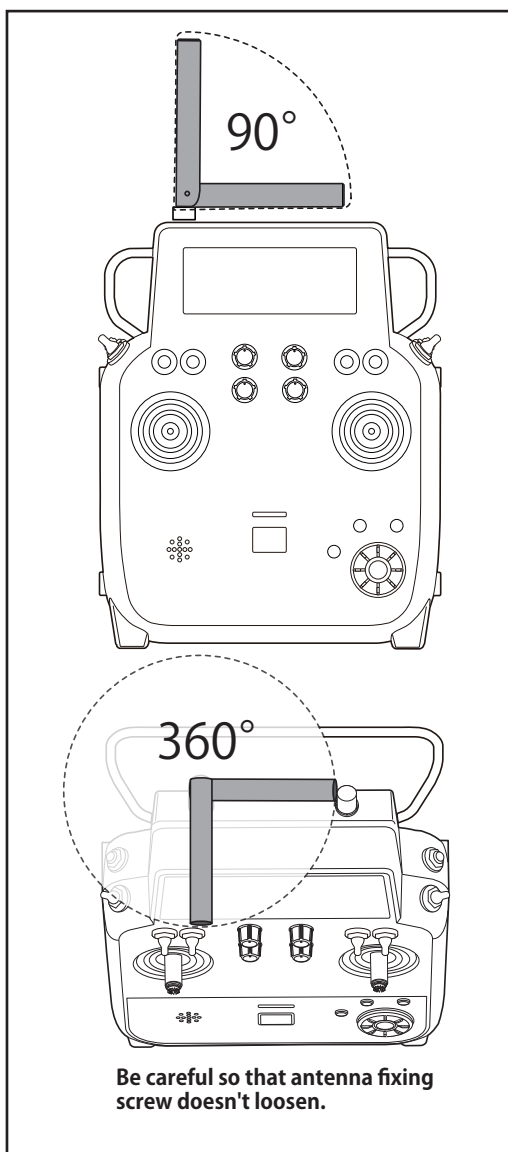
! This transmitter is a self neutral stick. A throttle stick of a transmitter for R/C hobbies of normality is a ratchet-type. Notice should be taken of this difference. When you release your hold, it becomes middle-speed, so be careful.

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

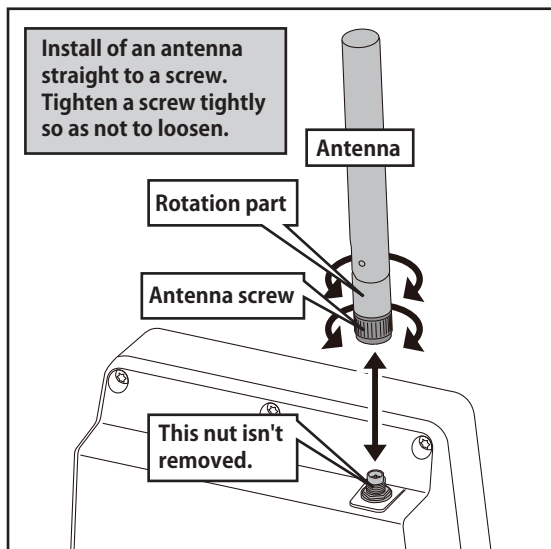
The antenna can be rotated 360 degrees and angled 90 degrees. Forcing the antenna further than this can damage it. When making an antenna rotate, be careful so that fixing screw doesn't loosen.



Attachment and removal of an antenna

FMT-03 can attach or remove an antenna.

Dust and water aren't supposed to be stuck in an antenna connector.



⚠ CAUTION

❗ **Be sure to install an antenna and do a flight.**

■ When there are no antennas, you can't control.

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

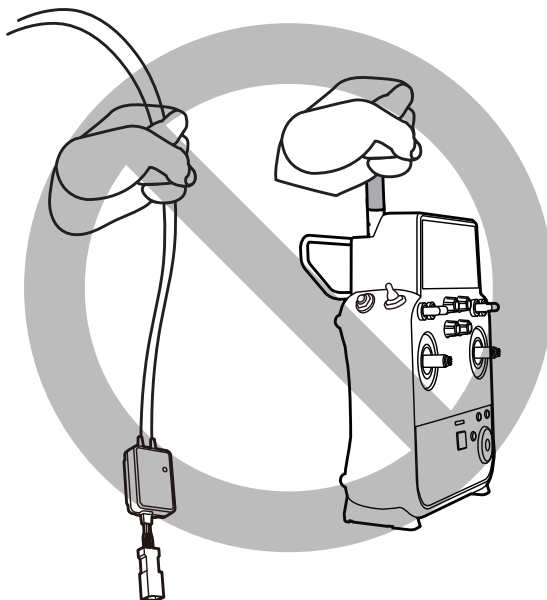
■ Doing so may degrade the quality of the RF transmission to the model.

⊘ **Do not carry the transmitter by the antenna.**

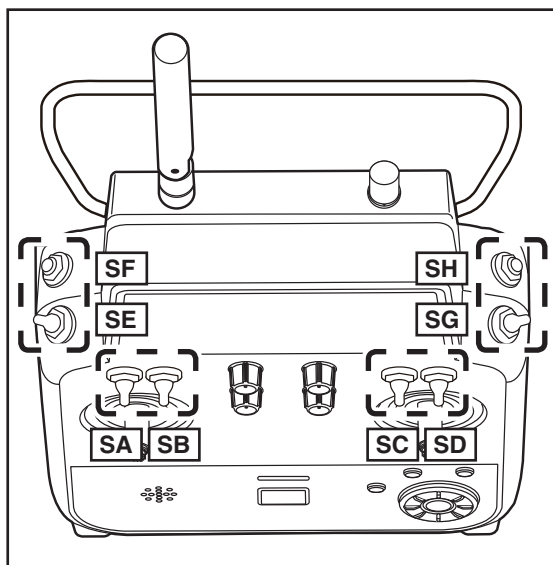
■ There is the danger that the antenna wire will break and operation will become impossible.

⊘ **Do not pull the antenna forcefully.**

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

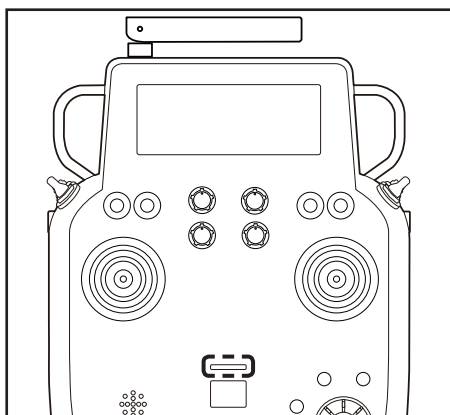


Switch (SA-SH)



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

Monitor LED

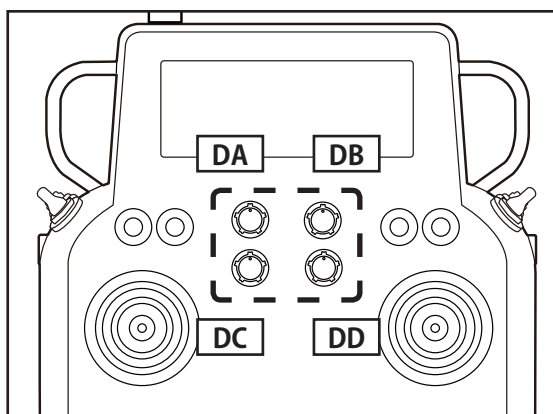


Monitor LED display

The status of the transmitter is displayed by LED at the upper part of the front of a FMT-03.

- RF-ON → Light Blue light
- RF-OFF → Violet light
- Starting → Red light
- Trainer Student → Blue light
- Range check mode → Slow blinking
- FASSTest receiver link mode → Fast blinking

Volume



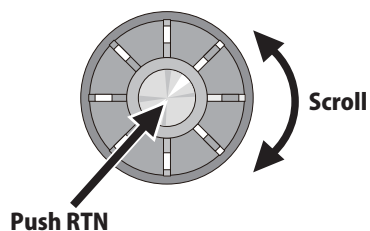
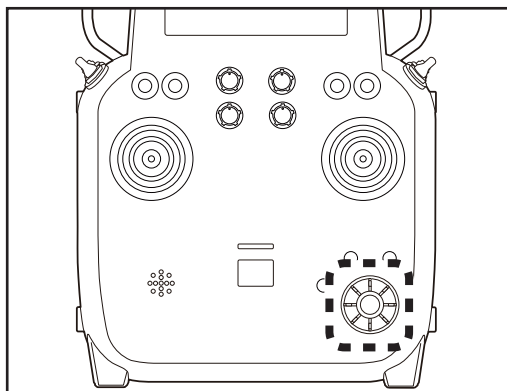
Volume DA - DD:

The volume DA-DD knobs allow analog input.

*The FMT-03 transmitter beeps when the volume knob reaches the center position.

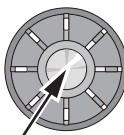
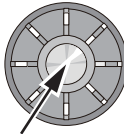

*You can use each setting screen of the mixing functions to select volumes and define the direction of a movement.

Edit dial



Edit dial operation

Data input operation is performed using the edit dial.

Edit dial operation		Action	Reaction
 S1 RTN	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.
 S1 RTN	S1	At the HOME screen	Key lock On or Off
	RTN	In the input data mode without blinking the setting data.	Reset to the initialized value.
 S1 Outline of Edit dial	Outline of Edit dial	Turn the outline of the edit dial.	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:

Push 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 pushing the S1 button. In this case, the cursor moves to the screen title item of the page.

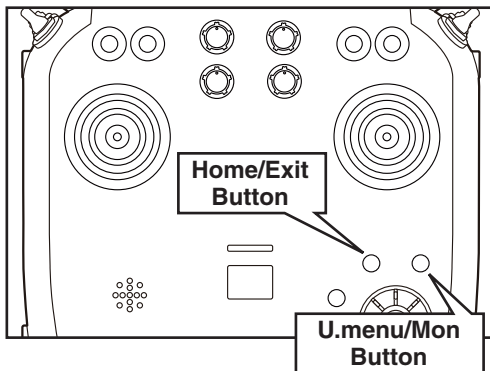
Exiting setup screen:

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

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

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

Home/Exit and U.menu/Mon. Button



Home/Exit:

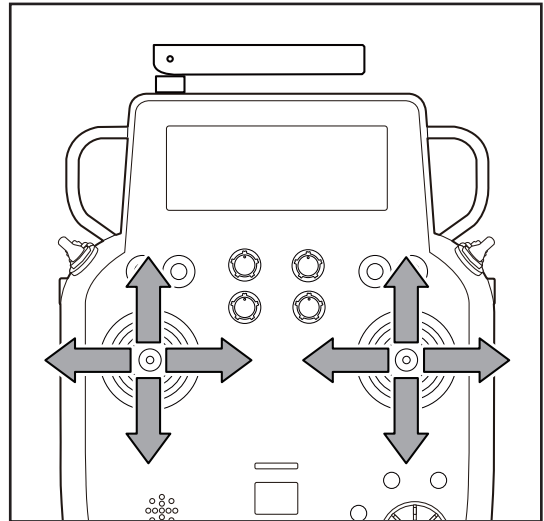
Push	Return to the previous screen
Push and hold	Return to the Home screen
It pushes from HOME screen.	To TELEMETRY display

U.menu/Mon:

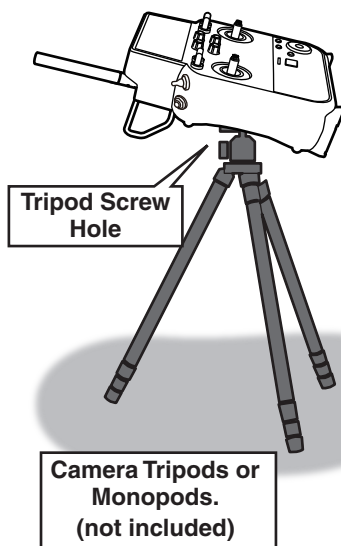
Push	To Servo Monitor display
Push and hold	To User menu

Operation of sticks

2 sticks of FMT-03 can do linear operation in left, right, up or down.

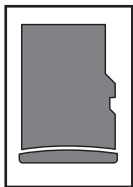


Maintenance example of a transmitter




Hole of the VESA (VIDEO ELECTRONICS STANDARDS ASSOCIATION) standard is equipped in FMT-03. It's also possible to install it in the display arm (not included).

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



The FMT-03 transmitter model data can be stored by using any commonly found micro SD card. When FMT-03 transmitter update software is released, the software is updated using an micro SD card. The FMT-03 is capable of using micro SD cards with a memory size between SD:32MB -2GB SDHC:4GB-32GB.

CAUTION

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

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

Micro SD card reader/writer

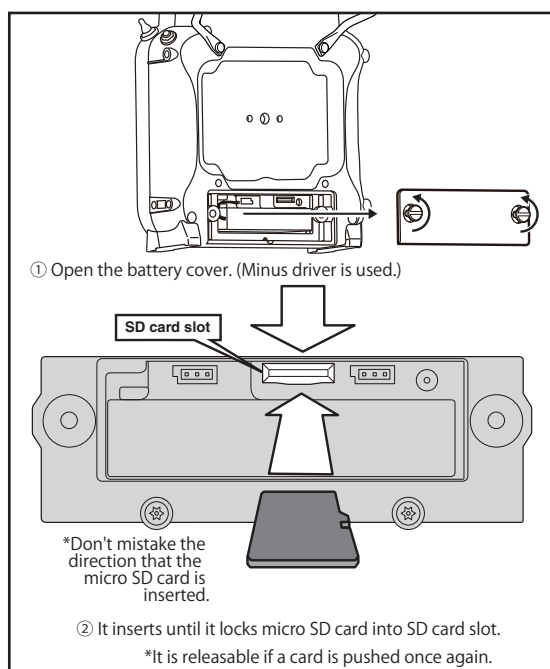
Saving model data and update files (released from Futaba) into the micro SD card, you can use those files on your FMT-03 transmitter. Equipment for reading and writing micro SD cards is available at most electronics stores.

Stored data

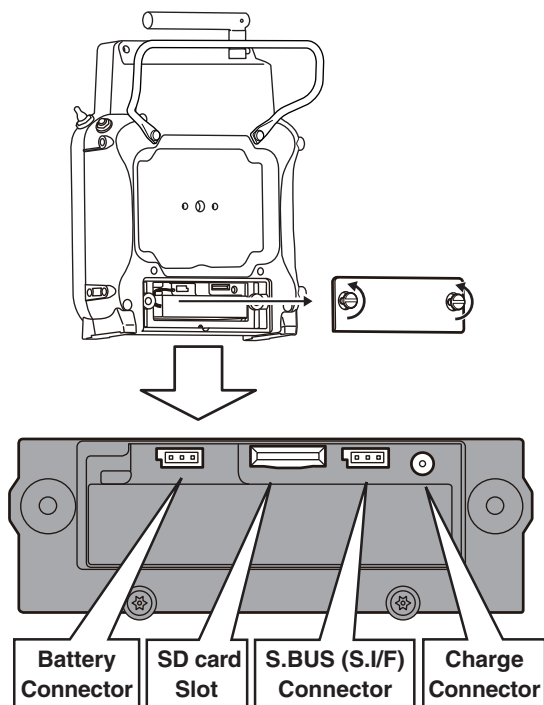
When you have a problem of saving or reading data after a long period of use, please get a new micro SD card.

*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 micro SD card.

Inserting/removing the micro SD card



Connector



S.BUS connector (S.I/F)

When setting an S.BUS2 servo and telemetry sensor, connect them both here.

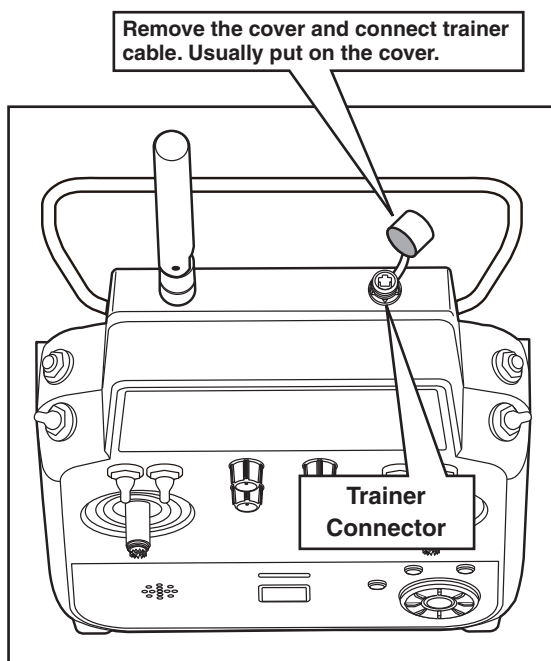
***Do not connect the battery.**

Connector for battery charger

This is the connector for charging the LiFe battery FT2F2100BV2 that is installed in the transmitter. Do not use any other chargers except the attached special charger corresponding to LiFe battery.

⚠ WARNING

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



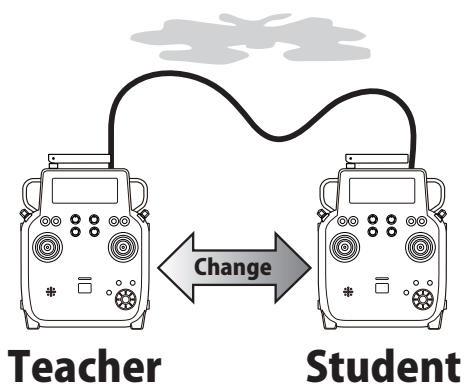
Connector for trainer function

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.

*A transmitter of anything but FMT-03 doesn't correspond to this trainer system.

*An exclusive option trainer code is needed to use a trainer system.

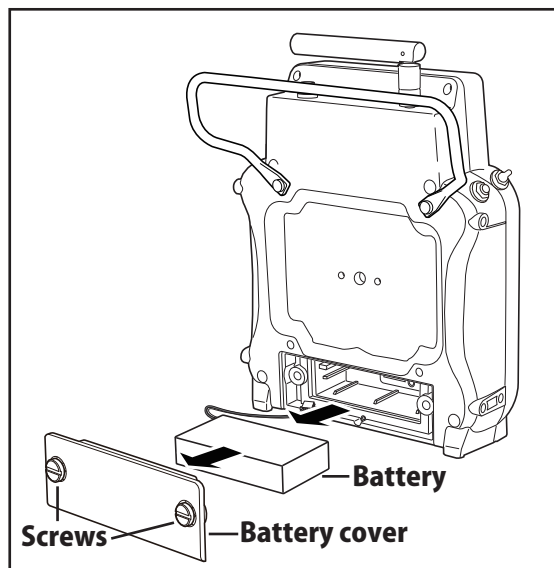


Installation and removal of the FT2F2100BV2 transmitter battery

Battery removal

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

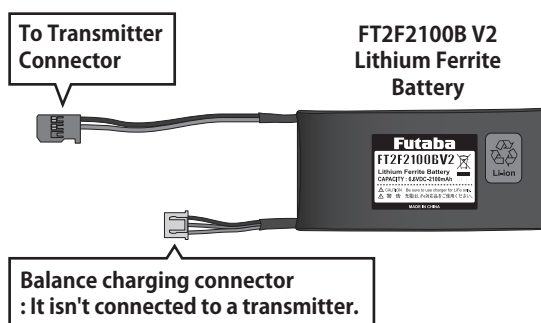
1. Loosen 2 screws.
2. Open the battery cover.



3. Disconnect the battery connector.
4. Remove the battery.
5. Close the battery cover completely.
6. Tighten 2 screws.

Attachment of the battery

1. Remove 2 screws.
2. Open the battery cover.
3. Insert a battery.
4. Connect the battery connector.
5. Close the battery cover completely.
6. Tighten 2 screws.



*The balance charge connector is not connected in the state where the battery is set to a transmitter.

⚠ WARNING

❗ Be careful not to drop the battery.

⊘ Never disconnect the battery connector from the FMT-03 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.

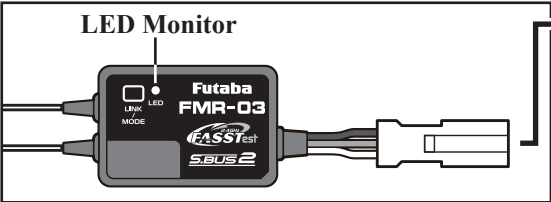
* If there is any problem, the message "Backup Error" will be shown the next time when you turn on the power of the transmitter. Do not use the transmitter as it is. Contact supplier.

⚠ WARNING

⊘ When closing the battery cover, be careful that the battery cover does not pinch the battery lead wires.

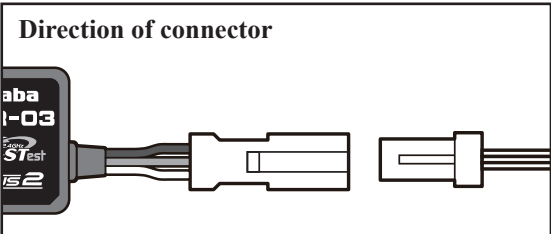
*Shorting of the battery lead wires may lead to fire and abnormal heating and cause burns or fire disaster.

Receiver FMR-03



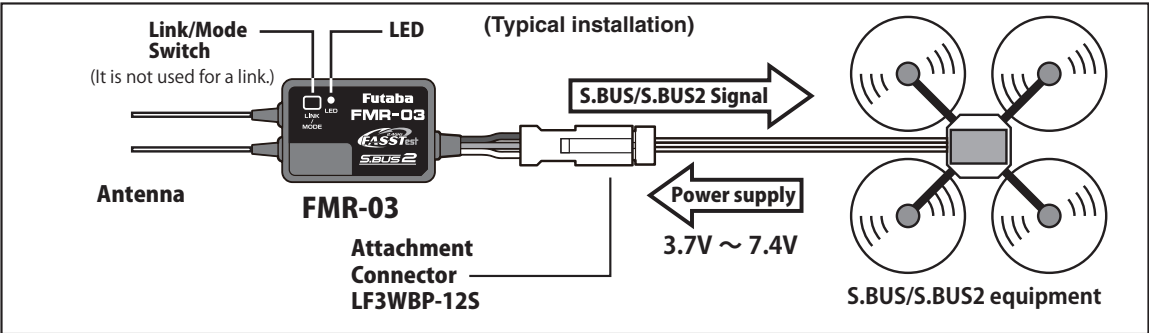
● S.BUS2 Connector

● Be careful about the direction of connector.



● LED Indication

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



S.BUS Modes S.BUS2 ⇔ S.BUS

The FMR-03 is capable of changing its S.BUS modes as described in the table next. Please choose the mode which suited the use in the following procedure from the S.BUS or S.BUS2 modes.

- 1 Press and hold down the Link/Mode button on the FMR-03 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 S.BUS Mode table shown next.]
- 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 S.BUS Mode.

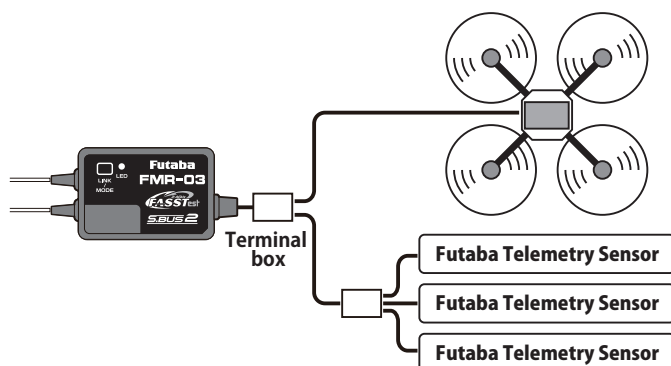
FMR-03 S.BUS Mode table

	S.BUS mode	LED	Signal
Default	A	Red 1 time	S.BUS2
	B	Red 2 times	
	C	Red 3 times	
	D	Red 4 times	
	E	Green 1 time	S.BUS2
	F	Green 2 times	
	G	Green 3 times	
	H	Green 4 times	
	I	Red Green 1 time	
	J	Red Green 2 times	
	K	Red Green 3 times	

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

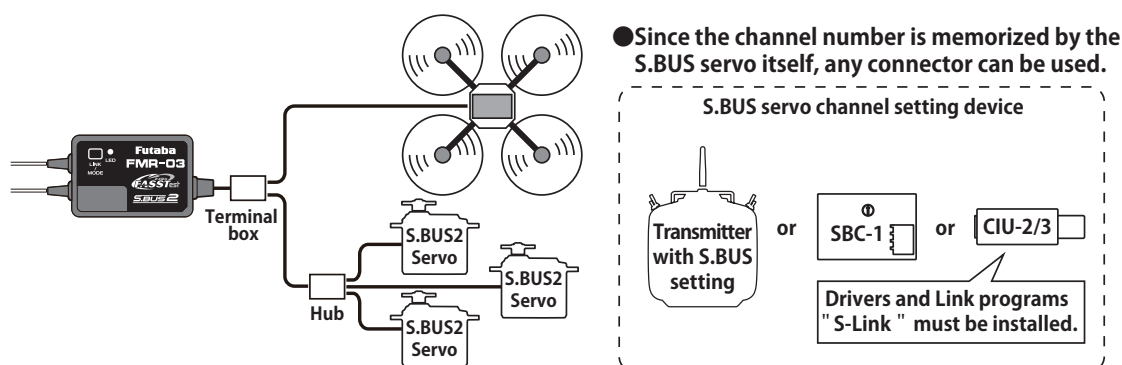
Telemetry sensor (sold separately)

Your aircraft's data can be checked in the transmitter by connecting various telemetry sensors to the hub connector of the receiver.



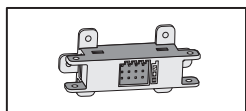
S.BUS/S.BUS2 Servo

Use of multi-copter control box corresponding to S.BUS/S.BUS2 is presupposing for FMR-03. S.BUS/S.BUS2 servo is connected as shown in the figure.



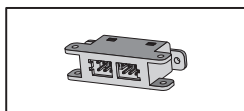
●6-Terminal box (TB16PP)

Six connectors can be inserted



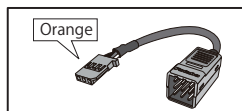
●4-Terminal box

Four connectors can be inserted



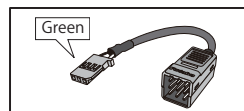
●Hub

Three connectors can be inserted.



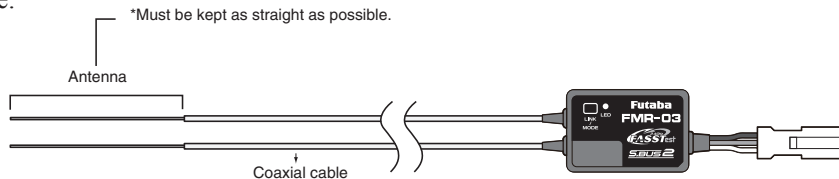
●Hub (Another power supply)

Used when using a separate power supply battery.



Receiver's Antenna Installation

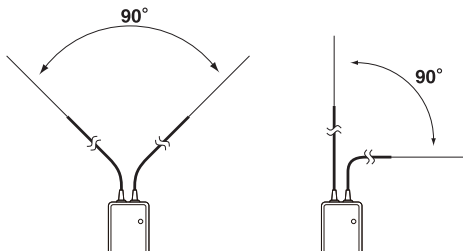
The FMR-03 has two antennas. In order to maximize signal reception and promote safe modeling Futaba has adopted a diversity antenna system. This allows the receiver to obtain RF signals on both antennas and fly problem-free.



FMR-03 Receiver

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.



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

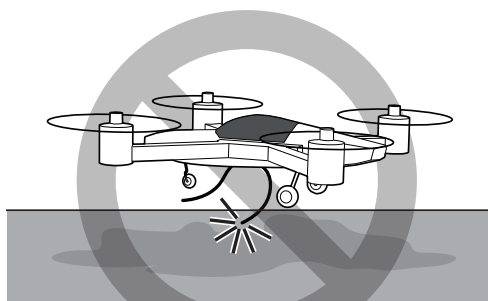
*The illustration demonstrates how the antenna should be placed.

*Install in a way that makes sure that the 2 antennas won't touch the ground. When an antenna touches the ground, there is danger which becomes control impossibility.

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

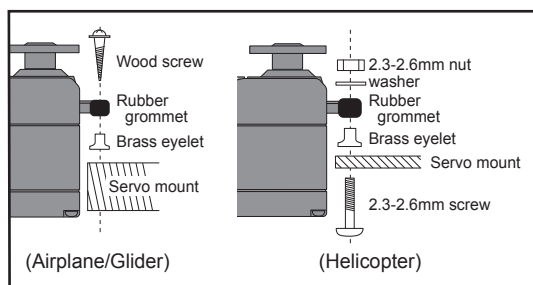
Larger models can have large metal objects that can effect the RF signal. In this case the antennas should be placed at both sides of the model. Then the best RF signal condition is obtained at any flying attitude.

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.



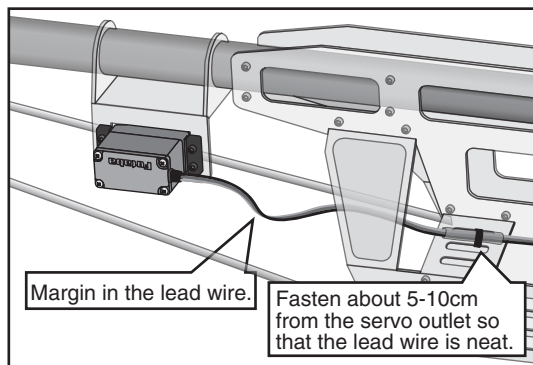
Antenna don't touch the ground.

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

- ❗ Wrap the receiver with something soft such as foam rubber to avoid vibration.

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.

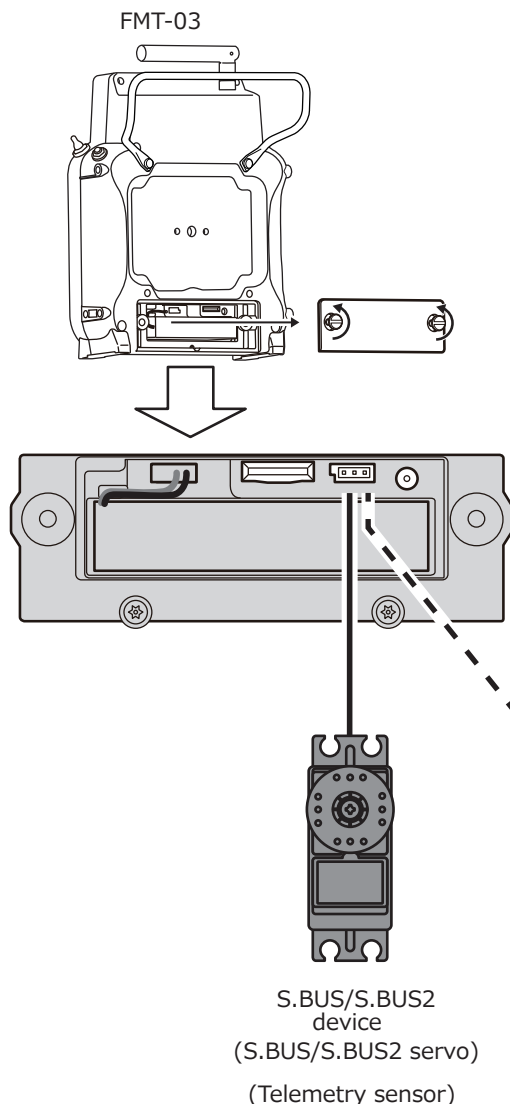
Mounting servos

- ❗ 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 push 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 device setting

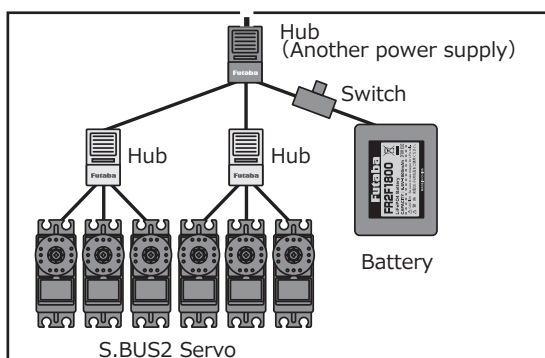
S.BUS/S.BUS2 servos or a telemetry sensor can be connected directly to the FMT-03. Channel setting and other data can be entered for the S.BUS/S.BUS2 servos or sensors.



1. Connect the S.BUS/S.BUS2 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.BUS2 servo, or telemetry device to be used with the S.BUS2 device or receiver.

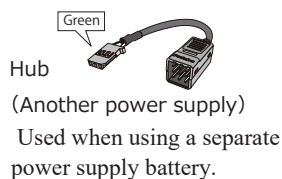
*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.
(It will damage, if it connects.)

*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.



BASIC OPERATION

Battery Charging

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

How to charge the LiFe battery FT2F2100BV2 for the transmitter

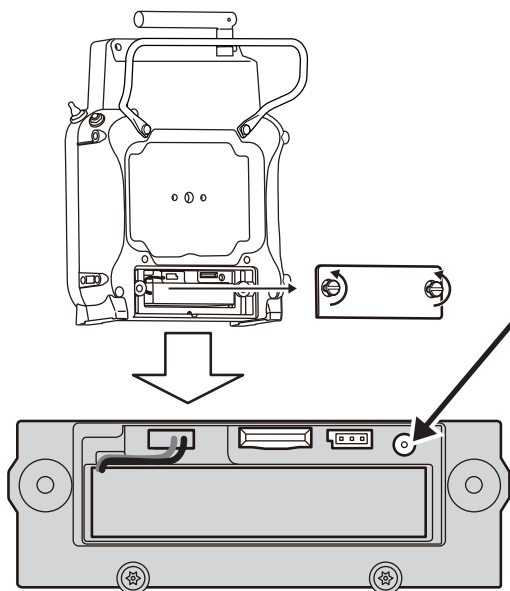
⚠ DANGER

⊘ The LiFe battery FT2F2100BV2 is only for your FMT-03. Do not use this battery for other equipment.

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

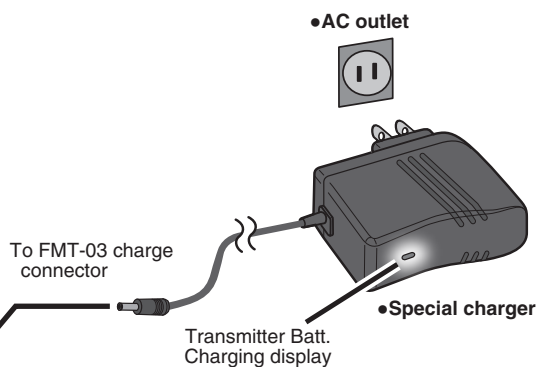
When the battery will not be used for a long time, to prevent it from deteriorating we recommend that it be kept in about the half capacity state instead of fully charged. Also be careful that the battery does not enter the over-discharged state due to self-discharge. When the transmitter will not be used for a long time, you should always remove its battery. Periodically (about every 3 months) charge the battery.

[Method of charging battery]

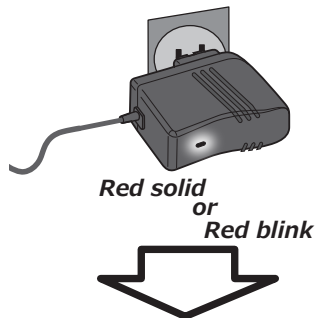


1. Plug the transmitter cord of the special charger into the charging connector in the transmitter.
2. Plug the charger into an AC outlet.
3. Check that the charging LED lights.

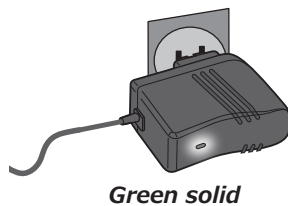
The charging time when charging the FT2F2100BV2 battery with the optional special charger is approximately 3 hours.



Charging



Charge completion



4. Disconnect the charge plug.
5. Disconnect the AC plug.

How to turn transmitter power ON/OFF

When turning on the power, the FMT-03 transmitter will begin emitting 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.



How to stop the transmitter

1. Turn off the power switch of the transmitter.

*The transmitter shuts down at once.

Low battery alarm

When the battery voltage reaches 6.2V, an audible alarm will sound. Land your aircraft immediately.

It can change from 6.0V to 7.6V by [SOUND] of [SYSTEM MENU].

It recommends using it with an initial value.

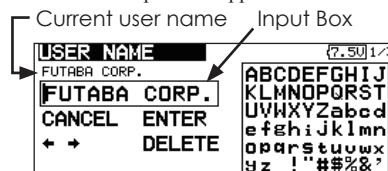
Registration of the user's name

If so desired, the FMT-03 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 RTN 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 RTN button.

[Deleting a character]

When [DELETE] is selected and the RTN button is pushed, 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 pushed, that character is added at the position immediately after the cursor.

