S.BUS Wiring example

Receiver

S.BUS
Port
(8/SB)

Battery

Switch

GY520
Extension
cord

Terminal box

HUB   HUB   HUB

S.BUS Servo

HUB
(Another power supply)

HUB   HUB

Battery

S.BUS Servo

It operates in another power
supply for the receiver.

HUB
Orange

Three connectors can be
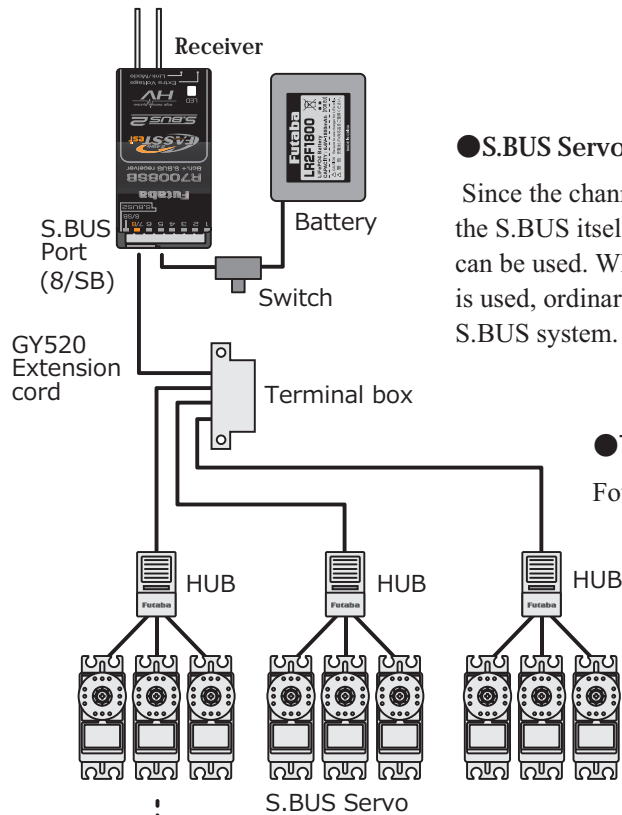inserted.

● **S.BUS Servo**

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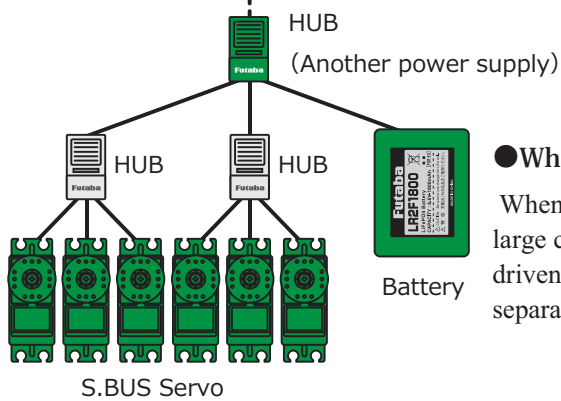is used, ordinary servos can be used with the
S.BUS system.

● **Terminal box**

Four connectors can be inserted

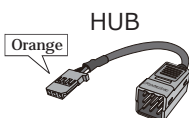⚠ **Warning**

Power supply

❗ Please use a battery with capacity of
enough to the number and kind of servo.
A dry battery cannot be used.

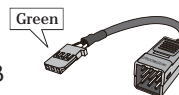● **When separate power supply used**

When many more servos are used and when
large current servos are used the servos are
driven by a separate power supply by using a
separate power supply 3-way hub.

HUB
Green

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

S.BUS2 System

S. BUS2, extend the conventional S.BUS system and support bidirectional communication systems, such as a telemetry sensor.

S.BUS2 TABLE

Receiver connector	S.BUS Servo S.BUS Gyro	telemetry sensor
S.BUS	○	×
S.BUS2	×（※)	○

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

S.BUS device setting

S.BUS servos or a telemetry sensor can be connected to the T18MZ and channel setting (slot setting) and other settings can be memorized at the S.BUS device.

