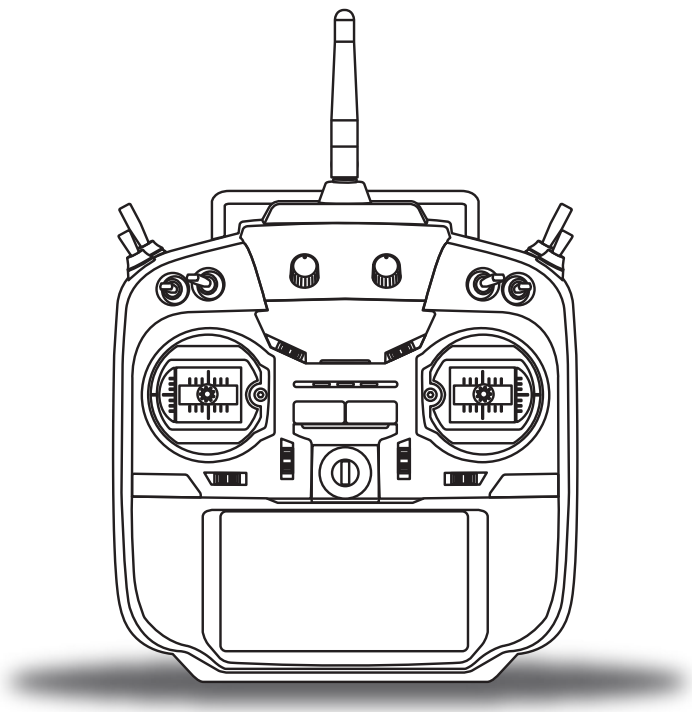
18SZ

Futaba Advanced Spread Spectrum Technology
Extended System Telemetry



INSTRUCTION MANUAL

Futaba®

Digital Proportional R/C System

1M23N00000

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INTRODUCTION

Thank you for purchasing a Futaba® FASSTest-2.4GHz* T18SZ series digital proportional R/C system. This system is extremely versatile and may be used by beginners and pros alike. In order for you to make the best use of your system and to fly safely, please read this manual carefully. If you have any difficulties while using your system, please consult the manual, our online Frequently Asked Questions (on the web pages referenced below), your hobby dealer, or the Futaba Service Center.

*FASSTest: Futaba Advanced Spread Spectrum Technology extend system telemetry

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

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

IN NORTH AMERICA

Please feel free to contact the Futaba Service Center for assistance in operation, use and programming. Please be sure to regularly visit the T18SZ Frequently Asked Questions web site at www.futaba-rc.com/faq/. This page includes extensive programming, use, set up and safety information on the T18SZ radio system and is updated regularly. Any technical updates and US manual corrections will be available on this web page. If you do not find the answers to your questions there, please see the end of our F.A.Q. area for information on contacting us via email for the most rapid and convenient response.

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

FOR SERVICE ONLY:
Futaba Service Center
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822
Phone: 217-398-0007
www.futaba-rc.com/service.html
Email: futabaservice@hobbico.com

FOR SUPPORT :
(PROGRAMMING AND USER QUESTIONS)
Please start here for answers to most questions:
www.futaba-rc.com/faq/
Fax: 217-398-7721
Phone: 217-398-8970 option 2

OUTSIDE NORTH AMERICA

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

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

Application, Export, and Modification

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

2. Exportation precautions:

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

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

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

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

This device, trade name Futaba Corporation, complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

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

The responsible party of this device compliance is:

Futaba Service Center

3002 N Apollo Drive Suite 1, Champaign, IL 61822 U.S.A.

TEL (217)398-8970 or E-mail: support@hobbico.com (Support)

TEL (217)398-0007 or E-mail: futabaservice@hobbico.com (Service)

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

(for USA)

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

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

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

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

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

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

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

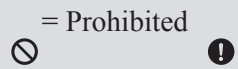
Exposure to Radio Frequency Radiation
To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.
This device must not be co-located or operating in conjunction with any other antenna or transmitter.

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

⚠ **DANGER** - Procedures which may lead to dangerous conditions and cause death/serious injury if not carried out properly.

⚠ **WARNING** - Procedures which may lead to a dangerous condition or cause death or serious injury to the user if not carried out properly, or procedures where the probability of superficial injury or physical damage is high.

⚠ **CAUTION** - Procedures where the possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.



Warning: Always keep electrical components away from small children.

FLYING SAFETY

WARNING

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

Have regular maintenance performed. Although your T18SZ 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.

LiFe/NiMH/NiCd Battery

Charge the batteries! (See Charging the Ni-Cd batteries, for details.) Always recharge the transmitter and receiver batteries before each flying session. A low battery will soon die potentially, causing loss of control and a crash. When you begin your flying session, reset your T18SZ's built-in timer, and during the session pay attention to the duration of usage.

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

Where to Fly

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

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

AMA
SINCE 1936

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

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

LiFe/NiMH/NiCd Battery Safety and Handling instructions

IMPORTANT!
Use only the **Futaba special charger** included with this set or other chargers approved by Futaba to charge the LiFe batteries in the T18SZ transmitter included with this set.

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

IMPORTANT PRECAUTIONS

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

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

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

At the flying field

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

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

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

- **While you are getting ready to fly, if you place your transmitter on the ground, be sure that the wind won't tip it over. If it is knocked over,** the throttle stick may be accidentally moved, causing the engine to speed up. Also, damage to your transmitter may occur.
- In order to maintain complete control of your aircraft it is important that **it remains visible at all times**. Flying behind large objects such as buildings, grain bins, etc. is not suggested. Doing so may result in the reduction of the quality of the radio frequency link to the model.
- **Do not grasp the transmitter's antenna during flight.** Doing so may degrade the quality of the radio frequency transmission.
- As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the transmitter's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.
- **Don't fly in the rain!** Water or moisture may enter the transmitter through the antenna or stick openings and cause erratic operation or loss of control. If you must fly in wet weather during a contest, be sure to cover your transmitter with a plastic bag or waterproof barrier. Never fly if lightning is expected.

Features

FASSTest system

The T18SZ 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.

Color touch screen LCD

T18SZ has a HVGA full color Backlight LCD touch screen. The screen is manufactured of a transflective construction which enables both indoor and outdoor visibility.

S.BUS2 system

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

Model types

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

LiFe battery

T18SZ is operated by a 6.6 V/2,100 mAh Lithium Ferrite battery.

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

Model data can be saved to an SD card (SD:32MB-2GB SDHC:4GB-32GB). When T18SZ transmitter software files are released, the software can be updated by using an SD card update.

Data input

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

Edit button

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

Vibration function

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

Contents and Technical Specifications

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

Your T18SZ includes the following components:

- T18SZ transmitter for airplanes or helicopters
- R7008SB Receiver
- FT2F2100BV2 LiFe battery & charger
- Switch harness
- Neck strap

*The set contents depend on the type of set.

Transmitter T18SZ

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

Transmitting frequency: 2.4GHz band

System: FASSTest18CH, FASSTest12CH, FASST MULT, FASST 7CH, T-FHSS, S-FHSS, switchable

Power supply: 6.6V FT2F2100BV2 LiFe battery

Receiver R7008SB

(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: 0.98 x 1.86 x 0.56 in. (24.9 x 47.3 x 14.3 mm)

Weight: 0.38 oz. (10.9g)

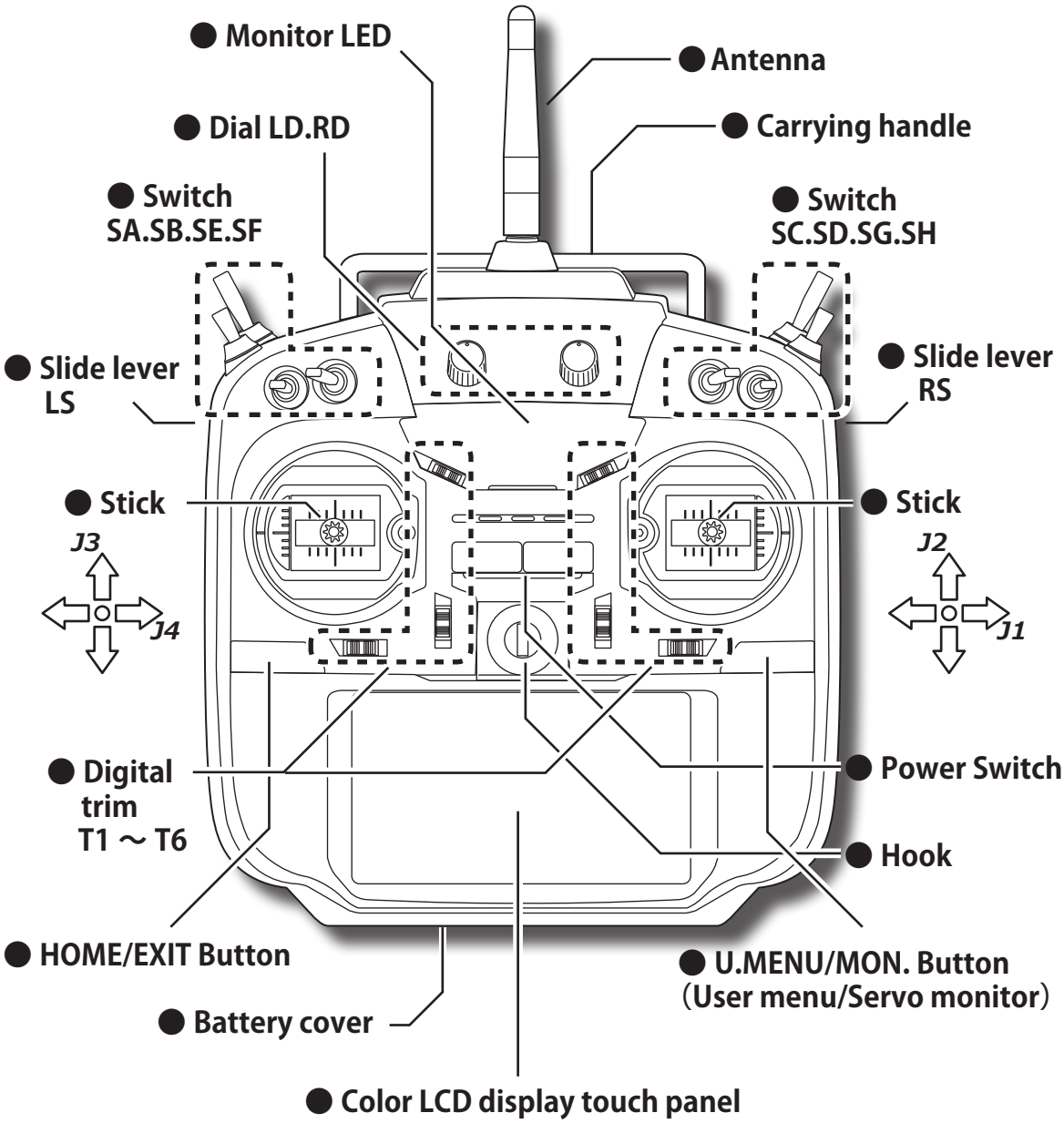
(*1) When using ESC's make sure that the regulated output capacity meets your usage application.

Note: The battery in the T18SZ 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 that the T18SZ transmitter may be connected to another T18SZ system, as well as to any other models of Futaba transmitters. The T18SZ transmitter uses one of the three cord plug types according to the transmitter connected. (Refer to the description at the TRAINER function instructions). The part number of this cord is: FUTM4405.
- Servos - there are various kinds of servos. Please choose from the servos of Futaba what suited the model and the purpose of using you. If you utilize a S.BUS system, you should choose a S.BUS servo. An analog servo cannot be used if "FASSTest12CH mode" is used.
- Telemetry sensor - please purchase an optional sensor, in order to utilize bidirectional communication system and to acquire the information from a model high up in the sky.
  [Temperature sensor : SBS-01T/TE] [Altitude sensor : SBS-01A] [RPM sensor magnet type : SBS-01RM][RPM sensor optical type : SBS-01RO] [RPM sensor brushless motor type : SBS-01RB] [GPS sensor : SBS-01G] [Voltage sensor : SBS-01V]
- Neckstrap - a neckstrap may be connected to your T18SZ system to make it easier to handle and improve your flying precision since your hands won't need to support the transmitter's weight.
- Y-harnesses, servo extensions, hub,etc - Genuine Futaba extensions and Y-harnesses, including a heavy-duty version with heavier wire, are available to aid in your larger model and other installations.
- Gyros - a variety of genuine Futaba gyros is available for your aircraft or helicopter needs.
- Governor - for helicopter use. Automatically adjusts throttle servo position to maintain a constant head speed regardless of blade pitch, load, weather, etc.
- Receivers - various models of Futaba receivers may be purchased for use in other models. (Receivers for FASSTest and FASST, T-FHSS, S-FHSS types are available.)

T18SZ

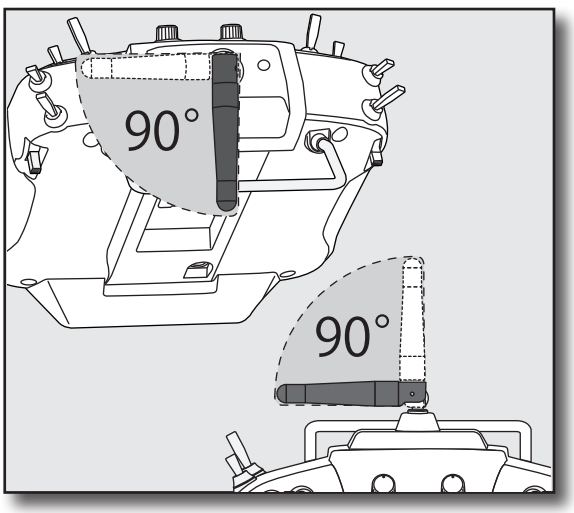

● Monitor LED
● Antenna
● Dial LD.RD
● Carrying handle
● Switch
SA.SB.SE.SF
● Switch
SC.SD.SG.SH
● Slide lever
LS
● Slide lever
RS
● Stick
J3
J4
● Stick
J2
J1
● Digital
trim
T1 ～ T6
● Power Switch
● Hook
● HOME/EXIT Button
● U.MENU/MON. Button
（User menu/Servo monitor）
● Battery cover
● Color LCD display touch panel

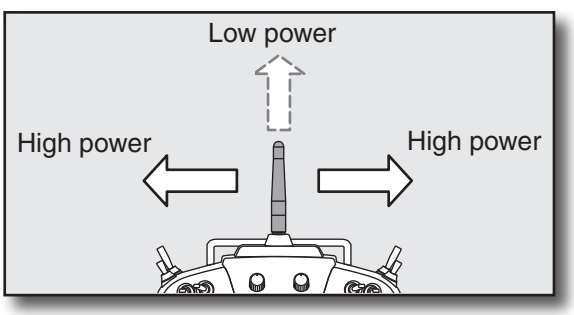
Transmitter's Antenna:

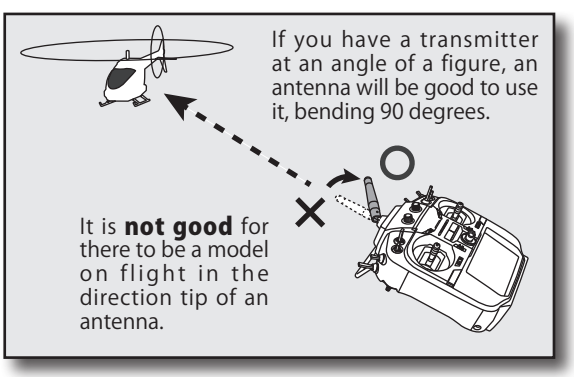
As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the transmitter's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.