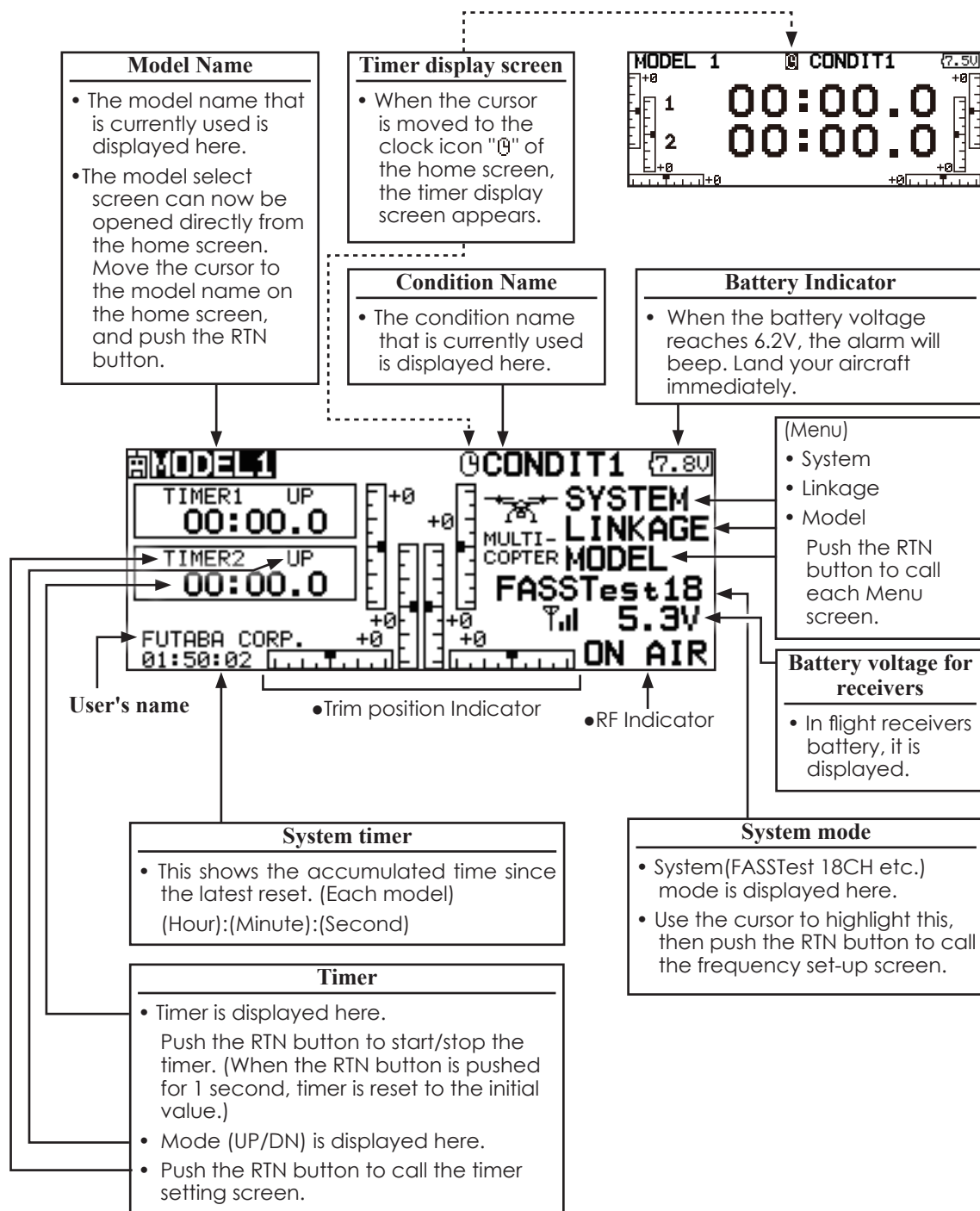
*A name of up to 12 characters long can be entered as the user name. (A space is also counted as 1 character.)

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

Home screen

Use the edit dial to select the following display area to call each setting screen, and Push the RTN button. The setting screen appears.

Home Screen



⚠ WARNING

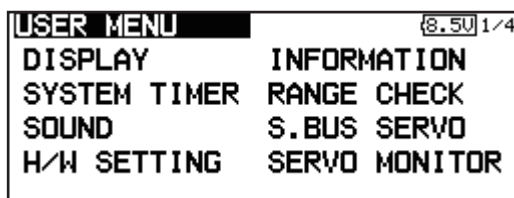
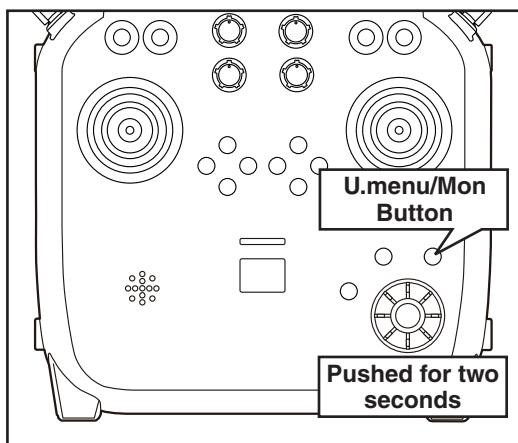
❗ Be sure to confirm the model name before flying your aircraft.

❗ 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.

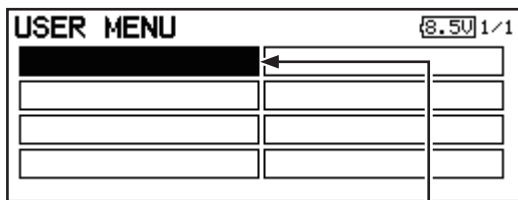
User Menu

A user menu which allows the user to customize and display frequently used functions has been added.



1. When the "U.MENU" button is pushed for two seconds, the user menu appears.

*Return to the home screen by pushing the EXIT button while the user menu is being displayed.



2. When the cursor highlights the space box, and the RTN button is pushed, the menu selection screen appears.

3. When the cursor is moved to the setting that you to set to the user menu and the RTN button is pushed, that setting screen is added to the user menu.

4. The registered setting screen can be called by moving the cursor to it and pushing the RTN button.

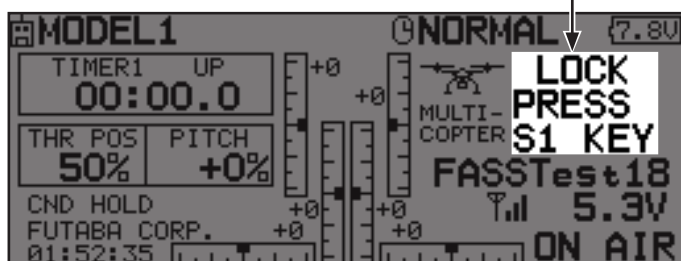
*When you want to delete an added screen from the user menu, highlight item you wish to delete, push and hold the RTN button for one second.

Key lock

To prevent the data from being changed by erroneous pushing of the edit dial during flight, a function which makes an edit dial impossible temporarily.

How to lock

1. The home screen is displayed.
2. Push the S1 button for about 1 second. "LOCK" is displayed and the edit dial is disabled.



How to unlock

1. Push the S1 button for about 1 second in the edit dial locked state. The edit dial 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-03 programming push and hold the S1 button for one second. Please note, the Auto Lock function timer will resume immediately once again.

*A PIN can also be set to protect the set data.

AUTOMATIC LOCK

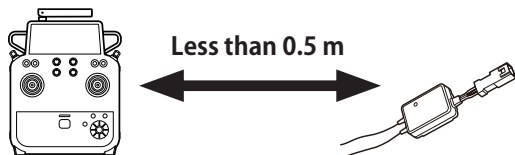
Auto Lock functions automatically when there is no operation from the HOME screen display for a chosen number of seconds.

Link procedure (FMT-03 ⇔ FMR-03)

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-03 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 pushing the RTN button.

SYSTEM TYPE		(7.80) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	114300031	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

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

SYSTEM TYPE		(7.90) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	114300031	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

ID of a primary receiver displays.

ID of a secondary receiver displays.

SYSTEM TYPE		(7.90) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	DUAL	
RECEIVER ID	114300031	LINK
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	3.8V

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.

SYSTEM TYPE		(7.80) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	114300031	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

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.

SYSTEM TYPE		(7.80) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	LINKING	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

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.

SYSTEM TYPE		(7.80) 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	114300031	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

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

SYSTEM TYPE		7.80 1/1
SYSTEM	FASSTest 18CH	
RECEIVER	SINGLE	
RECEIVER ID	114300031	
TELEMETRY	ACT 1.0s	
B.F/S VOLTAGE	3.8V	

*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

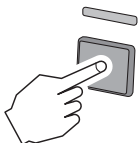
It is extremely important to range check your models prior to each flying session. This enables you to ensure that everything is functioning as it should and to obtain maximum enjoyment from your time flying. The FMT-03 transmitter incorporates a system that reduces its power output and allows you to perform such a range check.

Range check mode

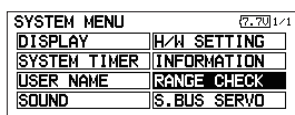
1. While pushing previously "U.menu/Mon" button.



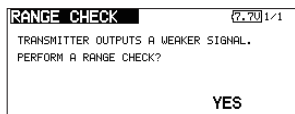
2. FMT-03 Power ON.



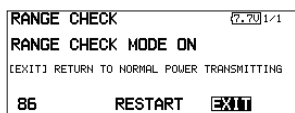
3. Scroll to "NO" and push RTN.



4. "RANGE CHECK" is chosen from "SYSTEM MENU" and push RTN.



5. "YES" is chosen from "RANGE CHECK" and push 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.

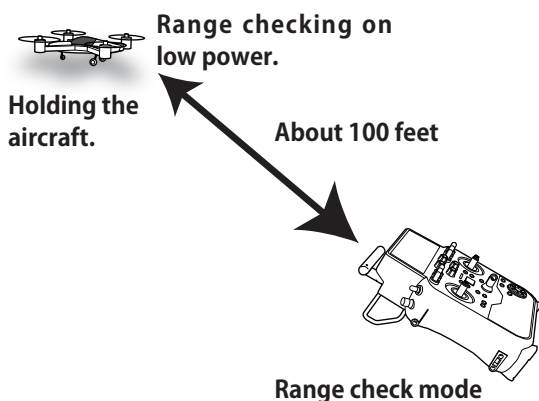
The "Range check mode" continues for 90 seconds and after that the power will return to the normal level. To exit the "Range check mode" before the 90 seconds, select the "EXIT" at the screen and touch the RTN button again. This mode is available one time only so if you need to re-use this function the 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.

Cannels connection by multicopter type

The FMT-03 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.

Multicopter

●FASSTest 18CH

CH	Multicopter
1	Aileron
2	Elevator
3	Throttle
4	Rudder
5	Gyro
6	Gyro2
7	Gyro3
8	CAM TILT
9	CAMERA PAN
10	CAMERA REC
11	Mode
12	AUX5
13	AUX4
14	AUX3
15	AUX2
16	AUX1
DG1	SW SH
DG2	SW SA

●FASSTest 12CH

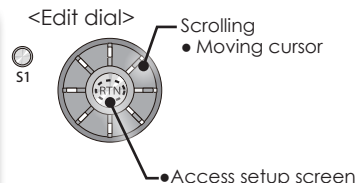
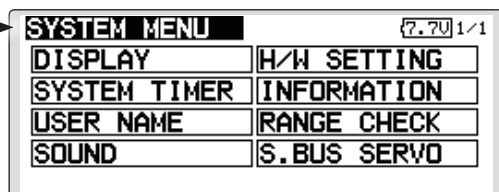
CH	Multicopter
1	Aileron
2	Elevator
3	Throttle
4	Rudder
5	Gyro
6	Gyro2
7	Gyro3
8	CAM TILT
9	CAMERA PAN
10	CAMERA REC
11	Mode
12	AUX5

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 pushing the RTN button.
- Scrolling the edit dial to select the function you want to set and call the setup screen by pushing the RTN button.

- Select the function name and return to the System menu by pushing the RTN button or pushing the Home/Exit 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, micro 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.

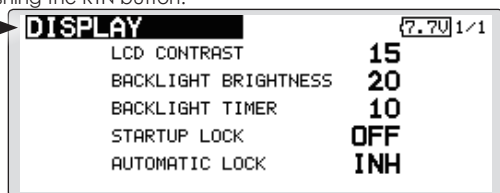
DISPLAY

LCD contrast adjustment and automatic key lock

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

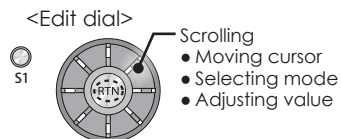
- Select [DISPLAY] at the system menu and call the setup screen shown below by pushing the RTN button.

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



- Backlighting brightness adjustment
- Backlighting off timer adjustment
- Key lock setup

A PIN can also be set to protect the set data.



LCD contrast adjustment

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

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

Initial value: 15

Push the RTN button to end adjustment and return to the cursor 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 push the RTN button for 1 second.

Backlight brightness adjustment

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

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

Initial value: 10

Push the RTN button to end adjustment and return to the cursor 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 push the RTN button for 1 second.

Back-light off-timer

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

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

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, push the RTN button for one second.

2. Push 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-03 programming push 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 push the RTN button to switch to the data input mode and adjust the ON or OFF by scrolling the edit dial.

Setting range: ON or OFF

Initial value: OFF

Set PIN ID

A PIN can also be set to protect the set data.

***Please do not forget the ID you set here.** You have to input the ID in order to unlock the ID lock on the home screen. If you do not need the ID lock feature, please set the ID for "00000000".

1. Select "ID" and push the RTN button to switch to the ID input screen.
2. Scrolling the edit dial to select "00000000" and push the RTN button to switch to the data input mode and adjust the number by turning the edit dial to the left and right. Push the RTN button to end adjustment and return to the cursor move mode.
3. UNLOCK: Push the S1 button for about 1 second in the edit dial locked state. And input the ID you have set. The edit dial is enabled again.

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 edit dial to select "AUTOMATIC LOCK" and push the RTN button to switch to the data input mode and adjust the time by turning the edit dial 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-03 has two type system timers.

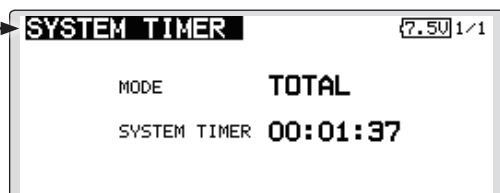
TOTAL timer: Displays the total accumulated time on the transmitter from the last time the timer was reset.

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 pushing the RTN button.

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



<Edit dial>



Scrolling

• Moving cursor

• Selecting mode

Timer selection

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

Select the mode by scrolling the edit dial and push 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 pushing the RTN button for 1 second. After reset, the timer restarts from "00:00:00".

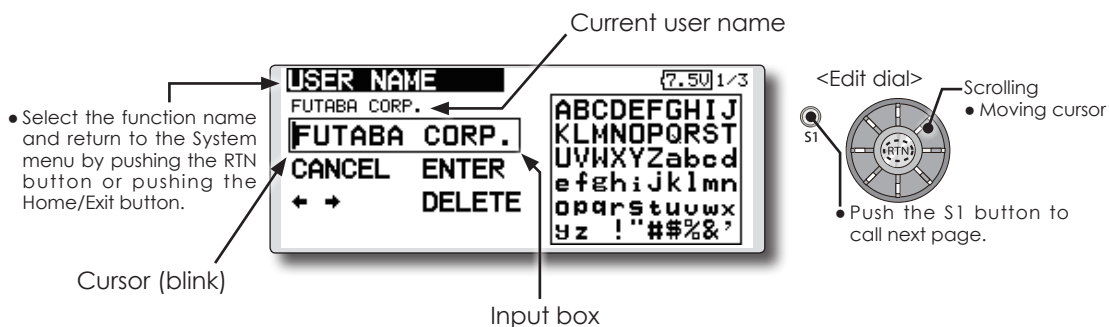
USER NAME

User name registration

This function registers the FMT-03 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 pushing the RTN button.



User name registration

1. Change the user name as described below:

[Moving cursor in input box]

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

[Deleting a character]

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

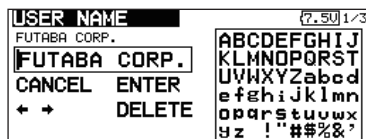
[Adding a character]

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

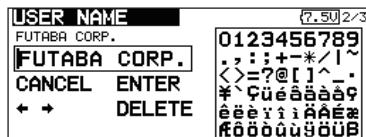
*A name of up to 12 characters long can be entered as the user name. (A space is also counted as 1 character.)

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

(Character list 1/3)



(Character list 2/3)



(Character list 3/3)



SOUND

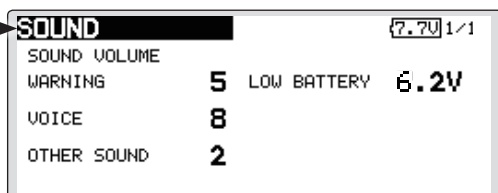
Turns off the buzzer.

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

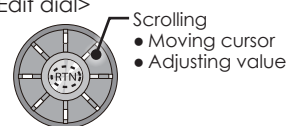
"LOW BATTERY" adjusts low battery alarm voltage to match a battery.

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

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



<Edit dial>



Sound volume operation

1. Move the cursor to the [WARNING][VOICE] or [OTHER SOUND] item and push the RTN button to switch to the data input mode.

2. Select the volume by scrolling the edit dial.

*The display blinks.

3. Push the RTN button.

Low battery voltage operation

1. Move the cursor to the [LOW BATTERY] item and push the RTN button to voltage to the data input mode.

2. Select the voltage by scrolling the edit dial.

*The display blinks.

3. Push 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.

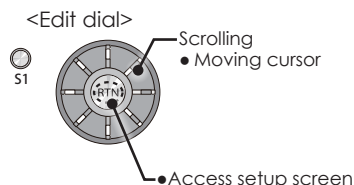
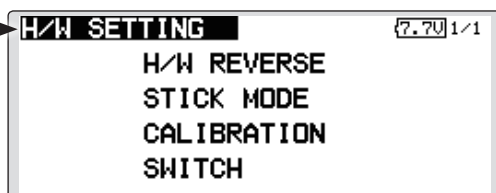
Note: It does not carry out, when there is no necessity.

Switch

For set the switch type and position amount when the stock configuration is changed.

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

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



Operation direction reversal method

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

H/W REVERSE (7.50) 1/2					
H/W	MODE	H/W	MODE	H/W	MODE
J1	NORM	SA	NORM	SE	NORM
J2	NORM	SB	NORM	SF	NORM
J3	NORM	SC	NORM	SG	NORM
J4	NORM	SD	NORM	SH	NORM

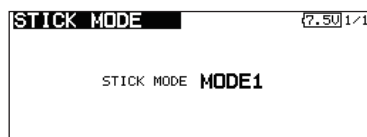
2. Use the edit dial to move the cursor to the "MODE" item corresponding to the H/W (hardware) you want to reverse and push the RTN button to switch to the data input mode.
3. Change the mode by turning the edit dial to the left or right. The display blinks. When the RTN button is pushed, the operation direction is reversed. (To terminate mode change, turn the edit dial or push the S1 button.)

"NORM": Normal operation direction

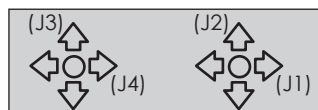
"REV": Operation direction is reversed.

Operation direction reversal method

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



2. Use the edit dial to move the cursor to the "STICK MODE" item and push the RTN button to switch to the data input mode.
3. Change the mode by turning the edit dial to the left or right. The display blinks. When the RTN button is pushed, the stick mode is changed. (To terminate mode change, turn the edit dial or push the S1 button.)

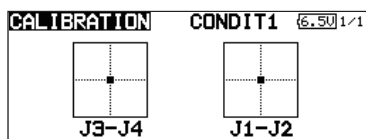


Mode	J1	J2	J3	J4
1	Aileron	Throttle	Elevator	Rudder
2	Aileron	Elevator	Throttle	Rudder
3	Rudder	Throttle	Elevator	Aileron
4	Rudder	Elevator	Throttle	Aileron

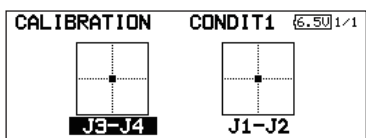
Stick calibration method

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

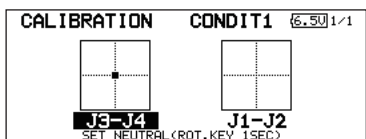
1. Select [CALIBRATION] and access the setup screen shown below by pushing the RTN button.



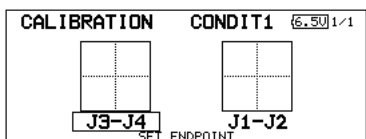
2. Move the cursor to the J3-J4 button and push the RTN button.



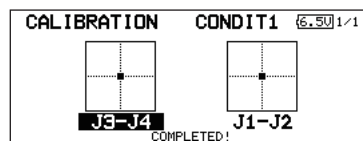
3. Move the J3-J4 stick to the neutral position and push the RTN button for one second.



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



5. Set the J3-J4 stick 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 pushing the RTN button.

SWITCH				7.60 1/1
H/W	SETTING	H/W	SETTING	
SA	3Pos	SE	3Pos	
SB	3Pos	SF	3Pos	
SC	3Pos	SG	3Pos	
SD	3Pos	SH	3Pos	

2. Use the edit dial to move the cursor to the "SA-SH" item corresponding to the switch you want to change and push the RTN button to switch to the data input mode.
3. Change the "2Pos" or "3Pos" by turning the edit dial to the left or right. The display blinks. It will decide, if the RTN button is pushed. (To terminate mode change, turn the edit dial or push the S1 button.)

"3Pos": 3 position switch

"2Pos" : 2 position switch

INFORMATION

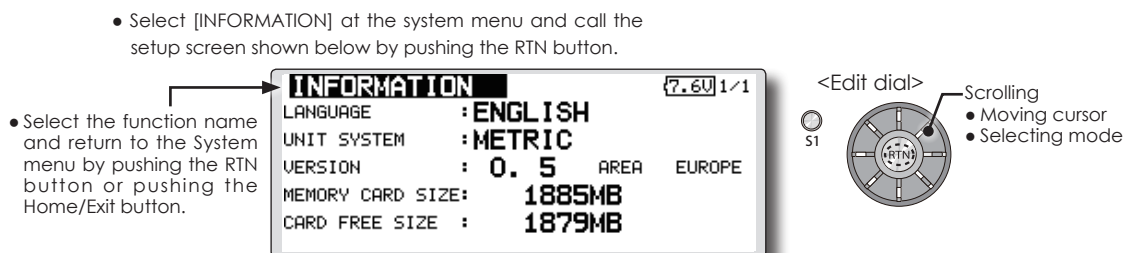
Displays the program version, Micro SD card information, and product ID.

The FMT-03 system program version information, micro SD card information (maximum and vacant number of model data), and product ID are displayed on the Information screen.

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

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

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



Information

"VERSION": FMT-03 system program version information

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

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

Language selection

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

Unit system selection

1. Use the edit dial to move the cursor to the "UNIT SYSTEM" item and push the RTN button to switch to the data input mode.
2. Change the unit by turning the edit dial to the left or right. The display blinks. When the RTN button is pushed, the unit is changed. (To terminate mode change, turn the edit dial 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 for 90 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

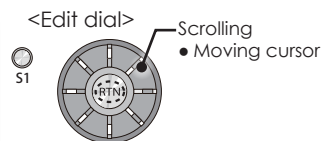
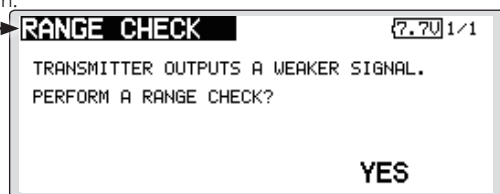
Do not fly in the range check mode.

■ 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.

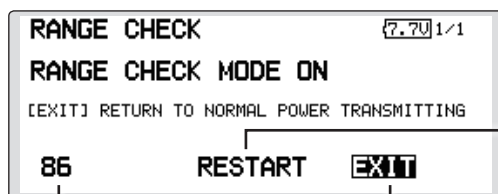
- Pushing [U.menu/Mon] button is continued. → Turn ON the transmitter's power switch. (First, a throttle stick is made into a low position, and turns on a power supply.) It is displayed as "TRANSMIT?". "NO" is chosen and [RTN] is pushed.

- Select [RANGE CHECK] at the system menu and call the setup screen shown below by pushing the RTN button.

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



- [Yes] is chosen and [RTN] is pushed.



- Range Check mode timer is returned to 90.

- Remaining time of RANGE CHECK MODE.

- Range Check mode is disabled.

Rotation Range Check method

1. Pushing [U.menu/Mon] button 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 push 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 pushed, push the [Exit] button.

*When the [RESTART] button is pushed, 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-03 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 pushed, the Range Check mode is disabled and the FMT-03 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

An S.BUS/S.BUS2 servo can memorize the channel and various settings internally. Servo setting changes can be performed on the FMT-03 screen by wiring the servo as shown in the figure.

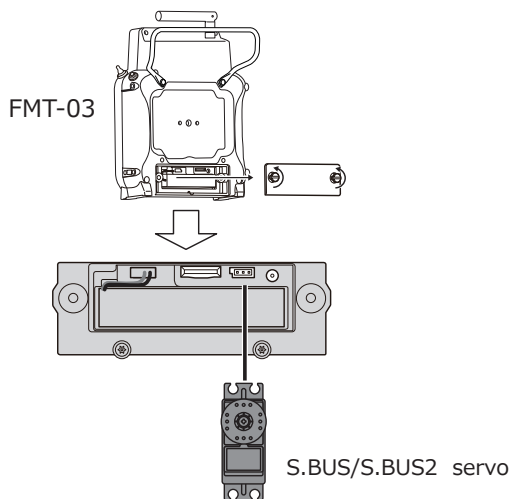
•Servo ID number

Individual ID numbers are memorized for your S.BUS servos in your FMT-03. 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.)



* 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.

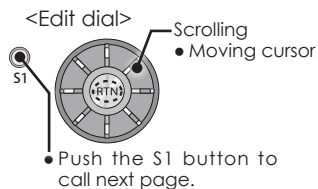
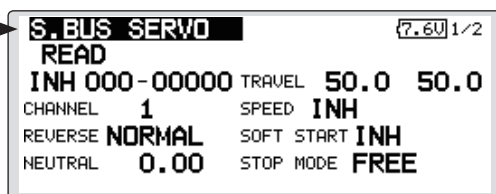
*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.

(It will damage, if it connects.)

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

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

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



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. Push [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. Push [WRITE]. The settings are changed.

S.BUS Servo Description of function of each parameter

*There are some functions which can only be used with certain types of servos.

- **ID**

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

- **Channel**

Channel of the **S.BUS** system is 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 less to a change 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 : The boost turns ON at the time of lower-demand operation. (In most cases)

ON : The boost is always ON. (When quick operation is needed)

• 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 slowed down.

(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 interrupted or a loss of signal from the transmitter, the buzzer sound of about 2.5Hz continues sounding from a servo.

(Even when the signal output of a transmitter is lost, a buzzer becomes until the signal of a servo is outputted normally.)

The transmitter has been turned OFF ahead of a servo power supply → The buzzer sound of about 1.25 Hz continues sounding to show that the servo power supply is still turned on.

(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 a lot of current is consumed and a servo generates heat during buzzer sounds, please do not operate the feature more than needed or do not continue sounding a buzzer for a long time.

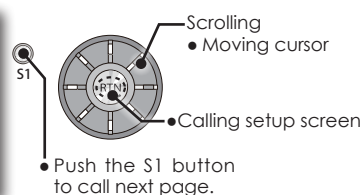
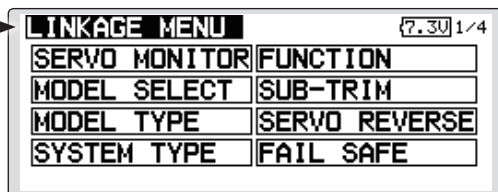
FUNCTIONS OF LINKAGE MENU

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.

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

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

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



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)
- [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.
- [STICK ALARM]: Can be set so that an audible alarm sounds once when the throttle stick reaches the set position
- [DATA RESET]: Model memory set data reset (by item)

SERVO MONITOR

Servo Test & Graph Display / Displays servo positions.

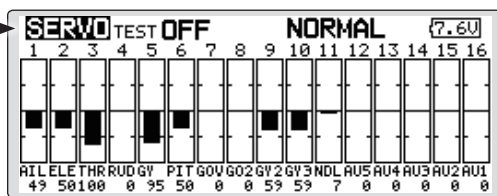
This is used for testing servo movement. “Moving Test” (repetition mode) and “Neutral Test” (fixed position mode) are available.

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 pushing the RTN button.

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



<Edit dial>



Scrolling

- Moving cursor
- Selecting mode

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

Servo test operation

1. Use the edit dial to move the cursor to the [TEST] item and push the RTN button to switch to the data input mode.

Select the test mode by turning the edit dial to the left or right and push the RTN button.

[MOVING]: Mode which repeats operation of each servo

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

2. Use the edit dial to move the cursor to the [TEST] item and push the RTN button to switch to the data input mode.

Select the [OFF] by turning the edit dial and push the RTN button. Testing is stopped.

⚠ WARNING

- ❗ Don't set a servo test mode when the drive motor is connected and the engine is powered or running.

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

MODEL SELECT

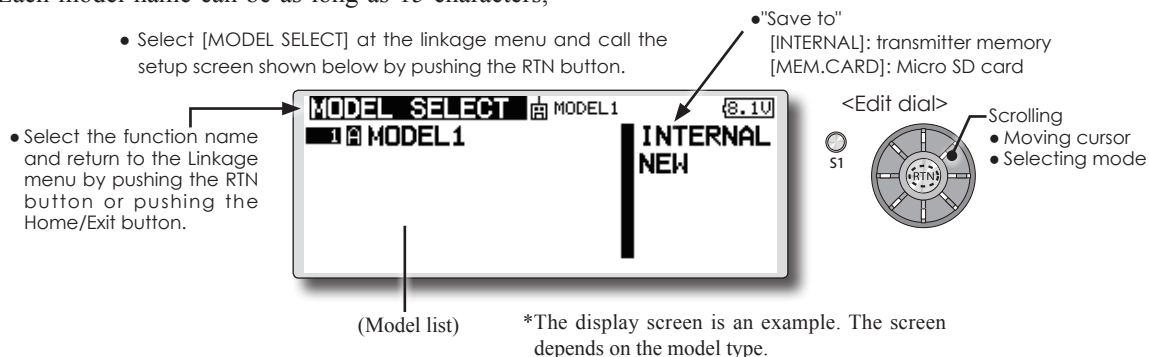
The Model Selection function performs model addition, call, deletion, copy, and model name setting.

This function is used to load the settings of the desired model into the FMT-03's memory.

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

The name of the model stored in the transmitter and the micro 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 micro 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.



Model call

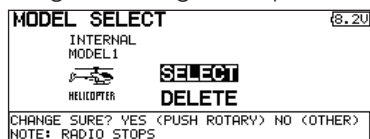
*Model data saved at models other than the model currently used or saved on a Micro SD card can be called.

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

Select the location which is to save the desired model by turning the edit dial to the left or right. Push the RTN button.

[INTERNAL]: Transmitter memory
[MEM. CARD]: Micro SD card

2. After using the edit dial to move the cursor to the desired model in the model list, push the RTN button.
3. Use the edit dial to move to [SELECT].
4. Push the RTN button. When a confirmation message is displayed and the RTN button is pushed again, calling is complete.



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

5. To start transmission, use the edit dial to select [YES] and then push the RTN button. To not transmit, select [NO] and push the RTN button.

Model addition

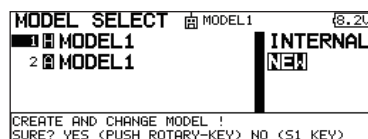
*A new model can be added to the transmitter memory or Micro SD card.

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

Select the save destination by turning the edit dial to the left or right. Push the RTN button.

[INTERNAL]: Transmitter memory
[MEM. CARD]: Micro SD card

2. Use the edit dial to move to [NEW].
3. Push the RTN button. A confirmation message appears. Push 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 edit dial to select [YES] and then push the RTN button. To not transmit, select [NO] and push the RTN button.

*The added model appears in the model list.

Model deletion

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

*The current model can not be deleted.

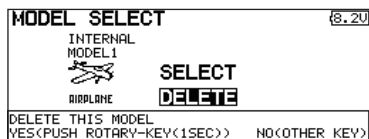
1. Use the edit dial to move the cursor to the save destination display ("INTERNAL" or "MEM. CARD") and push the RTN button to switch to the data input mode.

Select the save destination by turning the edit dial to the left or right and push the RTN button.

[INTERNAL]: Transmitter memory

[MEM. CARD]: Micro SD card

2. Use the edit dial to move the cursor to the model you want to delete in the model list and then push the RTN button.
3. Move the cursor to [DELETE].
4. Push the RTN button. When a confirmation message is displayed and the RTN button is pushed again, the model is deleted.

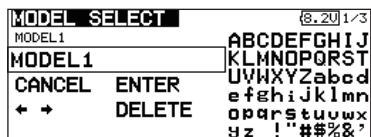


Model name change

*The current model's name can be changed.

1. Use the edit dial to select the current model in the model list and then push the RTN button.
2. Use the edit dial to move to [RENAME].
3. Push 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 push the RTN button.

[Deleting a character]

When [DELETE] is selected and the RTN button is pushed, 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 pushed, 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.)

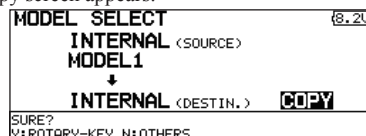
5. At the end of input, select [ENTER] and push the RTN button. (To terminate input and return to the original state, select [CANCEL] and push the RTN button.)

Model copy

*A copy can be made of the current model.

1. Use the edit dial to select the current model in the model list and then push the RTN button.
2. Move to [COPY] with the edit dial.
3. Push the RTN button.

*The copy screen appears.



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

Select the save destination by turning the edit dial and push the RTN button.

5. Use the edit dial to move to [COPY].
6. Push the RTN button. When a confirmation message is displayed and the RTN button is pushed again, the model data is copied.

*FMT-03 accepts a Micro 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-03 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 multicopter, 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.

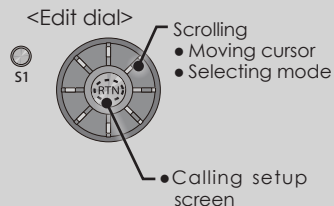
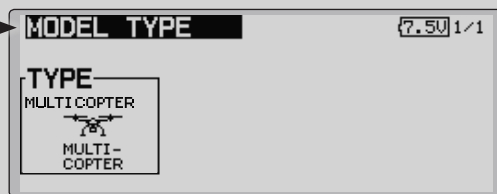
When the Model Type Selection command is accessed, all of the data in the active memory is cleared (except the following swash type.) Be sure that you don't mind losing this data, or back it up to another memory using the copying functions.

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 pushing the RTN button.

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



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

Model type selection

1. Use the edit dial to move the cursor to the item you want to change and then call the selection screen by pushing the RTN button.

"TYPE": Model type

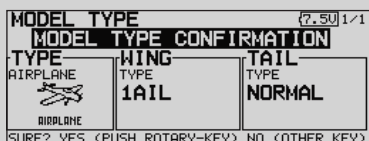
"WING" (airplane/glider): Wing type

"TAIL" (airplane/glider): Tail type

"SWASH" (helicopter): Swash type

2. Use the edit dial to move the cursor to the type you want to change and select the type by pushing 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. Push the RTN button to execute the change. (Operate the edit dial 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.

FMT-03 is equipped with a stick of multi-copter exclusive use. Therefore it's unsuitable for use of an airplane, a glider and a helicopter.

SYSTEM TYPE

System mode setting, Receiver link

System Type selection

The FMT-03 is for 2.4GHz only. The system can be changed from among 2 choices: FASSTest 18CH and FASSTest 12CH which can be chosen by FMR-03 set.

- *If you change the System Type, other model data is not reset.
- *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-03 in the FASSTest 12CH mode.

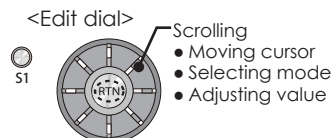
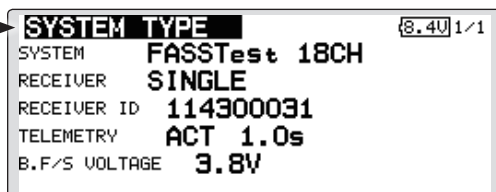
Dual receiver function (only FASSTest 18CH mode)

Dual receivers can be linked with the FMT-03. Two receivers are recognized individually by ID numbers. Two sets of receivers can be used as a set in the model. 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 pushing the RTN button.

- Select the function name and return to the Linkage menu by pushing 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.

Cases when linking is necessary:

- When using a receiver other than the initial setting.
- When the communication system was changed. (FASSTest 18CH ↔ FASSTest 12CH 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) = 5.2 ~ 5.4 v
- 2 cells LiPo (Normal: 7.4 v) = 6.6 ~ 6.8 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.

Linking method

P.33

Telemetry function (FASSTest 18CH mode only)

To use the telemetry function, set “Telemetry” to “ACT”.

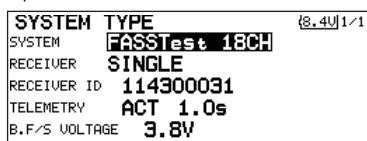
DL Interval (FASSTest 18CH mode only)

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 push the RTN button to switch to the data input mode.



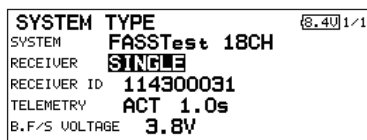
2. Select the system type by scrolling the edit dial.
[FASSTest 18CH][FASSTest 12CH]

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

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

Dual receiver function (only FASSTest 18CH mode) procedure

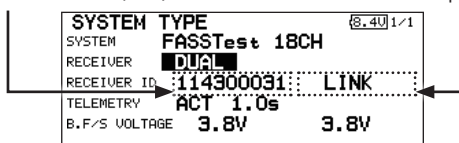
1. Move the cursor to the [SINGLE] item and push the RTN button to switch to the data input mode.



2. Select the [SINGLE] or [DUAL] by scrolling the edit dial.

ID of a Primary receiver displays.

ID of a Secondary receiver displays.

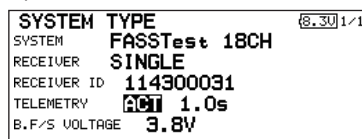


In DUAL, a primary receiver is link previously. Next, a secondary receiver is link.

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

Telemetry ACT/INH procedure

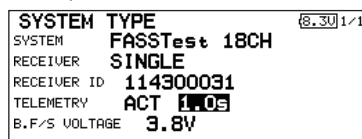
1. Move the cursor to the TELEMETRY [ACT] item and push the RTN button to switch to the data input mode.



2. Select the [ACT] or [INH] by scrolling the edit dial.
3. Push 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 push the RTN button to switch to the data input mode.



2. Select the DL time by scrolling the edit dial. 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. Push the RTN button to end adjustment and return to the cursor mode.

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 (End point, SUB-TRIM, REVERSE, F/S, and B-F/S, etc.).

Servo Output Channels

For FASSTest 12CH mode, you can set 12 linear channels and two digital channels. For FASSTest 18CH mode, you can set 16 linear channels and two digital 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.

• Select [FUNCTION] at the linkage menu and call the setup screen shown below by pushing the RTN button.