T18MZ

HUB or Y-adaptor

S.BUS device
(S.BUS Servo)
(telemetry sensor)

Receivers
Battery
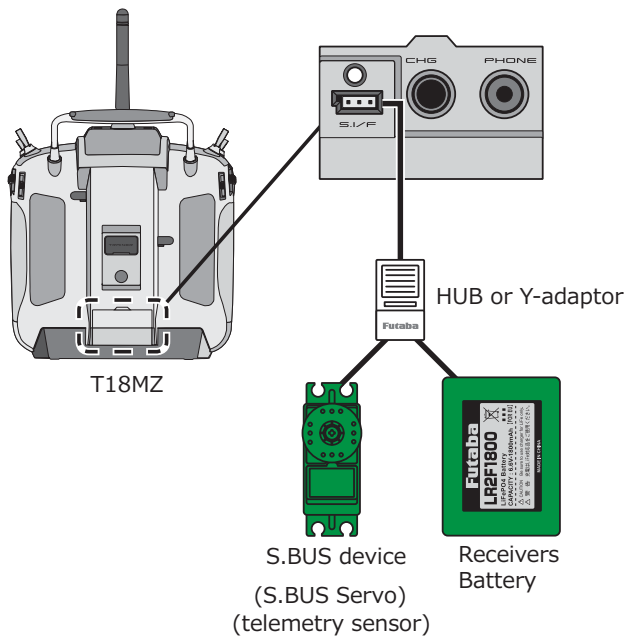
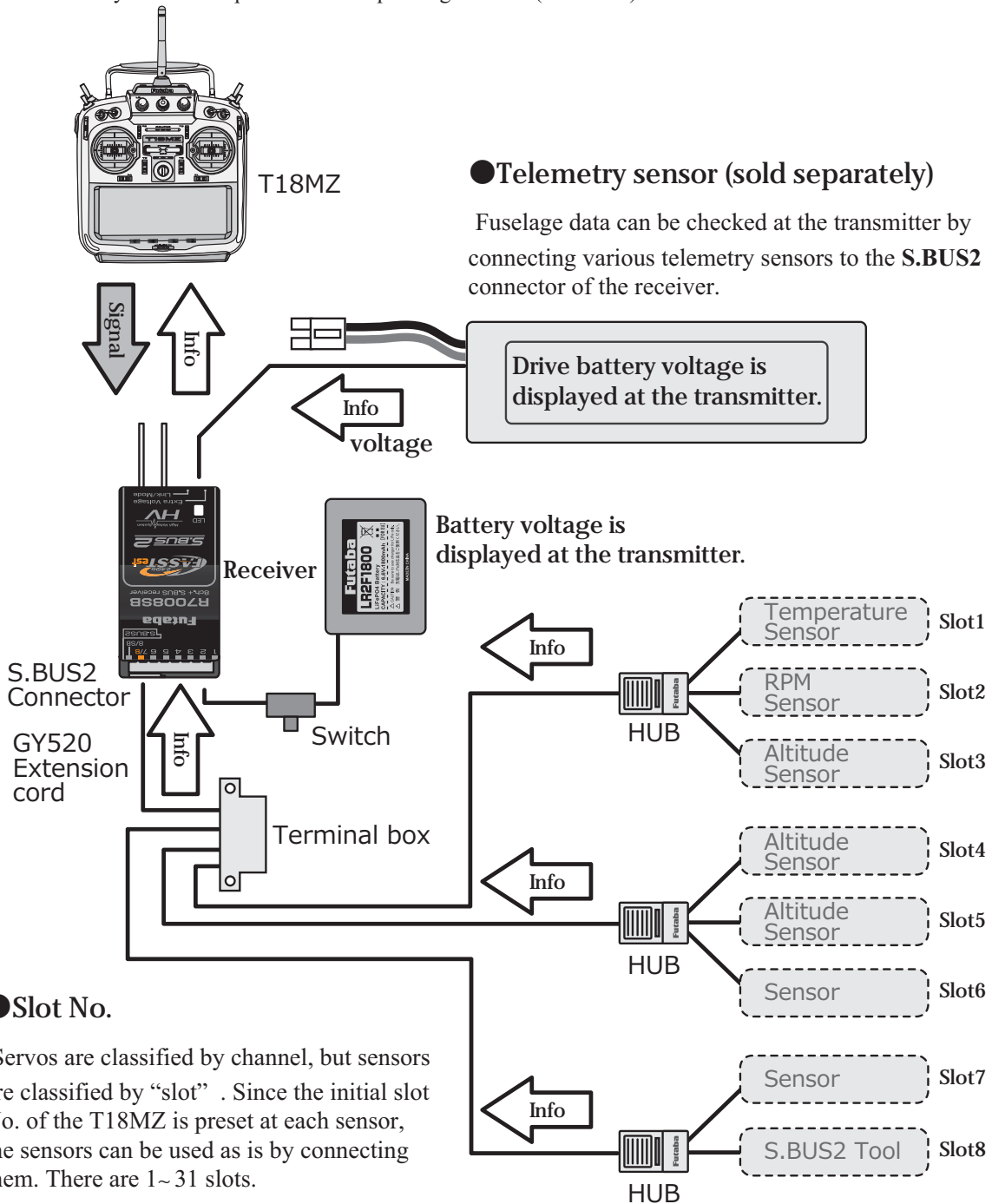1. Connect the S.BUS device and battery you want to set with a 3-way hub or 3-way cord as shown in the figure.
2. Turn on the transmitter power.
3. Call the setup screen.