•Rotating antenna

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







⚠ CAUTION

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

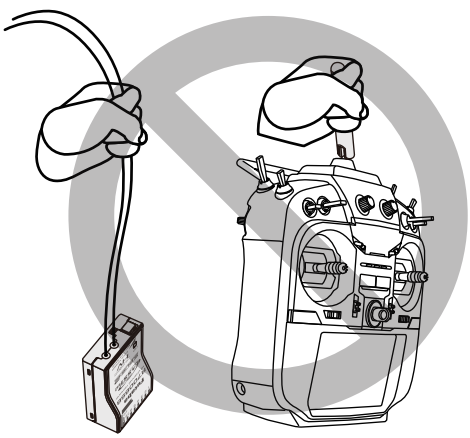
Doing so may degrade the quality of the RF transmission to the model

Do not carry the transmitter by the antenna.

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

Do not pull the antenna forcefully.

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



Monitor LED display

The status of the transmitter is displayed by LED at the upper part of the front of a T18SZ.

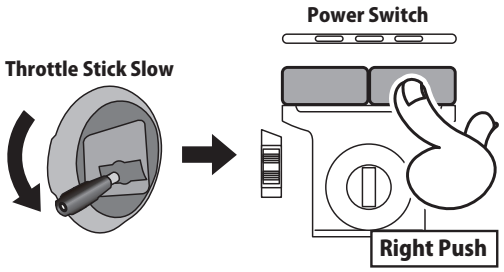
- ✧ FASSTest mode → Light Blue light
- ✧ FASST mode → Green light
- ✧ S-FHSS mode → Yellow-green light
- ✧ RF-OFF → Violet light
- ✧ Starting → Red light
- ✧ Trainer Student → Blue light
- ✧ Range check mode → Slow blinking
- ✧ FASSTest receiver link mode → Fast blinking

How to turn transmitter power ON/OFF

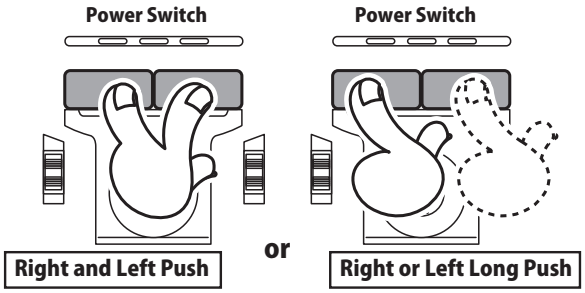
When turning on the power, the T18SZ transmitter will begin emmiting RF automatically after it confirms the surrounding RF conditions. The status of the transmitter is displayed by LED at the upper part of the front of a T18SZ.

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

Power ON



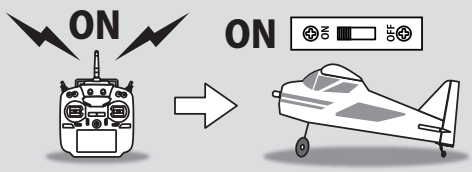
Power OFF



If the power switches are turned off in the opposite order the model may unexpectedly run out of control and cause a very dangerous situation.

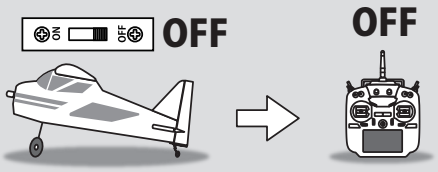
Turning on the power switches

1. Turn on the transmitter power switch.
2. Turn on the receiver or speed control power switch.

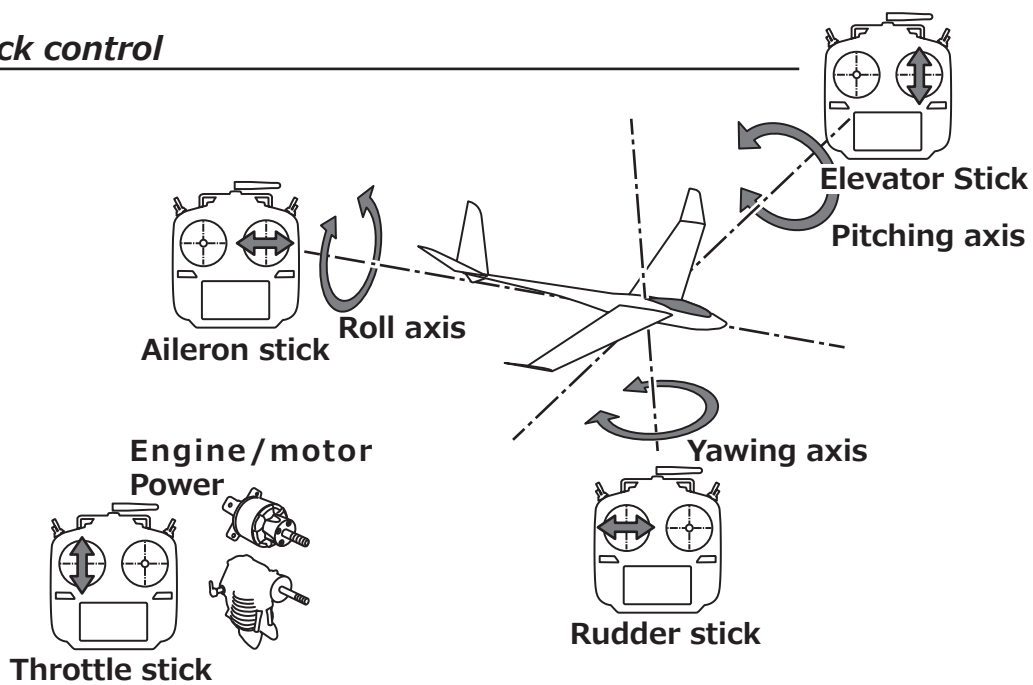


Turning off the power switches

Always be sure the motor/engine is stopped.
1. Turn off the receiver or speed control power switch.
2. Then turn off the transmitter power switch.

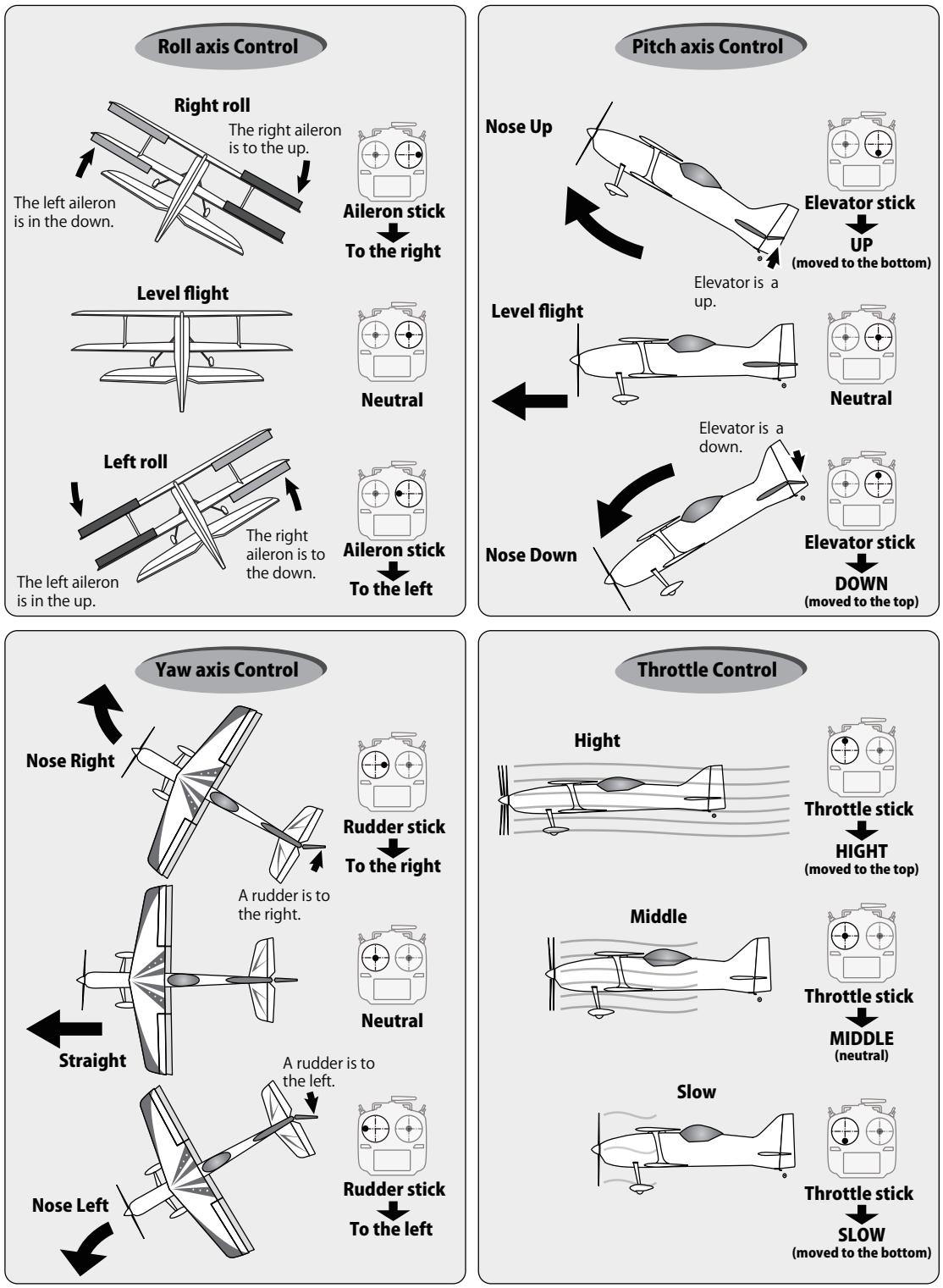


Stick control



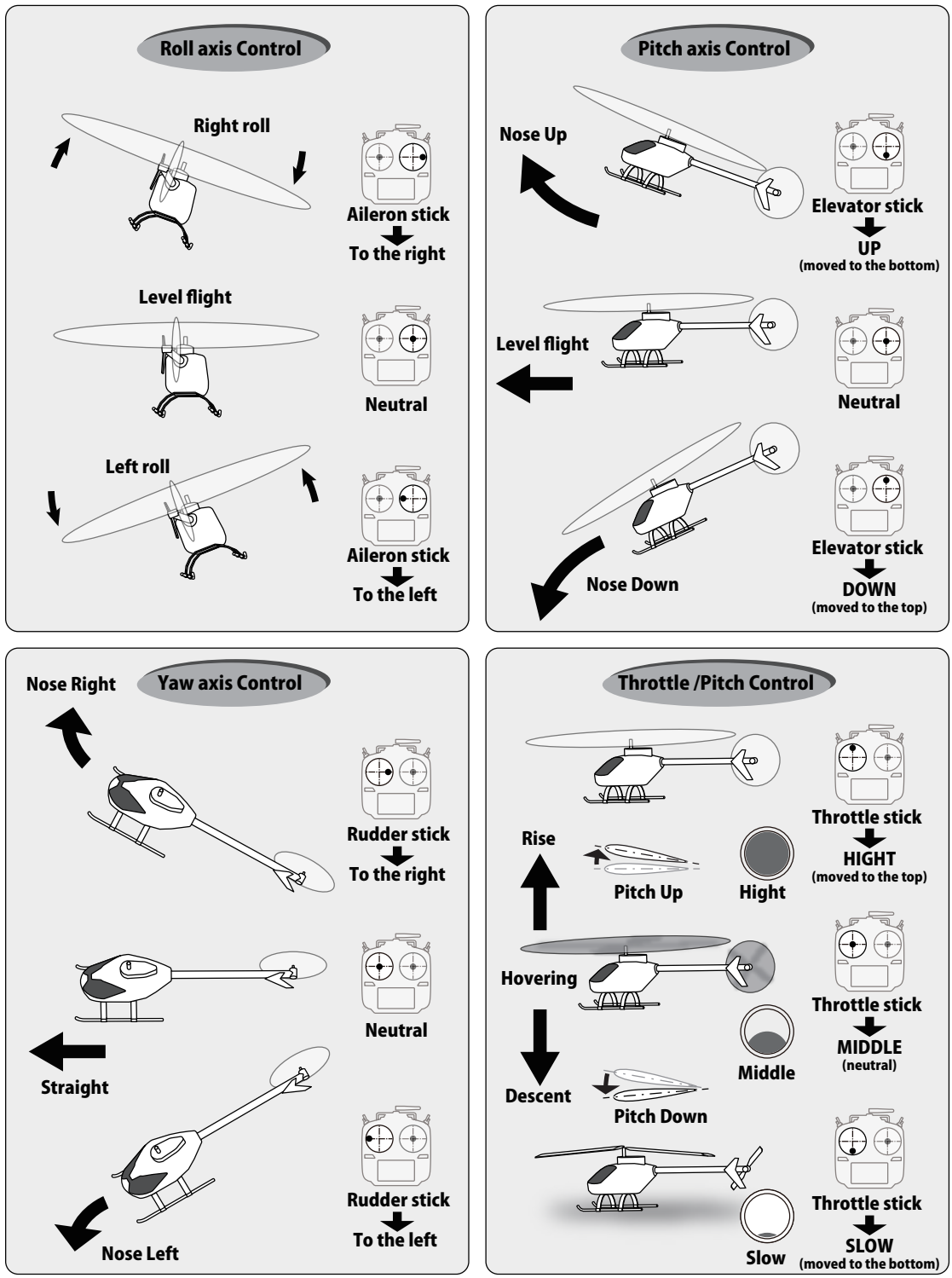
Stick control : Airplane Example

A general model example. (There is also a different operational model.)