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

CH	FUNCTION	CONTROL	TRIM
1	AILERON	J1	T1
2	ELEVATOR	J3	T3
3	THROTTLE	J2	T2
4	RUDDER	J4	T4

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

• Trim operation mode
"COMB": Combination mode
"SEPAR": Separate mode

<Edit dial>

• Scrolling
• Moving cursor
• Selecting mode

• Push the S1 button to call next page.

Function change

1. Use the edit dial to move the cursor to the "FUNCTION" item of the channel you want to change and push the RTN button.

*The function selection screen is displayed.

2. Use the edit dial to move the cursor to the function name you want to set and push the RTN button.

*The function name blinks.

3. Push the RTN button to execute the change. (When you want to cancel this operation, operate the edit dial or S1 button.)

*Multiple channels can be assigned to one function.

Operation control change

1. Use the edit dial to move the cursor to the "CONTROL" item of the channel you want to change and push the RTN button.

*The control selection screen is displayed.

HARDWARE SEL.		CONDIT1	6.60	1/1
J1	SA SE	J6 DA	T3	--
J2	SB SF	J5 DB	T4	
J3	SC SG	DC T1	T5	
J4	SD SH	DD T2	T6	

2. Use the edit dial to move the cursor to the control you want to change, and push 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 edit dial to move the cursor to the "TRIM" item of the channel you want to change and push the RTN button.

*The trim setup screen is displayed.

HARDWARE SEL.		CONDIT1		(6.6V) 1/1	
HARDWARE LIST					
J1	SA	SE	J6	DA	T3 --
J2	SB	SF	J5	DB	T4
J3	SC	SG	DC	T1	T5
J4	SD	SH	DD	T2	T6

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 edit dial to move the cursor to the trim, lever, etc. you want to set and push the RTN button.

*The setting can be changed.

Trim rate setting

Use the edit dial to move the cursor to the [RATE] item and push the RTN button to switch to the data input mode.

Set the trim rate by turning the edit dial.

Initial value: +30%

Adjustment range : 0~150%

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

Push the RTN button to end adjustment and return to the cursor move mode.

Trim mode selection

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

[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.

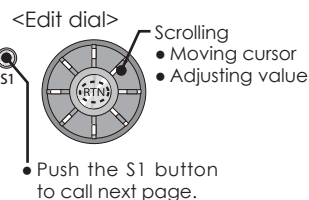
The Sub-Trim function is used to set the servo neutral position, and may be used to make fine adjustments to the control surface after linkages and pushrods are hooked up. When you begin to set up a model, be sure that the digital trims are set to their center position.

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

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

SUB-TRIM				{8.20} 1/2	
CH FUNCTION		CH FUNCTION			
1 AILERON	+0	5 GYRO<RUD>	+0		
2 ELEVATOR	+0	6 PITCH	+0		
3 THROTTLE	+0	7 GOVERNOR	+0		
4 RUDDER	+0	8 GOVERNOR2	+0		

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



Sub trim adjustment

1. Use the edit dial to move the cursor to the channel you want to adjust and push the RTN button to switch to the data input mode.

2. Adjust by turning the edit dial.

Initial value: 0

Adjustment range: -240~+240 (steps)

(When the RTN button is pushed 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.

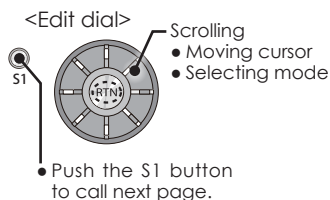
For CCPM helicopters, be sure to read the section on Swash AFR before reversing any servos. With CCPM helicopters, always complete your servo reversing prior to any other programming. If you use pre-built Airplane/Sailplane functions

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 pushing the RTN button.

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

SERVO REVERSE			[8.20] 1/3		
CH	FUNCTION	MODE	CH	FUNCTION	MODE
1	AILERON	NORM	5	GYRO<RUD>	NORM
2	ELEVATOR	NORM	6	PITCH	NORM
3	THROTTLE	NORM	7	GOVERNOR	NORM
4	RUDDER	NORM	8	GOVERNOR2	NORM



(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 edit dial to move the cursor to the channel you want to reverse and push the RTN button to switch to the data input mode.
2. Turn the edit dial and change the display to [REVERSE] (or [NORMAL]).

*The display blinks.

3. When the RTN button is pushed, servo operation is reversed. (Operate edit dial 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.

The FMT-03 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. 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 pushing the RTN button.

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

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

CHFUNCTION	F/S	F/S-POS
1 AIL	HOLD	OFF
2 ELE	HOLD	OFF
3 THR	HOLD	OFF
4 RUD	HOLD	OFF

RELEASE BATTERY F/S

<Edit dial>

- Moving cursor
- Selecting mode

• Push the S1 button to call next page.

Fail safe setting procedure

1. Move the cursor to the "F/S" item of the channel you want to set and push the RTN button to switch to the data input mode.
2. Select the F/S mode by scrolling the edit dial. A confirmation message appears.
*The display blinks.
3. Push the RTN button. (Push 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 push 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 push the RTN button to switch to the data input mode. Select the F/S mode by scrolling the edit dial. A confirmation message appears and then change the mode by pushing 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 model 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. Push 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 pushing the RTN button.

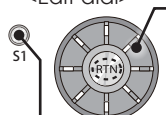
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.

END POINT
{8.20} 1/4

CH	FUNCTION	LIMIT	TRAV.	TRAV.	LIMIT	SPEED
1	AILERON	135%	100%	100%	135%	0
2	ELEVATOR	135%	100%	100%	135%	0
3	THROTTLE	135%	100%	100%	135%	0
4	RUDDER	135%	100%	100%	135%	0

← ↑ ↓ →
↺ ↻ ↷

<Edit dial>



- Scrolling
- Moving cursor
- Adjusting value

• Push the S1 button to call next page.

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

Servo travel adjustment

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

Servo speed setting

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

Limit point adjustment

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

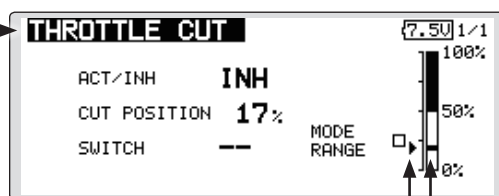
THROTTLE CUT

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 pushing the RTN button.

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



<Edit dial>



Scrolling

- Moving cursor
- Selecting mode
- Adjusting value

- Current throttle position
- Cut position

Throttle cut setting procedure

*Perform the following settings before using the edit dial to move the cursor to the item to be set.

1. Activate the function:

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

Turn the edit dial to the left until the blinking changes from "INH" to "ACT" and then push the RTN button.

2. Switch setting:

Move the cursor to the [SWITCH] item and call the switch setup screen by Pushing 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 push the RTN button to switch to the data input mode.

Adjust the servo operation position at throttle cut operation by turning the edit dial to the left or right.

Initial value: 17%

Adjustment range: 0%~50%

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

Push the RTN button to end adjustment and return to the cursor move mode.

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

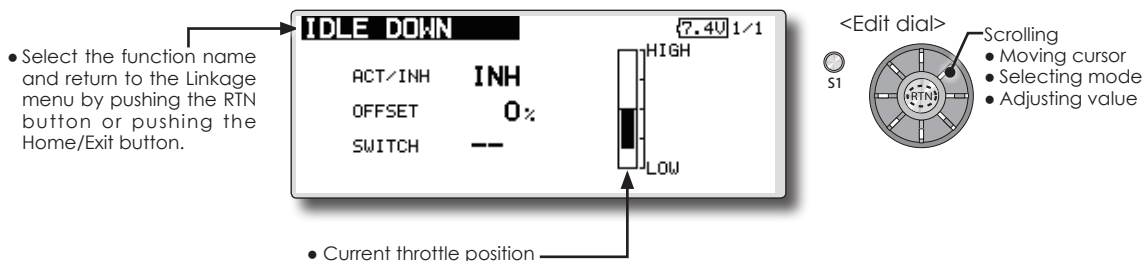
However, be sure that the throttle linkage is not pulled too tight and unreasonable force is not applied to the servo.

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 pushing the RTN button.



Idle down setting procedure

*Perform the following settings after using the edit dial to move the cursor to the item you want to set.

1. Activate the function:

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

Switch the blinking from "INH" to "ACT" by turning the edit dial to the left and then push the RTN button.

2. Switch setting:

Move the cursor to the [SWITCH] item, call the switch setup screen by pushing 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 push the RTN button to switch to the data input mode.

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

Initial value: 0%

Adjustment range: -100%~100%

(When the RTN button is pushed 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.

Push the RTN button to end adjustment and return to the cursor 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 pushing the RTN button.

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

<Edit dial>

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

Memory → ON

- The timer value is held even if the power is turned off or the model is switched.

Timer setting

*Perform the following settings after using the edit dial 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 push the RTN button to switch to the data input mode.

Select the mode by moving the edit dial to the left or right and push the RTN button.

[UP]: Up timer

[DOWN]: Down timer

2. Timer time setting

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

Set the time by turning the edit dial to the left or right.

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

Push the RTN button to end adjustment and

return to the cursor move mode.

3. Switch setting

Move the cursor to the item of the switch you want to set, call the switch setup screen by pushing 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 push 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 Pushing ↑ 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.

HOURL mode

*An HOURL 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 HOURL mode is set, "xx(hour) : xx(minute)" is displayed on the count time display. Seconds are not displayed.
- When the HOURL mode is set, " : " blinks each second during timer operation.
- When the HOURL 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.

Trim lever T1-T6 isn't equipped in FMT-03.

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

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

T1-T6 SETTING			CONDIT1			6.90 1/1		
	POS	STEP MODE		POS	STEP MODE			
T1	+0	4 C	T4	+0	4 C			
T2	+0	4 C	T5	+0	4 C			
T3	+0	4 C	T6	+0	4 C			
						TRIM UNIT		

<Edit dial>



Scrolling

- Moving cursor
- Selecting mode



Trim position setting (neutral offset)

1. Use the edit dial to move the cursor to the [POS] item and push the RTN button to switch to the data input mode.

Set the trim position by turning the edit dial.

Initial value: +0 (neutral position)

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

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

Control step amount setting

1. Use the edit dial to move the cursor to the [STEP] item and push the RTN button to switch to the data input mode.

Set the control step amount by turning the edit dial.

Initial value: 4

Adjustment range: 0(trim off)-200

(When the RTN button is pushed 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. Push the RTN button to end adjustment and return to the cursor move mode.

C; combination / S; separate mode selection

1. Use the edit dial to move the cursor to the [C;COMB./S;SEPA.] item and change to blinking by turning the edit dial and select the mode by pushing the RTN button.

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

[S;SEPA]: 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 pushed, the setting is changed.

MULTIPROP

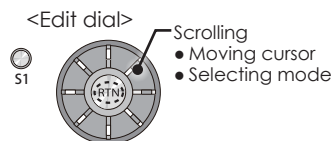
CH is extended by MPDX-1 of an option

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 [MULTIPROP] at the linkage menu and call the setup screen shown below by pushing the RTN button.

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



Multiprop selection

1. Select the Linkage Menu multiprop setting [MULTIPROP] and push the RTN button.
2. The MULTIPROP setup screen is displayed.
3. Select [MP1] and push the RTN button.
4. Scrolling the edit dial and switch the display to [MP1] or [MP2].

*The display blinks.

[MP1]: Multiprop 1

[MP2]: Multiprop 2

5. Push the RTN button.

Channel setting

1. Select [CH] and push the RTN button. Scrolling the edit dial 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 push 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 push the RTN button.
2. A hardware selection screen is displayed. Select the hardware which is to set control and push the RTN button.

Servo reverse setting

1. Select the "REVERSE" row of the multiprop channel which is to be reversed and push the RTN button.
2. Scrolling the edit dial and switch the display to [NORM] or [REV].

*The display blinks.

[NORM]: Normal mode

[REV]: Reverse mode

3. Push 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 push the RTN button.
2. Adjust the end point by scrolling the edit dial.
Initial value : 100%
Adjustment range : 30-100%
3. After adjustment, push the RTN button.

FUNCTION NAME

Function name can be changed

The name of the spare functions (AUXILIARY1-8) can be changed for the full name (10 characters) or for the abbreviated name (4 characters).

- Select [FUNCTION NAME] at the linkage menu and call the setup screen shown below by pushing the RTN button.

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

<Edit dial>

S1

• Scrolling
• Moving cursor

• Push the S1 button to call next page.

Function name change method

1. Select [FUNCTION NAME] of the Linkage Menu and push the RTN button.
2. The FUNCTION NAME setup screen is displayed.
3. When the function whose name is to be changed is selected and the RTN button is pushed, a modification screen is displayed.
4. Select the function to be renamed and select [RENAME] and push the RTN button. A character input screen is displayed. Input the function name.

FUNCTION NAME (7.5U) 1/1

RENAME 10 CHARACTERS AUXILIARY1

RESET 10 CHARACTERS AUXILIARY1

FUNCTION NAME (7.5U) 1/3

AUXILIARY1

AUXILIARY1

CANCEL ENTER

+ + DELETE

ABCDEFGHIJ
KLMNOPQRST
UVWXYZabcd
efghijklmn
opqrstuwx
yz !"#%&?

FUNCTION NAME (7.5U) 1/1

RENAME 10 CHARACTERS AUXILIARY1

RESET DEFAULT AUXILIARY1

RESET: TOUCH RTN BUTTON (1 SEC)

6. The function name may be displayed in 10 characters or 4 characters, depending on the setup screen. For 4 characters, display, input the function name as required.

FUNCTION NAME (7.5U) 1/2

1 AUXILIARY1 AUX1 4 CHARACTERS AUX1

2 AUXILIARY2 AUX2

3 AUXILIARY3 AUX3

4 AUXILIARY4 AUX4

DEFAULT

5. When [RESET] is selected and the RTN button is held down, the function name is set to the initial state function name.

TELEMETRY

Displaying data from the receiver

This screen displays your choice of data from the receiver.

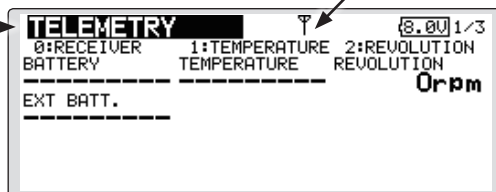
Also warnings can be activated regarding other data from your aircraft. For example, if the receiver voltage drops, the user can be warned by an alarm (and vibration).

*Only receiver voltage can be used in FASSTest 12CH mode.

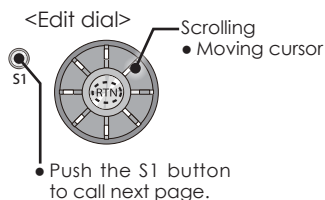
*The FASSTest 18CH mode can use all the telemetry functions.

- Select [TELEMETRY] in the Linkage menu and access the setup screen shown below by pushing the RTN button.

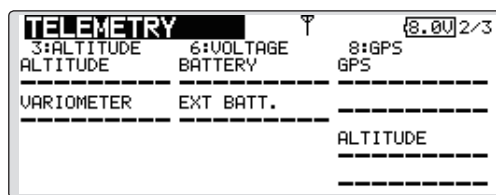
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.



- Receiver → Transmitter. The reception strength is shown.



- Push S1 button to advance to next page.



How to see telemetry data

1. Telemetry screen can be called select [TELEMETRY] in the Linkage menu and access the setup screen by pushing the RTN button.
2. If each item is chosen and the RTN button is pushed, an alarm setup can be performed with the minimum/maximum after a transmitter is turned on.

*Receiver voltage can be checked immediately. An optional sensor will need to be attached to S.BUS2 of a receiver if you would like to see other information.

*No special setup is necessary if each sensor displayed is left as in the default setup. Separate sensor ID is also unnecessary. However, if two or more of one kind of sensor is used, setup is required in the "SENSOR" menu.

⚠ WARNING

- ⊘ Do not watch the transmitter screen during flight.

*You may loose sight of the aircraft during flight and this is extremely dangerous. Have an assistant on hand to check the screen for you. A pilot should NEVER take his eyes off his aircraft.

TELEMETRY : RECEIVER [BATTERY]

Displaying data from the receiver battery voltage

In this screen, the battery voltage of a receiver is displayed.

If it becomes higher or lower than the setting an alarm and/or vibration will alert you.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

- Select [Rx-BATT.] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- Select [BATTERY] in the RECEIVER screen and access the setup screen shown below by pushing the RTN button.
- A setup of the voltage on which the alarm operates.
- ALARM is chosen from BUZZER, VOICE, and INHIBIT.
- The ON/OFF switch of SPEECH is chosen.

Alarm set

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [4.0V] item and push the RTN button to switch to the data input mode.

4. Adjust the rate by scrolling the edit dial.

Initial value: 4.0V

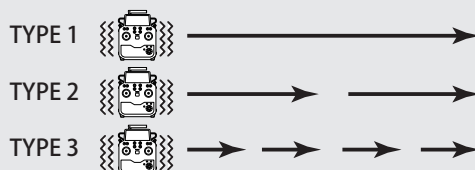
Adjustment range: 0.0V~100.0V

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.



TELEMETRY : RECEIVER [EXT BATT.]

Displaying data from the EXT battery voltage port

The EXT-VOLT screen will display the data from the EXT-battery output from the R7008SB receiver. In order to use this function, it is necessary to connect external voltage connector of the R7008SB receiver to a CA-RVIN-700 or SBS-01V to the battery you desire to measure the voltage of the EXT-battery.

*CA-RVIN-700 must be installed in the aircraft.

You will be alerted by an alarm or vibration if the voltage set by you is exceeded.

*FMR-03 isn't equipped with EXT-battery port.

*Only receiver voltage will be received in the FASSTest 12CH mode.

*The FASSTest 18CH mode will display all telemetry data.

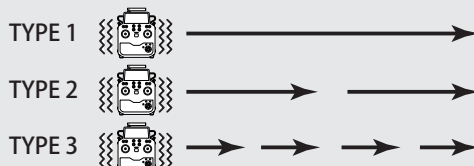
- Select [Rx-BATT.] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- EXT battery voltage
- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.
- Select [EXT BATT.] in the RECEIVER screen and access the setup screen shown below by pushing the RTN button.
- ↓The "down" arrow will indicate that an alarm will sound when the voltage drops to below the setting.
- ALARM is chosen from BUZZER, VOICE, and INHIBIT.
- The ON/OFF switch of SPEECH is chosen.
- A setup of the voltage on which the alarm operates.

Alarm set

- Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, and INHIBIT, and pushes RTN.
 - When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
 - Move the cursor to the LIMIT [4.0V] item and push the RTN button to switch to the data input mode.
 - Adjust the rate by scrolling the edit dial.
Initial value: 4.0V
Adjustment range: 0.0V~100.0V
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
- Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.



TELEMETRY : TEMPERATURE

Displaying data from the temperature

*A temperature sensor must be installed in the aircraft.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

Temperature is a screen which displays/sets up the temperature information from an optional temperature sensor.

The temperature of the model (engine, motor, battery, etc.) which is flying can be displayed.

If it becomes higher or lower than the setting an alarm and/or vibration will alert you.

- Select [TEMPERATURE] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.
- Select [TEMPERATURE] (small font display) in the TEMPERATURE screen and access the setup screen shown below by pushing the RTN button.
- An upward arrow will show that an alarm will sound when the temperature rises above the set value.
- A downward arrow will show that an alarm will sound when the temperature drops below the set value.
- The ON/OFF switch of SPEECH is chosen.

"VIBRATOR" type	
If the following types are selected, the transmitter will vibrate during the warning.	
TYPE 1	[VIB] → → → → →
TYPE 2	[VIB] → → → → →
TYPE 3	[VIB] → → → → →

Alert set : Hot warning

- Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
 - When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
 - Move the cursor to the LIMIT [°C] item and push the RTN button to switch to the data input mode.
 - Adjust the rate by scrolling the edit dial.
Initial value: 100°C
Adjustment range: 0°C ~200°C
(↑LIMIT ≥ ↓LIMIT)
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
- Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

Alert set : Low-temperature warning

- Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
 - When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
 - Move the cursor to the LIMIT [°C] item and push the RTN button to switch to the data input mode.
 - Adjust the rate by scrolling the edit dial.
Initial value: 0°C
Adjustment range: 0°C ~200°C
(↑LIMIT ≥ ↓LIMIT)
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
- Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

TELEMETRY : RPM SENSOR

Displaying data from the RPM

RPM sensor is a screen which displays / sets up the rotation information from an optional RPM sensor.

The rotation of the model (engine, motor, etc.) which is flying can be shown.

If it becomes higher or lower than the setting an

*A RPM sensor must be installed in the aircraft.
alarm and/or vibration will alert you.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

- Select [RPM sensor] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.
- Select [ROTATION] (small font display) in the RPM sensor screen and access the setup screen shown below by pushing the RTN button.
- An upward arrow indicates that the alarm will sound when the RPM rises above the set value.
- A downward arrow indicates that the alarm will sound when the RPM falls below the set value.
- The ON/OFF switch of SPEECH is chosen.
- "MAGNET" or "OPTICS" is set according to the sensor you use.
SBS-01RM : MAGNET
SBS-01RO : OPTICS
- A setup of the revolution on which the alarm operates.

"VIBRATOR" type
If the following types are selected, the transmitter will vibrate during the warning.

TYPE	Icon	Direction
TYPE 1	[VIB]	→
TYPE 2	[VIB]	→
TYPE 3	[VIB]	→

Alarm set : Over rotations

- Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
- When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
- Move the cursor to the LIMIT [2,000rpm] item and push the RTN button to switch to the data input mode.
- Adjust the rate by scrolling the edit dial.
Initial value: 2,000rpm
Adjustment range: 0rpm~150,000rpm
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

- Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

Alarm set : Under rotations

- Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
- When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
- Move the cursor to the LIMIT [0rpm] item and push the RTN button to switch to the data input mode.
- Adjust the rate by scrolling the edit dial.
Initial value: 0rpm
Adjustment range: 0rpm~150,000rpm
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

- Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

TELEMETRY : ALTITUDE

Displaying data from the altitude

*An altitude sensor or GPS sensor must be installed in the aircraft.

ALTITUDE is a screen which displays / sets up the altitude information from an optional altitude sensor or GPS sensor. The altitude of the model which is flying can be known. If it becomes higher (low) than preset altitude, you can be told by alarm. To show warning by vibration can also be chosen. Data when a power supply is turned on shall be 0 m, and it displays the altitude which changed from there. Even if the altitude of an airfield is high, that shall be 0 m and the altitude difference from an airfield is displayed.

This sensor calculates the altitude from atmospheric Pushure. Atmospheric Pushure will get lower as you go up in altitude, using this the sensor will estimate the altitude. Please understand that an exact advanced display cannot be performed if atmospheric Pushure changes in a weather situation.

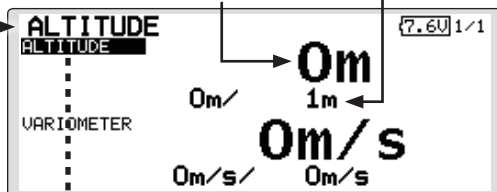
*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

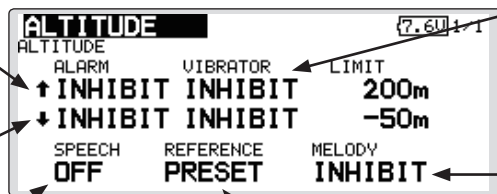
- Select [ALTITUDE] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.

- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.

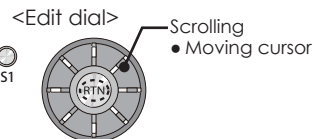
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.



- Select [ALTITUDE] (small font display) in the TEMPERATURE screen and access the setup screen shown below by pushing the RTN button.

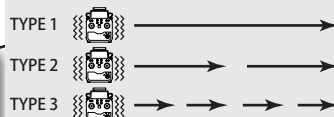


- The ON/OFF switch of SPEECH is chosen.



"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.



- If this is set to [MODE1-4], a rise and dive are told by a different melody.

MODE1: Little rise/dive→Melody changes (sensitive)
:
MODE4: Big rise/dive→Melody changes (insensible)

First, the set of a reference is required.

1. The model and transmitter to which the altitude sensor was connected are turned on.
2. Move the cursor to the [PRESET] of "REFERENCE" item.
3. Push the RTN button is pushed for 1 second. (To terminate the input and return to the original state, push the Home/Exit button.)

*Atmospheric Pushure is changed according to the weather also at the same airfield. You should preset before a flight.

Alarm set : High side

1. Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [m] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: 200m
Adjustment range-500m~+3,000m
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

Alarm set : Low side

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [m] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: -50m
Adjustment range-500m~+3,000m
(↑LIMIT ≥ ↓LIMIT)
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

TELEMETRY : ALTITUDE [VARIOMETER]

Displaying data from the variometer

*An altitude sensor or GPS sensor must be installed in the aircraft.

VARIO is a screen which displays / sets up the variometer information from an optional altitude sensor or GPS sensor.

The variometer of the model which is flying can be known.

If it becomes higher or lower than the setting an alarm and/or vibration will alert you.

To ensure that the pilot is aware as to the model's status, the FMT-03 incorporates a different melody

for ascent and descent. Additionally, depending upon the rate of climb or descent, the tones vary to indicate whether or not the airplane is climbing or descending at a rapid rate.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

- Select [ALTITUDE] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- Variometer
 - The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.
- Select [VARIOMETER] (small font display) in the TEMPERATURE screen and access the setup screen shown below by pushing the RTN button.
- ↑ An upward arrow indicates the alarm will sound when the variometer reaches above your set value.
- ↓ A downward arrow indicates the alarm will sound when the variometer reaches below your set value.
- The ON/OFF switch of SPEECH is chosen.

<Edit dial>

Scrolling

• Moving cursor

"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.

TYPE 1

TYPE 2

TYPE 3

• If this is set to **MODE1-4**, a rise and dive are told by a different melody.

MODE1: Little rise/dive→Melody changes (sensitivity)

...

MODE4: Big rise/dive→Melody changes (insensible)

Alert set : Rise side

1. Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [m/s] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: +1m
Adjustment range -50m/s~+50m/s
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

Alert set : Dive side

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [m/s] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: -1m
Adjustment range -50m/s~+50m/s
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

TELEMETRY : VOLTAGE [BATTERY]

Displaying data from the battery voltage

*SBS-01V must be installed in the aircraft.

*Only receiver voltage can be used in FASSTest 12CH mode.

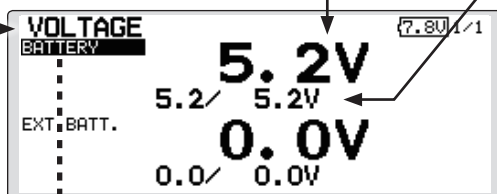
*The FASSTest 18CH mode can use all the telemetry functions.

In this screen, the battery voltage is displayed. In order to use this function, it is necessary to connect External voltage connector of FMR-03 ⇔ SBS-01V ⇔ Battery

SBS-01V measures two batteries. The power battery connected to two lines is displayed on EXT-VOLT. The battery for receivers connected to 3P lines is displayed here.

- Select [VOLTAGE] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.

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



• Battery voltage

- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.

<Edit dial>

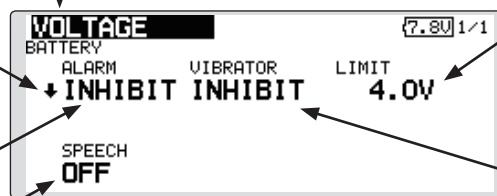


• Scrolling
• Moving cursor

- The "down" arrow will indicate that an alarm will sound when the voltage drops to below the setting.

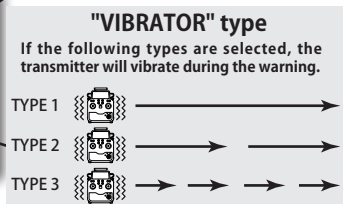
- Select [BATTERY] in the VOLTAGE screen and access the setup screen shown below by pushing the RTN button.

- A setup of the voltage on which the alarm operates.



- ALARM is chosen from BUZZER, VOICE, and INHIBIT.

- The ON/OFF switch of SPEECH is chosen.



Alarm set

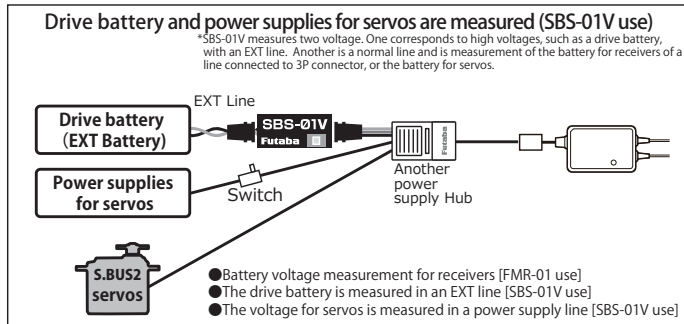
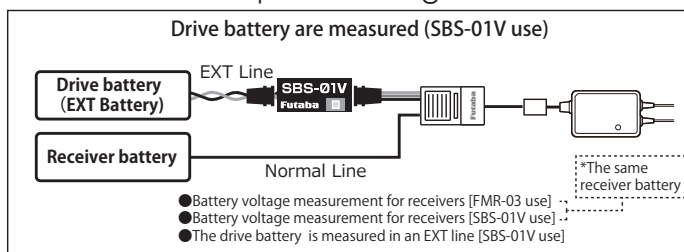
1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [4.0V] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.

Initial value: 4.0V

Adjustment range: 0.0V-100.0V

- *When the RTN button is pushed for one second, the rate is reset to the initial value.
- 5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

< Two examples of wiring are shown >



*Refer to the manual of SBS-01V for the details of wiring.

TELEMETRY : VOLTAGE [EXT-VOLT] Displaying data from the EXT battery voltage port

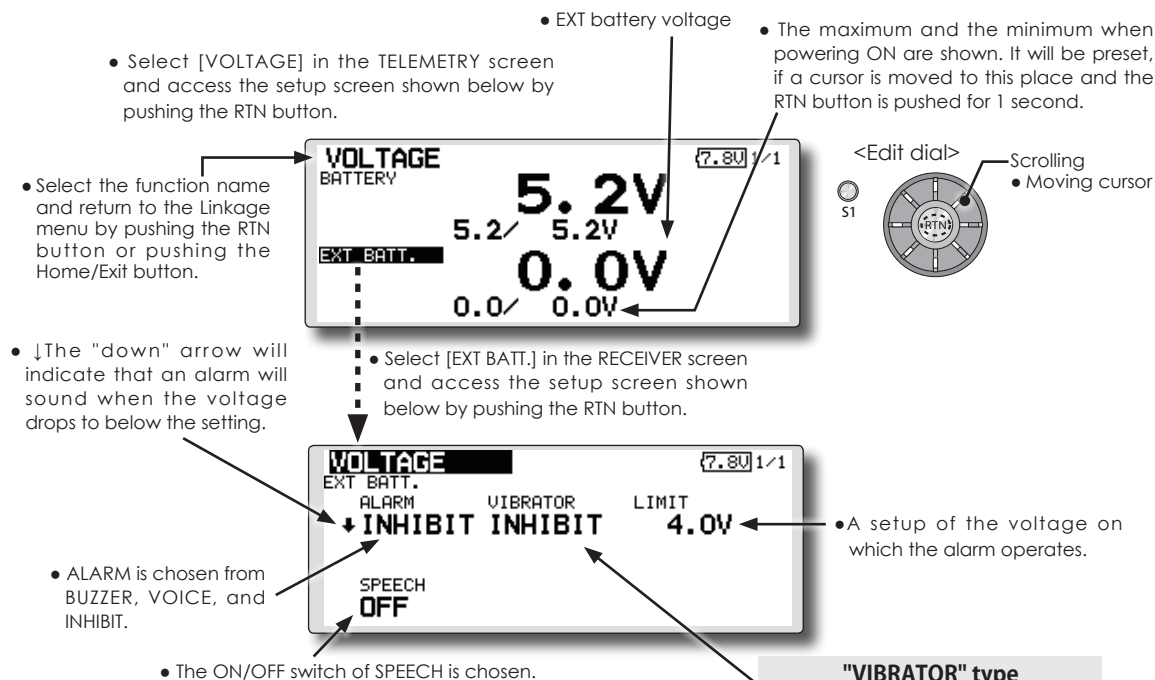
*SBS-01V must be installed in the aircraft.

In this screen, the EXT battery voltage is displayed. In order to use this function, it is necessary to connect External voltage connector of FMR-03 ⇄ SBS-01V ⇄ Battery

*Only receiver voltage will be received in the FASSTest 12CH mode.

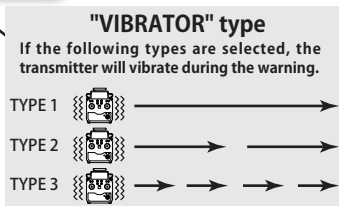
*The FASSTest 18CH mode will display all telemetry data.

SBS-01V measures two batteries. The power battery connected to two lines is displayed on EXT-VOLT.



Alarm set

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, and INHIBIT, and pushes RTN.
 2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
 3. Move the cursor to the LIMIT [4.0V] item and push the RTN button to switch to the data input mode.
 4. Adjust the rate by scrolling the edit dial.
Initial value: 4.0V
Adjustment range: 0.0V~100.0V
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)



TELEMETRY : GPS [DISTANCE]

Displaying data from the Distance Screen

The Distance screen displays and sets altitude data from an SBS-01G GPS Sensor (sold separately), and allows the distance to the airborne aircraft to be read by the transmitter. When the aircraft flies inside or outside the set distance an alarm and vibration alerts the pilot.

*A GPS sensor must be installed in the aircraft.

*The GPS sensor is necessary, and is sold separately. Mount and connect the sensor in accordance with the sensor instruction manual.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

- Select [GPS] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.

- This indicates the receiving accuracy from a GPS Satellite. When three bars are displayed, the GPS is ready for use.
- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.

<Edit dial> Scrolling Moving cursor

Push the S1 button to call next page.

- Select [DISTANCE] (small font display) in the TEMPERATURE screen and access the setup screen shown below by pushing the RTN button.

- ↑ An upward arrow indicates the alarm will sound when the distance reaches above your set value.
- ↓ A downward arrow indicates the alarm will sound when the distance reaches below your set value.
- The ON/OFF switch of SPEECH is chosen.
- Move the cursor to the [PRESET] of "REFERENCE" item. Push the RTN button is pushed for 1 second. Sets the current aircraft position as the starting point.

"VIBRATOR" type
If the following types are selected, the transmitter will vibrate during the warning.

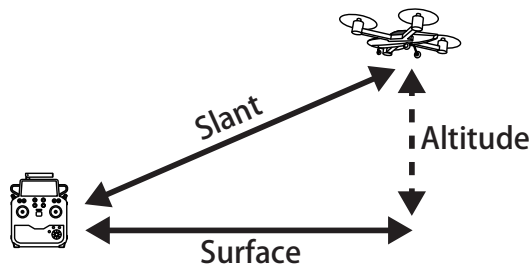
TYPE	VIBRATOR
TYPE 1	→ → → → →
TYPE 2	→ → → → →
TYPE 3	→ → → → →

*Positioning time of GPS

When powered up, the SBS-01G begins to acquire GPS satellite data. This process can take several minutes. Please do not move the model during this process. During acquisition, the LED on the SBS-01G will blink green; after the satellites signals have been acquired, the LED will become solid green, and the GPS signal strength display on the transmitter will show three bars.

Moving the model before the satellites are fully acquired will cause a delay in acquiring the satellite signal.

Altitude calculated as either straight line distance (slant) or surface distance on a map can also be selected.



Select <SLANT> <SURFACE> to "DISTANCE MODE", scroll either to the desired method and push the RTN button.

First, setting the point of reference is required.

1. The model and transmitter on which the GPS sensor is connected are turned on.
2. Move the cursor to the [PRESET] of "REFERENCE" item.
3. Push the RTN button is pushed for 1 second.
(To terminate the input and return to the original state, push the Home/Exit button.)

*Now, the position of the present model was set to 0 m.

Setting a "too far" alarm distance

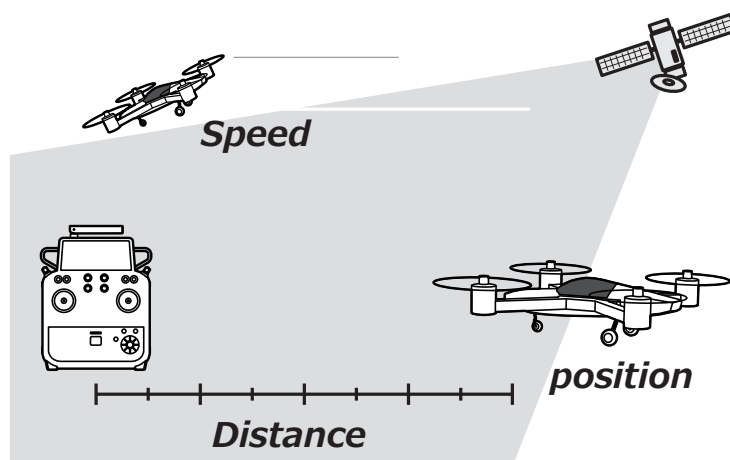
1. Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [m] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: 1,000m
Adjustment range 0m~3,000m
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

Setting a "too close" alarm distance

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
 2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
 3. Move the cursor to the LIMIT [m] item and push the RTN button to switch to the data input mode.
 4. Adjust the rate by scrolling the edit dial.
Initial value: 0m
Adjustment range 0m~3,000m
(↑LIMIT ≥ ↓LIMIT)
- *When the RTN button is pushed for one second, the rate is reset to the initial value.
5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)



TELEMETRY : GPS [SPEED]

Displaying data from the speed

*A GPS sensor must be installed in the aircraft.

The speed screen displays and sets the speed data from an SBS-01G (GPS sensor) sold separately.

The speed of the aircraft during flight can be displayed. After flight, the maximum speed during flight can be viewed. Because this speed is based on position data from a GPS satellite, the ground speed is displayed instead of air speed. Consequently, with a head wind, the displayed speed decreases and with a tail wind, the displayed speed increases.

- *The GPS sensor is necessary, and is sold separately. Mount and connect the sensor in accordance with the sensor instruction manual.
- *Only receiver voltage can be used in FASSTest 12CH mode.
- *The FASSTest 18CH mode can use all the telemetry functions.

- The maximum and the minimum when powering ON are shown. It will be preset, if a cursor is moved to this place and the RTN button is pushed for 1 second.

- Select [GPS] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- Select [SPEED] (small font display) in the TEMPERATURE screen and access the setup screen shown below by pushing the RTN button.
- ↑ An upward arrow indicates the alarm will sound when the speed reaches above your set value.
- ↓ A downward arrow indicates the alarm will sound when the speed reaches below your set value.

- This indicates the receiving accuracy from a GPS Satellite. When three bars are displayed, the GPS is ready for use.
- Push the S1 button to call next page.
- Scrolling
- Moving cursor

"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.

TYPE 1		→
TYPE 2		→
TYPE 3		→

- It links with the "DISTANCE" display.
- Pushing [PRESET] sets the current aircraft position as the starting point.
- The ON/OFF switch of SPEECH is chosen.

Alarm setting when speed increases

1. Move the cursor to the ↑ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.
3. Move the cursor to the LIMIT [km/h] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: 200km/h
Adjustment range 0km/h-500km/h
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

3. Move the cursor to the LIMIT [km/h] item and push the RTN button to switch to the data input mode.
4. Adjust the rate by scrolling the edit dial.
Initial value: 0km/h
Adjustment range 0km/h-500km/h
(↑LIMIT ≥ ↓LIMIT)

*When the RTN button is pushed for one second, the rate is reset to the initial value.

5. Push the RTN button. (To terminate the input and return to the original state, push the Home/Exit button.)

*Speed alarm precaution

Since the GPS speed sensor displays the ground speed, it cannot be used as a stall alarm. For example, an aircraft that stalls at 50km/h will stall if the tailwind is 5km/h or greater even though 55km/h is displayed by ground speed. In addition, with an aircraft that will fail in midflight at 400km/h at an over-speed alarm, when the headwind reaches 30km/h the airplane will fail in midair due to over speeding even at a ground speed of 370km/h.

Alarm setting when speed decreases

1. Move the cursor to the ↓ALARM item, and it chooses from BUZZER, VOICE, INHIBIT, and pushes RTN.
2. When not operating vibrator, it is "VIBRATOR" to INHIBIT. TYPE1-3 will be chosen if it is made to operate.

TELEMETRY : GPS [ALTITUDE, VARIOMETER, POSITION]

*A GPS sensor must be installed in the aircraft.

The altitude, variometer, position screen displays and sets the data from an SBS-01G (GPS sensor) sold separately.

*The GPS sensor is necessary, and is sold separately. Mount and connect the sensor in accordance with the sensor instruction manual.

*Only receiver voltage can be used in FASSTest 12CH mode.

*The FASSTest 18CH mode can use all the telemetry functions.

- This indicates the receiving accuracy from a GPS Satellite. When three bars are displayed, the GPS is ready for use.
- Select [GPS] in the TELEMETRY screen and access the setup screen shown below by pushing the RTN button.
- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.
- Push S1 button to advance to next page.
- Refer to the former page for a setup about ALTITUDE and VARIOMETER.
- Push S1 button to advance to next page.
- The position of the present model is displayed.

The diagram illustrates the three screens of the GPS telemetry setup. Each screen has a status bar at the top showing signal strength (three bars) and a battery level indicator (7.9V). The first screen, labeled 'GPS DISTANCE', shows '1m' for distance and '0km/h' for speed. The second screen, labeled 'GPS ALTITUDE' and 'GPS VARIOMETER', shows '1m' for altitude and '0m/s' for variometer. The third screen, labeled 'GPS POSITION', shows the coordinates 'N 35° 24.7285' and 'E 140° 19.5831'. A circular control dial with an S1 button is shown to the right of the first screen, with labels for 'Edit dial', 'Scrolling', and 'Moving cursor'. Arrows indicate the flow from one screen to the next, and from the dial to the first screen.

TELEMETRY : Servo sensor [Current] [Temperature] [Angle]

The SBS-01S can monitor and display the in-flight current, operating angle, and internal temperature of up to two S.BUS2 servos.

If you forget to connect the servo wiring during fuselage assembly, or the servo was disconnected, an alarm can be activated at the transmitter.

*SBS-01S must be installed in the aircraft.

*Only receiver voltage will be received in the FASSTest 12CH mode.

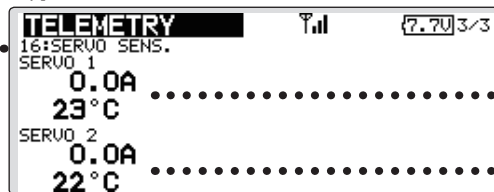
*The FASSTest 18CH mode will display all telemetry data.



Calling of a servo sensor screen.

① [Linkage menu]→[Telemetry]

② Select [SERVO SENS] in the TELEMETRY screen and access the next screen shown below by pushing the RTN button.



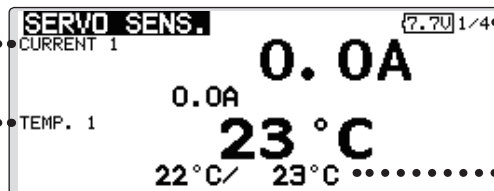
The current and the temperature of servo 1

The current and the temperature of servo 2

Servo sensor screen

To current setup screen

To temperature setup screen



Page

1/4 : Servo1: Current • Temp
 2/4 : Servo1: Angle
 Servo2: Current
 3/4 : Servo2: Temp • Angle
 4/4 : Servo1 • 2 : Connect

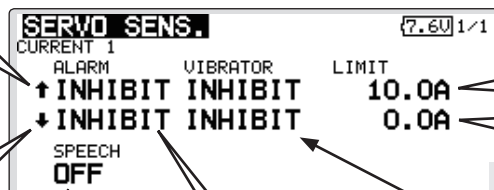
Max. and min. values since the power was turned ON will display.

Alarm setting

↑ An upward arrow indicates the alarm will sound when the current reaches above your set value.

↓ A downward arrow indicates the alarm will sound when the current reaches below your set value.

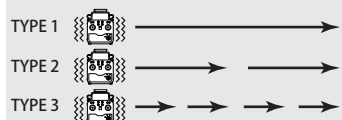
The ON/OFF switch of Speech is chosen.



A setup of the current on which the alarm operates.

"VIBRATOR" type

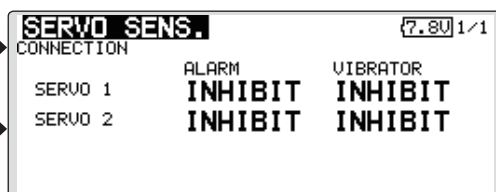
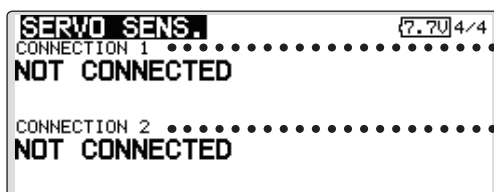
If the following types are selected, the transmitter will vibrate during the warning.



Connect Alarm setting

If you forget to connect the servo wiring during fuselage assembly, or the servo was disconnected, an alarm can be activated at the transmitter.

When the Alarm or Vibrator options are activated, the servo connection will display.



*This alarm and display is limited to the S.BUS servos connected to the servo sensors.

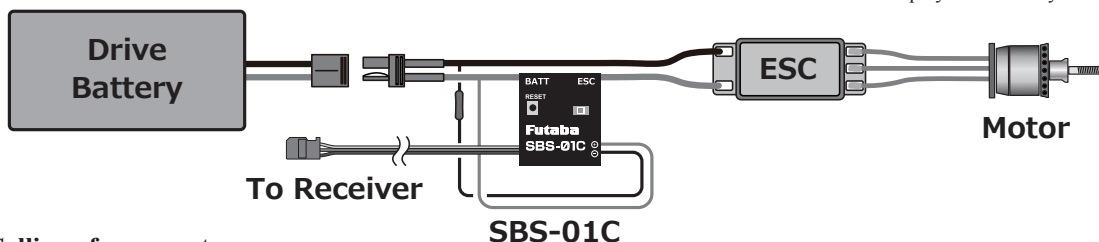
TELEMETRY : Current sensor [Current] [Voltage] [Capacity]

The SBS-01C has the capability of measuring current, voltage and capacity (consumption) from drive battery at the same time.

*Current sensor must be installed in the aircraft.

*Only receiver voltage will be received in the FASSTest 12CH mode.

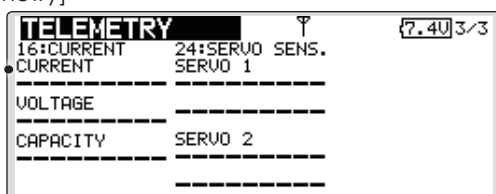
*The FASSTest 18CH mode will display all telemetry data.



Calling of a current sensor screen.

① [Linkage menu]→[Telemetry]

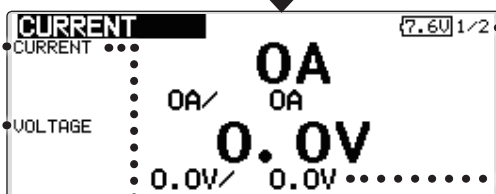
② Select [Current] in the TELEMETRY screen and access the next screen shown below by pushing the RTN button.



Current sensor screen

To current setup screen

To voltage setup screen



Page
1/2 : Current • Voltage
2/2 : Capacity

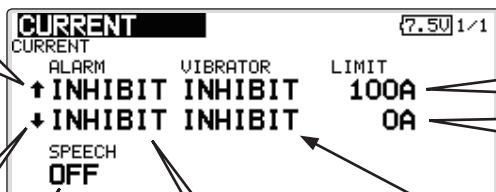
Max. and min. values since the power was turned ON will display.

Alarm setting

↑ An upward arrow indicates the alarm will sound when the current reaches above your set value.

↓ A downward arrow indicates the alarm will sound when the current reaches below your set value.

The ON/OFF switch of Speech is chosen.

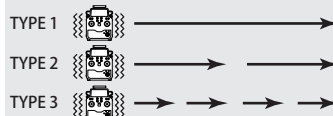


Alarm is chosen from Buzzer, Voice, and Inhibit.

A setup of the current on which the alarm operates.

"VIBRATOR" type

If the following types are selected, the transmitter will vibrate during the warning.



SENSOR

Various telemetry sensors setting

This screen registers the telemetry sensors used with the transmitter. When only one of a certain type of sensor is used, this setting is unnecessary and the sensor can be used by simply connecting it to the S.BUS2 port of the transmitter.

When using 2 or more of the same kind of sensor, they must be registered here.

- Select [SENSOR] in the Linkage menu and access the setup screen shown below by pushing the RTN button.

[What is a slot?]

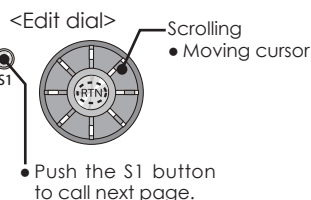
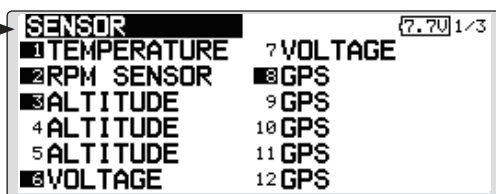
Servos are classified by CH, but **sensors** are classified in units called “slot”. There are **slots** from #1 to #31.

Altitude sensors, GPS sensors and other data sensor units may use **multiple slots**.

Using a sensor which uses two or more slots, the required number of slots is automatically assigned by setting up a **start slot**.

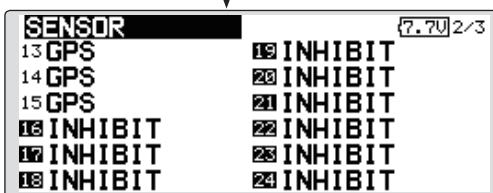
When 2 or more of the same kind of sensor are used, the sensors themselves must allocate unused slots and memorize that slot.

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

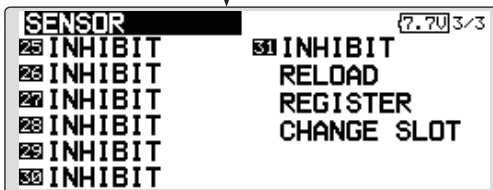


- *3 slots of altitude sensor are used.
- *8 slots of GPS sensor are used.

- Push S1 button to advance to next page.



- Push S1 button to advance to next page.



- As shown in the table below, an altimeter requires 3 contiguous slots and a GPS sensor requires 8 contiguous slots. In addition, since the GPS (SBS-01G) start slots are 8, 16, and 24.

< Assignable slot >

- *Altimeter, GPS, and other sensors that display a large amount of data require multiple slots.
- *Depending on the type of sensor, the slot numbers that can be allocated may be limited.

Sensor	The required number of slots	The number which can be used as a start slot	Selling area
TEMP (SBS-01T/TE)	1 slot	1 ~ 31	Global
RPM (SBS01RM/RO/RB)	1 slot	1 ~ 31	
Voltage (SBS-01V)	2 slots	1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,22,24,25,26,27,28,29,30	
Altitude (SBS-01A/02A)	3 slots	1,2,3,4,5,8,9,10,11,12,13,16,17,18,19,20,21,24,25,26,27,28,29	
Current (SBS-01C)	3 slots	1,2,3,4,5,8,9,10,11,12,13,16,17,18,19,20,21,24,25,26,27,28,29	
S.BUS Servo (SBS-01S)	6 slots	1,2,8,9,10,16,17,18,24,25,26	
GPS (SBS-01G)	8 slots	8,16,24	
TEMP125-F1713	1 slot	1 ~ 31	Europe
VARIO-F1712	2 slots	1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,22,24,25,26,27,28,29,30	
VARIO-F1672	2 slots	1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,22,24,25,26,27,28,29,30	
GPS-F1675	8 slots	8,16,24	

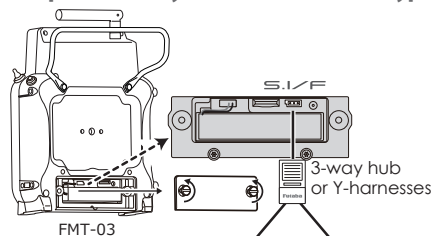
SENSOR : RELOAD

This page is set when using multiple telemetry sensors of the same type.

When using multiple sensors of the same type the sensors must be registered in the transmitter. Connect all the sensors to be used to the FMT-03 as shown in the figure at the right and register them by the following procedure. The ID of each sensor is registered in the transmitter.

- Call page 3/3 by pushing the S1 button 2 times from the [SENSOR] menu.

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



All the sensors to be used are connected.

*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.
(It will damage, if it connects.)

Reading all the sensors to be used

1. Connect all the sensors to be used to the FMT-03 through a hub as shown in the figure above.
2. Move the cursor to "RELOAD" on page 3/3 of the [SENSOR] screen.
3. Push the RTN button.

All the sensors are registered and can be used.

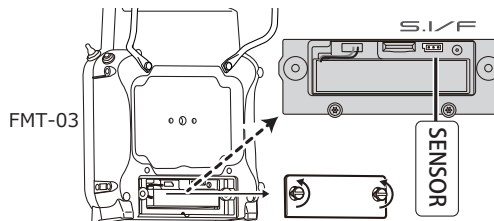
SENSOR : REGISTER

This page is set when using multiple telemetry sensors of the same type.

This function registers an additional sensor. Connect the sensor as shown in the figure at the right and register it by the following procedure. The sensor ID is registered in the transmitter.

- Call page 3/3 by pushing the S1 button 2 times from the [SENSOR] menu.

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



*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.
(It will damage, if it connects.)

Additional sensor registration

1. Connect the sensor to be used to the FMT-03 through a hub as shown in the figure at the right.
2. Move the cursor to "REGISTER" on page 3/3 of the <Sensor> screen.
3. Push the RTN button.

The sensor is registered and can be used.

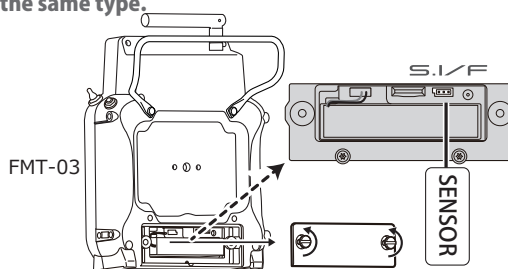
*When the number of slots needed in registration is insufficient, an error is displayed and registration cannot be performed. Disable unused slots or perform the following relocate.

SENSOR : CHANGE SLOT

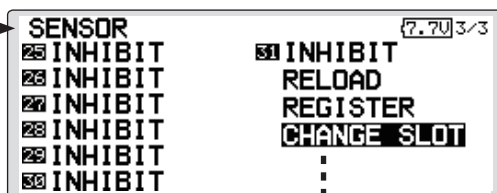
This page is set when using multiple telemetry sensors of the same type.

This procedure changes the slot number of one registered sensor.

- Call page 3/3 by pushing the S1 button 2 times from the [SENSOR] menu.

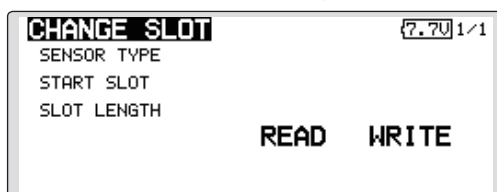


- Select the function name and return to the Linkage menu by pushing the RTN button or pushing the Home/Exit button.



*It is not necessary to carry out multiple connection of the battery like a T18MZ/T14SG.
(It will damage, if it connects.)

- Select [CHANGE SLOT] in the SENSOR screen and access the setup screen shown below by pushing the RTN button.



Sensor slot change

1. Connect the sensor to be changed to the FMT-03 through a hub as shown in the figure above.
2. Move the cursor to "CHANGE SLOT" on page 3/3 of the <Sensor> screen.
3. Push the RTN button. A sensor details screen appears.
4. Move the cursor to "READ" and push the RTN button.
5. The current start slot is displayed. Move the cursor to the number of the start slot and change it to the desired value. (Cannot be set to a slot that cannot be allocated like the table of all pages.)
6. Move the cursor to "WRITE" and push the RTN button.

TELE. SETTING

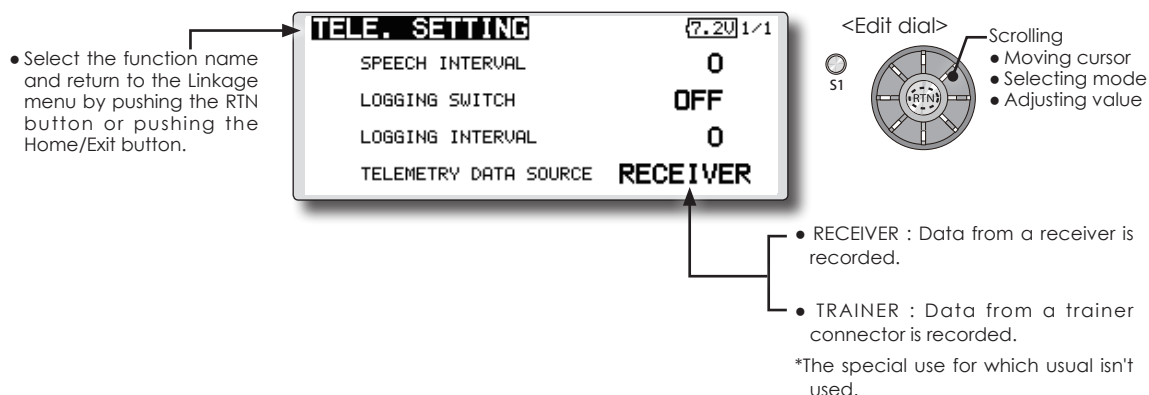
Speech interval set, data logging of telemetry.

The set of the speech interval of telemetry data, and a switch setup for carrying out logging of the telemetry data to micro SD card and a setup of a logging interval are carried out.

Telemetry data can be checked with PC after a flight.

*The software which displays the logging data of micro SD card on PC has not been put on the market yet.

- Select [TELE. SETTING] at the linkage menu and call the setup screen shown below by pushing the RTN button.



Speech interval setting

1. Select the Linkage Menu [TELE. SETTING] and push the RTN button.
2. The TELE. SETTING setup screen is displayed.
3. Select numerical value beside [SPEECH INTERVAL] and push the RTN button.
4. Adjust the time by scrolling the edit dial.
Initial value: 0
Adjustment range 0~30
5. Push the RTN button.

Logging switch setting

1. Select the Linkage Menu [TELE. SETTING] and push the RTN button.
2. The TELE. SETTING setup screen is displayed.
3. Select [OFF] beside [LOGGING SWITCH] and push the RTN button.
4. Move the cursor to the [SWITCH] item and call the switch setup screen by pushing the RTN button and ON direction.

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

Logging interval setting

1. Select the Linkage Menu [TELE. SETTING] and push the RTN button.
2. The TELE. SETTING setup screen is displayed.
3. Select numerical value beside [LOGGING INTERVAL] and push the RTN button.
4. Adjust the time by scrolling the edit dial.
Initial value: 0
Adjustment range 0~100
5. Push the RTN button.

WARNING

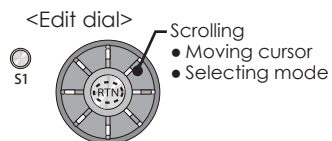
Mixing warning normal reset

The warning display at power ON can be turned ON/OFF for each function. Use by setting functions which may be dangerous if operated at power ON to ON. Initial setting is all ON.

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

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

WARNING				7.50	1/1
CONDITION	ON	MOTOR	ON		
THROTTLE CUT	ON	AIRBRAKE	ON		
IDLE DOWN	ON	SNAP ROLL	ON		
THR POSITION	ON				



Warning ON/OFF setting

1. The settings can be changed individually.
When set to [OFF], a warning is not displayed at power ON.

FMT-03 trainer system makes it possible for the instructor to choose which channels and operation modes that can be used in the student's transmitter. The function and rate of each channel can be set, the training method can also be matched to the student's skill level. Two FMT-03s must be connected by an optional Trainer Cord, and the Instructor's transmitter should be programmed for trainer operation, as described below.

When the Instructor activates the trainer switch, the student has control of the aircraft (if MIX/FUNC/NORM mode is turned on, the Instructor can make corrections while the student has control). When the switch is released the Instructor regains control. This is very useful if the student gets the aircraft into an undesirable situation.

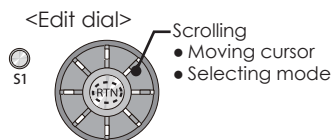
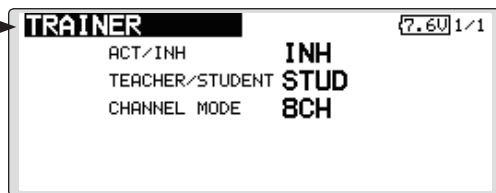
- Setting data are stored to model data.
- Student rate can be adjusted at MIX/FUNC/NORM mode.
- Activated student channels can be selected by switches.

NOTE: This trainer system can be used in the following manner;

1. With the FMT-03 transmitter and a conventional transmitter, if the channel order is different, it is necessary to match the channel order before using this function.
You can select the channel of input data from student's transmitter in the "FUNC" or "MIX" mode.
2. A transmitter of anything but FMT-03 doesn't correspond to this trainer system.
3. Be sure that all channels work correctly in both transmitters before flying.

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

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



When using at the student side

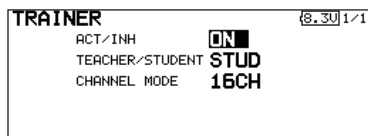
1. Select the mode.

*When changing the mode, use the edit dial to move to the item you want to change and push the RTN button to switch to the data input mode and change the mode by turning the edit dial to the left or right. The display blinks. Push the RTN button to change the mode.

"TEACHER/STUDENT": Select [STUD] (student).

"ACT/INH": Enable operation by changing to [ON].

"CHANNEL MODE": Select [16CH].



Note: In "student mode", only the teacher side can turn on and off the power to the student's transmitter. Keep the power switch always at off position.

When using at the teacher side

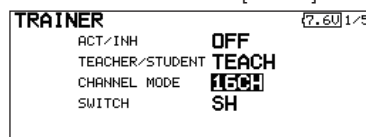
1. Select the mode.

*When changing the mode, use the edit dial to move to the item you want to change and push the RTN button to switch to the data input mode and change the mode by turning the edit dial to the left or right. The display blinks. Push the RTN button to change the mode.

"TEACHER/STUDENT": Select [TEACH].

"ACT/INH": Enable operation by changing to [OFF] or [ON].

"CHANNEL MODE": Select [16CH].



2. Select the trainer switch.

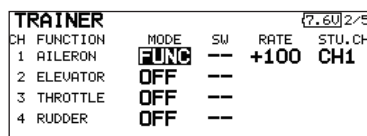
*When setting or changing the switch, use the edit dial to move to the "SWITCH" item, call the switch setup screen by pushing the RTN button and set the desired switch and ON/OFF direction.

(See "Switch selection method" at the end of this manual for selection method details.)

*The switch mode can also be selected when setting the ON position on the switch setup screen. When [NORM] is selected, normal ON/OFF operation is performed. When [ALTERNATE] is selected, the trainer function is alternately turned on and off each time the switch is operated.

Note: The trainer function won't be turned on unless the Instructor's transmitter receives signals from the student's transmitter. Be sure to confirm this after connecting your trainer cable.

3. Select the operating mode for each channel.



*Use the edit dial scrolling to move the cursor to the "MODE" item of the channel you want to change and push the RTN button to switch to the data input mode and change the mode by turning the edit dial to the left or right. The display blinks. Push the RTN button to change the mode.

"NORM": The model is controlled by signals from the student transmitter.

"MIX" mode: The model is controlled by signals from the teacher and student transmitters. (Reset the student's model data to the default condition.)

"FUNC" mode (function mode):

The model is controlled by signals from the student transmitter with the teacher AFR setting. (Reset the student's model data to the default condition.)

"OFF": Only the teacher side operates.

*The setting above allows setting of the servo throw relative to the amount of student side operation when [MIX] or [FUNC] was selected.

When changing the rate, use the edit dial scrolling to move the cursor to the [RATE] item of the channel you want to change and use the edit dial to adjust the rate.

Setting range: -100~+100

Initial value: +100

Push the RTN button to end adjustment and return to the cursor move mode.

*When the RTN button is pushed for 1 second, the rate is reset to the initial value.

3. Set the switch of each channel.

*When setting the switch at each channel, use the edit dial to move to the "SW" item of the channel you want to change, call the switch setup screen by pushing the RTN button, and select the switch.

"--" : Always ON.

"SA"- "SH": The switch which enables student side operation can be selected. (See "Switch selection method" at the end of this manual for selection method details.)

TRAINER				
CH	FUNCTION	MODE	SW	RATE
1	AILERON	FUNC	--	+100
2	ELEVATOR	OFF	--	
3	THROTTLE	OFF	--	
4	RUDDER	OFF	--	

Trainer student channel setting function

Which channel of the signal from the student's transmitter can be assigned as the instructor functions input signal when "FUNC" or "MIX" was set as the trainer function instructor's transmitter mode setting can be set. This makes trainer connection easy even when the instructor side and student side channel assignment is different.

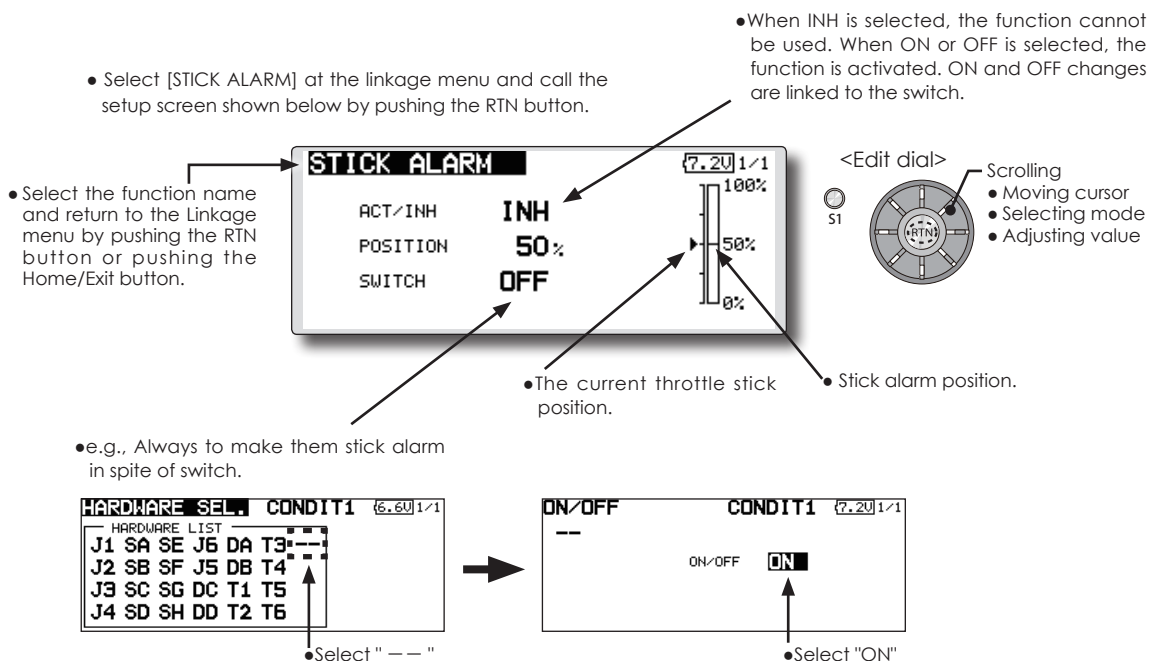
*When the instructor's transmitter mode is set to "NORM", the signal of the same channel of the student's transmitter is output as is. (The same as before.)

STICK ALARM

Throttle stick positional alarm

An alarm (single beep) can be sounded at the specified throttle stick position.

*Alarm function ON/OFF can be set by switch.



Stick alarm setting procedure

*Perform the following settings after using the edit dial to move the cursor to the item you want to set.

1. Activate the function:

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

Switch the blinking from "INH" to "ACT" by turning the edit dial to the left and then push the RTN button.

2. Switch setting:

Move the cursor to the [SWITCH] item, call the switch setup screen by pushing 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. Alarm position setting:

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

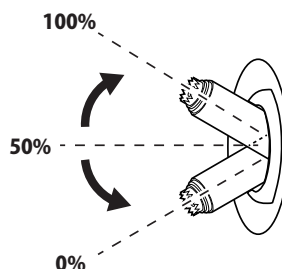
Adjust the alarm position operation by turning the edit dial to the left or right.

Initial value: 50%

Adjustment range: 0%-100%

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

Push the RTN button to end adjustment and return to the cursor move mode.



DATA RESET

Model memory setting data reset. (by item)

This function is designed to allow you to reset selected portions or all of the settings saved in the active model memory. You may individually choose to reset the following sets of data;

T1-T6:

Reset the digital trim setting.

*All the conditions, or the condition currently being displayed (the entire group for group setting), can be selected.

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

Model menu setting:

Resets all the functions in the Model menu except condition select.

All model setting:

Resets all Linkage and Model menu functions except for frequency, model select, and model type.

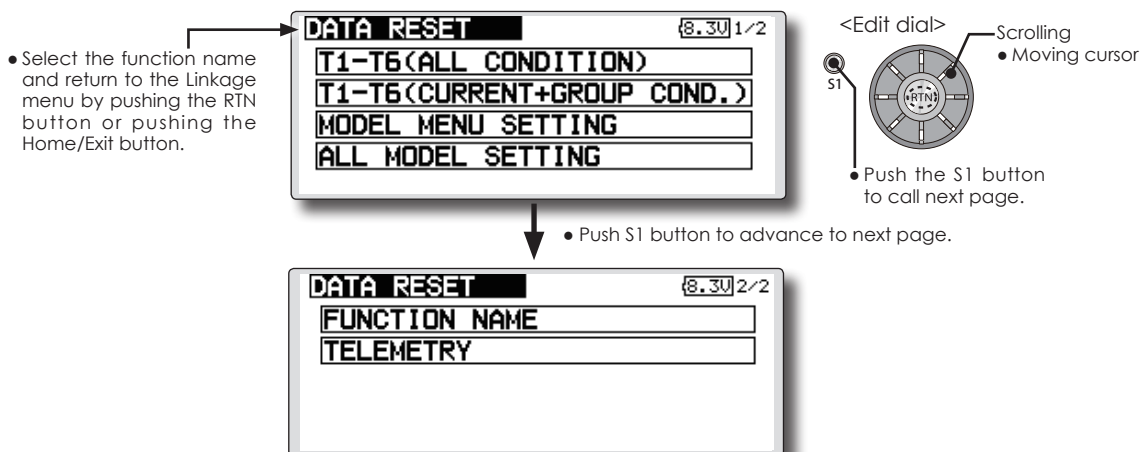
Function Name:

A function name is reset.

Telemetry:

Reset the telemetry setting.

- Select [DATA RESET] at the linkage menu and call the setup screen shown below by pushing the RTN button.



Data resetting method

1. Move the cursor to the item you want to reset and push the RTN button.

*A confirmation message appears.

2. Execute reset by pushing the RTN button again. (Operate edit dial or S1 button to stop resetting.)

[T1-T6 (ALL CONDITION)]: Resets only the T1-T6 (all conditions)

[T1-T6 (CURRNT+GROUP COND.)]: Resets only the data of T1-T6 (condition in use and all the conditions set to group mode)

[MODEL MENU SETTING]: Resets all the functions in the model menu, except the condition selection functions.

[ALL MODEL SETTING]: Resets all the functions in the linkage menu and model menu except the frequency, model select, and model type functions.

[FUNCTION NAME]: Resets only the function name functions.

[TELEMETRY]: Resets only the telemetry functions.

MODEL MENU (COMMON FUNCTIONS)

This section describes the AFR, program mixing, and other functions common to all model types.

Before setting the model data, use the Model Type function of the Linkage Menu to select the model type matched to the fuselage. When another model type is selected thereafter, the AFR, program mixing, and other setting data will be reset.

The functions in the Model Menu can be set for each flight condition. When you want to use the system by switching the settings for each condition by switch, stick position, etc., use the Condition

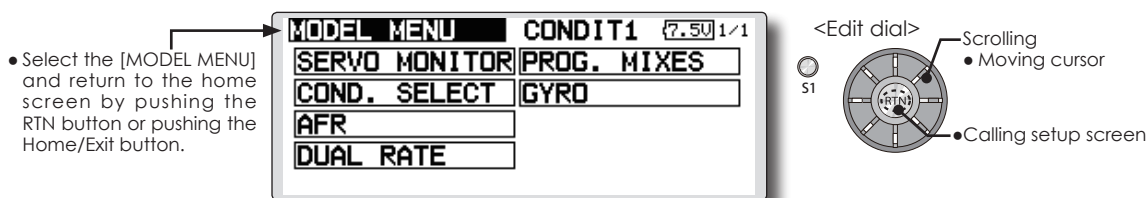
Select function to add flight conditions. (Up to 8 conditions can be used)

Note: The setup screens in the instruction manual are typical examples.

(Model Menu screen example)

*The Model Menu screen depends on the model type.

- Select the [MODEL] at the home screen and call the model menu shown below by pushing the RTN button.
- Use the edit dial to select the function you want to set and call the setup screen by pushing the RTN button.



Model Menu functions (Common) list

•SERVO MONITOR

Servo test and servo position display (For a description of its functions, see the Linkage Menu section.)

•COND.SELECT

Flight conditions addition, deletion, copy, condition renaming, and condition delay can be set.

•AFR

Sets the function rate and curve of all the operation functions.

•DUAL RATE

A D/R curve which can be switched with a switch, etc. can also be added.

•PROG. MIX

Program mixing which can be freely customized. Up to 10 mixes can be used for each condition.

•GYRO

This is a dedicated mix when a Futaba GY series gyro is used.

CONDIT. SELECT

Flight condition's addition, deletion, copy, condition renaming, and condition delay can be set. [All model types]

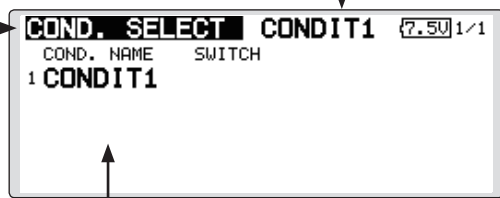
The functions in the Model Menu can be used by switching the settings of up to 8 flight conditions by using the Condition Select function to add flight conditions. Add conditions, as required.

When you do not want to use the Condition Select function, this setting is unnecessary. In this case, use the flight conditions assigned at initial setting.

- Since switching by stick and lever position, in addition to ordinary toggle switch, is possible as the flight condition selector switch, this function can be linked with other operations.
- A Condition Delay function can be set. Unnecessary fuselage motion generated

- Select [CONDIT. SELECT] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



(Conditions List)

*Perform the settings below after using the edit dial to move the cursor to the item you want to set.

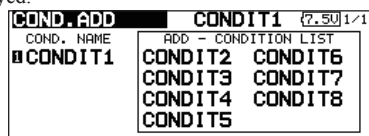
Condition addition

1. Use the edit dial to move the cursor to any condition in the conditions list and push the RTN button.

Move the cursor to the condition you want to add.

2. Move the cursor to [ADD] and push the RTN button.

*Only the number of the conditions which can be added is displayed.



3. Add the condition by pushing the RTN button again. Push the RTN button to end adjustment and return to the cursor move mode.

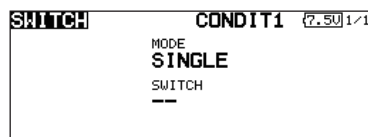
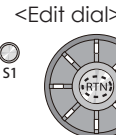
4. Move the cursor to [SWITCH] item, call the switch setup screen by pushing the RTN button, and select the switch and ON direction to be used in condition switching.

when there are sudden changes in the servo positions and when there are variations in the operating time between channels during condition switching can be suppressed. The delay can be set for each channel.

When setting the delay function at the switching destination condition, the related function changes after a delay corresponding to the set amount.

- When multiple conditions were set, their operation priority can be freely changed.
- The condition name can be changed. The selected condition name is displayed on the screen. When a condition has been added, give it a name which can be easily confirmed.

(Currently selected condition name)



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

*The data (except the condition name) of the condition currently being used is copied to the added condition.