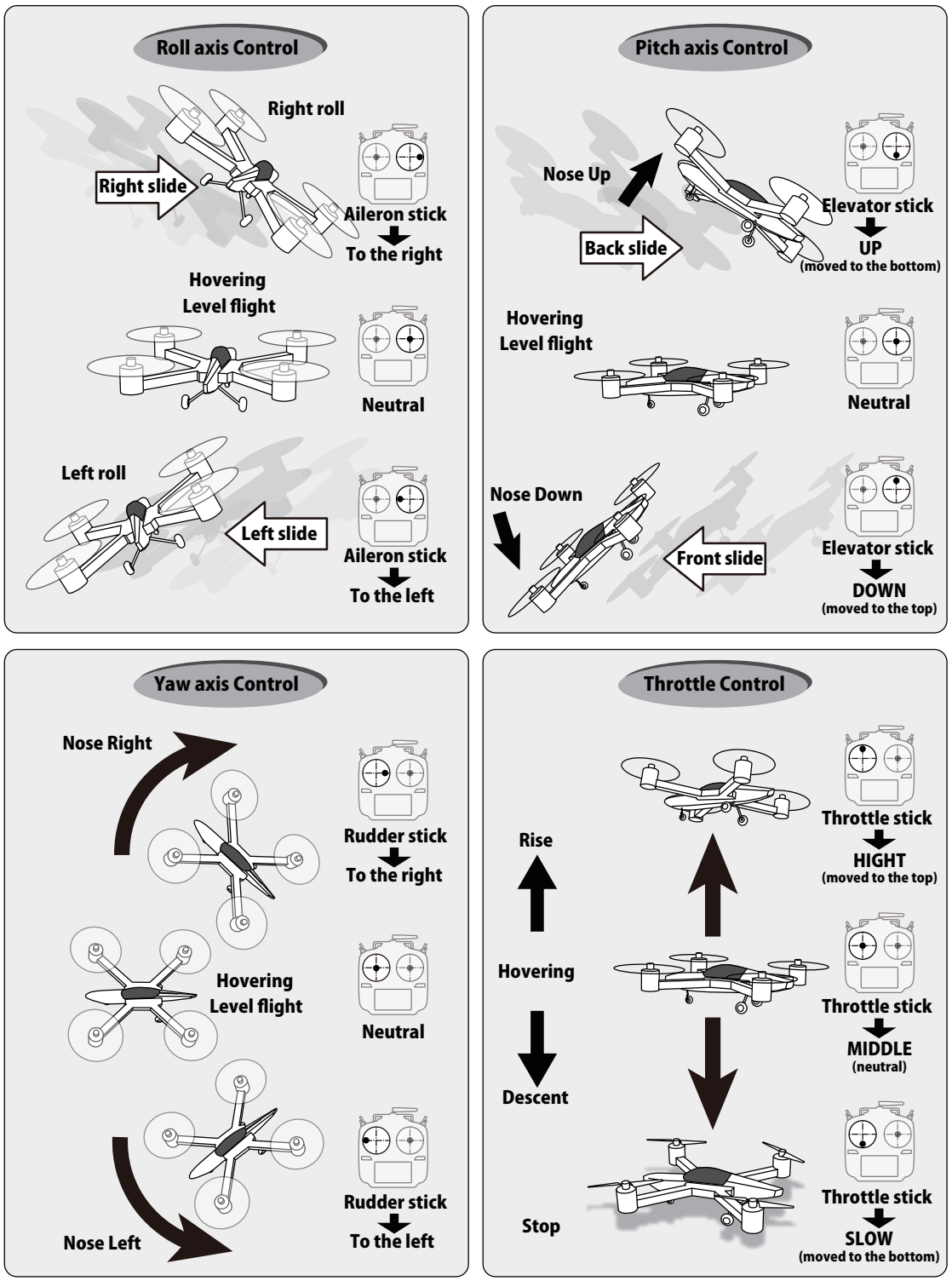
Stick control : Helicopter Example

A general model example. (There is also a different operational model.)

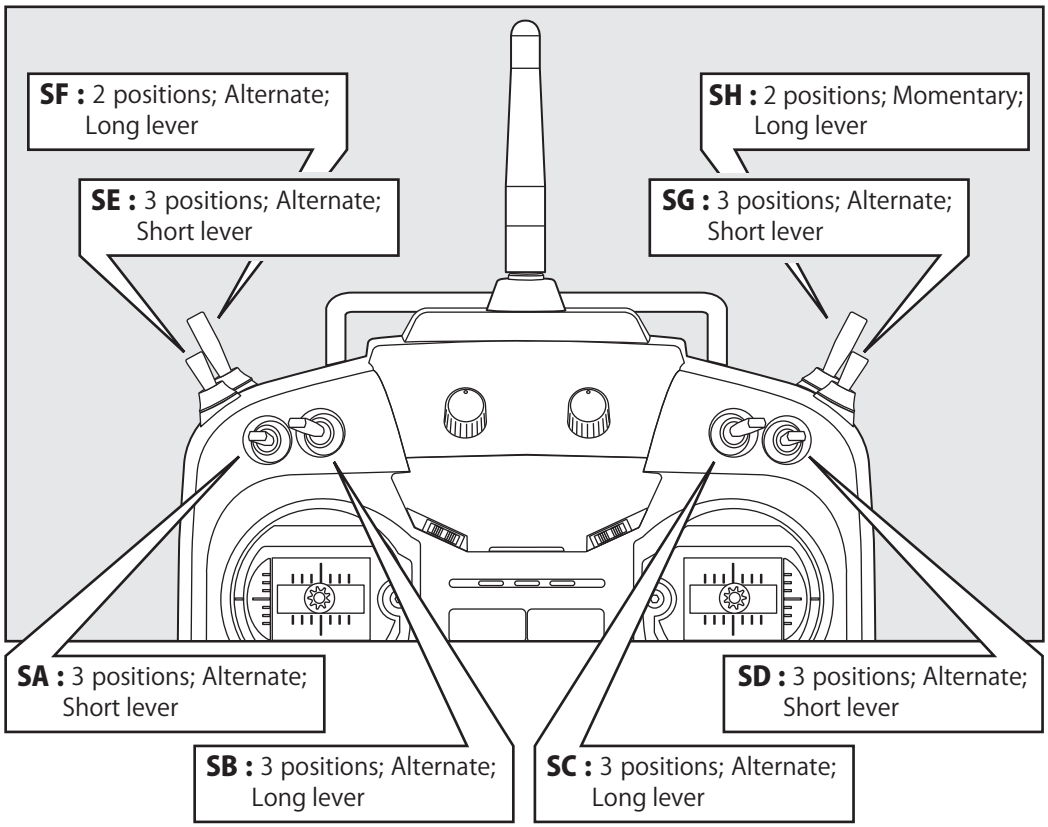


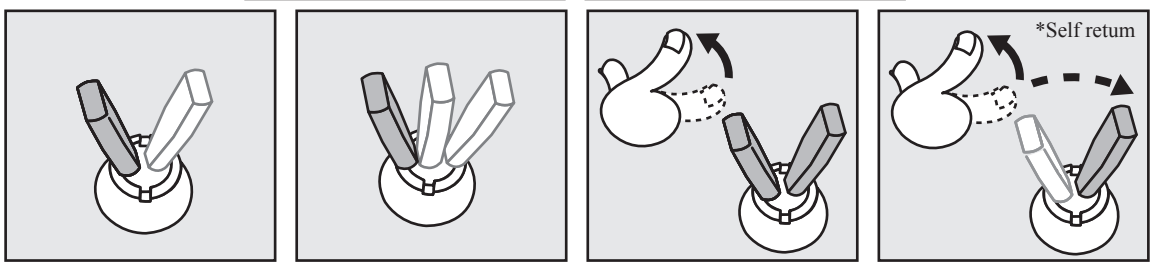
Stick control : Multicopter Example

A general model example. (There is also a different operational model.)

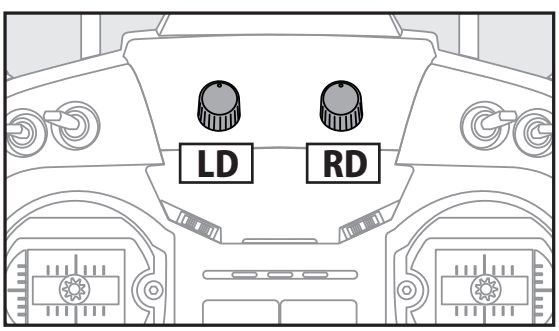


Switch (SA-SH)





Volume

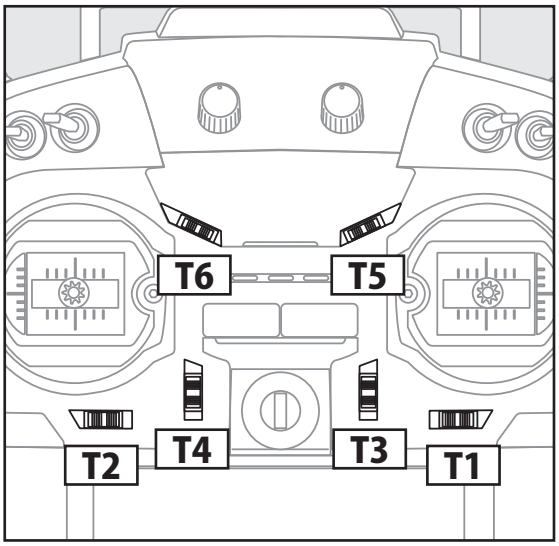


The volume LD and RD knobs allow analog input.

*The T18SZ 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.

Digital Trims T1-T6



This transmitter is equipped with 6 digital trims. Each time you press a trim button, the trim position moves one step. If you continue pressing it, the trim position starts to move faster. In addition, when the trim position returns to the center, the tone will change. You can always monitor trim positions by referencing the LCD screen.

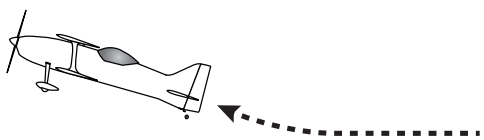
*You can select the trim step amount and the display unit on the home screen on the T1-T6 setting screen within the linkage menu.

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

The upper digital trimmers T5 and T6 offer analog input.

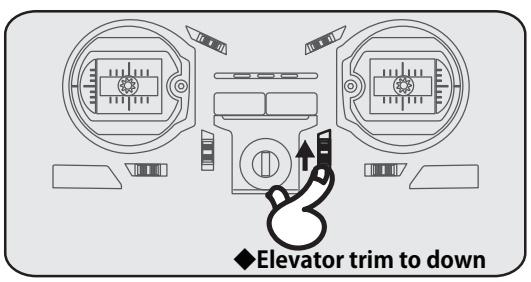
*You can select a slide lever and set the movement direction on the setting screen of mixing functions.

Digital trim operational example

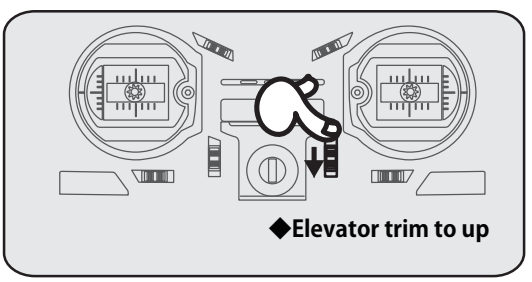


◆When an airplane nose up though an elevator stick is neutral.

◆When an airplane nose down though an elevator stick is neutral.

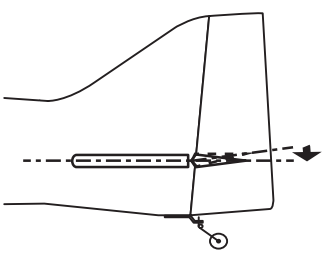


◆Elevator trim to down

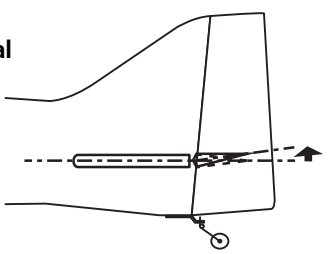


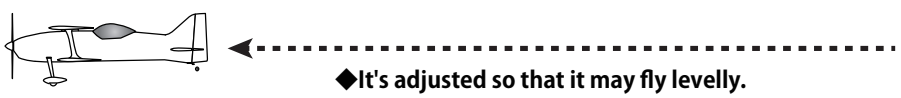
◆Elevator trim to up

Elevator neutral
Down



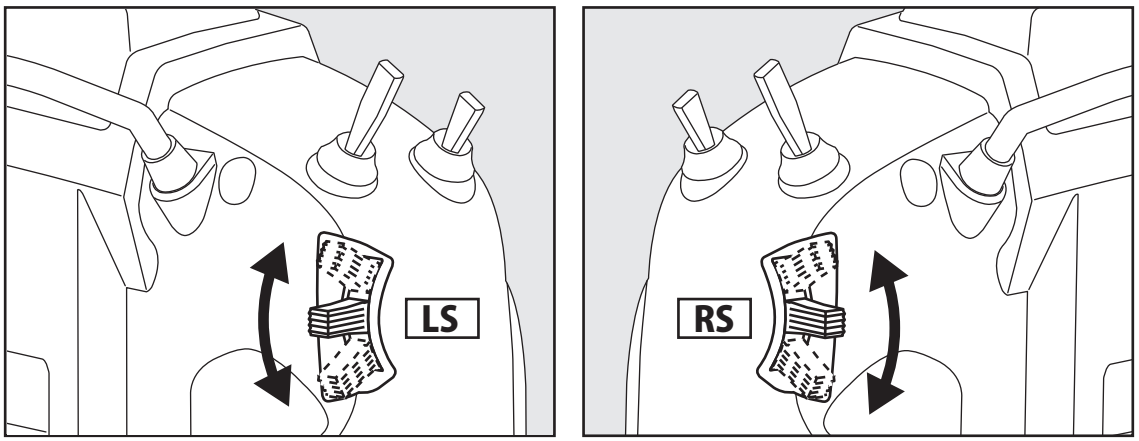
Elevator neutral
Up





◆It's adjusted so that it may fly levelly.

Slide Lever



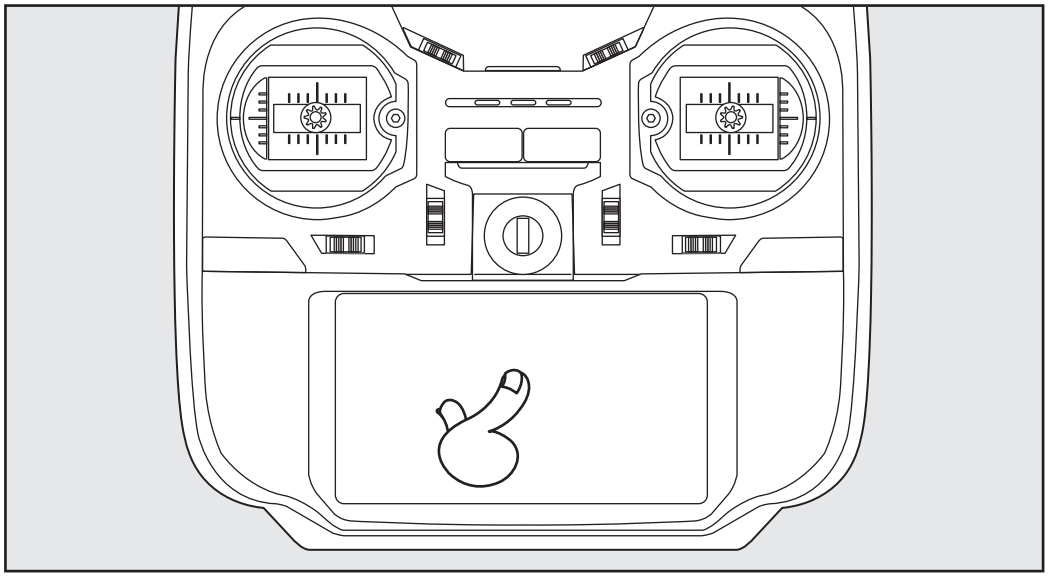
LS (right), RS (Left):

The Linear Slider LS and RS offer analog input.

*The T18SZ transmitter beeps when the lever comes to the center.

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

Touch Panel



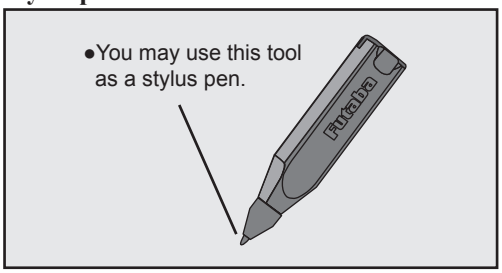
Touch the panel with your finger or the attached stylus pen, which is also used as a toolbox, to enter data.

*Plastic film is attached to the touch panel. Please be careful so that you don't scratch the touch panel with anything hard such as a metal object. Don't push the touch panel with excessive force or drop anything on the panel.

*Although you may find some air bubbles under the plastic panel due to environmental changes such as temperature, it is not a defect and will cause no problems.

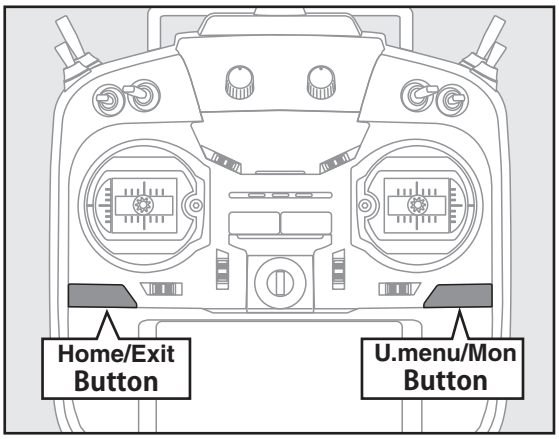
*Color LED is made from many pixels. Some pixels hold lighting. Moreover, some pixels go out. And a screen may flicker. Such condition is the characteristics of color LED. It is not failure.

Stylus pen



A rubber cap is attached to the stylus pen/ toolbox. You may use this stylus with rubber cap when operating the touch panel. The stylus allows more precise operation than fingers without fear of damaging the panels surface.

Home/Exit and U.menu/Mon.



Home/Exit:

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

U.menu/Mon:

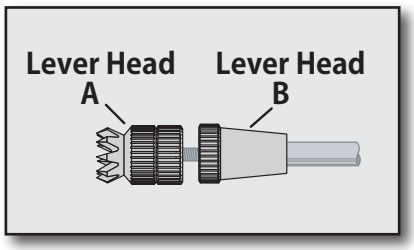
Press	To Servo Monitor display
Press and hold	To Model Select display

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

Stick Adjustment

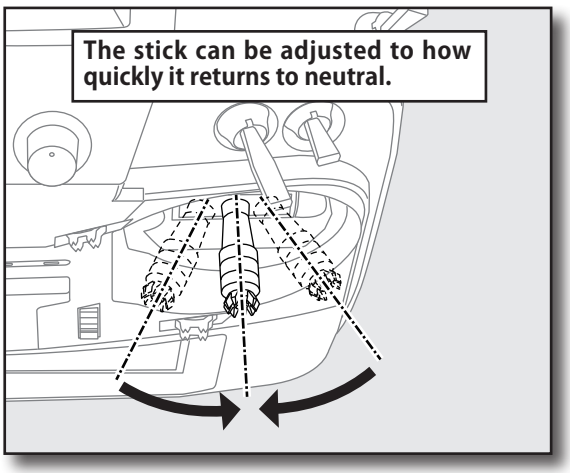
Adjustment of the stick lever length

You can adjust the length of stick levers, as you like. It is recommended to adjust the length of the sticks in line with your hand size.



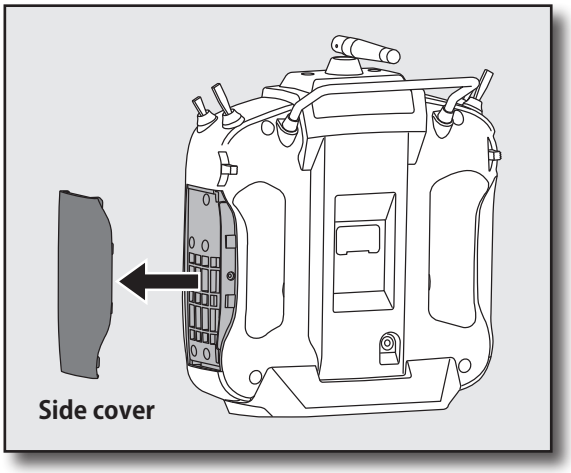
1. Hold the lever head "B" and turn the lever head "A" counter-clockwise. The lock will be released.
2. Turn the lever-head "A" clockwise as you hold the lever-head "B" after placing it as you like.

Adjustment of stick lever tension

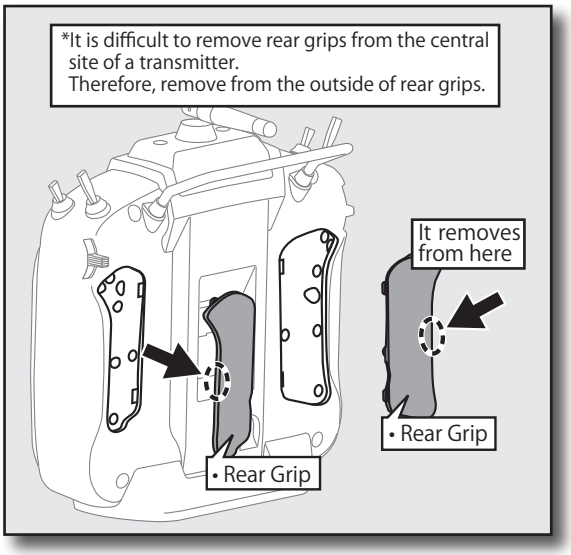


The tension of the self-return type stick lever can be adjusted.

1. First, Remove the battery cover on the bottom of the transmitter. Next, unplug the battery wire and remove the battery from the transmitter.
2. Next, using a hand, remove the transmitter's side cover (rubber). When using Mode 1, you will need to remove the side cover to expose the tension screw.



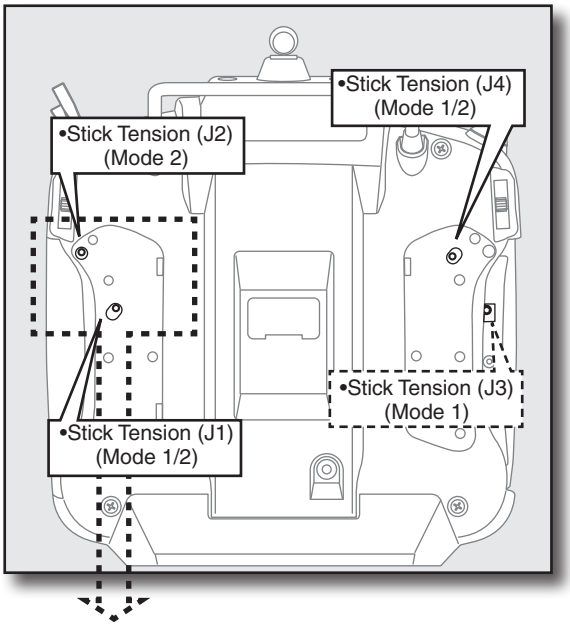
3. Using your hand remove the transmitters rear rubber grips.

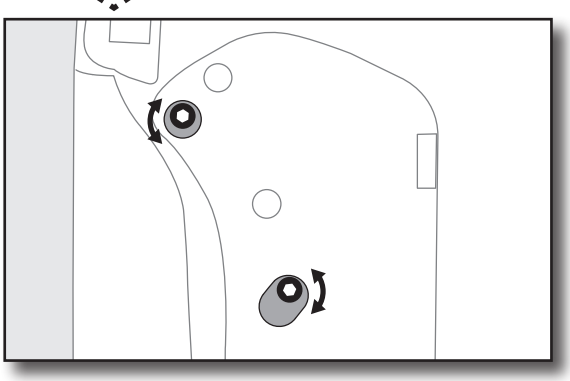


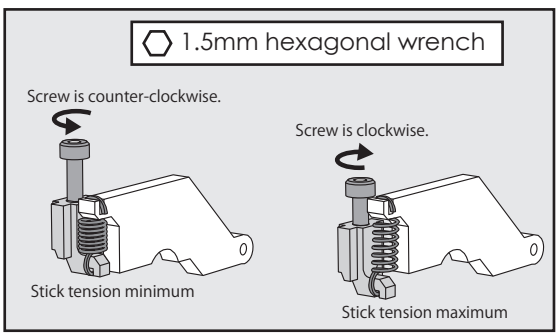
4. Use a small Phillips screwdriver to adjust the spring strength as you prefer by turning the adjusting screw of the stick you want to adjust.

*Turning the screw clockwise increases the tension.

CAUTION: If you loosen the screw too much, it can interfere with the operation of the sticks internally.





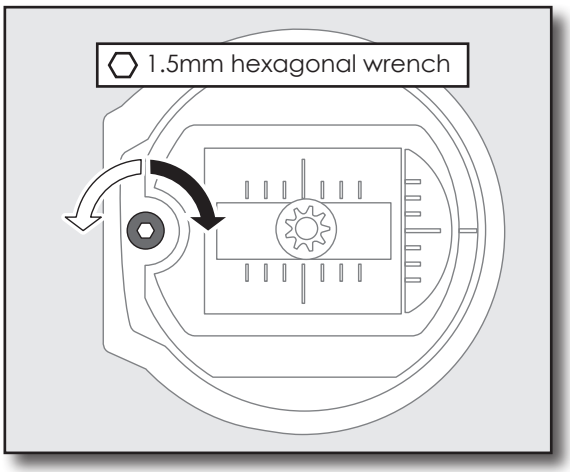


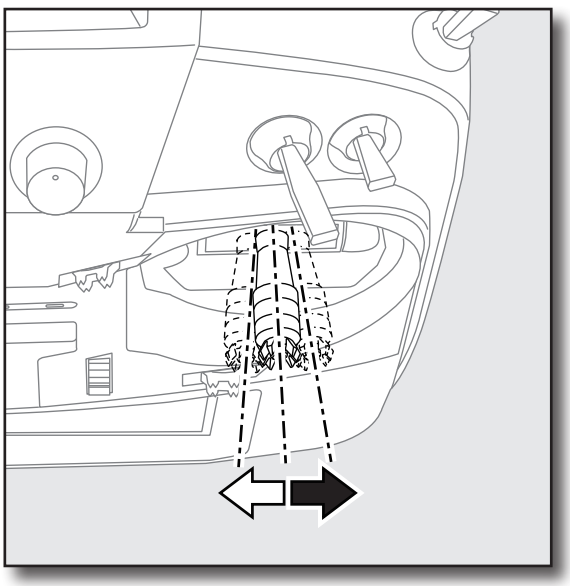
5. At the end of adjustment, re-install the side cover and rear grips.

Stick Adjustment

Adjustment of the stick lever angle

You can make fine adjustments to the angle of a stick lever either inwards or outwards from the center stick position.



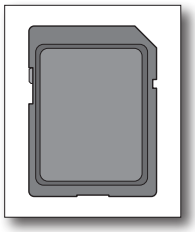


Use the attached 1.5mm hexagonal wrench (inside stylus) to turn the screw clockwise to adjust the stick outwards, or counter-clockwise to tilt it inward.

Note: Be careful not to turn the screw too far counterclockwise as it could fall out.

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

The T18SZ transmitter model data can be stored by using any commonly found SD card. When T18SZ transmitter update software is released, the software is updated using an SD card. The T18SZ is capable of using SD cards with a memory size between 32MB and 2GB.



SD card reader/writer

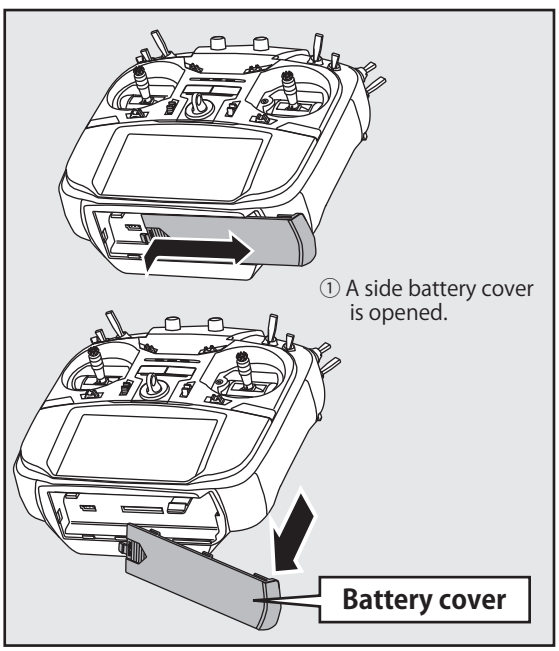
Saving model data and update files (released from Futaba) into the SD card, you can use those files on your T18SZ transmitter. Equipment for reading and writing SD cards is available at most electronics stores.

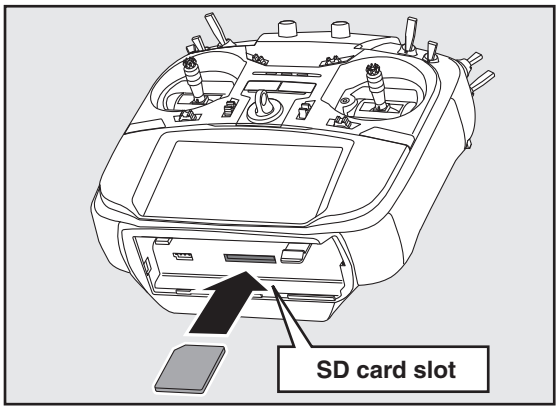
Stored data

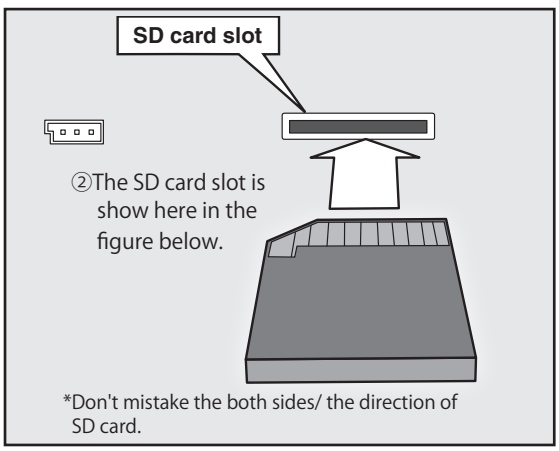
When you have a problem of saving or reading data after a long period of use, please get a new SD card.