Condition deletion

1. Use the edit dial to move the cursor to the condition you want to delete in the conditions list and push the RTN button.

*The number before the condition name become reverse-video to show that it is to be deleted.

2. Move the cursor to [REMOVE] and push the RTN button.

*A confirmation message is displayed.

*Note that if initially operated up and down, the objective condition changes.

3. When the RTN button is pushed again, the condition is deleted. (Operate the edit dial or S1 button to stop deletion.)

Push the RTN button to end adjustment and return to the cursor move mode.

Condition name change

1. Use the edit dial to move the cursor to the condition you want to change in the <Model Menu (Common Functions)> 95

conditions list.

*The number before the condition name become reverse-video to show that it is to be deleted.

2. Move the cursor to [RENAME] and push the RTN button.

*The condition name setup screen appears.

COND. SELECT		(7.50) 1/3
CONDIT 1		
CONDIT 1		ABCDEFGHIJ KLMNOPQRST UVWXYZabcd efghijklmn opqrstuwx yz !"#%&'
CANCEL	ENTER	
← +	DELETE	

3. Change the condition name as described below:

[Moving cursor in input box]

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

[Deleting a character]

When [DELETE] is selected and the RTN button is pushed, 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 pushed, that character is added at the position immediately after the cursor.

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

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

Condition copy

1. Use the edit dial to move the cursor to any condition in the conditions list and push the RTN button.

2. Use the edit dial to move to [COPY].

3. Push the RTN button.

*The copy screen appears.

COND. COPY	CONDIT1	(7.50) 1/1
SOURCE COND.		
CONDIT1		
COPY ↓		
DESTIN. COND.		
CONDIT1		

4. Use the edit dial to move the cursor to the "SOURCE COND." (copy source) item and push the RTN button.

*The models already saved are displayed at the right side of the screen.

5. After using the edit dial to move the cursor to the copy source condition, push the RTN button.

*The copy source condition is displayed at the "SOURCE COND." position.

6. Use the edit dial to move the cursor to "DESTIN.CND." (copy destination) and push the RTN button.

*The models already saved are displayed at the right side of the screen.

7. After using the edit dial to move the cursor to the copy destination condition, push the RTN button.

*The copy destination conditions are displayed at the "DESTIN.COND." position.

8. Use the edit dial to move the cursor to [COPY] and push the RTN button.

9. When the RTN button is pushed again, copy is executed. (Operate edit dial or S1 button to stop copying.)

Push the RTN button to end adjustment and return to the cursor move mode.

Priority change

1. Use the edit dial to move the cursor to the condition whose priority you want to change in the condition list.

2. Move the cursor to [UP] or [DOWN] of [PRIORITY] and push the RTN button. (The last condition becomes the highest priority.)

*The initial setting condition cannot be shifted. The priority is the lowest.

Condition delay setting

1. Use the edit dial to move the cursor to the condition you want to change in the condition list and push the RTN button.

2. Move the cursor to [DELAY] and push the RTN button.

*The condition delay setup screen appears.

COND. DELAY		CONDIT1	(7.50) 1/4
CH	FUNCTION	DELAY	GROUP
CH1	ELEVATOR	0	GROUP
CH2	RUDDER	0	GROUP
CH3	THROTTLE	0	GROUP
CH4	AILERON	0	GROUP

3. Use the edit dial to move the cursor to the "DELAY" item of the channel you want to set and push the RTN button to switch to the data input mode.

Adjust the delay amount with the edit dial.

Initial value: 0

Adjustment range: 0~27 (maximum delay)

Push the RTN button to end adjustment and return to the cursor move mode.

- The setting mode (group [GROUP]/single [SINGLE] mode) can be switched.

(For more information, see the description at the back of this manual.)

AFR

The function rate and curve of each operation function can be set. [All model types]

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. When mixing is applied from one channel to another channel, both channels can be adjusted at the same time by adjusting the operation rate through the AFR function.

- Operation curve adjustment: Three types of curves (EXP1, EXP2, and POINT) can be selected. A maximum 17 points curve can be used for the point curve type. (Initial setting: 9 points) The number of points can also be increased and decreased and curves from complex curves to simple curves can be used.
- Operation speed adjustment: The operation speed of each function when the function is operated (including at flight condition switching) can be adjusted. The function operates smoothly at a constant speed corresponding to the set speed.

- Select [AFR] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

[AFR, D/R]: Displays the currently selected rate (AFR, D/R).

• Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

• Push the S1 button to call next page.

• Operation curve setting
(For a description of the setting method, see the description at the back of this manual.)

• Function selection

• Servo speed setting
(For a description of the setting method, see the description at the back of this manual.)

• Group/single mode switch (GROUP/SINGLE)
(For more information, see the description at the back of this manual.)

(Number of D/R curves set at the currently selected condition)

Function selection method

1. Use the edit dial to move the cursor to [FUNC.] and push the RTN button to switch to the data input mode.
2. Select the desired function by scrolling the edit dial to the left or right, push the RTN button.

*The setting mode (group [GROUP]/single [SNGLE] mode) can be switched (For more information, see the description at the back of this manual.)

D/R curves which can be switched by switch, etc. can be added. The curve can be adjusted by the AFR function.

- Up to 6 rates can be added for each condition.
- D/R is set for each condition and is not reflected at other conditions.
- D/R at the top of the D/R list has priority.

- Select [DUAL RATE] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

DUAL RATE		CONDIT1		7.50 1/2
D/R NAME	STATUS	FUNCTION	SWITCH	
1 D/R 1	INH	AILERON	---	
2 D/R 2	INH	AILERON	---	
3 D/R 3	INH	AILERON	---	
4 D/R 4	INH	AILERON	---	

<Edit dial>

- Push the S1 button to call next page.

Dual rate adding

1. Move the cursor to the [INH] display of an unused D/R and push the RTN button to switch to the data input mode.
Turn it off by scrolling the edit dial to the left and activate the D/R function by pushing the RTN button.
2. Move the cursor to the "FUNCTION" item and push the RTN button to switch to the data input mode.
Select the function by scrolling the edit dial and push the RTN button.
3. Move the cursor to the [SWITCH] item and call the switch setup screen by pushing the RTN button and select the switch and ON direction. Alternate mode can be assigned to dual rate switch.

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

PROG. MIXES

Program mixing which can be freely customized. Up to 10 mixings can be used for each condition. [All model types]

Programmable mixing may be used to correct undesired tendencies of the aircraft, and it may also be used for unusual control configurations. Mixing means that the motion of a command channel, called the "master," is added to the motion of the mixed channel, called "slave."

You may choose to have the Master's trim added to the Slave channel response ("Trim" setting). The mixing curve can be changed so that the undesired tendencies can be corrected effectively by setting the EXP1/EXP2/POINT modes. The Delay function can be programmed for each rate. The Delay is used to change the rate smoothly when switching mixes. You may define Mixing ON/OFF switch, control or you may choose to have mixing remaining on all the time. Mixing ON/OFF delay

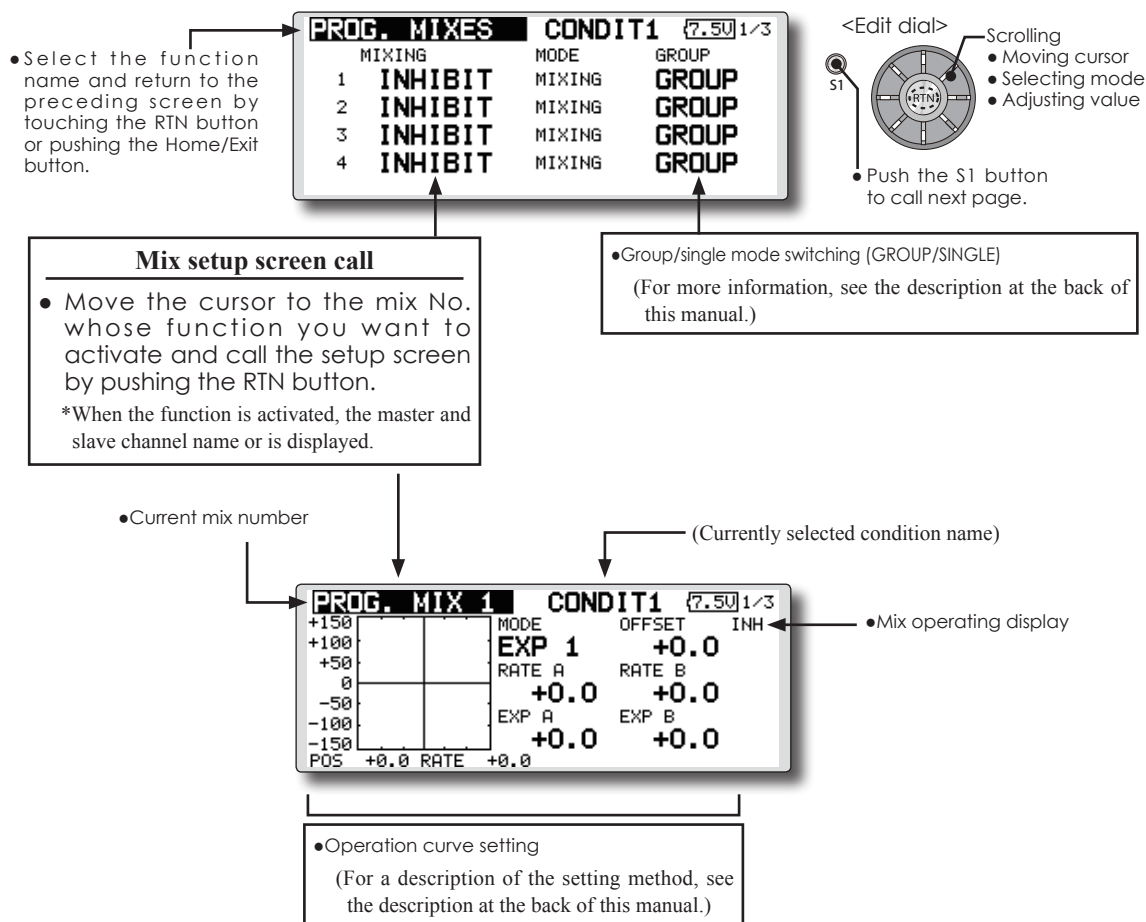
time can be adjusted.

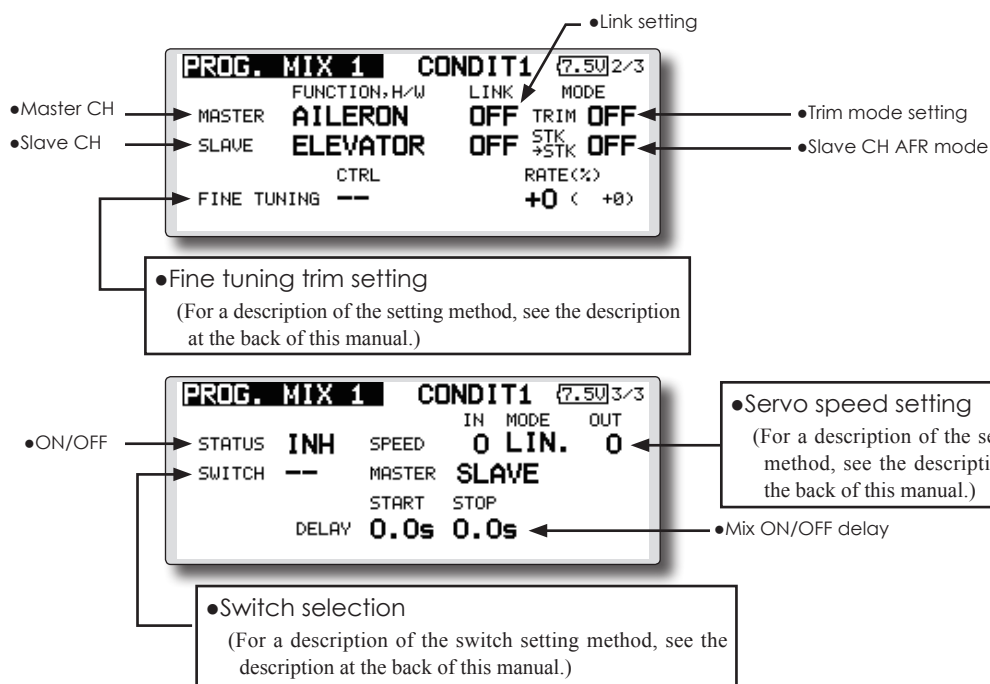
The Programmable mixing includes a powerful link function, which allows Programmable mixing to be linked with the special mixing functions, or with other programmable mixing functions. The link function can be set up for Master and Slave channel individually.

The slave channel AFR mode (STK-STK mode) may be selected, where the slave channel AFR and D/R settings are observed when Link function is set. The knob for fine tuning can be set up for every mixing circuit. (Fine tune function)

The programmable mixing (in mixing mode) STK to STK mixing function can be used even when the Master is a stick or other hardware.

- Select [PROG. MIXES] at the model menu and call the setup screen shown below by pushing the RTN button.





*Perform the settings below after using the edit dial to move the cursor to the item you want to set.

●Group/single mode selection

1. When you want to activate functions for only selected conditions, move the cursor to the [GROUP] item and push the RTN button to switch to the data input mode.
2. Turn the edit dial to the left until [SINGLE] starts to blink and then push the RTN button.

*The mode changes to the single mode [SINGLE].

*When using common settings at each conditions, remain in the [GROUP] mode.

●Activate the function.

1. Move the cursor to [INH] and push the RTN button to switch to the data input mode.
2. Turn the edit dial to the left until [ACT] starts to blink and then push the RTN button.

*The function is activated. (ON or OFF display)

*ON/OFF switch and mix rate are not set even through the function is activated.

●ON/OFF switch setting

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

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

*Always on when [--].

●Master channel setting

1. Move the cursor to the [FUNCTION.H/W] item of [MASTER] and push the RTN button to switch to the data input mode.

Select the function by scrolling the edit dial and push the RTN button.

2. When you want to link this mixing with other mixes, move the cursor to the [LINK] item and push the RTN button to switch to the data input mode.

Set the link mode to [+] or [-] by scrolling the edit dial and push the RTN button.

*Check the direction by actual operation.

*Master channel control can be set to simple operating amount of sticks and VR which do not include ATV, AFR, D/R, and mixing setting. In this case, the switch setup screen is displayed by pushing the RTN button with "H/W" selected by function selection. Select master channel side control. (To terminate the "H/W" selection, select the [--] display and push the RTN button.

●Slave channel setting

1. Move the cursor to the [FUNCTION.H/W] item of [SLAVE] and push the RTN button to switch to the data input mode.

Select the function by scrolling the edit dial and push the RTN button.

2. When you want to link this mix with other mixes, move the cursor to the [LINK] item and push the RTN button to switch to the data input mode.

Set the link mode to [+] or [-] by scrolling the edit dial and push the RTN button.

*Check the direction by actual operation.

●Trim mode ON/OFF setting

1. When changing the trim mode, move the cursor to the [TRIM] item and push the RTN button to switch to the data input mode.

Select ON/OFF by scrolling the edit dial and set the selection by pushing the RTN button.

*When mixing includes master side trim, select [ON] and when mixing does not include master trim, select [OFF].

*Effective when a function is set at the master channel.

●Slave channel AFR mode setting (STK-STK)

1. Move the cursor to the [STK-STK] item, select the mode by scrolling the edit dial, and change the mode by pushing the RTN button.

*When link is set at the slave side, and you want to add AFR (D/R) to the mixing rate, select [ON].

*This is effective when the linkage is the same, but the travels are substantially different.

●Mixing curve setting

(For a description of the curve setting method, see the description at the back of this manual.)

●Fine tuning trim setting

Operation control [CTRL], operation mode [MODE], and rate [RATE] adjustment is possible by [FINE TUNING] item.

(For a description of the fine tuning trim setting method, see the description at the back of this manual.)

●Servo speed setting

Adjustment is possible with the [SPEED] item.

(For a description of the servo speed setting method, see the description at the back of this manual.)

●Mixing ON/OFF delay setting

Delay time at mix ON [START] and delay time at mix OFF [STOP] adjustment is possible by [DELAY] item.

*This function is inactive when a mixing switch is not set.

1. Move the [START] or [STOP] item and push the RTN button to switch to the data input mode.
2. Adjust the delay time by scrolling the edit dial.

Initial value: 0.0 sec

Adjustment range: 0~4 sec

(When the RTN button is pushed for 1 second, the delay time is reset to the initial value.)

Push the RTN button to end adjustment and return to the cursor move mode.

●Offset mode setting

Offset mode is function which allows simultaneous offset control of up 4 slave functions per circuit.

1. Use [MODE] setting to select the program mixing operation mode. [MIXING] is the normal mixing mode and [OFFSET] is the offset mode.
2. Move the cursor to [INHIBIT] of the mixing No. set to the offset mode and push the RTN button. The setup screen is displayed.
3. Press the S1 button. Page 5/5 is displayed.
4. Move the cursor to the [STATUS] item and switch to the data input mode by pushing the RTN button.
5. Turn the dial to the left and right until [ACT] blinks, and then push the RTN button. To deactivate the function, switch to [INH].

●ON/OFF switch selection

Move the cursor to the page 5/5 [SWITCH] item, call the switch setup screen by pushing the RTN button, and then select the switch and ON direction. (For a detailed description of the selection method, see [Switch Selection Method] at the back of the instruction manual.)

●Slave No. selection

Setting of the slave No. from 1 to 4 at pages 1/5~4/5 is displayed. When the S1 button is pushed, the displayed slave No. is switched.

●Slave function setting

Move the cursor to the [FUNCTION] item and switch to the data input mode by pushing the RTN button. Select the function by scrolling the dial and then push the RTN button.

●Offset rate setting

The function operation offset amount when the mixing switch is ON and OFF can be set independently.

1. Move the cursor to the [ON] or [OFF] item and switch to the data input mode by pushing the RTN button.
2. Turn the dial to the left and right and set the offset rate when the switch is ON or OFF.
Initial setting : 0%
Setting range : -300%~+300%
3. After setting, switch to the cursor move mode by pushing the RTN button.

*At adjustment, the offset rate is reset to the initial value by pushing the RTN button for 1 second.

●Fine tuning trim setting

Operation control [CTRL], operation mode [MODE], and rate [RATE] adjustment is possible by [FINE TUNING] item.

(For a description of the fine tuning trim setting method, refer to [Fine tuning trim setting] at the back of this manual.)

●Operation mode setting

The operation mode when the switch was operated is selected. Normal mode [NORM] or timer mode [TIME] can be selected.

[Normal mode]

After the switch is set to ON, mixing is turned ON after the time set by start delay ([START]) has elapsed. Similarly, after the switch was set to OFF, mixing is turned OFF after the time set by stop delay ([STOP]) has elapsed.

[Timer mode]

After the switch was set to ON, mixing is turned ON after the time set by start delay ([START]) has elapsed. Mixing is automatically turned OFF after the time set by stop delay ([STOP]) has elapsed. Examples of use are jet plane and scale model retractable landing gear and cover linked mixing, etc.

●Servo speed setting

The speed at function operation can be adjusted. (For a description of the setting method, refer to [Servo speed setting] at the back of the instruction manual.)

●Delay setting

Mixing operation at mixing switch ON ([START]) and OFF ([STOP]) can be delayed by [DELAY] item.(When switch is set.)

1. Move the cursor to the [START] or [STOP] item and switch to the data input mode by pushing the RTN button.
2. Turn the dial to the left and right and set the mixing operation delay time at switch ON or OFF.

Initial setting : 0sec

Setting range : 0sec~35sec

3. After adjustment, switch to the cursor move mode by pushing the RTN button.

*At adjustment, the delay time can be reset to the initial value by pushing the RTN button for 1 second.

GYRO

[Corresponding model type]: Multicopter/Airplane/glider, general

This function is used when a GYA Series gyro is used to stabilize the aircraft's attitude. The sensitivity and operation mode (Normal mode/GY mode) can be switched with a switch.

- Three rates (Rate 1/Rate 2/Rate 3) can be switched.
- Up to 3 axes (Gyro/Gyro 2/Gyro 3) can be simultaneously controlled.

*Initial setting does not assign a sensitivity channel. Use the Function menu of the Linkage Menu to assign the sensitivity channel (Gyro/Gyro2/Gyro3) used to a vacant channel beforehand.

Set [Control] and [Trim] other than Function to [--].

• Select [GYRO] at the model menu and call the setup screen shown below by pushing the RTN button.

• Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

• Group/single mode switching (For more information, see the description at the back of this manual.)

(Currently selected condition name)

GYRO		RATE123		CONDIT1		7.40 1/3	
ACT/INH	INH			MODE		RATE	
TYPE	GY	GYRO	AVCS			0%	
SWITCH	--	GYRO2	AVCS			0%	
GROUP	GRP	GYRO3	AVCS			0%	

<Edit dial>

Scrolling

- Moving cursor
- Selecting mode
- Adjusting value

S1

• Push the S1 button to call next page.

• The operation mode (AVCS/NOR) and sensitivity of the 3 axis controlled by Gyro/Gyro2/Gyro3 can be set.

- Three rates (Rate 1/Rate 2/Rate 3) can be used.
Move the cursor to the [RATE] item and push the RTN button to switch to the data input mode. Adjust the rate by scrolling the edit dial.
- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button.
- When a Futaba GYA gyro is used, when [GY] type is selected, the sensitivity set value is directly read in both the AVCS and NORM modes.
- When setting a switch, move the cursor to the SWITCH item and press the RTN button to call the selection screen, and then select the switch and set its ON direction.
(For a description of the switch selection method, see the description at the end of this manual.)

COMMON OPERATIONS USED IN FUNCTION SETUP SCREEN

This section describes the functions often used at the function setup screen. Refer to it when setting each function.

Operations related to flight conditions

Group/single mode switching (GROUP/SINGLE)

When setting multiple flight conditions, linking the setting contents with all conditions (group mode) or setting independently (single mode) can be selected. The mode can be changed at the [GROUP] item on each setup screen.

[Group/single mode switching]



1. Use the edit dial to move the cursor (reverse-will display) to the [GROUP] item on the setup screen and push the RTN button to switch to the data input mode.

2. Turn the edit dial to the left until switch [SINGLE] starts to blink.

*At this point, the mode has still not been changed.

*When changing from [SINGLE] to [GROUP], turn the edit dial to the right.

3. Change the mode by pushing the RTN button.

●Group mode (GROUP)

The same setting contents are set to all the flight conditions.

●Single mode (SINGLE)

Set this mode when the setting contents are not linked with other conditions.

Condition delay setting

Unnecessary fuselage motion generated when there are sudden changes in the servo position and variations in the operating time between channels can be suppressed by using the condition delay function of the condition select function [COND. SELECT].

When the delay function is set at the switching destination condition, a delay corresponding to that amount is applied and the related functions change smoothly.

[Setting method]



*At the condition delay setup screen [COND.DELAY], move the cursor to the [DELAY] item of the channel you want to set and perform the following settings:

1. Switch to the condition you want to set and push the RTN button to switch to the data input mode.

2. Set the delay by turning the edit dial.

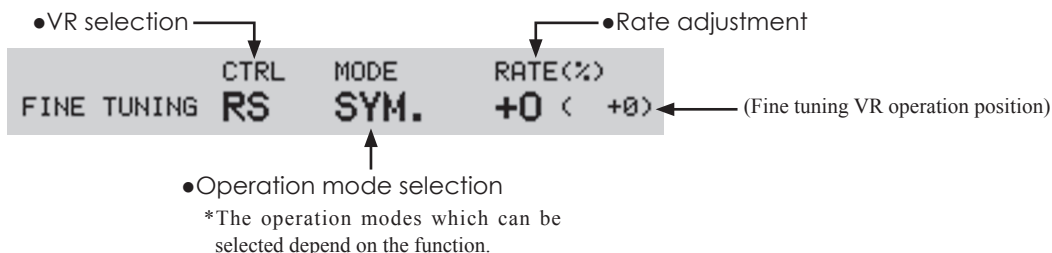
Initial value: 0

Adjustment range: 0~27 (maximum delay)

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

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

Operations related to fine tuning VR



[Setting method]

1. Control selection

Use the edit dial to move the cursor (reverse-will display) to the [CTRL] item and push the RTN button to call the selection screen.

Move to the control you want to set by turning the edit dial to the left or right and push the RTN button.

2. Mode selection

Use the edit dial to move the cursor to the [MODE] item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left or right and switch to the operation mode ([LIN.], [ATL+], [ATL-], or [SYM.]) corresponding to the set control and push the RTN button.

3. Rate adjustment

Move the cursor to the [RATE] item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left or right and set the rate.

Initial value: 0%

Adjustment range: -100%~+100%

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

Push the RTN button to end adjustment and return to the cursor move mode.

[Fine tuning VR operation mode]

[LIN.] Mixing rate 0% at center of VR. When the VR is turned clockwise and counterclockwise, the mixing rate increases and decreases, respectively.

[ATL+] Mixing rate 0% at left end of VR. When the VR is turned, the mixing rate increases.

[ATL-] Mixing rate 0% at right end of VR. When the VR is turned, the mixing rate increases.

[SYM.] When the VR is turned to the left or right of the neutral position, the mixing rate increases.

Operations related to servo speed

Servo speed setting

The servo speed at each function operation (including flight condition switching) can be adjusted. The servos operate smoothly at a fixed speed corresponding to the set speed. The operating speed (IN side) and return speed (OUT side) can be set individually.

Switch the operation mode according to the set function.

"SYM." mode: Used with ailerons and other self neutral functions.

"LIN." mode: Used with functions which hold the operation position of the throttle and switch channel, etc.

[Setting method]



1. Use the edit dial to move the cursor (reverse-will display) to the [MODE] item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left or right and switch to the operation mode ("SYM." or "LIN.") corresponding to the set function and push the RTN button.

2. Move the cursor to the direction ([IN] or [OUT]) item you want to set and push the RTN button to switch to the data input mode.

Turn the edit dial to the left or right and set the speed.

Initial value: 0

Adjustment range: 0~27 (maximum delay)

(When the RTN button is pushed for 1 second, the servo speed is reset to the initial value.)

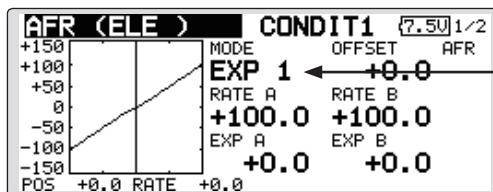
Push the RTN button to end adjustment and return to the edit mode.

Curve setting operation

This section describes the setting procedure of curves which are used with the AFR function and each mixing function.

Curve type selection

Three types of curves (EXP1, EXP2 and POINT) can be selected.



Curve type selection

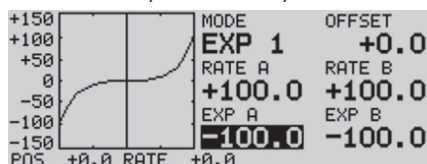
1. Use the edit dial to move the cursor (reverse-will display) to the [MODE] item and push the RTN button to switch to the data input mode.
2. Display the curve you want to use by turning the edit dial to the left or right.
*The curve type blinks.
3. When the RTN button is pushed, the curve type is changed. (Operate the edit dial or S1 button to stop the change.)
[EXP1]: EXP1 curve
[EXP2]: EXP2 curve
[POINT]: point curve

Setting by curve type

When the curve type is selected as described above, adjustment items corresponding to the curve type appear on the screen. Adjust each curve as described below.

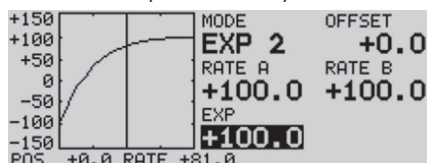
EXP1/EXP2 curve adjustment

(EXP1 curve)



Using the EXP1 curve is effective in smoothing starting of the ailerons, elevator, rudder, etc.

(EXP2 curve)



Using the EXP2 curve is effective in engine rise and other engine control.

The curve left and right rates ([RATE A], [RATE B]) and EXP curve rate ([EXP A], [EXP B]) can be adjusted individually. ([EXP] for EXP2)

The curve can also be offset horizontally ([OFFSET]) in the vertical direction.

[Rate setting]

1. Use the edit dial to move the cursor (reverse-will display) to the [RATE A], [RATE

B], [EXP A], or [EXP B] setting item and push the RTN button to switch to the data input mode.

2. Set the rate by turning the edit dial to the left or right.

Initial value: +100.0% (rate)/+0.0% (EXP rate)

*Initial value differs depending on function.

Adjustment range: -200.0~+200.0% (rate)/-100.0~+100.0% (EXP rate)

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

Push the RTN button to end adjustment and return to the cursor move mode.

[Offsetting the curve horizontally in the vertical direction]

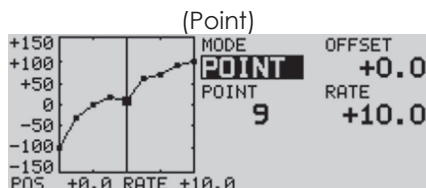
1. Use the edit dial to move the cursor (reverse-will display) to the [OFFSET] setting item and push the RTN button to switch to the data input mode.
2. Move the curve in the vertical direction by turning the edit dial to the left or right.

Initial value: +0.0%

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

Push the RTN button to end adjustment and return to the cursor move mode.

Point curve (POINT) adjustment



Up to 11 or 17 points curve can be used.
(differs with function)

Initial point number: 9 points (17 points curve), 11 points (11 points curve)

*The set points can be freely increased, decreased, and offset.

[Rate adjustment of each point]

1. Use the edit dial to move the cursor (reverse-display) to the [POINT] or [RATE] item and push the RTN button to switch to the curve setting mode.

*It is changed from the reverse-display to the square box display.

*In this mode, push the RTN button to switch the [POINT] item and [RATE] item alternately.

2. Move the cursor (square box) to the [POINT] item by pushing the RTN button.
3. Turn the edit dial to the left or right and select the point whose rate you want to set.

*The mark ■ on the curve shows the currently selected point. The mark □ on the curve shows the currently deleted point.

4. Move the cursor (square box) to the [RATE] item by pushing the RTN button and set the rate by turning the edit dial to the left or right.

Repeat steps 2 through 5 and adjust the curve.

Push the S1 button to end adjustment and return to the cursor move mode.

[Point addition]

1. In the curve setting mode, push the RTN button to move the cursor to the [POINT] item and turn the edit dial to the left or right and move the cursor on the curve to the position (mark □) you want to add.
2. When the RTN button is pushed for 1 second, the point is added.

[Point deletion]

1. In the curve setting mode, push the RTN

button to move the cursor to the [POINT] item and turn the edit dial to the left or right and move the cursor on the curve to the position (mark ■) you want to delete.

2. When the RTN button is pushed for 1 second, the point is deleted.

[Offsetting the curve horizontally in the vertical direction]

1. Use the edit dial to move the cursor (reverse-will display) to the [OFFSET] item.
2. Move the curve in the vertical direction by turning the edit dial to the left or right.

Initial value: +0.0%

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

Push the RTN button to end adjustment and return to the cursor move mode.

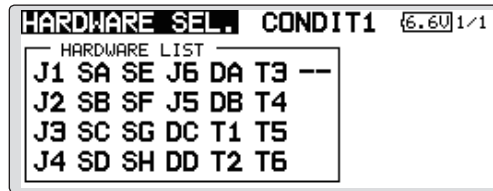
Switch selection method

The various functions used in the FMT-03 can be selected by switch. The switch (including when stick, trim lever, or VR are used as a switch) setting method is common to all functions.

Switch selection

When a switch is selected at a mixing function, etc., the selection screen shown below is called.

(Switch selection screen example)



Switch selection

1. Use the edit dial to move the cursor (highlights) to the switch you want to select and push the RTN button.

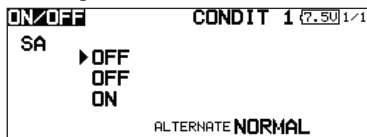
*The switch blinks.

2. To return to the preceeding screen, move the cursor to the [HARDWARE SEL.] at the top of the screen and push the RTN button.

Or, move the cursor to the [ON/OFF] and call the ON/OFF position setting screen by pushing the RTN button.

When switch was selected

When switch was selected, ON/OFF position setting is also performed.



*The ON/OFF setting state of each position is displayed.

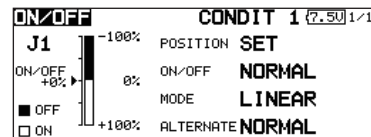
1. When you want to change the ON/OFF setting, use the edit dial to move the cursor and push the RTN button to switch to the data input mode. Switch the ON/Off display by turning the edit dial to the left or right.

*ON/OFF display blinks.

2. When the EDIT button is pressed, the ON/OFF setting is changed. (Operate the edit dial or S1 button to stop the change.)
3. To return to the preceeding screen, move the cursor to the [ON/OFF] at the top of the screen and push the RTN button.

When stick, trim lever, or knob selected

When a stick, trim lever, or knob is used as a switch, four operation modes can be selected by the following mode and type combination:



1. When you want to change the mode, move the cursor to [MODE] and push the RTN button to switch to the data input mode. Switch the display to the mode you want to change by turning the edit dial to the left or right and then make the change by pushing the RTN button.

●Mode: [LINEAR]/[SYMMETRY]

*Set the ON/Off point by the method described on the next page.

Alternate mode setting

●Mode: [NORMAL]/[ALTERNATE]

1. Move the cursor to the [ALTERNATE] item and push the RTN button to switch to the data input mode.
2. Change to the mode you want to set by turning the edit dial to the left or right.
*The mode display blinks.
3. Push the RTN button. (Operate the edit dial or S1 button to stop the change.)
4. To return to the preceeding screen, move the cursor to the [ON/OFF] at the top of the screen and push the RTN button.

Operation modes

The operation modes when stick, trim lever, or knob are selected is described below.

Linear mode



This mode sets ON/OFF at the left or right (up or down) with the set point as the reference.

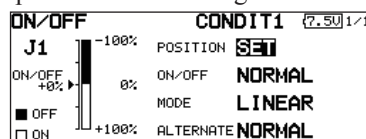
Symmetrical mode



Left and right (up and down) operations are symmetrical about the neutral position. For instance, when you want to switch DR1 with the aileron stick, when the stick is moved to the left or right, DR1 can be turned on at the same left and right position.

Shifting the ON/Off point

The ON/OFF point can be shifted. ON/OFF at a free position can be changed.



- Black range: OFF range
- White range: ON range

[Setting method]

1. First, use the edit dial to move the cursor to the [POSITION] item.
2. Move the stick, trim lever, or knob to the point you want to change and push the RTN button. The point is shifted.
3. To return to the preceeding screen, move the cursor to the [ON/OFF] at the top of the screen and push the RTN button.

Logic switch (Condition Select function only)

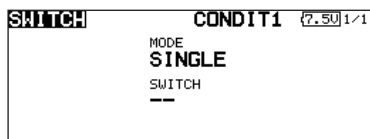
The logic switch function lets you turn operation on and off by combining two switches. For instance, the condition is activated when 2 switches are turned on.

Logic mode

AND: When both switches are ON, the condition is ON.

OR: When either switches is ON, the condition is ON.

EOR: When the two switches are in different states, the condition is ON.



Switch mode selection

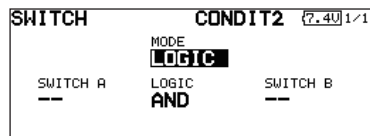
1. Move the cursor to the [MODE] item and push the RTN button to switch to the data input mode.

2. Turn the edit dial to the left and select the [LOGIC].

*[LOGIC] display blinks.

3. Push the RTN button to change to the logic switch mode.

(Logic switch setting screen)



Swich selection

1. Select the switch A and B. (Refer to the description at the previous page.)

Logic mode selection

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

2. Turn the edit dial to the left or right and select the logic mode.

*The mode display blinks.

3. Push the RTN button to change to the logic mode.

4. To return to the preceeding screen, move the cursor to the [SWITCH] at the top of the screen and push the RTN button.

UPDATING

Your Futaba FMT-03 transmitter programming can be updated easily online. When functions are added or improved, the update file can be downloaded from our website. Copy the update files to the SD card and then use the following procedure to update the program.

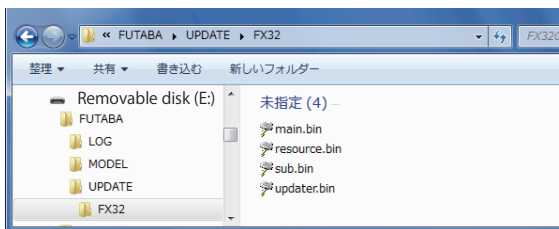
Check our web site for the FAQ regarding updating for more information.

Updating procedure

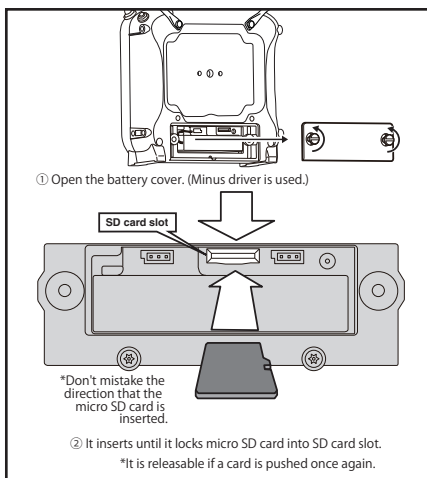
Note: If the battery fully discharges during program updating, updating will fail. When the remaining battery capacity is 50% or less, always recharge the battery before updating.

Note: The model data in the transmitter can be used unchanged after updating, but to be safe, back up the model data before updating.

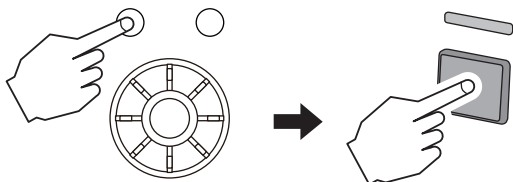
1. Copy update files to a SD card. Typical structure of folders of the card for update are following.