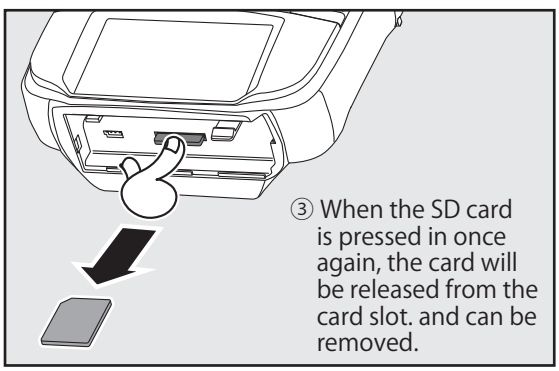
*We do not have the responsibility of compensating any failure or damage to the data stored in the memory card no matter what the reason is. Be sure to keep a backup of your important data in your SD card.

Inserting/removing the SD card





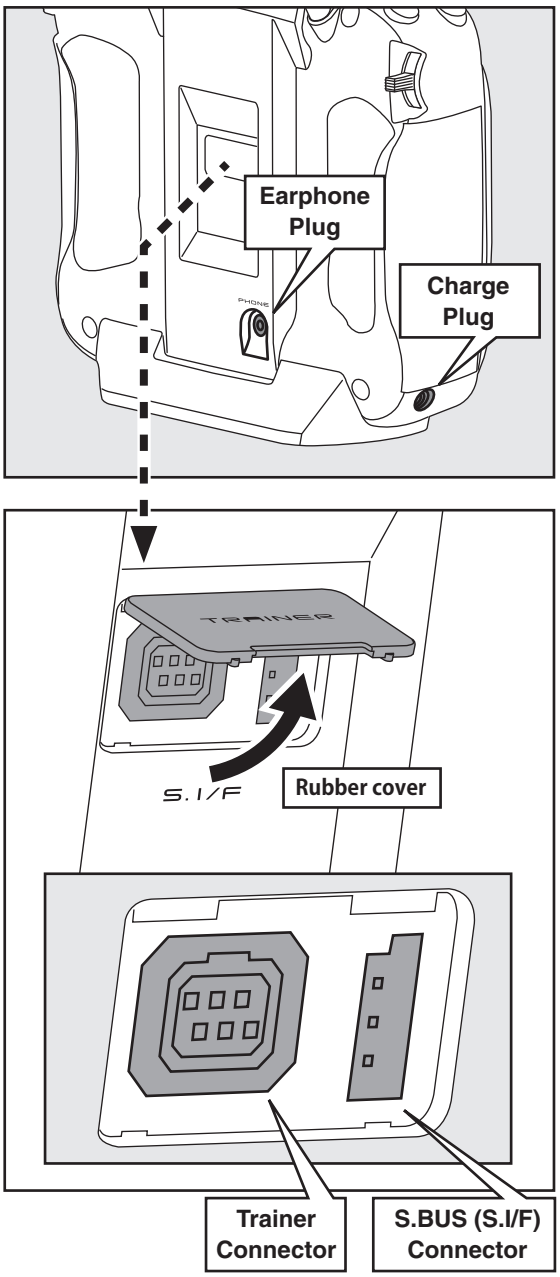




⚠ CAUTION

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

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



Connector for trainer function

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

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

S.BUS connector (S.I/F)

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

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

Earphone plug

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

Connector for battery charger

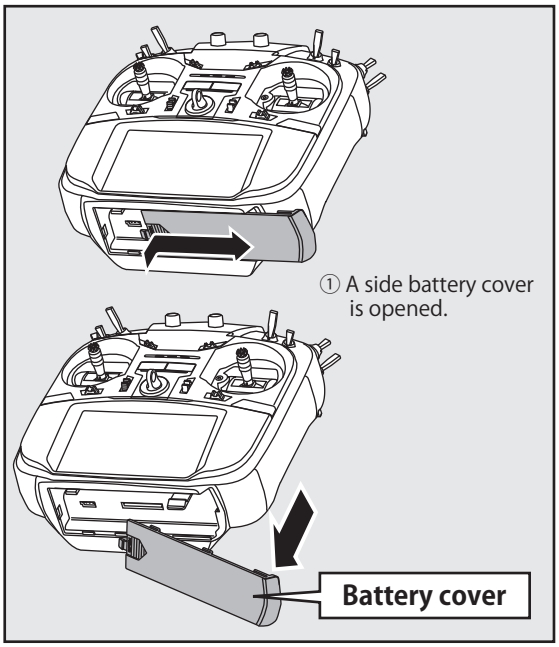
This is the connector for charging the LiFe battery FT2F2100BV2 that is installed in the transmitter. Do not use any other chargers except the attached special charger corresponding to LiFe battery.

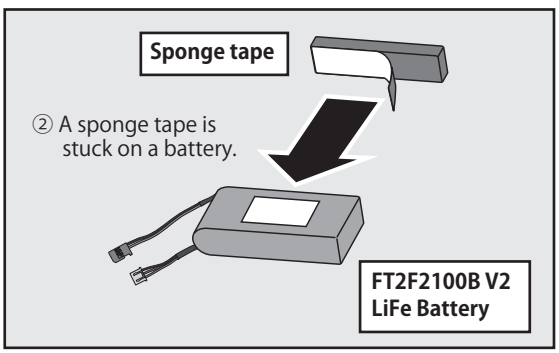
⚠ WARNING

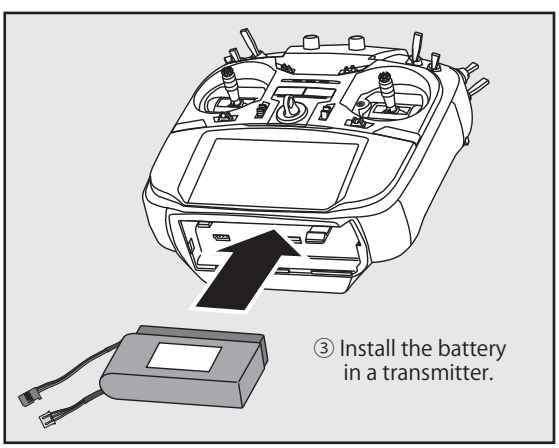
⃠ Do not connect any other chargers except the special charger to this charging connector.

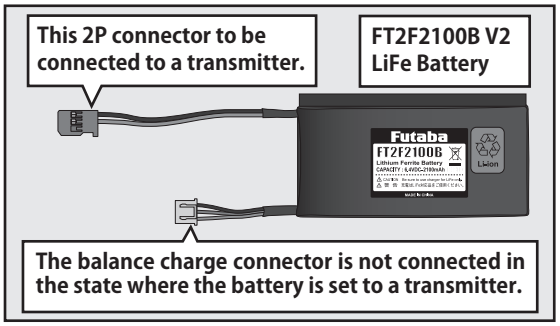
*If you take out the LiFe battery FT2F2100BV2 from the transmitter, you can use the optional balance charger LBC-4E5 corresponding to LiFe battery.

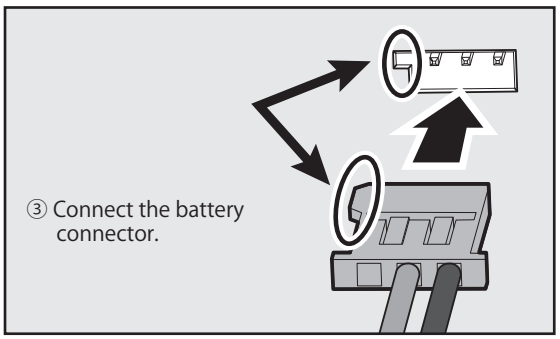
Inserting/removing the FT2F2100B V2

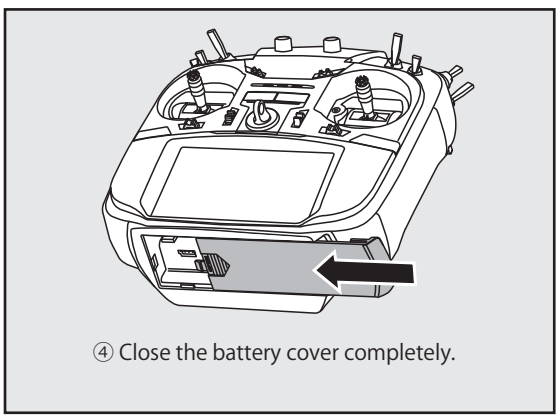




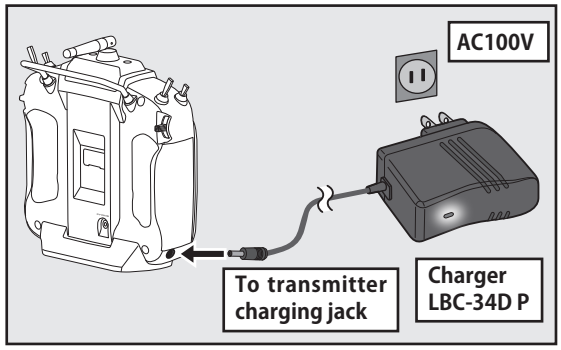








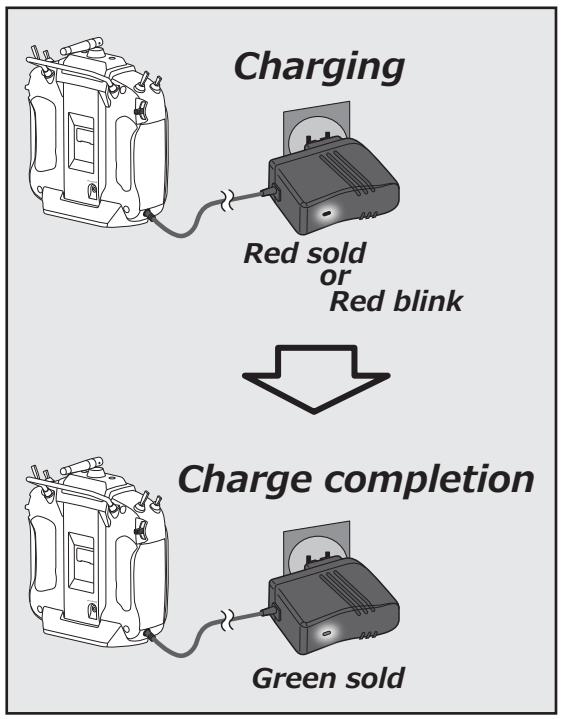
Charge of a LiFe battery



1.Plug the transmitter cord of the special charger into the charging jack on the side of the transmitter.

2. Plug the charger into an AC outlet.

3. Check that the charging LED lights.



4. Disconnect the charg plug.

5. Disconnect the AC plug.

The charging time when charging the FT2F2100BV2 battery with the optional special charger is approximately 3 hours. However, when the battery has not been used for some time, repeat charging 2 or 3 times to activate 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.
Periodically (about every 3 months) charge the battery.

Battery removal

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

1. Open the battery cover.
2. Disconnect the battery connector.
3. Close the battery cover completely.

⚠ WARNING

Be careful not to drop the battery.

Never disconnect the battery connector from the T18SZ transmitter after turning off the power until the screen is completely blank and the transmitter has shut down completely.

* Internal devices such as memories may be damaged.

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

⚠ WARNING

Never plug it into an outlet other than the indicated voltage.

*Plugging the charger into the wrong outlet could result in an explosion or fire.

Do not insert and remove the charger when your hands are wet.

*It may cause an electric shock.

Do not overcharging /overdischarging the battery.

*Overcharging/Overdischarging a battery can result in burns, fire, injuries, or loss of sight due to overheating, breakage, or electrolyte leakage.

⚠ CAUTION

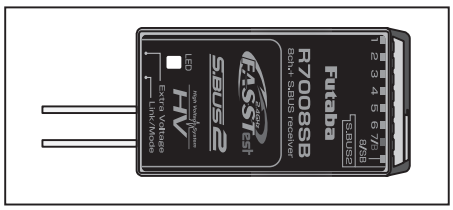
When the charger is not in use, disconnect it from the AC outlet.

* Do this to prevent accidents and to avoid overheating.

Receiver nomenclature

Before using the receiver, be sure to read the precautions listed in the following pages.

Receiver R7008SB



Connector

"1 through 6": outputs for the channels 1 through 6

"7/B": outputs of 7 channels and power.

"8/SB": outputs of 8 channels or S.BUS port.

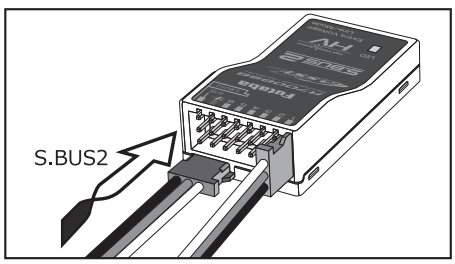
[S.BUS Servo S.BUS Gyro]

*When using 8/SB as S.BUS, you have to set CH MODE of the following page to mode B or mode D.

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

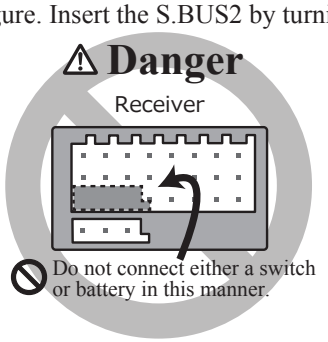
[S.BUS2 Servo S.BUS2 Gyro Telemetry Sensor]

*When using 9 or more channels, use an S.BUS function or use a second R7008SB and link both to your transmitter.



Connector insertion

Firmly insert the connector in the direction shown in the figure. Insert the S.BUS2 by turning it 90 degrees.



⚠ Danger

⃠ Don't connect a connector, as shown in a before figure.

*It will short-circuit, if it connected in this way. A short circuit across the battery terminals may cause abnormal heating, fire and burns.

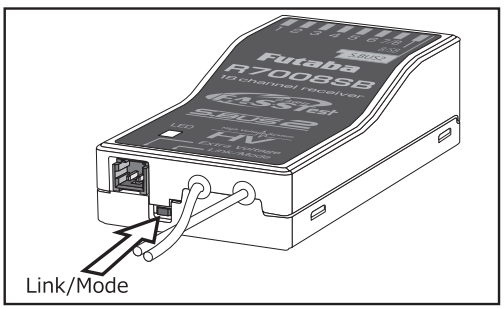
⚠ Warning

S.BUS2 connectors

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

LED Monitor

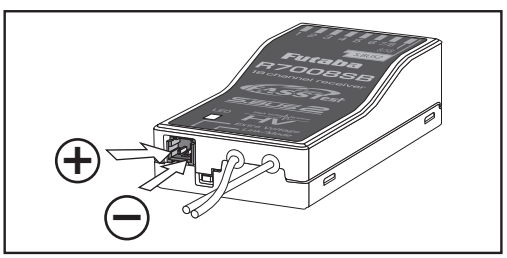
This monitor is used to check the CH mode of the receiver.



Link/Mode Switch

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

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



Extra Voltage Connector

Use this connector when using a voltage telemetry device to send the battery voltage (DC0 ~ 70V) from the receiver to the transmitter.

You will need to purchase the optional External Voltage input cable (CA-RVIN-700) FUTM5551.

You can then make a cable with an extra connector to the External voltage connector.

⚠ Danger

⃠ Don't touch wiring.

* There is a danger of receiving an electric shock.

⃠ Do not short-circuit the battery terminals.

* A short circuit across the battery terminals may cause abnormal heating, fire and burns.

⃠ Please double check your polarity (＋ and －) when hooking up your connectors.

* If ＋ and － of wiring are mistaken, it will damage, ignite and explode.

⃠ Don't connection to Extra Voltage before turning on a receiver power supply.

R7008SB CH Mode

The R7008SB receiver is a very versatile unit. It has 8 PWM outputs, S.BUS and S.BUS2 outputs. Additionally the PWM outputs can be changed from channels 1-8 to channels 9-14. If you only desire to use it as an 8 channel receiver (without S.BUS), it can be used without any setting changes.

The T18SZ has the ability to link to two R7008SB receivers. One of them outputting channels 1-8 and the other outputting channels 9-14 giving you 14 PWM channels. Instructions for this configuration and S.BUS operation follow.

[How to change the R7008SB Channel mode.]

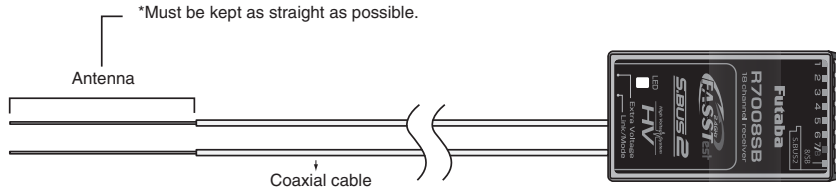
1. Press and hold down the Link/Mode button on the R7008SB receiver.
2. Turn the receiver on while holding down the Link/Mode button. when the LED begins to blink green/red the button may be released.
3. The LED should now be blinking red in one of the patterns described by the chart below.
4. Each press of the Mode/Link button advances the receiver to the next mode.
5. When you reach the mode that you wish to operate in, press and hold the Mode/ Link button for more than 2 seconds.
6. Once locked into the correct mode the LED will change to a solid color.
7. Please cycle the receiver(s) power off and back on again after changing the Channel Mode.

R7008SB CH MODE TABLE

Receiver connector	Setting channel			
	Mode A 1 ～ 8CH	**Mode B** 1 ～ 7CH	**Mode C** 9 ～ 14CH	**Mode D** 9 ～ 14CH
1	1	1	9	9
2	2	2	10	10
3	3	3	11	11
4	4	4	12	12
5	5	5	13	13
6	6	6	14	14
7/B	7	7	-	-
8/SB	8	S.BUS	-	S.BUS
Red LED blink	1time	2time	3time	4time

Receiver's Antenna Installation

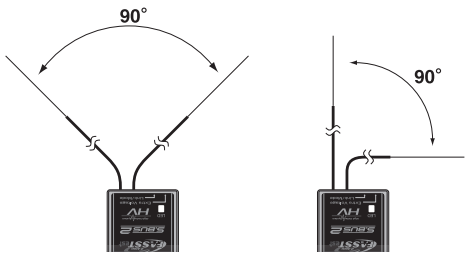
The R7008SB has two antennas. In order to maximize signal reception and promote safe modeling Futaba has adopted a diversity antenna system. This allows the receiver to obtain RF signals on both antennas and fly problem-free.



R7008SB Receiver

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

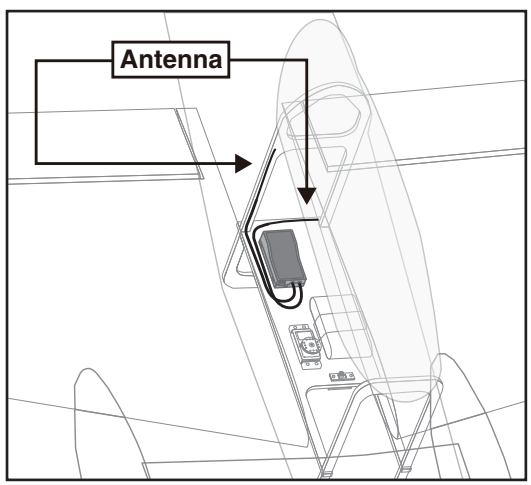
1. The two antennas must be kept as straight as possible. Otherwise it will reduce the effective range.
2. The two antennas should be placed at 90 degrees to each other.

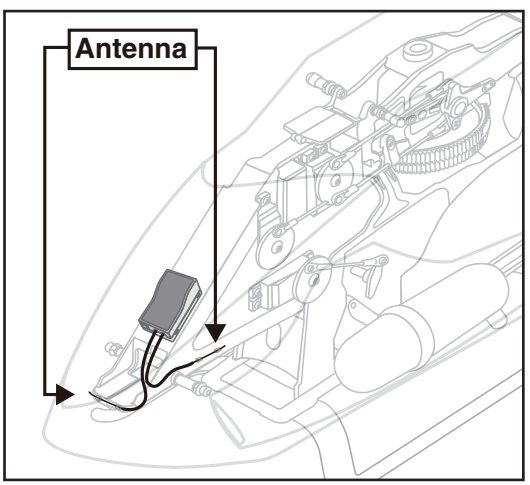


This is not a critical figure, but the most important thing is to keep the antennas away from each other as much as possible.

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

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





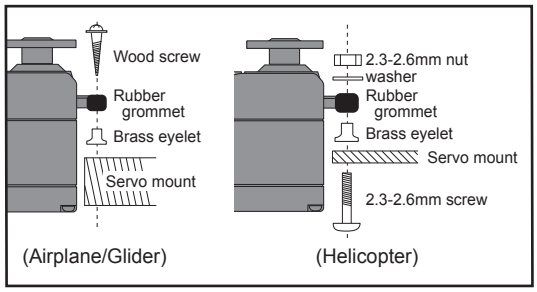
*The two antennas should be placed at 90 degrees to each other.

*The illustration demonstrates how the antenna should be placed.

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

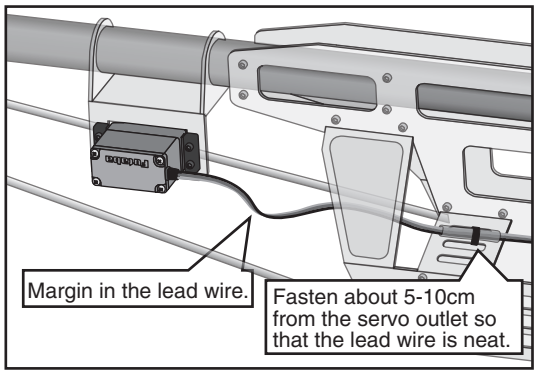
Mounting the Servo

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



Servo lead wires

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



Mounting the power switch

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

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

Safety precautions when you install receiver and servos.

⚠WARNING

Connecting connectors

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

How to protect the receiver from vibration and water

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

Receiver's antenna

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

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

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

Servo throw

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

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

Mounting servos

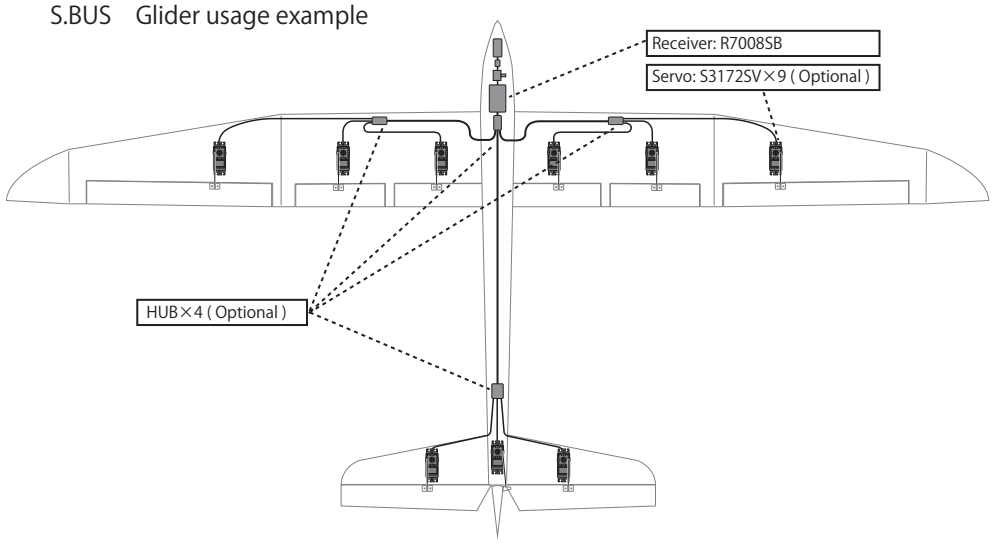
❗Use a vibration-proof rubber (such as rubber grommet) under a servo when mounting the servo on a servo mount. And be sure that the servo cases do not touch directly to the metal parts such as servo mount.

S.BUS/S.BUS2 Installation

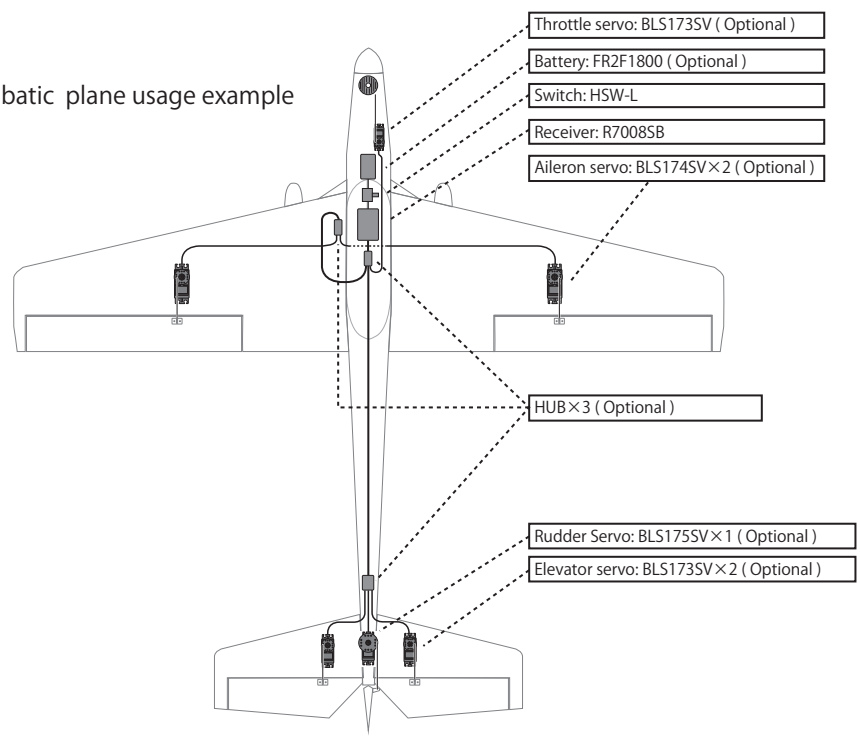
This set uses the S.BUS/S.BUS2 system. The wiring is as simplified and clean mounting as possible, even with models that use a large number of servos. In addition, the wings can be quickly installed to the fuselage without any erroneous wiring by the use of only one simple wire, even when there are a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

- When using S.BUS/S.BUS2, special settings and mixes in your transmitter may be unnecessary.
- The S.BUS/S.BUS2 servos memorize the number of channels themselves. (settable with the T18SZ)
- The S.BUS/S.BUS2 system and conventional system (receiver conventional CH used) can be mixed.

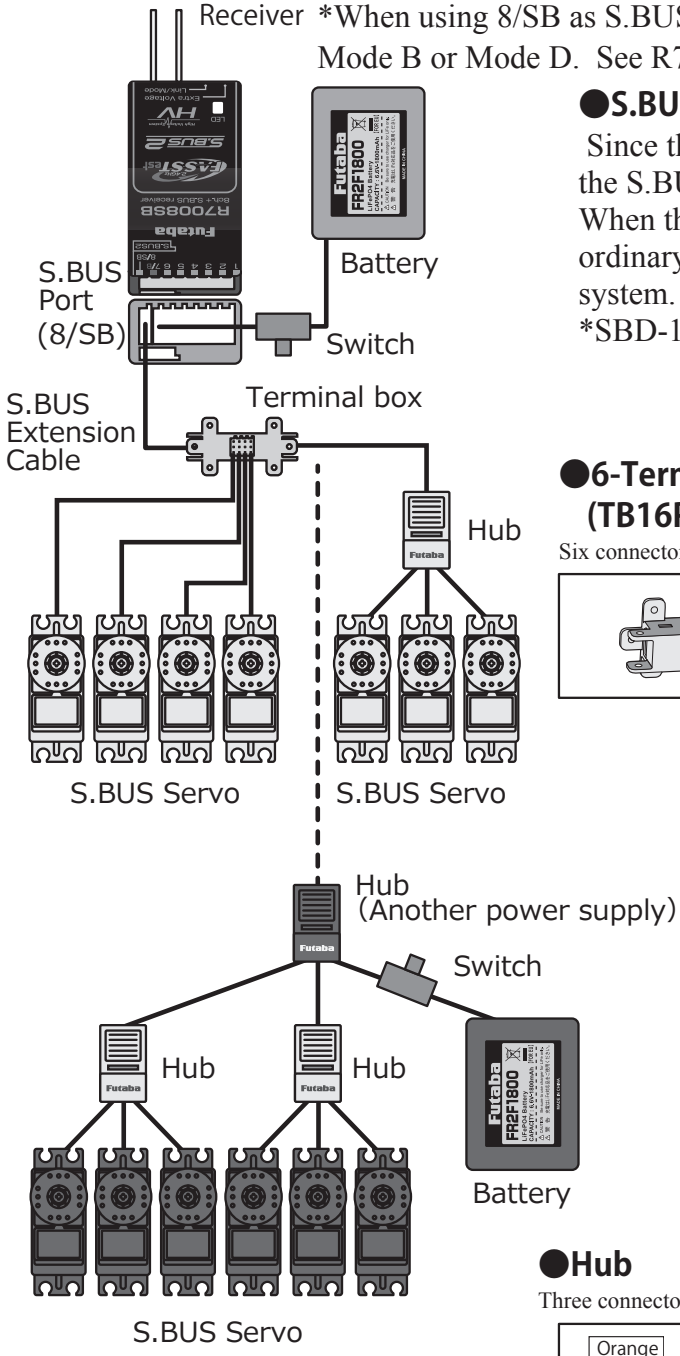
S.BUS Glider usage example



S.BUS Aerobatic plane usage example



S.BUS Wiring example



*When using 8/SB as S.BUS, you must set the receiver to Mode B or Mode D. See R7008SB CH MODE TABLE.

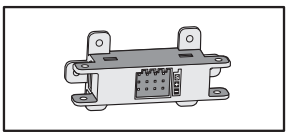
●S.BUS Servo

Since the channel number is memorized by the S.BUS itself, any connector can be used. When the SBD-1 (sold separately) is used, ordinary servos can be used with the S.BUS system.

*SBD-1 cannot be used by S.BUS2 port.