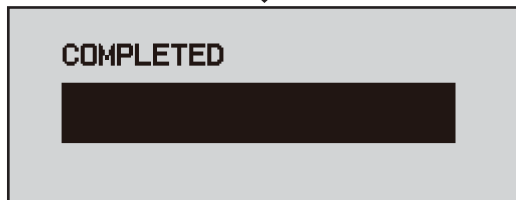
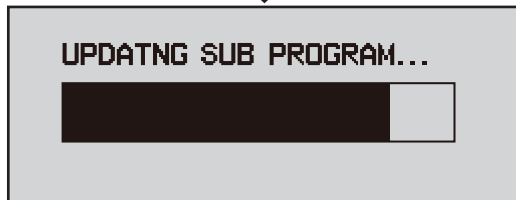
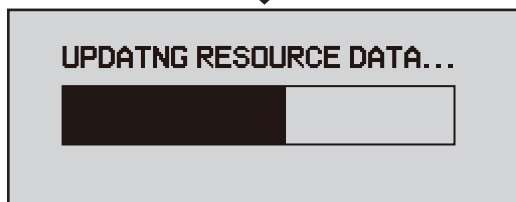
2. Attach the SD card into the SD slot of the FMT-03.



3. Press the Home/Exit switch and turn on the power switch, and FMT-03 should begin to update.



4. When updating is complete, the screen shown below appears.



5. Turn off the power switch. After the monitor LED goes off, switch the update switch in the down direction.

After the updating above has been completed, turn on the power and then check the system program version at the system menu information screen.

6. If writing goes wrong, the following error message will come out.

"LOW BATTERY"
 "UPDATE FILE NOT FOUND"
 "BROKEN FILE"
 "WRITE ERROR"

AIRPLANE/GLIDER/HELICOPTER FUNCTIONS

**FMT-03 is equipped with a stick of multi-copter exclusive use. Therefore it's unsuitable for use of airplane, glider and helicopter.
But, FMT-03 is also equipped with the function of the airplane, glider and helicopter. It's indicated on a page after this by reference.**

MODEL MENU (AIRPLANE/GLIDER FUNCTIONS)

The dedicated mixes, etc. usable when airplane or glider model type is selected are displayed in this Model Menu functions section. First use the Model Type function of the Linkage Menu to preset the model type, wing type, and tail type matched to the fuselage used. Other settings reset the data used in mixing function, etc.

These dedicated mixes can be set for each flight condition, as required. When you want to use the system by switching the settings for each condition by switch or stick position, use the

Condition Select function to add flight conditions. (Up to 8 conditions can be used)

Note: The FMT-03 is designed so that the airplane and glider model types can handle aircraft of the same wing type.

The functions common to airplanes and gliders, except some dedicated functions, are summarized without regard to the model type.

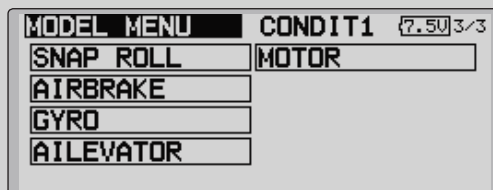
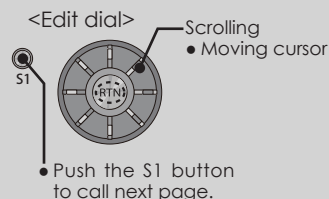
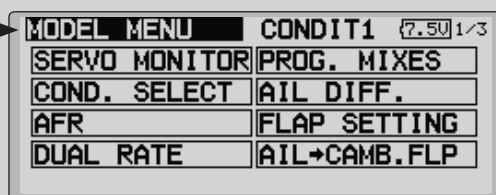
The setting items are different, depending on the number of servos, etc. according to the wing type used. The setup screens in the instruction manual are typical examples.

(Model Menu screen example)

*The Model Menu screen depends on the model type. This screen is for model type 4AIL+4FLP.

- Select the [MODEL] at the home screen and call the model menu shown below by pushing the RTN button.
- Use the edit dial to select the function you want to set and call the setup screen by pushing the RTN button.

- Select the [MODEL MENU] and return to the home screen by pushing the RTN button or pushing the Home/Exit button.



Model Menu functions list

AIR DIFFERENTIAL

This function adjusts the left and right ailerons. Roll axis correction and fine tuning with a VR are also possible. This is convenient when making settings during flight.

[Airplane/glider, 2 ailerons or more]

FLAP SETTING

The flaps can be adjusted independently. For a 4 flaps model, the camber flaps can be mixed with the brake flaps. [Airplane/glider, 2 flaps or more]

AIL to CAMBERFLP

This mix operates the camber flaps in the aileron mode. It improves the operation

characteristic of the roll axis. [Airplane/glider, 2 ailerons + 2 flaps or more]

AIL to BRAKEFLP

This mix operates the brake flaps in the aileron mode. It improves the operation characteristic of the roll axis. [Airplane/glider, 4 flaps or more]

AIL to RUD

This mix is used when you want to operate the rudder at aileron operation. Banking at a shallow bank angle is possible. [Airplane/glider, general]

AIRBRAKE to ELE

This mix is used to correct operation of the airbrakes (spoilers) when landing. [Airplane/glider, general]

RUD to AIL

This mix is used to correct roll maneuvers, knife edge, etc. of stunt planes. [Airplane/glider, general]

CAMBER Mix

This mix adjusts the camber and corrects the elevators. [Airplane/glider, 2 ailerons or more]

ELE to CAMBER

This mix is used when you want to the mix camber flaps with elevator operation. Lifting force can be increased at elevators up. [Airplane/glider, 2 ailerons or more]

CAMBERFLP to ELE

This mix is used to correct for attitude changes when the camber flaps are being used. [Airplane/glider, 2 ailerons + 1 flap or more]

BUTTERFLY (Crow)

This function is used when powerful brake operation is necessary. [Glider, 2 ailerons or more]

TRIM MIX 1/2

The ailerons, elevators, and flaps trim offset rate can be called by switch or condition selection. [Glider, 2 ailerons or more]

AIRBRAKE

This function is used when airbrakes are necessary when landing or when diving, etc. during flight. (Airplane, general)

GYRO

This is a dedicated mix when a GYA Series gyro is used. [Airplane/glider, general]

V-TAIL

This function adjusts the elevators and rudder of V-tail models. [Airplane/glider, V-tail specifications]

AILEVATOR

This function adjusts the elevators and ailerons of models with elevator specifications. [Airplane/glider, elevator specifications]

WINGLET

This function adjusts the left and right rudders of winglet models. [Airplane/glider, winglet specifications]

MOTOR

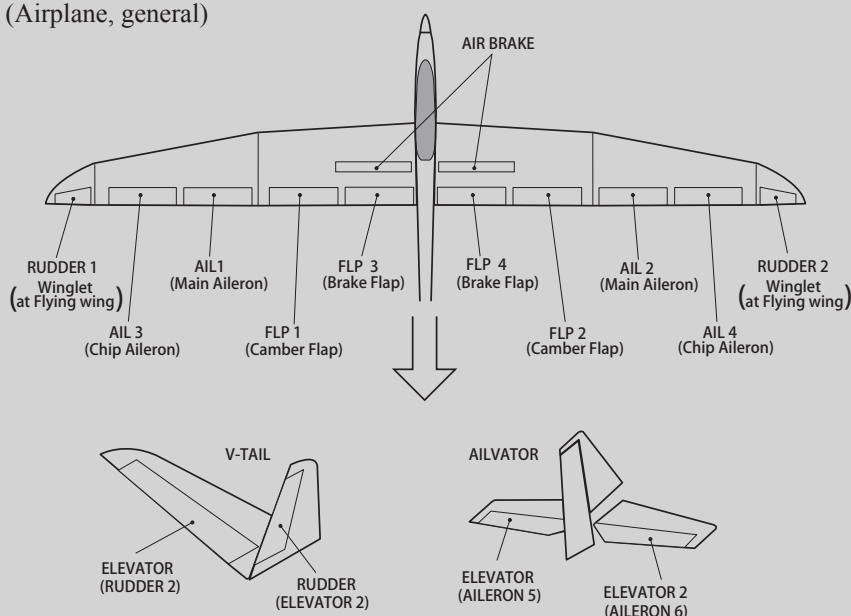
The operation speed when the motor of F5B and other EP gliders is started by switch can be set. [EP glider, general]

RUD to ELE

This function is used to correct roll maneuvers, knife edge, etc. of stunt planes. [Airplane, general]

SNAP ROLL

This function selects the snap roll switch and adjusts the steering angle of each rudder. Servo speed can also be adjusted. [Airplane general]



Servo connection by Airplane/glider type

The FMT-03 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 airplane/glider 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			The output CH of each system	FASTest 18CH FASTest 12CH
	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		

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP			The output CH of each system	FASTest 18CH FASTest 12CH
	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		

•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

FASTest 18CH

FASTest 12CH

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

FASTest 18CH

FASTest 12CH

•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

The output
CH of each
system

FASSTest 18CH
FASSTest 12CH

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

The output
CH of each
system

FASSTest 18CH
FASSTest 12CH

●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

The output
CH of each
system

FASTest 18CH
FASTest 12CH

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

The output
CH of each
system

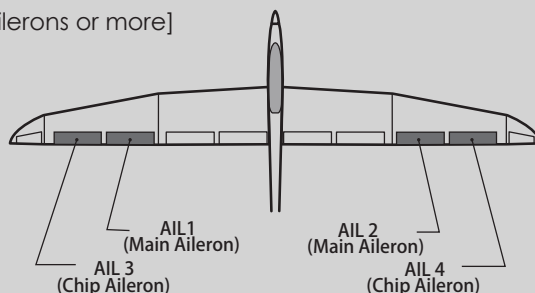
FASTest 18CH
FASTest 12CH

* 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.

AIL DIFF.

[Airplane/glider, 2 ailerons or more]

The left and right aileron differential can be adjusted independently. The differential rate can also be adjusted according to the flying state by setting a fine tuning VR.



- Select [AIL DIFF.] at the model menu and call the setup screen shown below by pushing the RTN button.
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.
- Aileron left/right adjustment
- Fine tuning VR setting
- (Currently selected condition name)
- Group/single mode switching
(For more information, refer to the description at the back of this manual.)
- Calls the AFR screen directly when adjusting aileron operation AFR.

AIL DIFF. CONDIT1 7.50 1/1

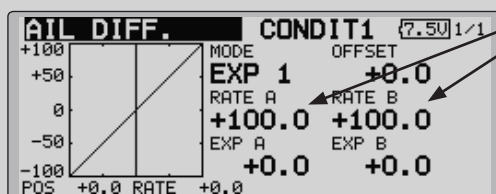
	LEFT	RIGHT
AILERON	100%	100%
AILERON2	100%	100%
AILERON3	100%	100%
AILERON4	100%	100%

GROUP GROUP
FINE TUNING CURVE
AIL-AFR

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

*The graph is operated by setting a VR, etc.



• Overall adjustment by Rate A and Rate B.

Setting method

- Move the cursor to the aileron (AIL) 1~4 left (or right) setting item and push the RTN button to switch to the data input mode.
Adjust the aileron angles when the stick is moved to the left (or right) end.
Push the RTN button to end adjustment and return to the cursor move mode.
*The aileron AFR screen can be directly called from the AIL differential setup screen. ([AIL-AFR])
- When setting the fine tuning VR, move the cursor to the "--" item and push the RTN button to call the selection screen, and then select the fine tuning VR.
Push the RTN button to end adjustment and return to the cursor move mode.
- The fine tuning rate can be set by curve.

<Wing type: 4 ailerons screen>

*The display screen is an example. The actual screen depends on the Model Type.

FLAP SETTING

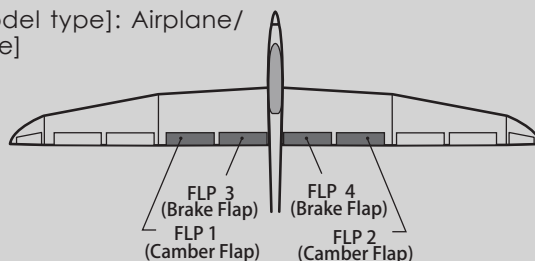
[Corresponding model type]: Airplane/
glider, 2 flaps or more]

The up/down travel of each flap (camber flaps: FLP1/2, brake flaps: FLP3/4) can be adjusted independently at each servo according to the wing type.

- The operation reference point of each flap can be offset

The camber flaps of a 4-flap model can be mixed with the brake flaps. (Brake FLP to camber FLP)

- An ON/OFF switch can be set.



<Wing type: 4 flaps screen>

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

- Select [FLAP SETTING] at the model menu and call the setup screen shown below by pushing the RTN button.

(CAMBER FLP setting screen)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

FLAP SETTING		CONDIT1		7.50 1/3	
CAMBER FLAP		INH			
UP	FLAP	FLP1	FLP2		
		+100%	+100%		
DOWN		+100%	+100%	GROUP	GROUP
OFFSET		+0%	+0%		

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

(BRAKE FLP setting screen)

- Up side/Down side adjustment
- Operation reference point offset

FLAP SETTING		CONDIT1		7.50 2/3	
BRAKE FLAP		INH			
UP	FLAP	FLP3	FLP4		
		+100%	+100%		
DOWN		+100%	+100%	GROUP	GROUP
OFFSET		+0%	+0%		

- Group/single mode switching
(For more information, refer to the description at the back of this manual.)

(B.FLP to C.FLP setting screen)

FLAP SETTING		CONDIT1		7.50 3/3	
BRAKE FLAP → CAMBER FLAP					
UP		+100%	ACT/INH	INH	
DOWN		+100%	GROUP	GROUP	
OFFSET		+0%	SWITCH	--	

Setting method

- Move the cursor to the flap (FLP) 1~4 up or down item according to the wing type and push the RTN button to switch to the data input mode.
Adjust the travel independently.
- To offset the operation reference point of each flap, move the cursor to the corresponding offset item. Use the edit dial to offset the reference point.
Push the RTN button to end adjustment and return to the cursor move mode.

- When using brake FLP to camber FLP mixing, move the cursor to the [ACT/INH] item and turn the edit dial to the left and push the RTN button. (ON is displayed.)

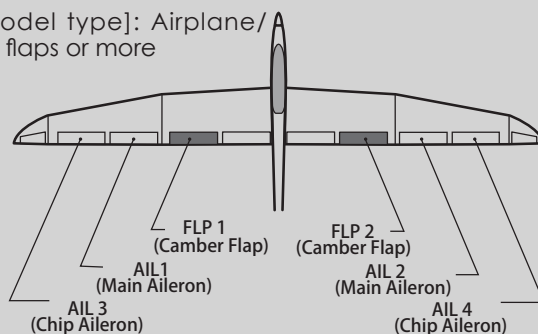
When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

AIL to CAMB.FLP [Corresponding model type]: Airplane/ glider, 2 ailerons + 2 flaps or more

This mix operates the camber flaps (FLP1/2) in the aileron mode. When the aileron stick is manipulated, the ailerons and camber flaps perform aileron operation simultaneously and the operation characteristic of the roll axis is improved.

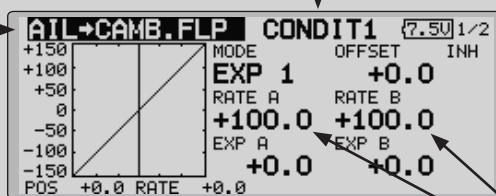
- The aileron left/right mixing rate of each flap servo can be fine-tuned.
- A mixing curve can be set.
- An ON/OFF switch can be set.
- Linking is possible: Link this mix to other mixes.



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

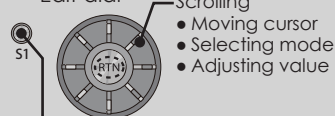
- Select [AIL to CAMB.FLP] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



(Currently selected condition name)

<Edit dial>



- Push the S1 button to call next page.

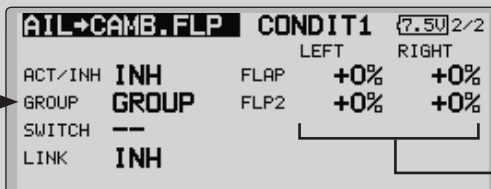
- Mixing curve setting

*For a description of the curve setting method, see the description at the back of this manual.

- Left/right overall adjustment at Rate A and Rate B

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



- Adjustment of each flap servo

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

- Move the cursor to the left or right item of each flap servo and push the RTN button to

switch to the data input mode.

Adjust the mixing rate with the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

- A mixing curve can be set.

(For a description of the mixing curve setting method, see the description at the back of this manual.)

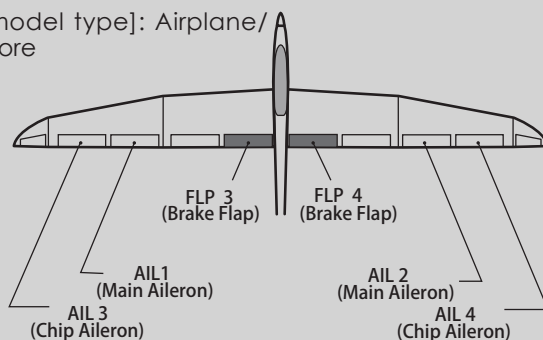
- To set linking, move the cursor to the [LINK] item and push the RTN button to switch to the data input mode.

Set it to ON and push the RTN button.

AIL to BRAKEFLP [Corresponding model type]: Airplane/ glider, 4 flaps or more

This mix operates the brake flaps (FLP3/4) in the aileron mode. When the aileron stick is manipulated, the aileron and brake flaps perform the aileron operation simultaneously and the operation characteristic of the roll axis is improved.

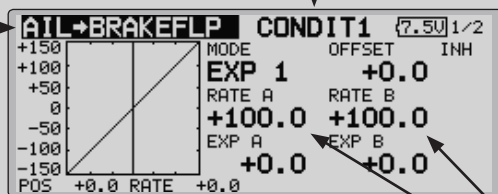
- The aileron left and right mixing rates can be adjusted for each flap servo.
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [---] setting)
- Linking can be set: Link this mix to other mixes.



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

- Select [AIL to BRAKEFLP] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



(Currently selected condition name)

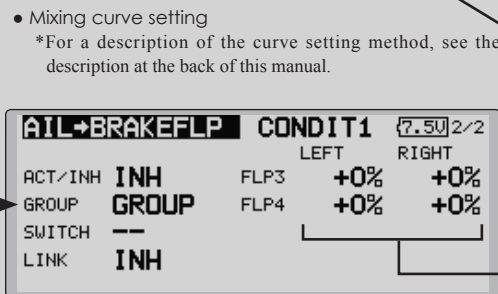
<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



- Mixing curve setting
*For a description of the curve setting method, see the description at the back of this manual.

- Left/right overall adjustment at Rate A and Rate B

- Adjustment of each flap servo

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.
Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When setting a switch, move the cursor to the [---] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "---" setting)
(For a description of the switch selection method, see the description at the back of this manual.)
- Move the cursor to the left or right button of each flap servo and push the RTN button to switch to the data input mode.

Adjust the mixing rate with the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*When the mixing direction is reversed by the linkage, adjustments can be made by reversing the mixing rate polarity (+ or -).

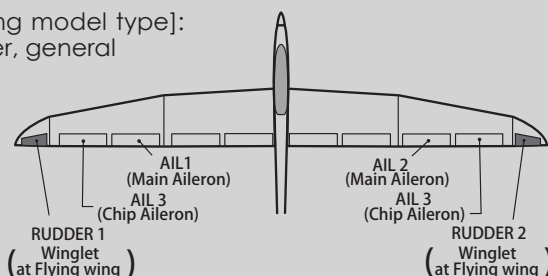
- A mixing curve can be set.
(For a description of the curve setting method, see the description at the back of this manual.)
- To set linking, move the cursor to the Link item and push the RTN button to switch to the data input mode.
Set it to ON and push the RTN button.

AIL to RUD

[Corresponding model type]:
Airplane/glider, general

Use this mix when you want to mix the rudders with aileron operation.

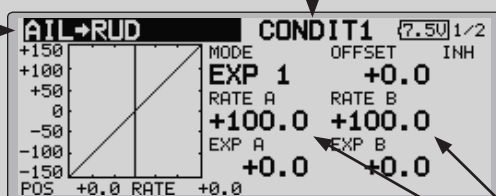
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [-] setting)
- The mixing rate can be fine-tuned by setting a VR.



- Select [AIL to RUD] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

- Mixing curve setting

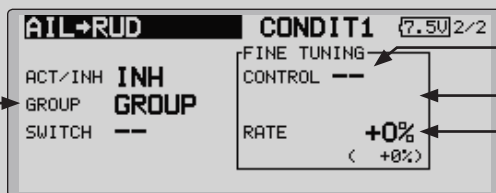
*For a description of the curve setting method, see the description at the back of this manual.

- Left/right overall adjustment at Rate A and Rate B

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)

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



- Fine tuning VR setting

- Operation mode

- Adjustment rate

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- When setting a switch, move the cursor to the [-] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "-" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

- When setting a VR, move the cursor to the Fine Tuning "-" item and push the RTN button to call the selection screen, and then select the VR. The adjustment rate can be set. The VR operation mode can also be selected.

- A mixing curve can be set.

(For a description of the curve setting method, see the description at the back of this manual.)

[Fine tuning VR operation mode]

[LIN.] Mixing rate 0% at center of VR. When the VR is turned clockwise and counterclockwise, the mixing rate increases and decreases, respectively.

[ATL+] Mixing rate 0% at left end of VR. When the VR is turned, the mixing rate increases.

[ATL-] Mixing rate 0% at right end of VR. When the VR is turned, the mixing rate increases.

[SYM.] When the VR is turned to the left or right of the neutral position, the mixing rate increases.

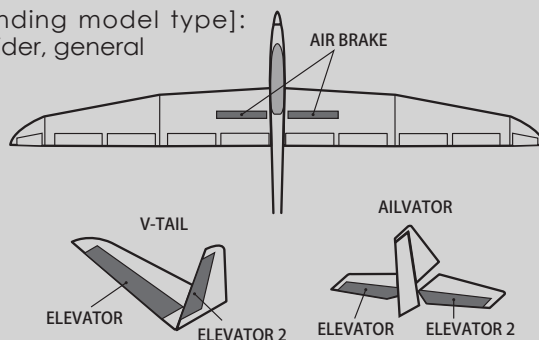
AIRBRAKE to ELE

[Corresponding model type]:
Airplane/glider, general

This mix is used when you want to mix the elevators with airbrake (spoiler) operation. It raises the elevators to correct for dropping of the nose during airbrake operation.

*This function does not operate when airbrake is not assigned at the Function menu in the Linkage Menu.

- The Rate 1 side/Rate 2 side mixing rate with the elevator servos can be adjusted.
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [--] setting)
- The mixing rate can be fine-tuned by setting a VR.

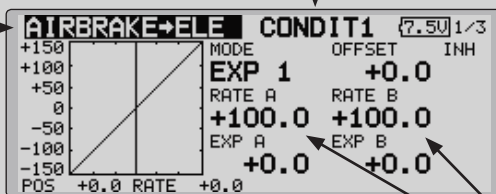


*The display screen is an example. The actual screen depends on the model type.

- Select [AIRBRAKE to ELE] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



<Edit dial>

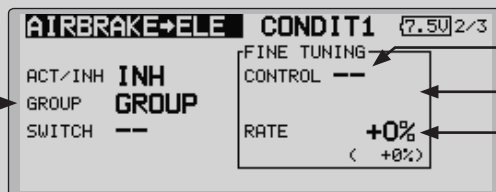
- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value
- Push the S1 button to call next page.

- Mixing curve setting

*For a description of the curve setting method, see the description at the back of this manual.

- Group/single mode switching

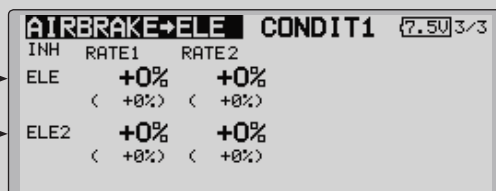
(For more information, refer to the description at the back of this manual.)



- Overall adjustment by Rate A and Rate B.

- Fine tuning VR setting
- Operation mode
- Adjustment rate

- Adjustment of each elevator servo



Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.
Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)
(For a description of the switch selection method, see the description at the back of this manual.)
- When setting a VR, move the cursor to the Fine tuning "--" item and push the RTN button to call the selection screen, and then select the VR. The adjustment rate can be set. The VR operation mode can also be set.
(For a description of the fine tuning VR setting method, see the description at the back of this manual.)
- A mixing curve can be set.
(For a description of the curve setting method, see the description at the back of this manual.)

[Fine tuning VR operation mode]

- [LIN.] Mixing rate 0% at center of VR.
When the VR is turned clockwise and counterclockwise, the mixing rate increases and decreases, respectively.
- [ATL+] Mixing rate 0% at left end of VR.
When the VR is turned, the mixing rate increases.
- [ATL-] Mixing rate 0% at right end of VR.
When the VR is turned, the mixing rate increases.
- [SYM.] When the VR is turned to the left or right of the neutral position, the mixing rate increases.

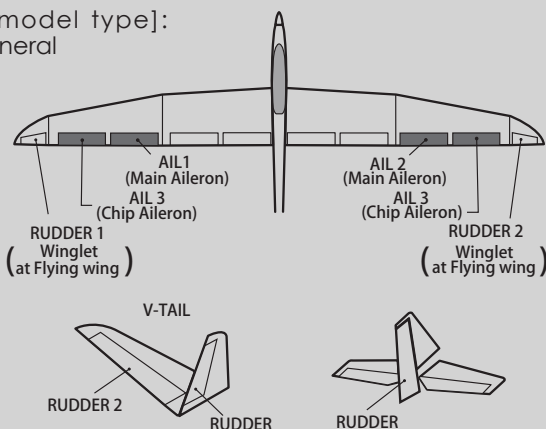
RUD to AIL

[Corresponding model type]:
Airplane/glider, general

This function is used when you want to mix the ailerons with rudder operation. It is used when rudder is applied during roll maneuvers, knife edge, etc. of stunt planes. It can be used to bank scale models, large models, etc. like a full size plane.

- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [-] setting)
- Linking can be set: Link this mix to other mixes.
- The mixing rate can be fine-tune by setting a VR.

- Select [RUD to AIL] at the model menu and call the setup screen shown below by pushing the RTN button.

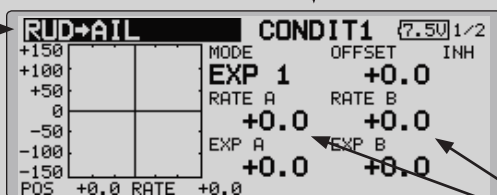


(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



- Mixing curve setting

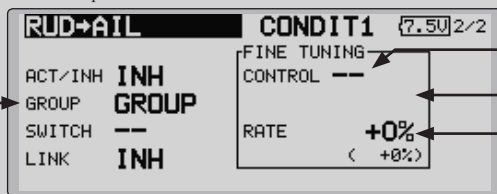
*For a description of the curve setting method, see the description at the back of this manual.

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

- Left/right overall adjustment at Rate A and Rate B



- Fine tuning VR setting

- Operation mode

- Adjustment rate

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

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- When setting a switch, move the cursor to the [-] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "-" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

- When setting a VR, move the cursor to the Fine tuning "-" item and push the RTN button to call the selection screen and then select the VR. The adjustment rate can be set.

The VR operation mode can also be set.

(For a description of the fine tuning VR setting method, see the description at the back of this manual.)

- A mixing curve can be set.

(For a description of the curve setting method, see the description at the back of this manual.)

- When linking: move the cursor to the [LINK] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)

[Fine tuning VR operation mode]

[LIN.] Mixing rate 0% at center of VR. When the VR is turned clockwise and counterclockwise, the mixing rate increases and decreases, respectively.

[ATL+] Mixing rate 0% at left end of VR. When the VR is turned, the mixing rate increases.

[ATL-] Mixing rate 0% at right end of VR. When the VR is turned, the mixing rate increases.

[SYM.] When the VR is turned to the left or right of the neutral position, the mixing rate increases.

CAMBER MIX

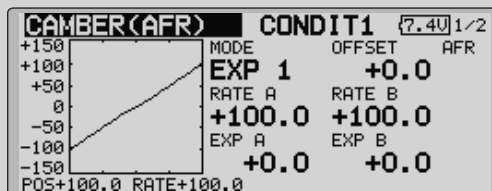
[Corresponding model type]: Airplane/glider, 2 ailerons or more

This function adjusts the AFR (D/R) rate of camber operation which operates the wing camber (ailerons, camber flaps, brake flaps) in the negative and positive directions. The aileron, flap, and elevator rates can also be adjusted independently by curve, and attitude changes caused by camber operation can be corrected.

*Initial setting assigns camber operation to side lever LS.

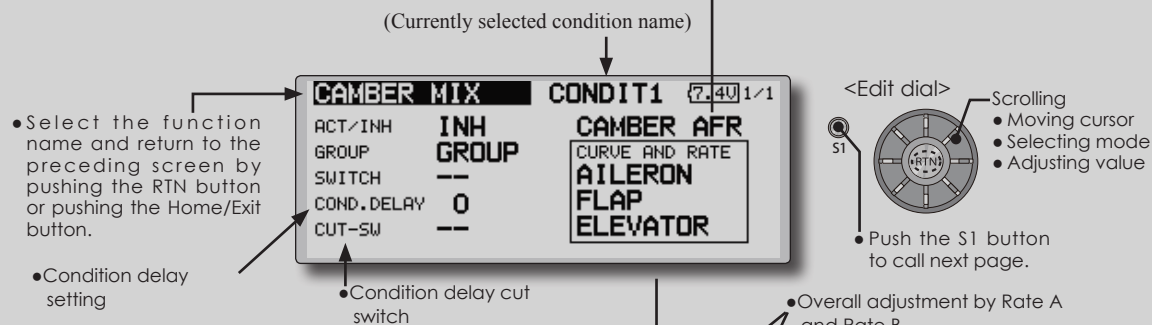
- The up/down side rates of the aileron, flap, and elevator servos can be adjusted by curve. When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [--] setting)
- A delay can be set for each condition. A cut switch which can turn OFF the delay function can be set.
- The speed of the aileron, flap, and elevator servos can be set. (IN side/OUT side)

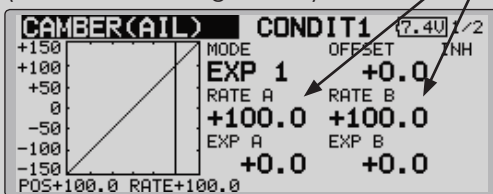


- Select [CAMBER MIX] at the model menu and call the setup screen shown below by pushing the RTN button.

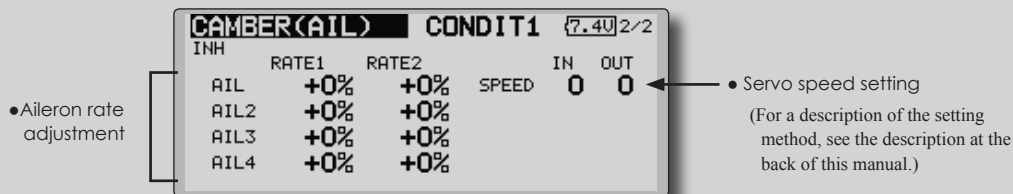
- Camber AFR (D/R) setup screen call (For a description of the setting method, refer to the AFR function.)



(Curve/rate setting screen)



- Mixing curve setting
- *For a description of the curve setting method, see the description at the back of this manual.



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

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

- When setting a condition delay, move the cursor to the [COND.DELAY] item and push the RTN button to switch to the data input mode.

Set the delay with the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

When setting a cut switch, move the cursor to [CUT-SW] item and push the RTN button to call the selection screen, and then select the

switch and set its ON direction. (Always ON at [--] setting)

(For a description of the condition delay function, see the description at the back of this manual.)

- Camber AFR(D/R) screen call

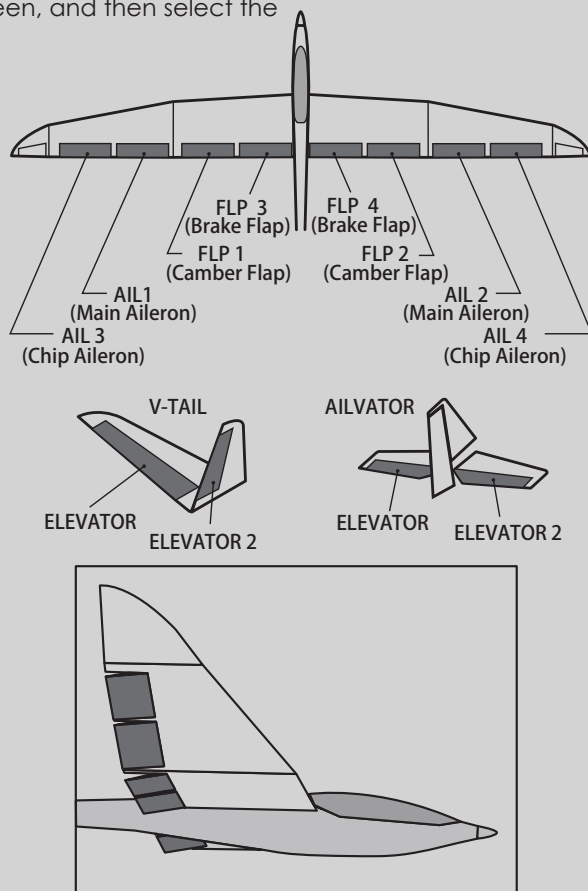
Move the cursor to the Camber AFR item and push the RTN button to call the setup screen. (For a description of the setup method, see the description at the back of this manual.)

(Curve/rate setup screen)

- The curve and rate are adjusted by calling the aileron, flap, and elevator curve/rate screens.

The rate and curve of each servo can be set by calling each screen. (For a description of the curve setting method, see the description at the back of this manual.)

The servo speed can also be adjusted.



ELE to CAMBER

[Corresponding model type]: Airplane/glider, 2 ailerons or more

This function is used when you want to mix the camber flaps with elevator operation. When used, the flaps are lowered by up elevator, and lift can be increased.

- Select [ELE to CAMBER] at the model menu and call the setup screen shown below by pushing the RTN button.

Note: Tailless wing elevator can be operated when this mix is activated.

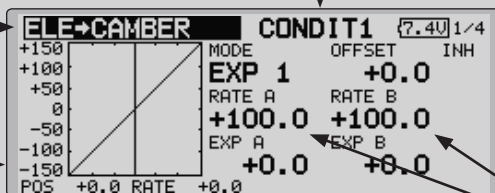
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [--] setting)
- The mixing rate can be fine-tuned by setting a VR.

(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Mixing curve setting

*For a description of the curve setting method, see the description at the back of this manual.

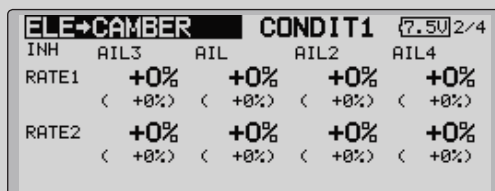


<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

- Overall adjustment by Rate A and Rate B.

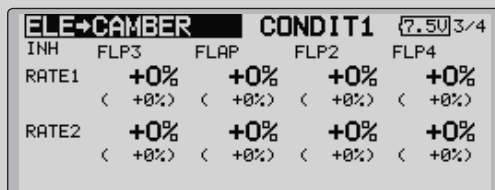


- Ailerons and flaps rate adjustment

1. Select the rate box and push the RTN button to switch to the data input mode.

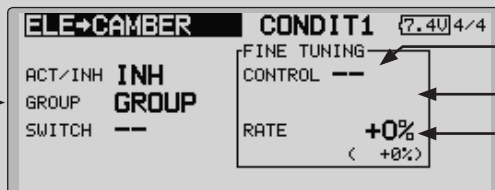
2. Adjust the rates by scrolling the edit dial.

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



- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



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

- Fine tuning VR setting

- Operation mode

- Adjustment rate

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.

Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

- When setting a VR, move the cursor to the Fine tuning "--" item and push the RTN button to call the selection screen, and then select the VR. The adjustment rate can be set.

The VR operation mode can also be selected.

- A mixing curve can also be set.

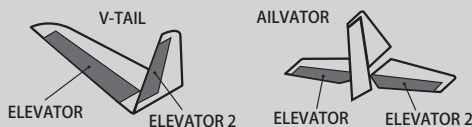
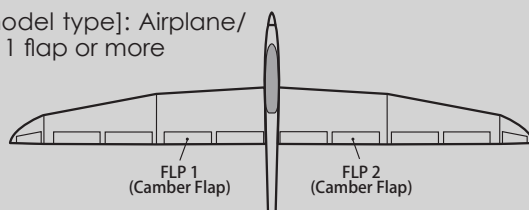
(For a description of the curve setting method, see the description at the back of this manual.)

CAMB.FLP to ELE

[Corresponding model type]: Airplane/
glider, 2 ailerons + 1 flap or more

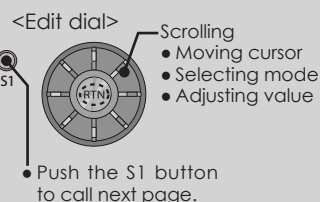
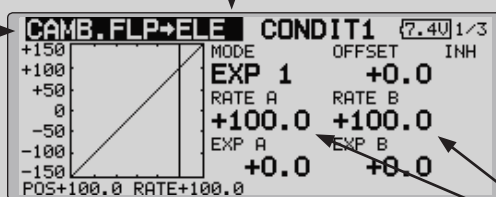
This mixing is used to correct changes (elevator direction) generated when the camber flaps (speed flaps) are used.

- The elevator servos up side/down side rate can be adjusted. When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [--] setting)
- The mixing rate can be fine-tuned by setting a VR.



- Select [CAMB.FLP to ELE] at the model menu and call the setup screen shown below by pushing the RTN button.

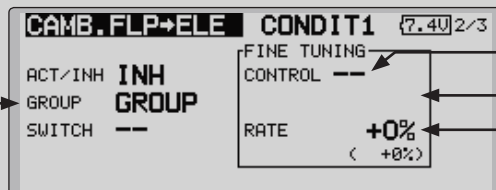
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



- Group/single mode switching
(For more information, refer to the description at the back of this manual.)

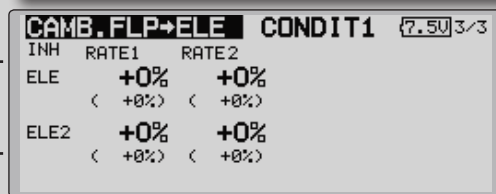
- Mixing curve setting
*For a description of the curve setting method, see the description at the back of this manual.