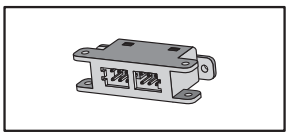
●6-Terminal box (TB16PP)

Six connectors can be inserted



●4-Terminal box

Four connectors can be inserted

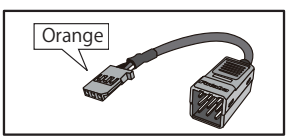


●When separate power supply used

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

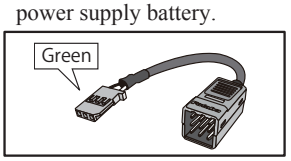
●Hub

Three connectors can be inserted.



●Hub（Another power supply）

Used when using a separate power supply battery.



⚠WARNING

Power supply

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

S.BUS2 System

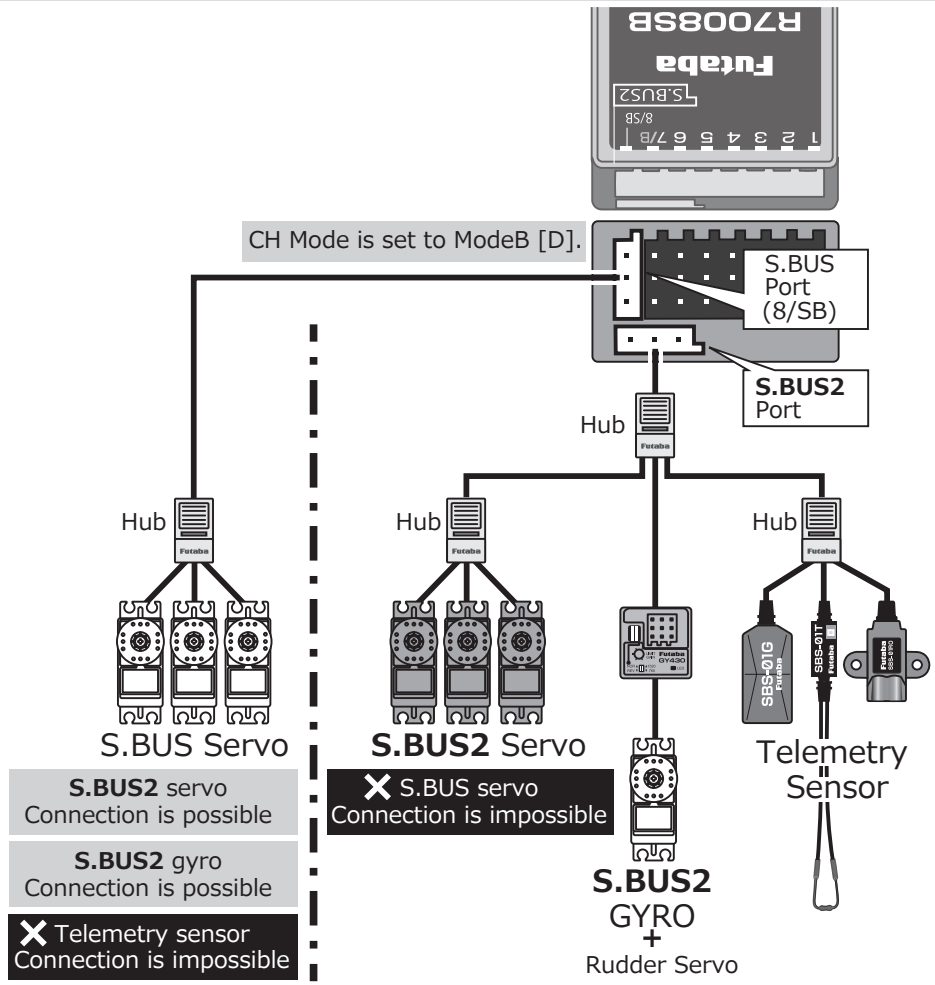
When using the S.BUS2 port, an impressive array of telemetry sensors may be utilized.

S.BUS2 TABLE

Receiver port	S.BUS Servo S.BUS Gyro	**S.BUS2** Servo **S.BUS2** Gyro	Telemetry sensor
S.BUS	○	○	×
S.BUS2	× (※)	○	○

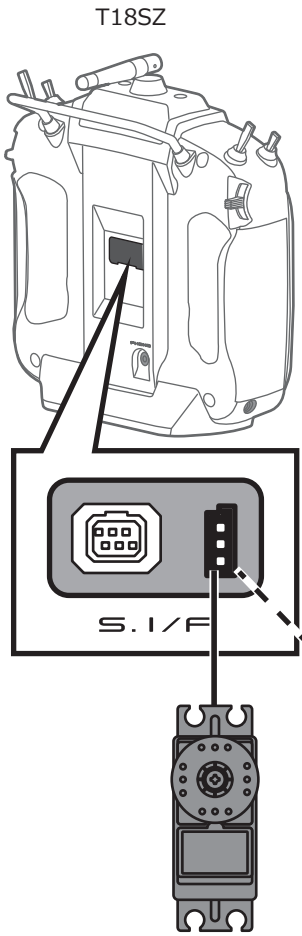
(※) Don't connect S.BUS Servo,
S.BUS Gyro to S.BUS2 connector.

S.BUS servos and gyros and S.BUS2 servos and gyros must be used in the correct receiver ports. Please refer to the instruction manual to make sure you connect to the correct one.



S.BUS/S.BUS2 device setting

S.BUS/S.BUS2 servos or a telemetry sensor can be connected directly to the T18SZ. Channel setting and other data can be entered for the S.BUS/S.BUS2 servos or sensors.



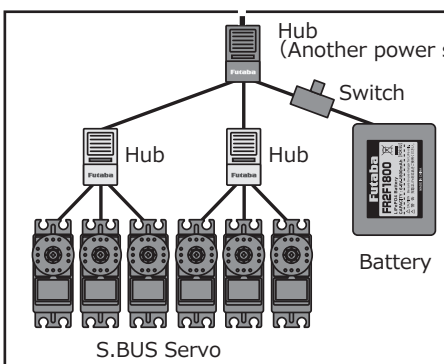
1. Connect the S.BUS device you want to set with as shown in the figure.
2. Turn on the transmitter power.
3. Call the setup screen.
   Servo: System Menu → S.BUS servo
   Sensor: Linkage Menu → Sensor
4. Perform setting in accordance with each screen.
5. This sets the channel and other data for each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

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

(It will damage, if it connects.)

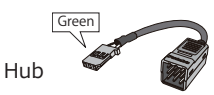
*When you connect to a transmitter many servos which consume many current, please use "Another power supply HUB".

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



●When separate power supply used

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



Hub
(Another power supply)
Used when using a separate power supply battery.

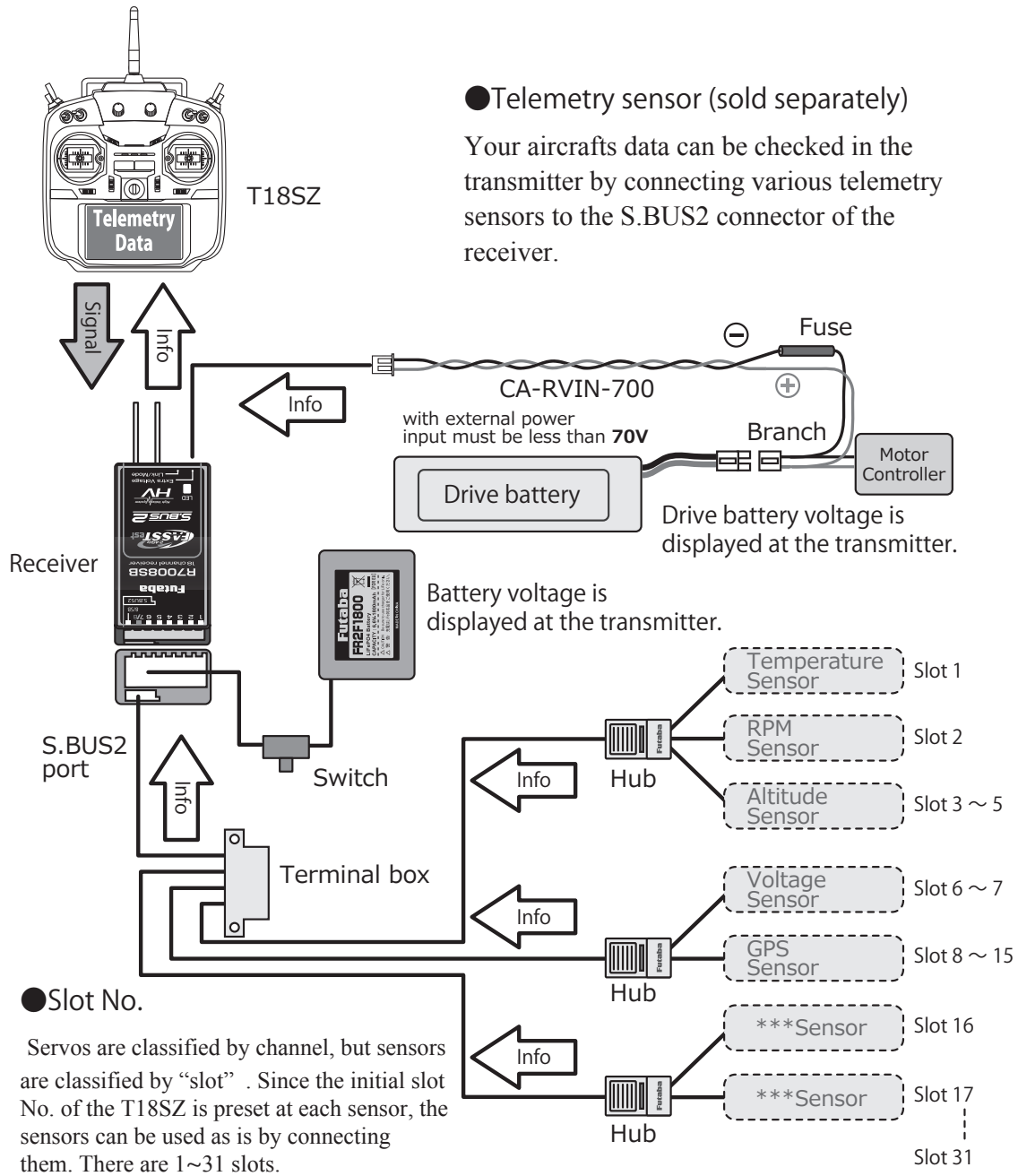
Telemetry System

The R7008SB receiver features bi-directional communication with a FASSTest Futaba transmitter using the S.BUS2 port. Using the S.BUS2 port an impressive array of telemetry sensors may be utilized. It also includes both standard PWM output ports and S.BUS output ports.

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

*The telemetry function requires the corresponding receiver (R7008SB).

* Telemetry display only T18SZ ID of R7008SB was remembered to be.



●Telemetry sensor (sold separately)

Your aircrafts data can be checked in the transmitter by connecting various telemetry sensors to the S.BUS2 connector of the receiver.

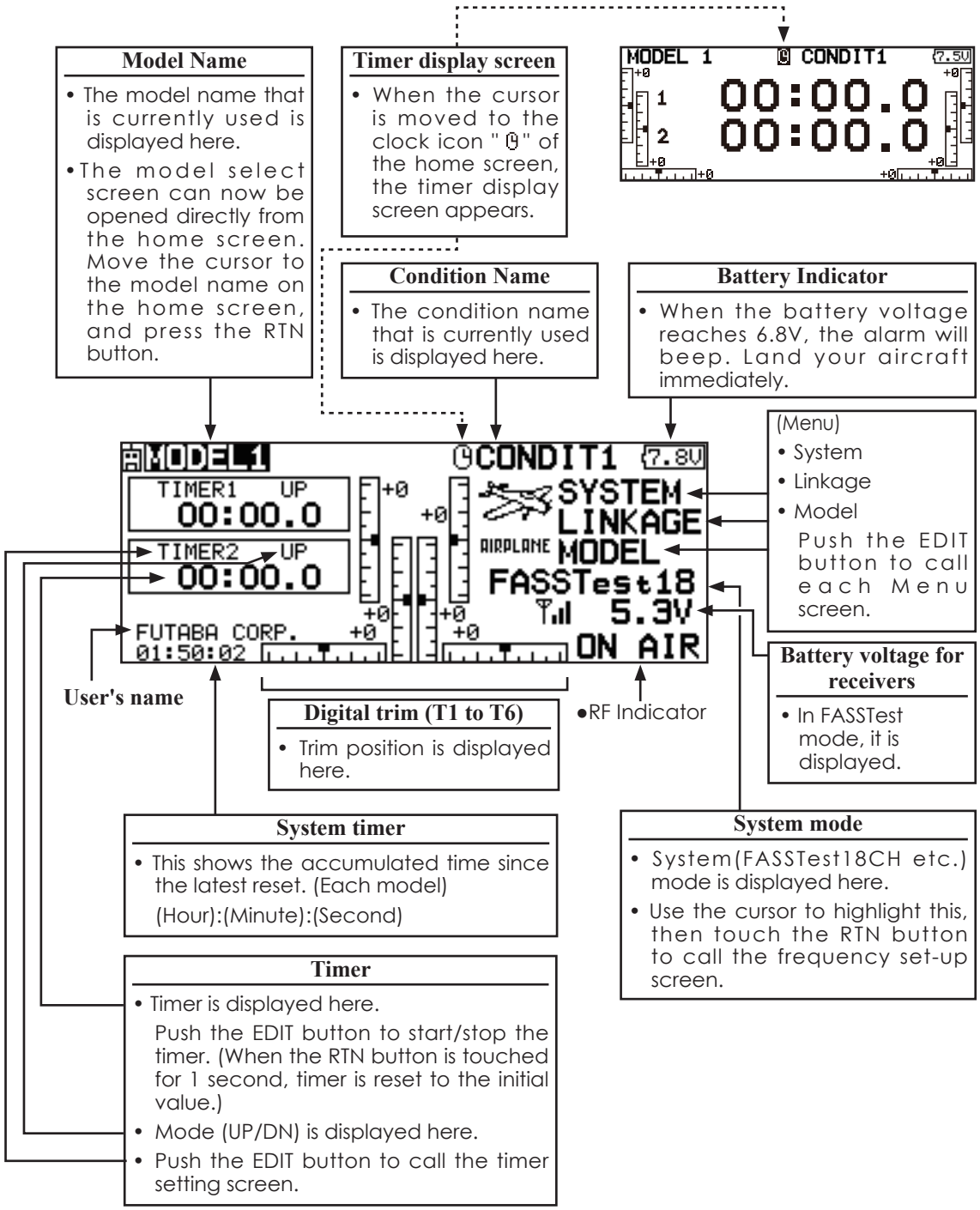
●Slot No.

Servos are classified by channel, but sensors are classified by “slot” . Since the initial slot No. of the T18SZ is preset at each sensor, the sensors can be used as is by connecting them. There are 1~31 slots.