- Overall adjustment by Rate A and Rate B.



- Fine tuning VR setting
- Operation mode
- Adjustment rate

- Elevator rate adjustment



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

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode.
Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When setting a switch, move the cursor to the [--] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "--" setting)
(For a description of the switch selection method, see the description at the back of this manual.)
- Move the cursor to the elevator servos left and right item and push the RTN button to

switch to the data input mode. Adjust the mixing rate with the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

- When setting a VR, move the cursor to the Fine tuning "--" item and push the RTN button to call the selection screen, and then select the VR. The VR operation mode can be selected.
- A mixing curve can be set.
(For a description of the curve setting method, see the description at the back of this manual.)

BUTTERFLY

[Corresponding model type]: Glider, 2 ailerons or more

This function allows powerful brake operation by simultaneously raising the left and right ailerons and lowering the flaps (camber flap, brake flap).

This setting will allow the ailerons to be raised while the flaps are simultaneously lowered. Butterfly (crow) produces an extremely efficient landing configuration by accomplishing the following:

1. Slow the aircraft's velocity.
2. Provide washout at the wing tips to reduce the tendency to tip stall.
3. Create more lift toward the center of the wing allowing it to fly at a slower speed

- Select [BUTTERFLY] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Select the Mixing Rate AIL and FLP box and push the RTN button to switch to the data input mode. Adjust the mixing rates.
Push the RTN button to end adjustment and return to the cursor move mode.

- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [--] setting)
- The butterfly operation reference point can be offset. When the RTN button is pushed with the offset item selected when operated to the position to be changed, the reference point is offset. If the reference point is offset too much, unexpected operation may be performed.
- The ailerons and flaps operation speed can be adjusted. (IN side/OUT side)
- A delay can be set for each condition. A cut switch which can turn OFF the delay function can also be set.
- The differential rate can be adjusted.

*When servo binding occurs when setting the ailerons and flaps in butterfly mixing, use the AFR function to adjust the rudder angle.

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

(Currently selected condition name)



- To elevator correction setup screen

• Calls the Butterfly AFR (D/R) setup screen
(For a description of the setting method, see the description at the back of this manual.)

- When using this function, move the cursor to the [ACT/INH] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- Group/single mode switching

(For more information, see the description at the back of this manual.)

- When setting a switch, select the SWITCH [--] box and push the RTN button to switch to the data input mode. Press the EDIT button to call the selection screen, and then select the switch and set its ON direction.

- Aileron and flap servos speed setting

(For a description of the setting method, see the description at the back of this manual.)

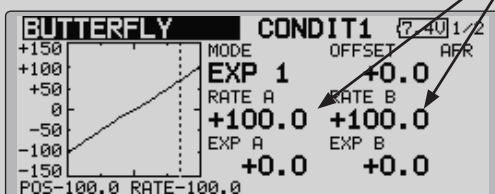
- When offsetting the butterfly operation reference point, operate to the point you want to change and then press the EDIT button for 1 second. "INITIALIZE ELEVATOR CURVE?" is displayed. Please choose whether to initialize by YES, or not to initialize by NO.

- Differential rate adjustment

- Condition delay setting and cut switch setting

(For a description of the setting method, see the description at the back of this manual.)

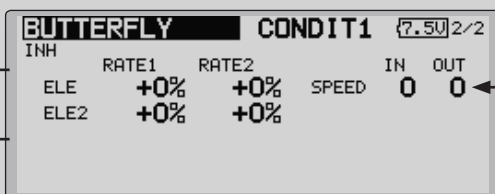
(Elevator correction rate setup screen)



• Overall adjustment by Rate A and Rate B

• Mixing curve setting

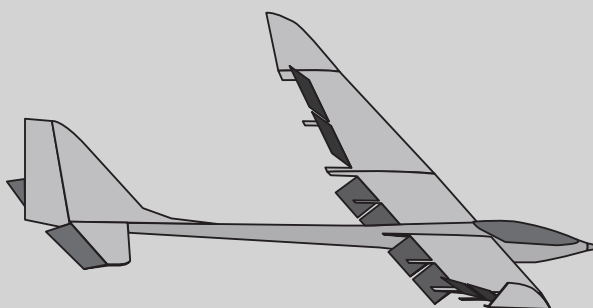
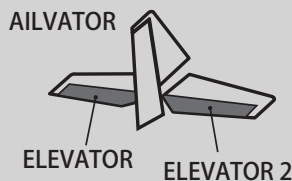
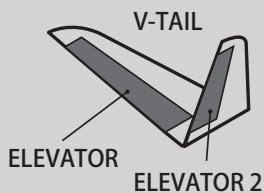
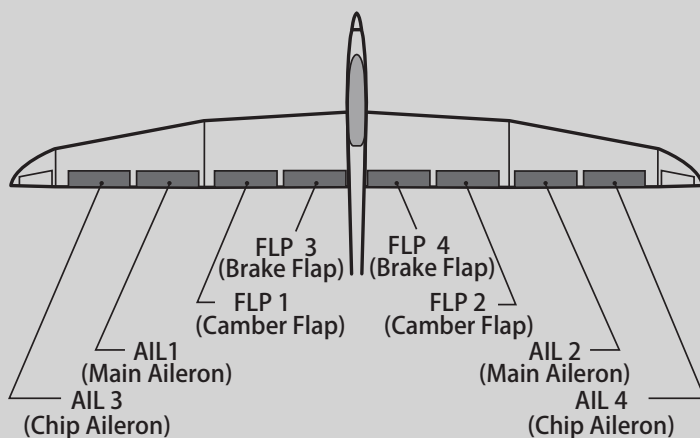
*For a description of the curve setting method, see the description at the back of this manual.



• Elevator rate adjustment

• Servo speed setting

(For a description of the setting method, see the description at the back of this manual.)



TRIM MIX 1/2

[Corresponding model type]: Glider, 2 ailerons or more

These functions call the ailerons, elevators, and flaps (camber flaps, brake flaps) trim offset rates preset according to the flight state.

The amount of ailerons, elevator, and flaps (camber flap, brake flap) trim offset can be set to a switch.

As an example **Trim Mix 1** can be set up for launching, with speed flaps and ailerons dropped, and a slight amount of up elevator. **Trim mix 2** can be used for high speed flying, with both ailerons and speed flaps reflexed slightly, and a bit of down elevator.

The trim functions can be activated during flight by setting a switch. To prevent sudden trim changes when switching flight conditions, a delay can be set to provide a smooth transition between the two. Trim Mix 2 will have priority over Trim Mix 1.

Example

1. Move to the ACT/INH item and push the RTN button to switch to the data input mode. Set the trim mix function to [ON].
*When separating the settings for each condition, move to the [GROUP] item and set it to [Single].
 2. Select the ON/OFF switch.
 3. Select the [Manual] or [Auto] mode.
In the [Auto] mode, also select an auto SW. This switch can be linked to a stick, etc.
- <Speed>
In: The operation speed at switch ON can be set.
Out: The return speed at switch OFF can be set.
- <Fine Tuning>
The offset rate can be varied in the Fine Tuning numeric range set at screen [5/5] by VR, etc. selection.
- <Condition Delay>
When flight conditions are set, the operation speed can be set for each condition. Condition delay operation can be interrupted and each rudder quickly returned to its original position by selecting a cut switch.

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

- Select [TRIM MIX1 or 2] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

• Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

• The ailerons, flaps, and elevators offset rate can be adjusted. Move the cursor to the corresponding setting item and push the RTN button to switch to the data input mode. Adjust the rate with the edit dial. Push the RTN button to end adjustment and return to the cursor move mode.

- When a fine tuning VR is set on the next page, the ailerons flaps and elevators trim rates can be adjusted. Move the cursor to the corresponding setting item and push the RTN button to switch to the data input mode, adjust the rate with the edit dial. Push the RTN button to end adjustment and return to the cursor move mode.

- When using this function, move the cursor to the [ACT/INH] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)

- Group/single mode switching

(For more information, see the description at the back of this manual.)



- Manual/Auto mode selection

Manual: Switches the function ON/OFF by switch

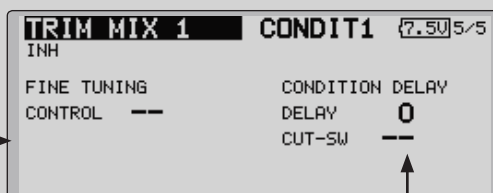
Auto: Trim mix function call can be linked to a stick, etc. A stick switch, etc. separate from the function ON/OFF switch is set.

- Ailerons, flaps, an elevators servo speed setting

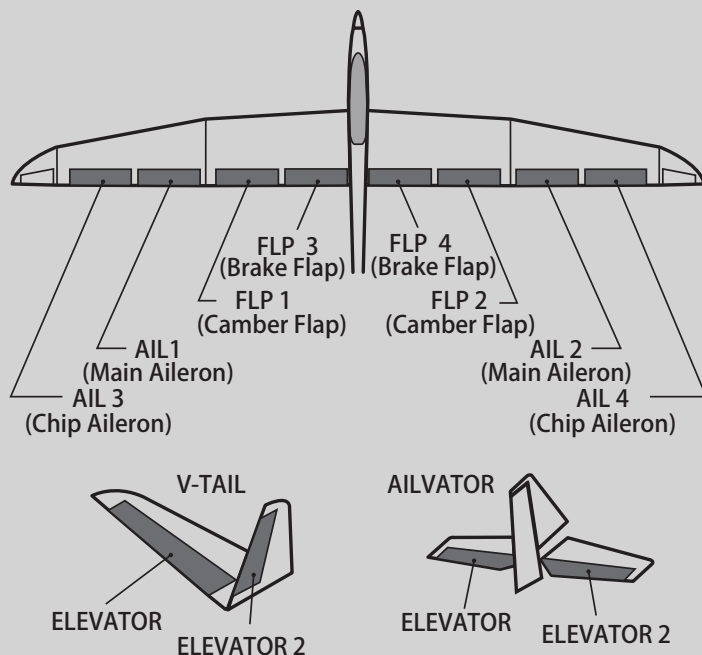
(For a description of the setting method, see the description at the back of this manual.)

- When using a fine tuning VR, move the cursor to this item and push the RTN button to call the selection screen.

Select the VR and push the RTN button.



- Condition delay setting (for a description of the setting method, see the description at the back of this manual) and cut switch setting.



AIRBRAKE

[Corresponding model type]: Airplane, general

This function is used when an air brake is necessary when landing 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.

Setting example for F3A and other flaperon specifications

(When 2 ailerons model type selected)

Offset rate:

AIL: [-35~45%], AIL2: [-35~45%], ELE: [+5~7%]

Note: The input numerics are examples. Adjust the travel to match the aircraft.

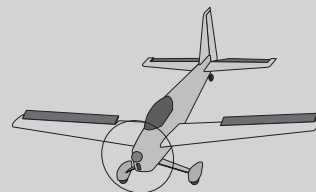
Mode setting:

ACT: [ON]

Group: [Single]

Switch: [SW-C]

Mode: [Manual]



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

- Select [AIRBRAKE] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

AIRBRAKE **CONDIT1** {7.50} 1/5

INH	AIL3	AIL	AIL2	AIL4
OFFSET	+0%	+0%	+0%	+0%
TUNING	+0%	+0%	+0%	+0%
	< +0% >	< +0% >	< +0% >	< +0% >

AIRBRAKE **CONDIT1** {7.50} 2/5

INH	FLP3	FLAP	FLP2	FLP4
OFFSET	+0%	+0%	+0%	+0%
TUNING	+0%	+0%	+0%	+0%
	< +0% >	< +0% >	< +0% >	< +0% >

AIRBRAKE **CONDIT1** {7.50} 3/5

INH	ELE	ELE2
OFFSET	+0%	+0%
TUNING	+0%	+0%
	< +0% >	< +0% >

• Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

<Edit dial>

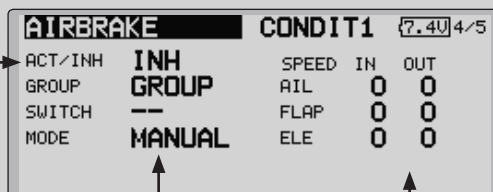
• Push the S1 button to call next page.

- When a fine tuning VR is set on the next page, the ailerons', flaps', and elevators' trim rates can be adjusted.

Move the cursor to the corresponding setting item and push the RTN button to switch to the data input mode. Adjust the rate with the edit dial.

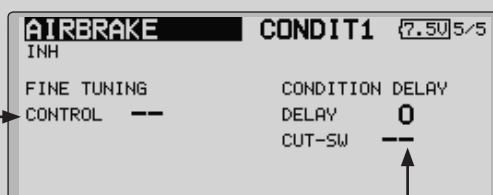
Push the RTN button to end adjustment and return to the cursor move mode.

- When using this function, move the cursor to the [ACT/INH] item and turn the edit dial to the left and push the RTN button. (ON is displayed.)
- Group/single mode switching
(For more information, see the description at the back of this manual.)

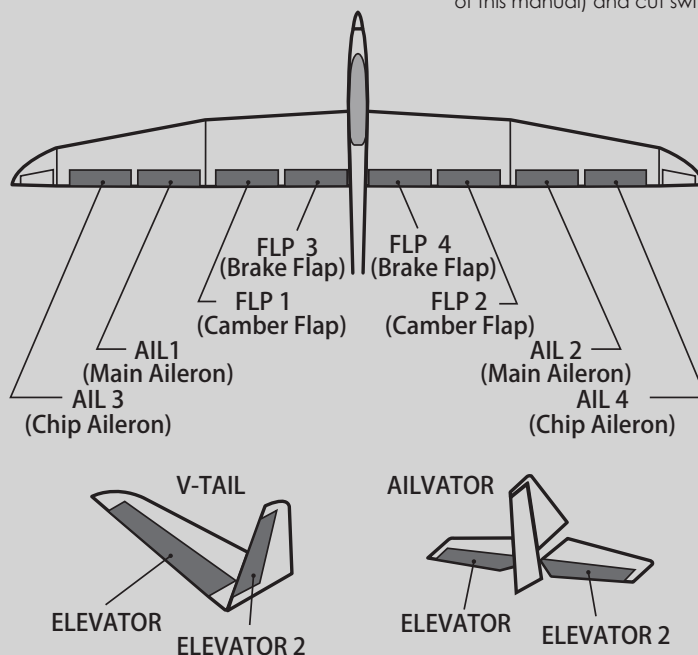


- Manual/Auto mode selection
Manual: Switches the function ON/OFF by switch
Auto: Trim mix function call can be linked to a stick, etc. A stick switch, etc. separate from the function ON/OFF switch is set.
- Ailerons, flaps, and elevators servo speed setting
(For a description of the setting method, see the description at the back of this manual.)

- When using a fine tuning VR, move the cursor to this setting item and press the EDIT button to call the selection screen.
Select the VR and push the RTN button.



- Condition delay setting (for a description of the setting method, see the description at the back of this manual) and cut switch setting.



GYRO

[Corresponding model type]: Airplane/glider, general

This function is used when a GYA Series gyro is used to stabilize the aircraft's attitude. The sensitivity and operation mode (Normal mode/GY mode) can be switched with a switch.

- Three rates (Rate 1/Rate 2/Rate 3) can be switched.
- Up to 3 axes (Gyro/Gyro 2/Gyro 3) can be simultaneously controlled.

*Initial setting does not assign a sensitivity channel. Use the Function menu of the Linkage Menu to assign the sensitivity channel (Gyro/Gyro2/Gyro3) used to a vacant channel beforehand.

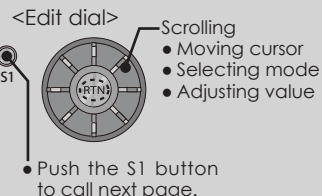
Set [Control] and [Trim] other than Function to [--].

- Select [GYRO] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

(Currently selected condition name)

GYRO		RATE123		CONDIT1		7.40 1/3	
ACT/INH	INH			MODE		RATE	
TYPE	GY	GYRO	AVCS			0%	
SWITCH	--	GYRO2	AVCS			0%	
GROUP	GRP	GYRO3	AVCS			0%	



- Group/single mode switching
(For more information, see the description at the back of this manual.)

- The operation mode (AVCS/NOR) and sensitivity of the 3 axis controlled by Gyro/Gyro2/Gyro3 can be set.

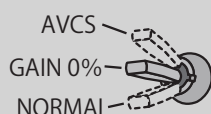
- Three rates (Rate 1/Rate 2/Rate 3) can be used.
Move the cursor to the [RATE] item and push the RTN button to switch to the data input mode. Adjust the rate by scrolling the edit dial.
- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button.
- When a Futaba GYA gyro is used, when [GY] type is selected, the sensitivity set value is directly read in both the AVCS and NORM modes.
- When setting a switch, move the cursor to the SWITCH item and press the EDIT button to call the selection screen, and then select the switch and set its ON direction.
(For a description of the switch selection method, see the description at the end of this manual.)

(Example) Setting three axis using a GYA440(2) and GYA441

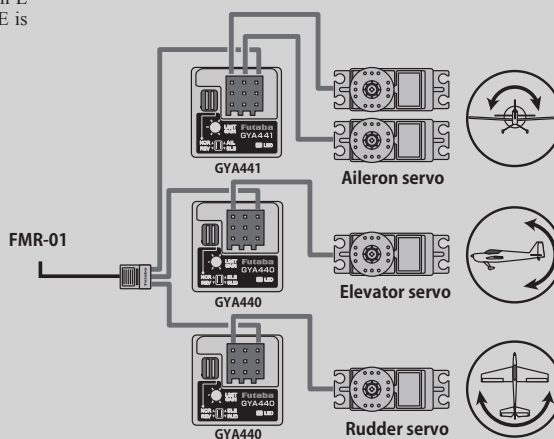
- Wing type: Aileron 2 servos mounted fuselage selected
- Set **5CH → GYRO** (GYA441AIL), **7CH → GYRO2** (GYA441ELE), **8CH → GYRO3** (GYA440RUD), **Control and Trim → NULL** : at the Function menu of the Linkage menu.
- GYRO setting of the Model menu.

Rate	ACT	Type	Switch	GYRO	GYRO 2	GYRO 3
1	OFF/ON	GY	SE	AVCS : 60%	AVCS : 60%	AVCS : 60%
2	INH					
3	ON/OFF	GY	SE	NORM : 60%	NORM : 60%	NORM : 60%

*Set so that Rate 1 is turned on at the back position of switch E and Rate 3 is turned ON at the front position. Since switch E is turned OFF at the center, Rate 2 remains [INH].



When AVCS is used we recommend that the sensitivity CH be set to the 3-position.

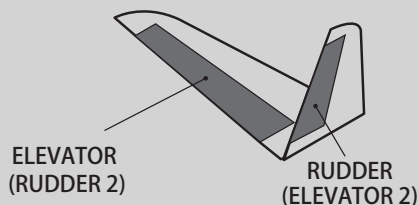


V-TAIL

[Corresponding model type]: Airplane/glider, V-tail

This function let's you adjust for left and right rudder angle changes at elevator and rudder operation of a V-tail airplane.

V-tail is when 2 servos are used together to control rudder movement as elevators. In addition to each rudder side moving up and down together, each side moves in opposite directions when moving as elevators. On a V-tail, this is also known as a ruddervator, as they can serve the same purpose.



- Select [V-TAIL] at the model menu and call the setup screen shown below by pushing the RTN button.
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.
- Group/single mode switching
(For more information, see the description at the back of this manual.)
- (Currently selected condition name)

GROUP		ELEVATOR		RUDDER	
FUNCTION		DOWN	UP	LEFT	RIGHT
ELE <RUD2>		+50%	+50%	+50%	+50%
RUD <ELE2>		+50%	+50%	+50%	+50%

(Elevator function)

Up and down travel adjustment at CH1 and CH2 elevator operation

(Rudder function)

Left and right travel adjustment at CH1 and CH2 rudder operation

<Edit dial>

S1

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

• Travel adjustment

Move the cursor to the item you want to adjust and push the RTN button to switch to the data input mode.

Adjust the rate by scrolling the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*If the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

*If a large value of travel is specified, when the sticks are moved at the same time, the controls may bind or run out of travel. Decrease the travel until no binding occurs.

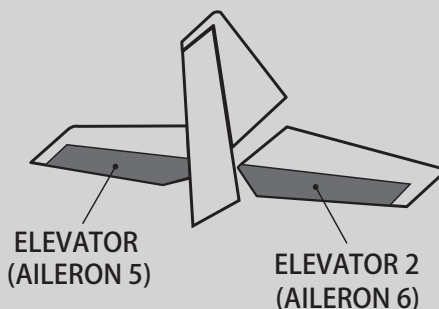
AILEVATOR

[Corresponding model type]: Airplane/glider, V-Tail

(Effective only when 2 servos used at the elevators)

This function improves the operating performance of the roll axis by operating the elevators as ailerons.

Ailevator is where each elevator in a standard (conventional) or v-tail moves independently, like ailerons on a wing. In addition to each elevator side moving up and down together, each side moves in opposite directions when moving as an ailevator. On a V-tail, this is also known as a ruddervator, as they can serve the same purpose. Typically, both ailevator and ailerons are coupled together to maximize roll performance, especially on larger wingspan planes.



Note: Select ailevator as the Model type at the Model type screen. This changes the output channel. Check the Function menu.

- Select [AILEVATOR] at the model menu and call the setup screen shown below by pushing the RTN button.

- Group/single mode switching
(For more information, see the description at the back of this manual.)

(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

AILEVATOR		CONDIT1		7.40 1/1	
GROUP	GROUP				
FUNCTION	ELEVATOR				
	DOWN	UP	AILERON		
			LEFT	RIGHT	
ELE <AIL5>	+100%	+100%	+0%	+0%	
ELE2<AIL6>	+100%	+100%	+0%	+0%	

<Edit dial>



- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

(Elevator function)

- The up and down rate of the left and right elevators when the elevator stick is manipulated can be individually adjusted.

(Aileron function)

- When the elevators are used as ailerons, aileron travel of the left and right elevators can be adjusted.

• Travel adjustment

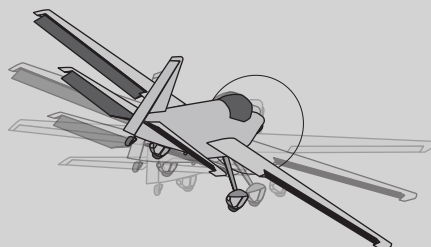
Move the cursor to the item you want to adjust and push the RTN button to switch to the data input mode.

Adjust the rate by scrolling the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*If the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

*If a large value of travel is specified, when the sticks are moved at the same time, the controls may bind or run out of travel. Decrease the travel until no binding occurs.



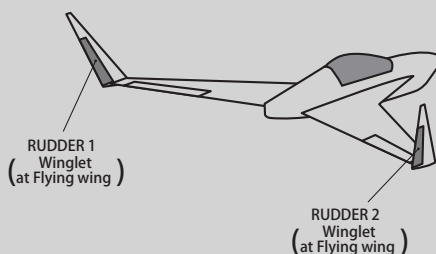
WINGLET

[Corresponding model type]: Airplane/glider, winglet

This function adjusts the left and right rudder angles of airplanes with winglets.

Winglets are used to improve the efficiency of aircraft lowering the lift-induced drag caused by wingtip vortices. The winglet is a vertical or angled extension at the tips of each wing.

Winglets work by increasing the effective aspect ratio wing without adding greatly to the structural stress and hence necessary weight of its structure - an extension of wing span would also permit lowering of induced drag, though it would cause parasitic drag and would require boosting the strength of the wing and hence its weight - there would come a point at which no overall useful saving would be made. A winglet helps to solve this by effectively increasing the aspect ratio without adding to the span of the wing.



- Select [WINGLET] at the model menu and call the setup screen shown below by pushing the RTN button.
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.
- The travel at rudder stick left and right operation can be individually set.

Group/single mode switching
(For more information, see the description at the back of this manual.)

(Currently selected condition name)

WINGLET		CONDIT1		7.40	1/1
GROUP	GROUP				
FUNCTION	RUDDER LEFT RIGHT				
RUDDER	+100% +100%				
RUDDER2	+100% +100%				

(Rudder 1/2)

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

• Travel adjustment

Move the cursor to the item you want to adjust and push the RTN button to switch to the data input mode.

Adjust the rate by scrolling the edit dial.

Push the RTN button to end adjustment and return to the cursor move mode.

*If the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity (+ or -).

MOTOR

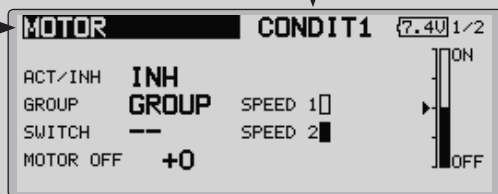
[Corresponding model type]: EP glider, general

This function lets you set the operation speed when the motor of a F5B or other EP glider is started by switch. The operation speed can be set in 2 ranges of slow speed flight and high speed flight (Speed 1/Speed 2). This function can also be operated as a safety function by setting 2 switches.

- The in side and out side operating speeds can be adjusted independently in 2 ranges (Speed 1/ Speed 2).
- The boundary between the 2 ranges can be set. (From speed 1 to speed 2)
- The set operation speed operation can be activated at initial operation only. (1 time operation) However, operation can be repeated

- Select [MOTOR] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

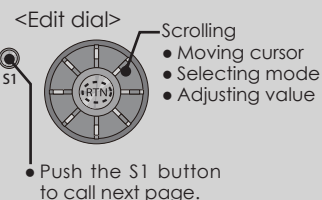


by setting the switch to OFF before operation is finished. When you want to reset 1 time operation, set the ACT/INH item to [INH] and then reset it to [ON].

- The motor (CH3) is controlled by SW-G. (Initial setting) When changing the switch or stick which controls the motor, first change Function of the Linkage Menu.

Note: When using this function, always check initial operation with the propeller removed.

(Currently selected condition name)



- Move the cursor by set switch or VR.

- When using this function, move the cursor to the [ACT/INH] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button.

- Group/single mode switching

(For more information, see the description at the back of this manual.)

- Switch

A switch that turns the function itself ON/OFF can be selected.

- Motor off position

Press the EDIT button for 1 second when [SW-G] is in the motor OFF position you want to set. The direction of the motor switch is memorized. The screen graph display OFF direction also changes.



- When using this function, move the cursor to the [ACT/INH] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button.

- When you want to set the "One time mode", move the cursor to the [ONE TIME] item and turn the edit dial to the left and push the RTN button.

- Speed 1 to 2

The speed 1 and speed 2 region boundary can be changed,

- Operation speed adjustment

The speed when speed 1 and speed 2 are ON (In) and OFF (Out) can be adjusted.

Notes

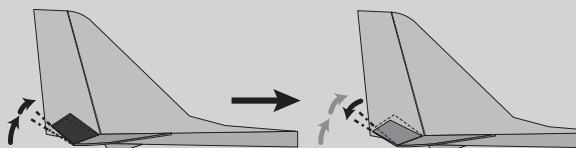
- First decide the motor OFF direction, and then set the speed. When you want to reset the motor OFF direction, also reset the speed.
- We recommend that motor OFF be set in combination with F/S.
- Set the basic operation direction with the reverse function to match the ESC used.
- Always set the motor OFF position.

ACCELERATION [Corresponding model type]: Glider, general

Acceleration setting can be performed at elevator, ELE to Camber and AIL to RUD.(Glider and EP glider only)

- This setting is divided into elevator setting and camber setting. The setting method is the same.
- Camber setting sets the acceleration function for ELE to camber mixing. Setting is not performed when ELE to camber mixing is INH.
- The acceleration function can be set for both the up side and down side.

- Function ON/OFF switch setting is performed for AIL to RUD setting only.
- AIL to RUD setting is acceleration function setting for AIL to RUD mixing. It is not performed when AIL to RUD mixing is INH.



- Select [ACCELERATION] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- 1/3 Elevator setting

(Currently selected condition name)

ACCELERATION		CONDIT1		(7.50)		1/3	
ELEVATOR							
ACT/INH	INH	RATE	UP	DOWN	0%	0%	
GROUP	SNGL	DUMPING					
		ACT POS	-50%	+50%			

<Edit dial>

- Scrolling
 - Moving cursor
 - Selecting mode
 - Adjusting value
- Push the S1 button to call next page.

- 2/3 Elevator → Camber setting

ACCELERATION		CONDIT1		(7.50)		2/3	
ELE → CAMBER							
ACT/INH	INH	RATE	UP	DOWN	0%	0%	
GROUP	SNGL	DUMPING					
		ACT POS	-50%	+50%			

- 3/3 Aileron → Rudder setting

ACCELERATION		CONDIT1		(7.50)		3/3	
AIL → RUD							
ACT/INH	INH	RATE	LFT	RIGHT	0%	0%	
GROUP	SNGL	DUMPING					
SWITCH	—	ACT POS	-50%	+50%			

- Act position
- Current position

Setting method

- Acceleration rate setting (Rate)
- The return time after operation (Dumping) can be set.
- The operation point at acceleration and deceleration can be set. When an operation point is exceeded, acceleration is performed.

Note: When using the acceleration function, since the servo stroke is large, make your settings so there is no binding of your linkage.

RUD to ELE

[Corresponding model type]: Airplane, general

This function is used when you want to mix elevator operation with rudder operation. It is used to correct undesirable tendencies when rudder is applied in roll maneuvers, knife edge, etc. of stunt planes.

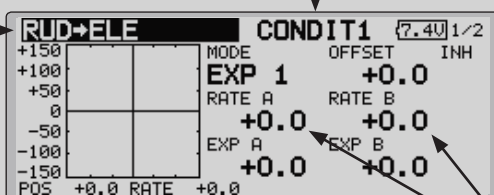
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [–] setting)

- Link can be set: Links this mixing to other mixings.
- The mixing rate can be fine-tuned by setting a VR. (Fine tuning)

- Select [RUD to ELE] at the model menu and call the setup screen shown below by pushing the RTN button.

(Currently selected condition name)

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

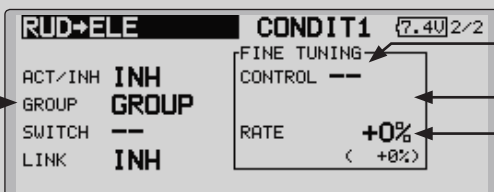
- Mixing curve setting

*For a description of the curve setting method, see the description at the back of this manual.

- Left/right overall adjustment at rate A and rate B

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



- Fine tuning VR setting

- Operation mode

- Adjustment rate

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

Setting method

- Move the cursor to the ACT/INH item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When setting a switch, move the cursor to the [–] item of the switch and push the RTN button to call the selection screen, and then select the switch and set its ON direction. (Always ON at "–" setting)
(For a description of the switch selection method, see the description at the back of this manual.)
- When setting a VR, move the cursor to the Fine Tuning "–" item and push the RTN button to call the selection screen, and then select the VR. The fine tuning rate can be set. The VR operation mode can also be set.

(For a description of the fine tuning VR setting method, see the description at the back of this manual.)

- When setting Link, move the cursor to the Link item and push the RTN button to switch to the data input mode. Set it to ON.

[Fine tuning VR operation mode]

- [LIN.] Mixing rate 0% at center of VR. When the VR is turned clockwise and counterclockwise, the mixing rate increases and decreases, respectively.
- [ATL+] Mixing rate 0% at left end of VR. When the VR is turned, the mixing rate increases.
- [ATL–] Mixing rate 0% at right end of VR. When the VR is turned, the mixing rate increases.
- [SYM.] When the VR is turned to the left or right of the neutral position, the mixing rate increases.

SNAP ROLL

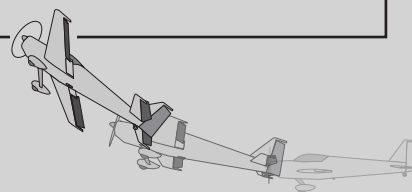
[Corresponding model type]: Airplane, general

This function selects the switch and rate adjustment of each rudder, (ailerons, elevators, or flaps) when a snap roll is performed.

- Four snap roll directions can be set. (Right/up, right/down, left/up, left/down)
- Operation mode: When [Master] mode is selected, the Snap Roll function is turned ON/OFF by master switch in the state in which the direction switch was switched to the direction in which you want to snap roll. When [Single] mode is selected, snap roll in each direction can be executed by means of independent switches.
- A safety switch can be set. As a safety measure, the switch can be set so that snap roll is not executed when, for instance, the landing gear is lowered, even if the switch is turned on accidentally. The snap roll switch is activated only when the safety switch is ON.
- The operation speed of the aileron, elevator, and flap servos can be adjusted for each snap roll direction. (In side/out side)

(Example) Setting example for F3A

- Mode: [Master]
- Safety SW: [SW-G] (Safety measure)
- Master SW: [SW-H] (Main switch for executing snap roll)
- Direction switches:
*The snap roll up side left and right and down side left and right direction switches are selected here.
Right/Up: OFF [SW-D]
Right/Down: OFF [SW-D]
Left/Up: OFF [SW-A]
Left/Down: OFF [SW-A]
- Speed adjustment
The operation speed of each control surface when the snap switch is ON can be changed and snap roll executed by stick while there is switch operation can be performed.

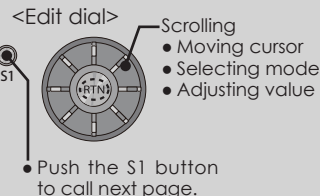


- Select [SNAP ROLL] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

(Currently selected condition name)

SNAP ROLL		CONDIT1		[7.4U] 1/4
RATE	AIL	ELE	RUD	
RIGHT/UP	+100%	+100%	+100%	
RIGHT/DOWN	+100%	-100%	-100%	
LEFT/UP	-100%	+100%	-100%	
LEFT/DOWN	-100%	-100%	+100%	



SNAP ROLL		CONDIT1		[7.4U] 2/4
MODE	MASTER			
MASTER-SW	--			
SAFETY-SW	--			
GROUP	GROUP			

- Rate adjustment
 1. Move the cursor to the item you want to adjust and push the RTN button to switch to the data input mode.
 2. Adjust rate by scrolling the edit dial.
 3. Push the RTN button to end adjustment and return to the cursor move mode.

- Group/single mode switching

(For more information, see the description at the back of this manual.)

SNAP ROLL		CONDIT1		[7.4U] 3/4
	ACT	SWITCH		
RIGHT/UP	OFF	--		
RIGHT/DOWN	OFF	--		
LEFT/UP	OFF	--		
LEFT/DOWN	OFF	--		

- Direction switches

SNAP ROLL		CONDIT1		[7.4U] 4/4
SPEED	AIL IN	OUT	ELE IN	OUT
RIGHT/UP	0	0	0	0
RIGHT/DOWN	0	0	0	0
LEFT/UP	0	0	0	0
LEFT/DOWN	0	0	0	0

- Adjustment of the servo speed of each rudder
(For a description of the setting method, see the description at the back of this manual.)

MODEL MENU (HELICOPTER)

This section contains information on the commands that apply to helicopters only. For instructions on airplanes and sailplanes, refer to the sections pertaining to those aircraft.

Use the Model Type function in the Linkage Menu to select the swash type matched to the fuselage beforehand.

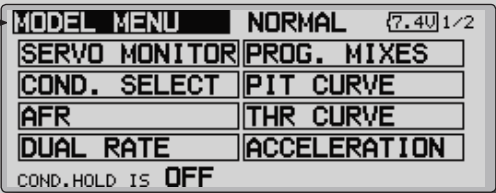
Also, add flight conditions at the Condition Select screen if necessary before setting the model

- Select the [MODEL] at the home screen and call the model menu shown below by pushing the RTN button.
- Use the edit dial to select the function you want to set and call the setup screen by pushing the RTN button.

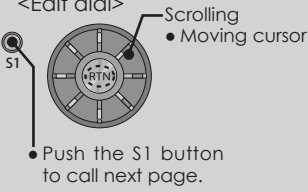
data at each function. (Up to 8 conditions can be used)


The AFR function, dual rate function and other functions common to all model types, are described in a separate section.

• Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



<Edit dial>





*Condition hold operation is displayed.

To activate/deactivate Condition Hold:

1. Move the cursor to [COND. HOLD].
2. Set the throttle stick lower than the 1/3 point and push the RTN button to activate/deactivate the condition hold function.

*Refer to for condition hold function details.

Model Menu functions (helicopter) list

PIT CURVE: Adjusts response in different flight conditions

THR CURVE: Throttle curve and hovering trim adjustment

ACCELERATION: Allows a brief "overload" in response to sudden throttle and pitch commands

THR HOLD: Moves the throttle to idle during autorotation

SWASH MIX: Compensates for each control response

THROTTLE MIX: Compensates for power loss when cyclic applied

PIT to NEEDLE: Adjusts response curve in different flight conditions

PIT to RUD: Handles torque changes from pitch angle inputs

GYRO: Used to switch gyro sensitivity

GOVERNOR: Used to switch RPM of the helicopter's head

Servo connection by Helicopter type

The FMT-03 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 helicopter 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.

Helicopter

●FASSTest 18CH

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	

●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	

PIT CURVE/PIT TRIM

PIT Curve

This function adjusts the pitch operation curve for each flight condition for the optimal flight state relative to movement of the throttle stick.

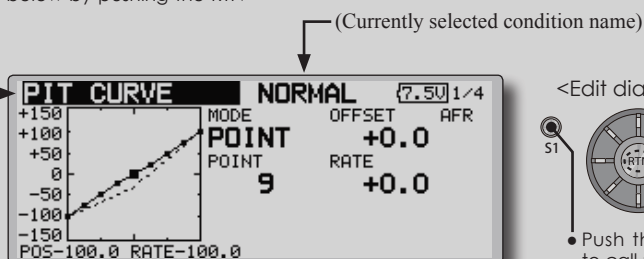
*Up to 17 points can be set for the point curve types. However, when using the 3 points or 5 points specified to create a curve, a simple curve can be created by reducing

the number of input points to 3 or 5, and then entering the specified value at the corresponding points that you created a curve.

- Select [PIT CURVE] at the model menu and call the setup screen shown below by pushing the RTN button.

- Point curve type is 9 points (initial), but for simple use, 4~5 points are sufficient.