Home screen

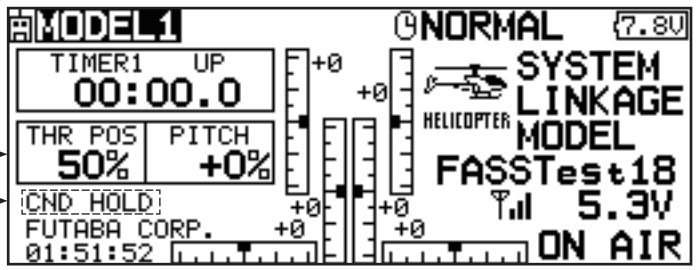
Use the touch sensor to select the following display area to call each setting screen, and push the EDIT button. The setting screen appears.

Airplane/Glider Home Screen



Throttle/Pitch Position Display

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



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

To activate/deactivate Condition Hold:

1.Move the cursor to [CND HOLD].

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

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

⚠WARNING

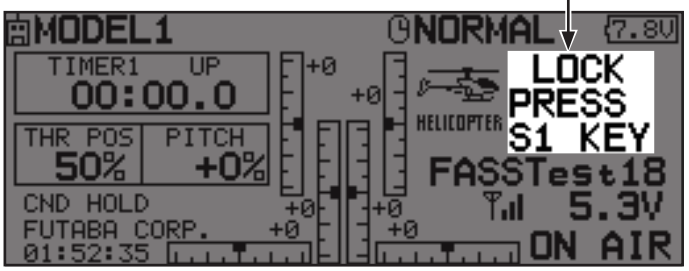
- Be sure to confirm the model name before flying your aircraft.
- Check the battery voltage as often as possible and try to charge the battery earlier. If the battery alarm makes a sound, land your aircraft immediately.

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

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

How to lock

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



How to unlock

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

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

STARTUP LOCK

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

*To temporarily allow access to the T18SZ programming press and hold the S1 bitton for one second. Please note, the Auto Lock function timer will resume immediately once again.

AUTOMATIC LOCK

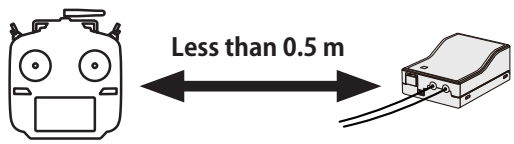
Auto Lock functions automatically when there is no operation from the HOME screen display for a chosen number of seconds.

Link procedure (T18SZ/R7008SB)

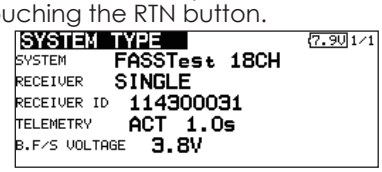
Each transmitter has an individually assigned, unique ID code. In order to start operation, the receiver must be linked with the ID code of the transmitter with which it is being paired. Once the link is made, the ID code is stored in the receiver and no further linking is necessary unless the receiver is to be used with another transmitter. When you purchase additional R7008SB receivers, this procedure is necessary; otherwise the receiver will not work.

Link procedure

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



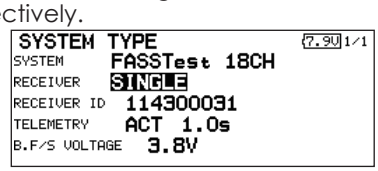
2. Turn on the transmitter.
3. Select [SYSTEM TYPE] at the Linkage menu and access the setup screen shown below by touching the RTN button.



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

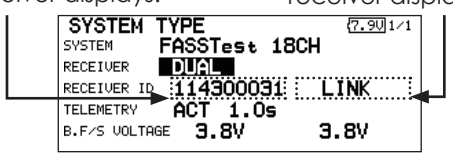
4. When you use two receivers on one model, you must change from [SINGLE] to [DUAL].

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



ID of a primary receiver displays.

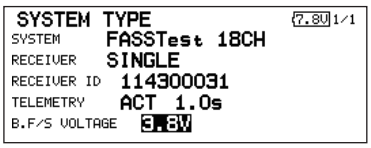
ID of a secondary receiver displays.



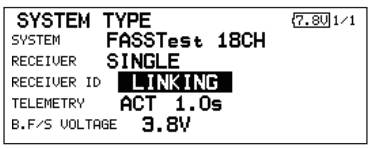
In DUAL, a primary receiver is link previously. Next, a secondary receiver is link.

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

* Only in FASSTest Mode.



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



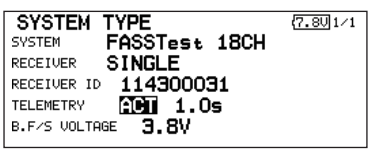
7. When the transmitter starts to chime, power on the receiver. The receiver should link to the transmitter within about 1 second.

In "Link" Mode

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

9. ACT will be chosen if telemetry is used.

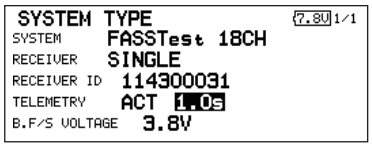
It is INH when not using it.



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

Initial value: 1.0s

Adjustment range: 0.1s~2.0s



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

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

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

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

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

* You cannot link three receivers.

* Link is required when a system type is changed.

* Linking is required whenever a new model is made.

⚠ WARNING

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

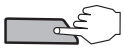
Do not perform the linking procedure with motor's main wire connected or with the engine operating as it may result in serious injury.

Range Testing Your R/C System

It is extremely important to range check your models prior to each flying session. This enables you to ensure that everything is functioning as it should and to obtain maximum enjoyment from your time flying. The T18SZ transmitter incorporates a system that reduces its power output and allows you to perform such a range check.

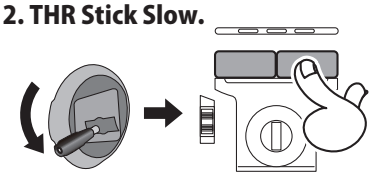
Range check mode

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

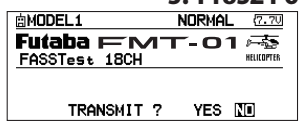


U.menu/Mon

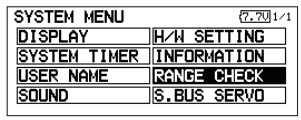
2. THR Stick Slow.



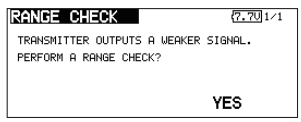
3. T18SZ Power ON.



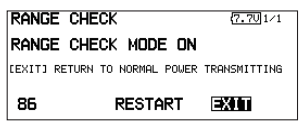
4. Scroll to "NO" and press RTN.



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



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



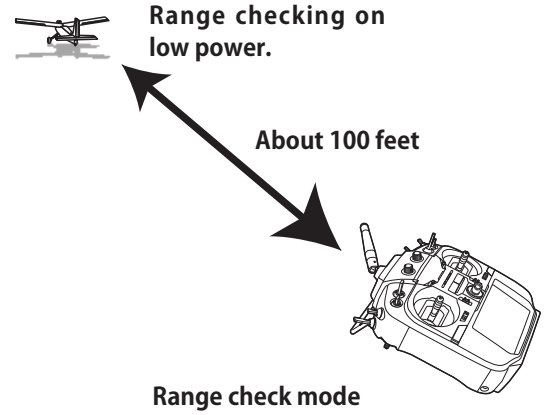
During this mode, the RF power output is reduced so the range test can be performed. In addition, when this mode is activated the right LED on the front of the transmitter starts blinking and the transmitter gives users a warning with a beeping sound every 3 seconds.

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

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

Range check procedure

1. With the "Range check mode" on, walk away from the model while simultaneously operating the controls. Have an assistant stand by the model to confirm that all controls are completely and correctly operational. You should be able to walk approximately 30-50 paces from the model without losing control.
2. If everything operates correctly, return to the model. Set the transmitter in a safe, yet accessible, location so it will be within reach after starting the engine or motor. Be certain the throttle stick is in the low throttle position, then start the engine or motor. Perform another range check with your assistant holding the aircraft with the engine running at various speeds. If the servos jitter or move inadvertently, there may be a problem. We would strongly suggest you do not fly until the source of the difficulty has been determined. Look for loose servo connections or binding pushrods. Also, be certain that the battery has been fully charged.



⚠ WARNING

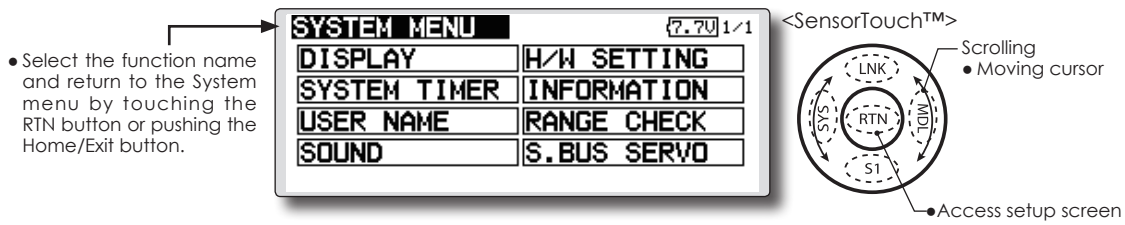
Do not fly in the range check mode.

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

SYSTEM MENU

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

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



System Menu functions table

[DISPLAY]: LCD contrast and back light adjustment.

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

[USER NAME]: User name registration.

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

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

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

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

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

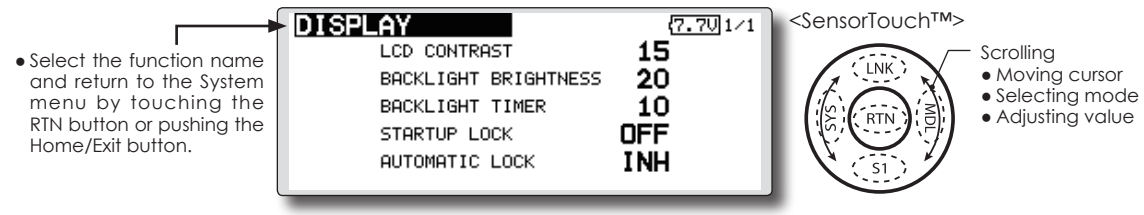
DISPLAY

LCD contrast adjustment and automatic key lock

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

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

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



LCD contrast adjustment

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

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

   Initial value: 15

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

   *Adjust to the contrast while watching the screen display.

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

Backlight brightness adjustment

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

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

   Initial value: 10

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

   *Adjust to the brightness while watching the screen display.

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

Back-light off-timer

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

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

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

   Initial value: 10 sec

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

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

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

Start lock

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

*To temporarily allow access to the T18SZ programming press and hold the S1 button for one second. Please note, the Auto Lock function timer will resume immediately once again.

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

   Setting range: ON or OFF

   Initial value: OFF

Automatic lock

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

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

   Setting range: INH, 0 to 120 (s)

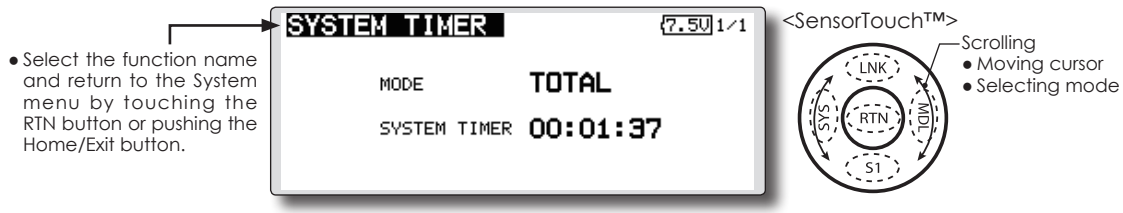
   Initial value: INH

SYSTEM TIMER Resets the accumulated timer.

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

- T18SZ has two type system timers.
  TOTAL timer: Displays the total accumulated time on the transmitter from the last time the timer was reset.
  MODEL timer: Displays the total accumulated time on each model from the last time the timer was reset.
- System timer displayed on the home screen can be selected.

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



Timer selection

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

Timer reset

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

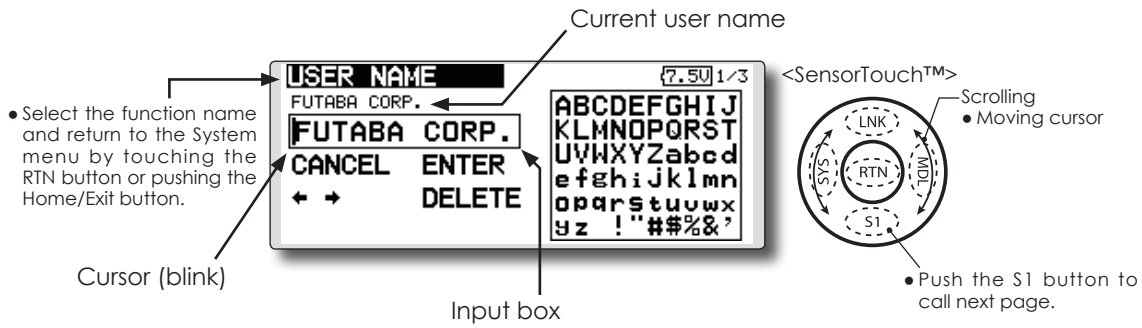
USER NAME

User name registration

This function registers the T18SZ user name.

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

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



User name registration

1. Change the user name as described below:

   [Moving cursor in input box]

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

   [Deleting a character]

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

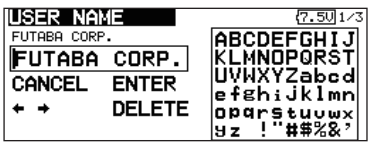
   [Adding a character]

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

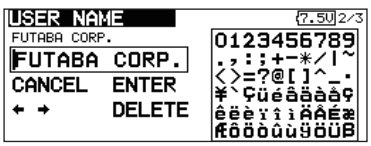
   *A name of up to 12 characters long can be entered as the user name. (A space is also counted as 1 character.)

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

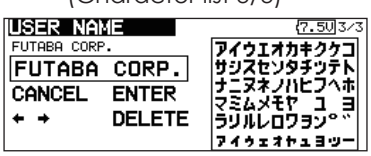
(Character list 1/3)



(Character list 2/3)



(Character list 3/3)



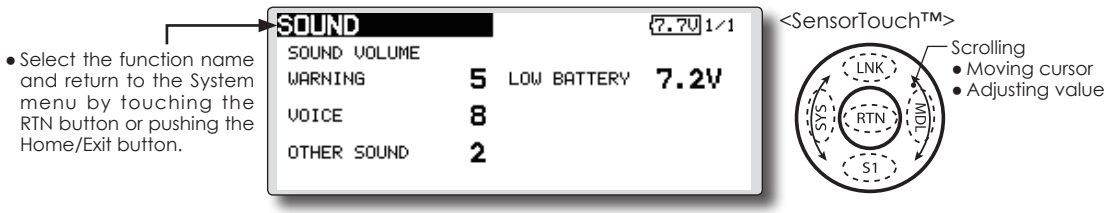
SOUND

Turns off the buzzer.

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

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

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



● LOW BATTERY : 6.8V~7.6V

Sound volume operation

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

   *The display blinks.

3.Touch the RTN button.

Low battery voltage operation

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

   *The display blinks.

3.Touch the RTN button.