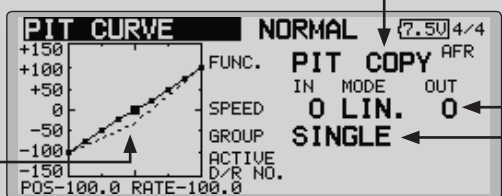
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



- <Edit dial>
- Scrolling
 - Moving cursor
 - Selecting mode
 - Adjusting value
- Push the S1 button to call next page.

- Mixing curve setting
- *For a description of the curve setting method, see the description at the back of this manual.

- Pitch trim copy



- Pitch trim operating position (dotted line)

- Pitch servo speed setting
(For a description of the setting method, see the description at the back of this manual.)
- Group/single mode switching
(For more information, refer to the description at the back of this manual.)

Normal curve adjustment

- For normal curve, usually use [POINT] type and create a basic pitch curve centered about hovering. Use this function together with the THR curve (normal) function and adjust the curve so that up/down control is best at a constant engine speed.

Idle up curve adjustment

- For the high side pitch curve, set the maximum pitch which does overload the engine. For the low side pitch curve, create curves matched to loop, roll, 3D, and other purposes and use the idle up curves according to the performance.

Throttle hold curve adjustment

- The throttle hold curve is used when executing auto rotation dives.

Operation precautions

⚠ WARNING

- When actually starting the engine and flying, always set the idle up condition switch to OFF and start the engine in the idling state.

Setting method

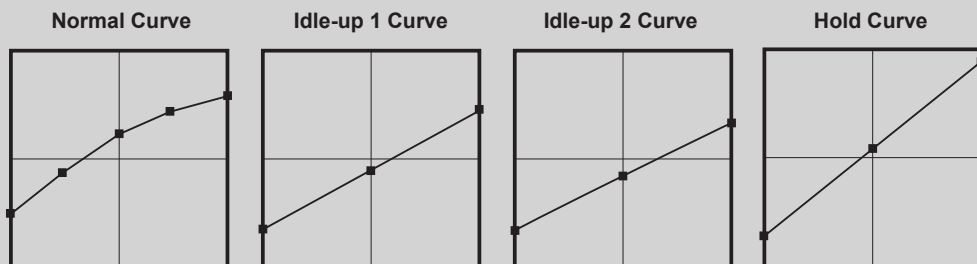
- **Group/Single item:** When you also want to input the same setting contents at other conditions, perform setting in the group mode. In this case, the same contents are input to the other conditions set in the group mode. When you want to set each condition independently, select the single mode (initial setting). Other conditions can be set independently.
- **Pit trim copy (Hover/high/low)**
The pitch trim operating position can be copied to the pitch curve.
Move the cursor to the [COPY] item and push the RTN button.
After copying, return the pitch trim to the center to call the last operating position.

Curve setting examples

The screens shown below are curves created by entering the pitch rate at low, center, and high side (3 points or 5 points) at each condition. When actually creating a curve, input the rate specified at the fuselage (or the reference value).

*For a description of the curve setting method, see the description at the back of this manual.

•Pitch Curve (Example)



Pitch Trim (Hovering pitch, high pitch, low pitch)

The hovering pitch, low pitch, and high pitch trim setup screen can be called from the PIT curve setup screen.

- Hovering pitch trim setting

PIT CURVE		NORMAL	7.50 2/4
HOVER			
ACT/INH	ON	MODE	CTRM
GROUP	SINGLE	RANGE	100%
CONTROL	LD		
RATE	+30% (-30%)		

- Low/high pitch trim setting

PIT CURVE		NORMAL	7.50 3/4
LOW PITCH		HIGH PITCH	
ACT/INH	INH	ACT/INH	INH
GROUP	SINGLE	GROUP	SINGLE
CONTROL	--	CONTROL	--
RATE	+30% (+0%)	RATE	-30% (+0%)

(Continued on next page)

Hovering pitch trim

The Hovering Pitch trim function trims the pitch near the hovering point. Normally, it is used with the hovering condition. The hovering pitch can be fine tuned for changes in rotor speed accompanying changes in temperature, humidity, and other flight conditions. Adjust the hovering pitch so that rotor speed is constant. This function can be used together with the hovering Throttle Trim function for more delicate operation.

Setting method

- When using only the hovering (normal) condition, switch the group mode to the single mode (initial setting) before setting.
- Set the function to ACT [ON].
- Select the adjustment knob.
- The trim operation mode (Mode: CTRM/ NORM) can be selected.
CTRM mode: Maximum amount of change near center by center trim operation (recommended)
NORM mode: Normal trim (parallel movement trim) operation. The advantage of using this mode is that the hovering pitch can be adjusted without changing the curve.
- Trim adjustment range (Range) setting
When this value is made small, trim can only be used near the center.
- The trim rate can be adjusted and the operation direction can be changed.

High Pitch/Low Pitch Trim

High Pitch/Low Pitch Trim is the pitch servo high side and low side trim function.

Setting method

- When setting the adjustment knobs common to all the conditions, set them in the group mode.
- Set the function to ACT (ON).
- Select the adjustment knobs.
- The trim rate can be adjusted and the operation direction can be changed.
- Trim acts as high side or low side trim with the center as the standard.

THR CURVE/THROTTLE HOVER TRIM

THR Curve

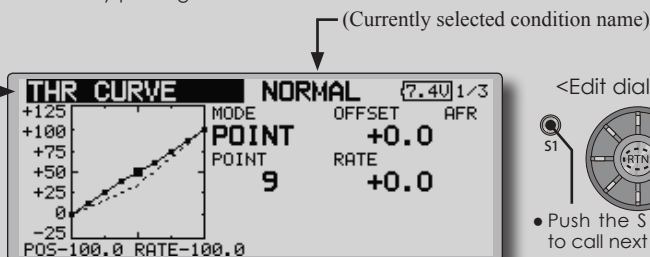
This function adjusts the throttle operation curve for each condition for optimum engine speed to throttle stick movement.

Up to 17 curve points can be set for the point curve type, however, when the 5 points and other

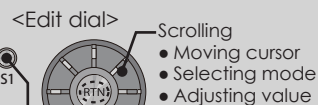
point data is used, a simple curve can be easily created by reducing the number of input points of the curve to 5 and entering the specified value at the corresponding points.

- Select [THR CURVE] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



- Mixing curve setting
*For a description of the curve setting method, see the description at the back of this manual.



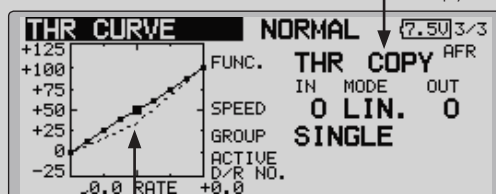
- Push the S1 button to call next page.

Normal curve adjustment

- Normal curve creates a basic curve centered around hovering. Use it along with the normal pitch curve and adjust so that up/down control at a constant engine speed is easiest.

Idle up curve adjustment

- Set a idle up curve that maintains a constant speed at all times, even during operation which reduces the pitch performed in flight. Create a curve matched to loop, roll, 3D, or other purposes and the idle up curve according to the performance.



- Throttle hover trim copy
- Throttle hover trim operating position (dotted line)

Operation precautions

⚠ WARNING

- ! When actually starting the engine and flying, always set the idle up condition switch to OFF and start the engine in the normal/motor at idle mode.

Setting method

- Group/single item: When you want to simultaneously enter the same settings to other functions, make the settings in the group mode. In this case, the same setting contents are entered to the all conditions. When you want to set each condition independently, make the settings after selecting the single mode (Initial setting).
- Throttle hover trim copy
The throttle hover trim operating position can be copied to the throttle curve.
Move the cursor to the [COPY] item and push the RTN button.
After copying, return the pitch trim to the center to call the last operating position.

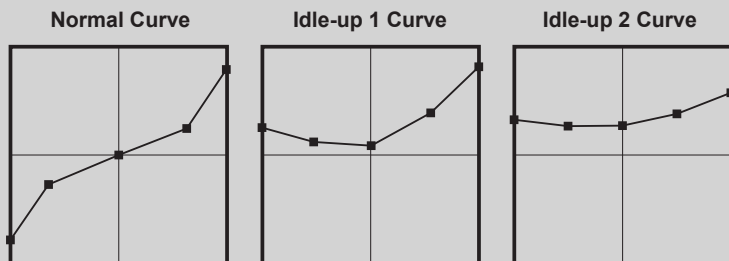
Curve setting examples

The curves shown below are created by using the point curve type and inputting the data of the 5 points 0% (low side), 25%, 50% (center), 75%, 100% (high) side at each condition. They are created by reducing the number points of the line

to 5. When actually creating a curve, enter the data specified per the aircraft (or the reference value).

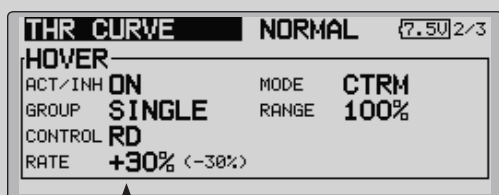
*For a description of the curve creation method, see the description at the back of this manual.

•Throttle Curve (Example)



Throttle Hover trim

The Throttle Hover trim setup screen can be called from the THR Curve setup screen.



•Sets the dial used.

The Throttle Hover function trims the throttle near the hovering point. Normally, use it with hovering conditions. Changes in rotor speed accompanying changes in the temperature, humidity, and other flight conditions can be trimmed. Adjust the throttle so that rotor rotation is most stable. More delicate trimming is also possible by using this function along with the Hover Pitch function.

Setting method

- When using the hovering (normal) condition only, switch the group mode to the single mode (initial setting) and make the settings.
- Set the function to ACT ([ON]).
- Select the adjustment knob.
- The trim operation mode (Mode: CTRM/ NORM) can be selected.

CTRM mode: Maximum rate of change near center by center trim operation (recommended)

NORM mode: Normal trim (horizontal movement trim) operation.

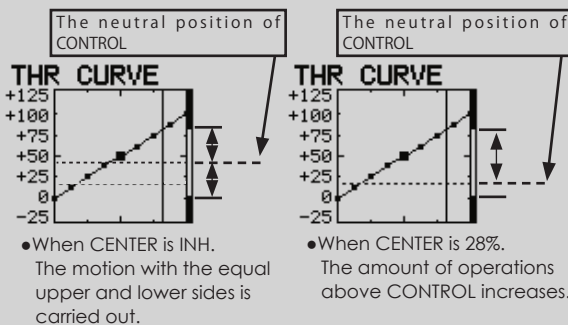
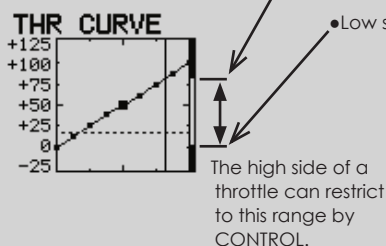
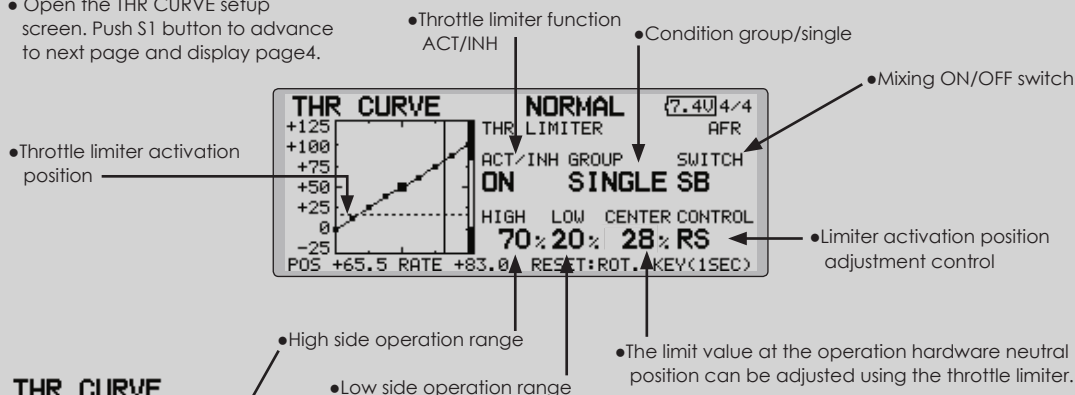
- Trim adjustment range (Range) setting
When the value is made small, trim acts only near the center.
- The trim rate can be adjusted and the operation direction can be set.

Throttle Limiter

This function limits throttle operation to within a certain range. Control which adjusts the operating range during flight can be set. (Effective only when the model type is helicopter.)

*When the limiter operation range adjustment control is NULL, the throttle limiter function is not activated.

- Open the THR CURVE setup screen. Push S1 button to advance to next page and display page4.



Setting method

- Activate the function
 1. Select "ACT/INH" and push the RTN button.
 2. Scrolling the edit dial and switch the display to [INH] or [ACT].
 3. Push the RTN button.
- Group/single mode selection.
 1. Select "GROUP" and push the RTN button.
 2. Scrolling the edit dial and switch the display to [GROUP] or [SINGLE].
 3. Push the RTN button.
- ON/OFF switch setting
 1. Select "SWITCH" and push the RTN button.
 2. A hardware selection screen is displayed. Select the hardware and push the RTN button.
- High side operation range setting
 1. Select "HIGH" and push the RTN button.
 2. Scrolling the edit dial and adjust the high side operation range.
- Low side operation range setting
 1. Select "LOW" and push the RTN button.
 2. Scrolling the edit dial and adjust the low side operation range.
 3. Push the RTN button.
- The neutral position of "CONTROL" setting
 1. Select "CENTER" and push the RTN button.
 2. Scrolling the edit dial and adjust the neutral position.
 3. Push the RTN button.
- Limiter activation position adjustment control setting
 1. Select "CONTROL" and push the RTN button.
 2. A hardware selection screen is displayed. Select the hardware and push the RTN button.

ACCELERATION

This function is used to adjust the pitch and the throttle rise characteristic at acceleration/deceleration operation. An acceleration function which temporarily increases the pitch and throttle operations at throttle stick acceleration/deceleration operation can be set.

Example of acceleration function use

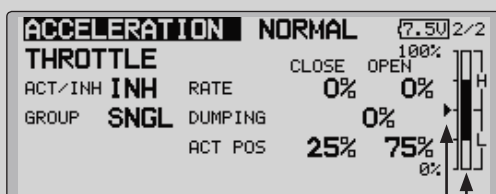
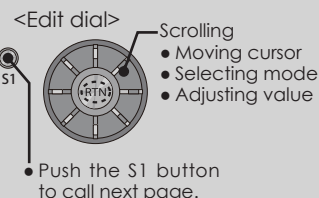
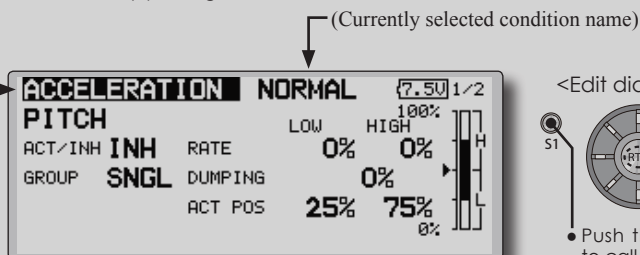
- When used for pitch control, the acceleration function is effective when you want to quicken the response of the model at 3D on collective pitch. When used, high pitch temporarily exceeds maximum pitch, but immediately returns to maximum pitch.

- Select [ACCELERATION] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Pitch setting

- Throttle setting



- Act position
- Current position

Setting method

- Acceleration can be set at both setting at acceleration (high) and setting at deceleration (low).
(The operation point is displayed on a graph.)
- Acceleration rate setting (Rate)
- The return time after operation (Dumping) can be set.
- The operation point at acceleration and deceleration can be set. When an operation point is exceeded, acceleration is performed.

Note: When using the acceleration function, since the pitch stroke is large, make your settings so there is no binding of your linkage.

THR HOLD

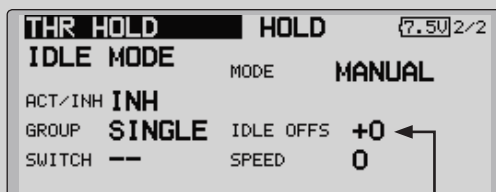
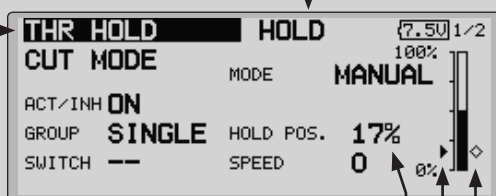
This function sets the throttle cut position for auto rotation. The throttle position can also be set to an idling position. Setting of these 2 positions can be selected by a switch. This allows use for switching during training.

- Select [THR HOLD] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Set to the engine stop position.

- Set to the idling position.



(Currently selected condition name)

Example of use

- Since throttle hold has 2 modes (Cut) and (Idle), using it in the Idling mode during training and in the Cut mode when stopping the engine.

Note: When throttle hold is set to ON in the normal condition, throttle hold acts and the throttle servo is deactivated. Always set throttle hold to ON in the hold condition.

<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value



- Push the S1 button to call next page.

- Hold position

- Current position

Setting method

- Operation mode selection

Manual mode(MANUAL): The throttle hold function is operated by switch operation only.

Auto mode(AUTO): The throttle hold function operation is linked to the throttle stick position.

Auto position setting: When the auto mode is selected, the throttle position (auto position) can be selected. Move the throttle stick to the position you want to set and push the RTN button. (Auto position is displayed.)

- Hold position adjustment

Throttle Hold (Cut) sets the throttle cut position. Adjust it so that the carburetor is full close.

Throttle Hold (Idle): Make this adjustment to maintain idling. Adjustments can be made based on the throttle curve idle position.

- The throttle servo operating speed can be adjusted. (Speed)
- Throttle cut or training function can be switched by hold function selector switch.

Operation precautions

⚠ WARNING

- When starting the engine, confirm that the idle up condition and throttle hold condition are OFF.

SWASH MIX

The swash mix function is used to correct the swash plate in the aileron (roll) direction and elevator (cyclic pitch) corresponding to each operation of each condition.

Adjustment by independent curve for aileron, elevator, and pitch operations is possible. The operation can be smoothly adjusted by calling up the "Curve setup" screen by pushing the EDIT button with moving the cursor to the mixing item that corresponds to the mixing and direction which needs correction.

Example of use

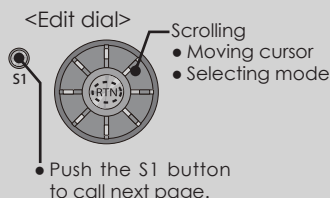
- As an example, use swash mixing to correct undesirable tendencies in the roll direction
- For a condition which uses AIL to ELE, set this function to ON. When raising the nose at a right roll, when the Rate B side is input and the right aileron is operated, the elevator moves to the down side. Tune by adjusting the Rate. For right roll, adjust to the rate A side.

- Select [SWASH MIX] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

(Currently selected condition name)

MIXING	ACT	SWITCH	TRIM	GROUP
AIL→ELE	INH	--	OFF	SINGLE
ELE→AIL	INH	--	OFF	SINGLE
PIT→AIL	INH	--		SINGLE
PIT→ELE	INH	--		SINGLE



- Group/single mode switching
(For more information, refer to the description at the back of this manual.)

AIL→ELE		NORMAL		[7.40] 1/1	
MODE	EXP 1	OFFSET	INH		
RATE A	+0.0	RATE B	+0.0		
EXP A	+0.0	EXP B	+0.0		
POS	+0.0	RATE	+0.0		

- Mixing curve setting
*For a description of the curve setting method, see the description at the back of this manual.

Setting method

- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When you want to set the same contents at other conditions, select the group mode. When you want to set the selected condition only, select the single mode (initial setting).
- The correction rate can be set by curve.
- A switch can be set.

When [--] is set, the swash mixing function is operated by merely selecting the condition.

When setting an [ON]/[OFF] switch, move

the cursor to the [--] item and push the RTN button to call the selection screen and set the switch and its ON position.

THROTTLE MIX

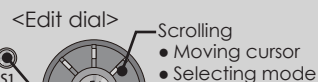
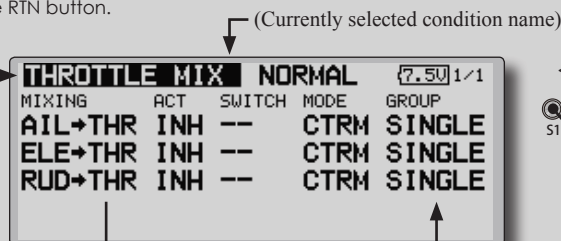
This function corrects slowing of engine speed caused by swash plate operation during aileron or elevator operation. The method of applying clockwise or counterclockwise torque when pirouetting can also be corrected.

An acceleration function which temporarily increases the throttle side correction rate relative to rapid stick operation can also be set.

- Select [THROTTLE MIX] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

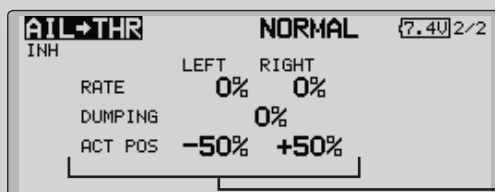
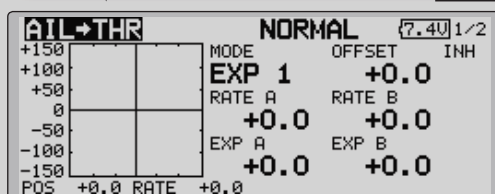
- Mixing curve setting
*For a description of the curve setting method, see the description at the back of this manual.



- Push the S1 button to call next page.

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)



- Acceleration settings

Setting method

- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When you want to set the same contents at other conditions, select the group mode.
When you want to set the selected condition only, select the single mode (initial setting).
- The correction rate can be set by curve.
- A switch can be set.

When [--] is set, the swash mixing function is operated by merely selecting the condition.

When setting an [ON]/[OFF] switch, move the cursor to the [--] item and push the RTN button to call the selection screen and set the switch and its ON position.

<Acceleration function setting>

- Acceleration can be set for both settings (Left) and (Right)
- Acceleration rate setting (Rate)
- The return time (Dumping) after operation can be set.
- The operation point when the correction rate is increased and decreased can be set independently. When an operation point is exceeded, acceleration operation is performed.

PIT to NEEDLE MIXING

This mixing is used when the engine is equipped with needle control or other fuel-air mixture adjustment. A needle curve can be set.

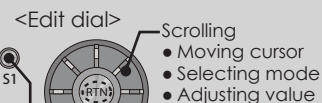
An acceleration function which temporarily increases needle operation at throttle stick

acceleration/deceleration operation can be set. The rise characteristic of the needle servo at acceleration and deceleration operation can be adjusted.

- Select [PIT to NEEDLE] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

- Normally, use [POINT] type.



- Push the S1 button to call next page.

- Mixing curve setting

*For a description of the curve setting method, see the description at the back of this manual.

- Group/single mode switching

(For more information, refer to the description at the back of this manual.)

- Acceleration settings

Setting method

- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When you want to set the same contents at other conditions, select the group mode. When you want to set the selected condition only, select the single mode (initial setting).
- A needle curve can be set.
- A switch can be set.

When [--] is set, the mixing function is operated by merely selecting the condition.

When setting an [ON]/[OFF] switch, move the cursor to the [--] item and push the RTN button to switch to the data input mode. Push the RTN button to call the selection screen and set the switch and its ON position.

<Acceleration function setting>

- Acceleration can be set at both setting at acceleration (high) and setting at deceleration (low).
- The acceleration rate (rate) and the return time after operation (dumping) can be set.
- An operation point (act pos) at acceleration and deceleration can be set. When an operation point was exceeded, acceleration operation is performed.

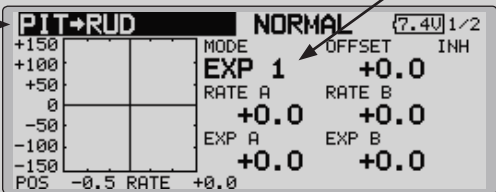
PIT to RUD MIXING (REVOLUTION MIXING)

Use this mix when you want to suppress the reaction torque generated by main rotor pitch and speed changes during pitch operation. Adjust so that the nose does not move in the rudder direction.

An acceleration function which temporarily increases the correction rate at throttle stick acceleration/deceleration operation can be set. The mixing rate at acceleration/deceleration can be set.

However, when a GY Series or other heading hold gyro is used, since correction is performed by the gyro, this mix is not used. If this function is used when the gyro operation mode is the AVCS mode, the neutral position will change.

- Select [PIT to RUD] at the model menu and call the setup screen shown below by pushing the RTN button.
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.
- Normally, use [POINT] type.



<Edit dial>

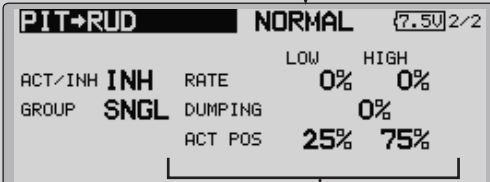
- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

• Push the S1 button to call next page.

Setting method

- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When you want to set the same contents at other conditions, select the group mode.
When you want to set the selected condition only, select the single mode (initial setting).
- A mixing curve is set.

(Currently selected condition name)



• Acceleration settings

<Normal condition mixing curve>

The mixing curve rate starts from a small value.

For a rotor with a clockwise operation direction (polarity), when pitch was operated at the plus side, set so that mixing is in the clockwise direction. First, trim at hovering and then adjust the neutral position.

1. Adjustment between slow and hovering
Repeatedly hover from take off and land from hovering at a constant rate matched to your own rhythm, and adjust the pitch so the nose does not deflect when the throttle is raised and lowered.
2. Throttle high side (climbing and diving from hovering)
Repeat climbing and diving from hovering at a constant rate matched to your own rhythm and adjust the pitch so that the nose does not deflect when the throttle is raised and lowered.

<Idle up condition mixing curve>

Set the mixing rate so that the rudder direction at high-speed flight is straight ahead. Adjust for each condition used.

<Acceleration function setting>

- Acceleration operation can be performed for both setting at acceleration (high) and setting at deceleration (low).
- Acceleration rate setting (rate)
- The return time after operation (dumping) can be set.
- An operation point (act pos) at acceleration and deceleration can be set independently. When an operation point was exceeded, acceleration operation is performed.

GYRO PROGRAMMING / GAIN SENSITIVITY

This function used to adjust gyro sensitivity. The sensitivity and operation mode (Normal mode/AVCS mode) can be set for each condition.

The gyro sensitivity can be switched with each condition or the switch. (5 sensitivities)

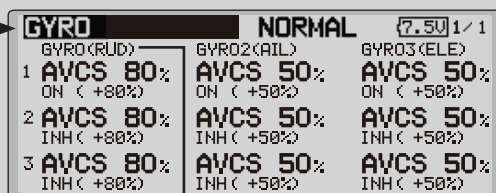
*Compatible with 3 axis gyro (CGY750).

Note: When using the [Gyro2]/[Gyro3] function, assign [Gyro2]/[Gyro3] to any channel on the function screen.

Always set to [--] both (control) and (trim) for the [Gyro] function at the Function menu in the Linkage menu.

- Select [GYRO] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.

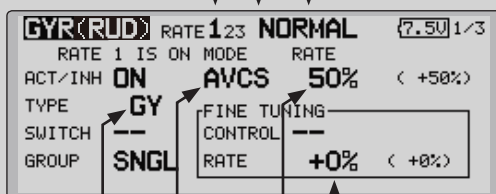


<Edit dial>

- Scrolling
- Moving cursor
- Selecting mode
- Adjusting value

- Push the S1 button to call next page.

- When the GYRO function button is selected, each GYRO detailed setting screen appears.
- (Rate No. display) (Currently selected condition name)



- Gyro type selection: [GY]/[NORM]
- Mode selection: [AVCS]/[NORM]
- Fine tuning VR settings
- Gyro sensitivity adjustment

Setting method

- When using this function, move the cursor to the [ACT] item and push the RTN button to switch to the data input mode. Turn the edit dial to the left and push the RTN button. (ON is displayed.)
- When you want to set the same contents at other conditions, select the group mode. When you want to set the selected condition only, select the single mode (initial setting).
- Three rates can be switched for each condition. (Rate 1/Rate 2/Rate 3)
- A fine tuning VR can be set.

GOVERNOR PROGRAMMING

When using a Futaba governor, this function is used to switch the RPM of the helicopters head. Up to 3 rates can be set for each condition.

*The governor is used by connecting the governor speed setting channel to CH7 (initial setting).

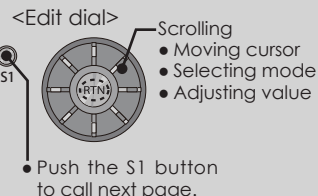
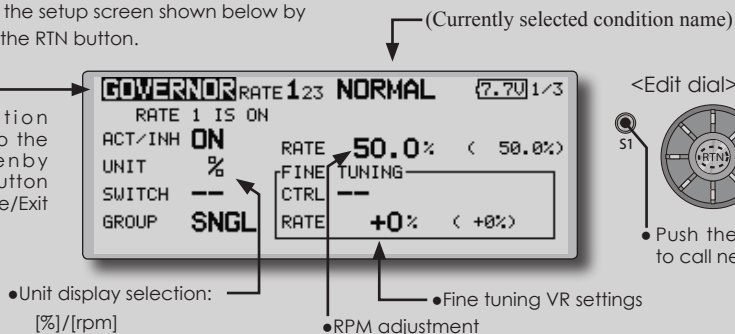
*When using an independent governor [ON]/[OFF] switch, connect the AUX([ON]/[OFF]) connector of the governor to CH8 (initial setting) and set the switch to CH8 (Governor2) at the Function menu of the Linkage Menu.

*When using the Fuel Mixture function, the mixture servo is controlled from the governor. When transmitting the mixture curve data from the transmitter to the governor, the governor AUX (m.trm) connector must be connected to CH8 (initial setting) and governor side setting performed. See the governor instruction manual.

Note: Always set [Control] and [Trim] to [--] for [Governor] and [Governor 2] of the Function menu of the Linkage menu.

- Select [GOVERNOR] at the model menu and call the setup screen shown below by pushing the RTN button.

- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



Setting method

•Activate the mixing

When using this function, move the cursor to the [INH] item and push the RTN button to switch to the data input mode. Select the ACT mode by scrolling the edit dial.

*The display blinks.

Push the RTN button to activate the mixing and return to the cursor mode. (ON is displayed.)

When the Governor is changed from the default inhibited (INH) state to the active (ACT) state, the endpoint menu will be displayed and it is possible to utilize the endpoints for this given condition.

*When the function is set ON/OFF at the governor setup screen, the governor rpm setting channel end point servo travel and limit point are now initialized.

*When changed from INH to ACT (ON), the servo travel is initialized to 100 and the limit point is initialized to 155.

*When operation is changed to INH at all conditions, the servo travel is initialized to 100 and the limit point is initialized to 135.

•RPM adjustment

Move the cursor to the rate item and push the RTN button to switch to the data input mode.

Adjust the rpm by scrolling the edit dial.

Initial value: 50% (1500rpm)

Adjustment range: OFF, 0~110% (OFF, 700~3500rpm)

*When the RTN button is pushed for one second, the sensitivity is reset to the initial value.)

Push the RTN button to return to the cursor mode.

•Unit display selection

Move the cursor to the UNIT item and push the RTN button to switch to the data input mode. Select the unit by scrolling the edit dial.

Push the RTN button to change the operation mode and return to the cursor mode.

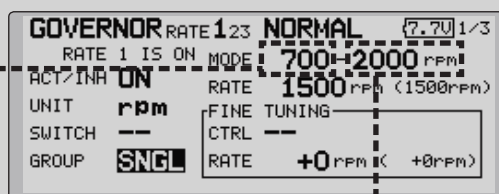
●Display mode selection

*When [rpm] mode is selected above setting, the display mode can be selected.

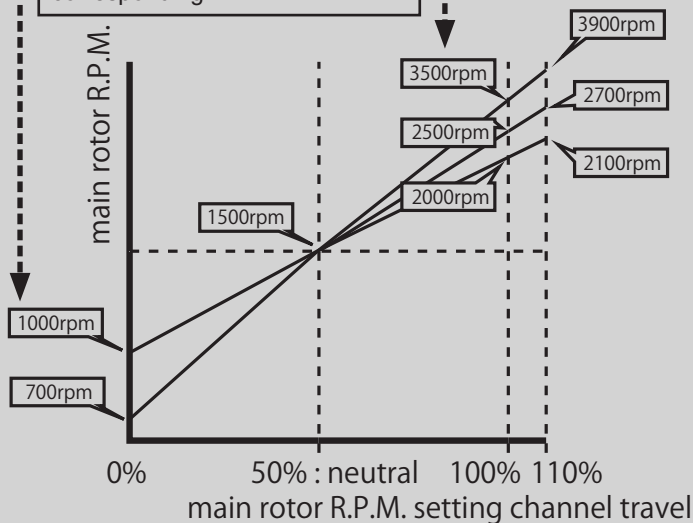
*There is no change in the transmitter output even when the "MODE" is changed. Calibration should be performed via the governor.

*In order to use the Governor function of the FMT-03, it is necessary to change the settings on the governor for the low side 700 rpm mode.

When the MODE of the Governor screen's model menu is changed, the change is also indicated on-screen.



The chart below indicates the mode percentage and the corresponding RPM.



●Fine tuning VR settings

Move the cursor to the [--] item and push the RTN button to access the selection screen. Select the control.

*For a description of the switch selection method, see the description at the back of this manual.

Move the cursor to the rate item and push the RTN button to switch to the data input mode.

Adjust the trim rate by scrolling the edit dial.

Initial value: 0% (0rpm)

Adjustment range: -20~+20% (-800~+800rpm)

*When the RTN button is pushed for one second, the sensitivity is reset to the initial value.)

Push the RTN button to return to the cursor mode.

COND.HOLD

Condition hold function

This function may be used to fix the maximum speed of the engine so that you may adjust flight conditions when the engine is running. An alarm indicates that the function is operating. It will prevent the engine from increasing when adjusting the idle-up settings.

While this function is active, the throttle servo position is fixed at the point set from when the function is activated. You must deactivate this function when you are through making adjustments.

The system will not allow you to activate/deactivate this function in either of the following states:

- When any of the flight condition switches are on.
- When the throttle stick is higher than the 1/3 point.

To activate/deactivate condition hold:

(Home screen)

1. Move the cursor to [CND HOLD].
2. Set the throttle stick lower than the 1/3 point.
3. Push the RTN button to activate the condition hold function.

*When this function is active, "IS ON" appears at the right of the [CND HOLD] display at the left bottom of the screen.

(LINKAGE menu/MODEL menu)

1. Move the cursor to [COND. HOLD].
2. Set the throttle stick lower than the 1/3 point.
3. Push the RTN button to activate the condition hold function.

*Operation is displayed at the bottom of the menu.

Function ON: "CND HOLD IS ON" is displayed.

Function OFF: "CND HOLD IS OFF" is displayed.

SWASH RING

< Linkage Menu >

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.

- Select [SWASH RING] at the linkage menu and call the setup screen shown below by pushing the RTN button.
- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.
- When the swash ring function is activated, a circle is displayed in the operating range display area and the rate input box is displayed. Stick operation is limited to within the area of this circle.
- The operating range display area:
The vertical direction shows the elevator travel.
The horizontal direction shows the aileron travel.
- The marker shows the stick position.

Swash ring setting procedure

*Perform the following settings after using the edit dial to move the cursor to the item you want to set.

1. Activate the function:

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

Switch the blinking from "INH" to "ACT" by turning the edit dial to the left and then push the RTN button.

2. Rate setting:

Use the edit dial to move the cursor to the [RATE] item push the RTN button to switch to the data input mode.

Use the edit dial to set the rate.

Initial value: 100%.

Adjustment range: 50% to 200%.

*Adjust the rate to maximum swash tilt.

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

Push the RTN button to end adjustment and return to the cursor move mode.

SWASH

< Linkage Menu >

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

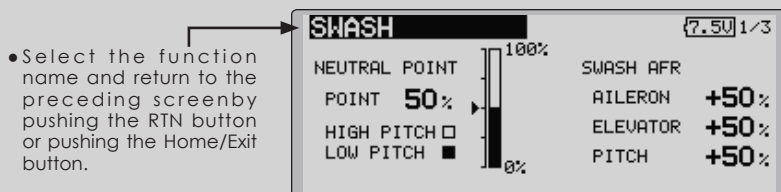
Neutral Point

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.

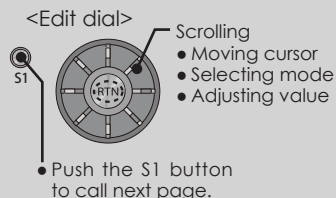
Swash AFR

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.

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



- Select the function name and return to the preceding screen by pushing the RTN button or pushing the Home/Exit button.



*Before making the following settings, use the edit dial 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 push 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.

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.

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 edit dial to move the cursor to the function you want to adjust and push the RTN button to switch to the data input mode.
2. Adjust the AFR rate by turning the edit dial to the left or right.

Initial value: +50%

Adjustment range: -100%~+100%

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

Push the RTN button to end adjustment and return to the cursor 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.

SWASH			(7.50) 2/3		
MIXING RATE					
MIXING	←→	↺↻	MIXING	←→	↺↻
PIT→AIL	100%	100%	AIL→PIT	100%	100%
PIT→ELE	100%	100%	ELE→AIL	50%	50%
			ELE→PIT	50%	50%

*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 edit dial to move the cursor to the item you want to set and push the RTN button to switch to the data input mode. Push the RTN button to end adjustment and return to the cursor 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 edit dial 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 edit dial 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 edit dial 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.

SWASH				(8.80) 3/3	
LINKAGE COMPENSATION					
FUNCTION	DIR.	LOW PITCH			
AILERON	+	←→	0%	↺↻	0%
ELEVATOR	+		0%		0%
SPEED COMPENSATION					0

*When making the following setting, use the edit dial to move the cursor to the item you want to set and push the RTN button to switch to the data input mode. Push the RTN button to end adjustment and return to the cursor 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 edit dial 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 edit dial to move the cursor to the "SPEED COMPENSATION" item and push 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 edit dial to the left and right.

Push the RTN button to end adjustment and return to the cursor move mode.

FMT-03

Futaba[®]