   Servo: System Menu → S.BUS Servo

   Sensor: Linkage Menu → Sensor
4. Perform setting in accordance with each screen.
5. This memorizes the channel (slot No.) at each S.BUS device so it can be used by connecting it to the S.BUS connector of the receiver.

Telemetry System

This set is compatible with a telemetry system. Flight status can be displayed at the transmitter by mounting various sensor units to the fuselage.

*The telemetry function is applicable only in the FASSTest 18CH mode. (12CH mode serves as a display of only Receiver battety voltage and Extra battety voltage.)

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

T18MZ

Signal

Info

●Telemetry sensor (sold separately)

Fuselage data can be checked at the transmitter by connecting various telemetry sensors to the **S.BUS2** connector of the receiver.

Info

voltage

Drive battery voltage is displayed at the transmitter.

Receiver

R7008SB

S.BUS2 Connector

Info

GY520 Extension cord

Switch

Futaba LR2F1800

Battery voltage is displayed at the transmitter.

Info

HUB

Temperature Sensor	Slot1
RPM Sensor	Slot2
Altitude Sensor	Slot3

Terminal box

Info

HUB

Altitude Sensor	Slot4
Altitude Sensor	Slot5
Sensor	Slot6

●Slot No.

Servos are classified by channel, but sensors are classified by "slot". Since the initial slot No. of the T18MZ is preset at each sensor, the sensors can be used as is by connecting them. There are 1~31 slots.

Info

HUB

| Sensor | Slot7 |
| S.BUS2 Tool | Slot8 |

BASIC OPERATION

Battery Charging

Before charging batteries, read the "Cautions for handling battery and battery charger" in the section "For your safety".

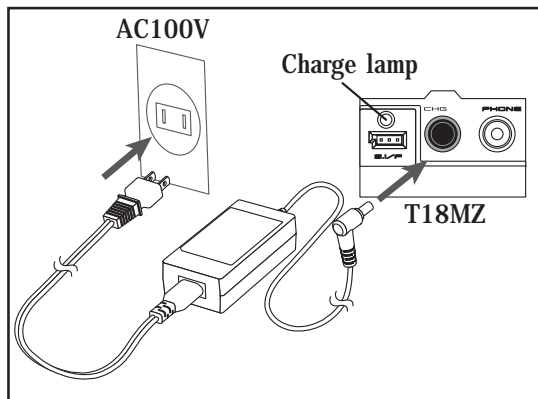### Charging the transmitter LT2F3500XH lithium-polymer battery

⚠ Danger

🚫 The LT2F3500XH lithium-polymer battery is for the T18Mz transmitter only. Do not use it with other devices.

❗ Always use the accessory AC adapter to charge the battery.

The charging circuit is built into the T18MZ.

[Method of charging battery]

1. Turn off the transmitter power.
2. Connect the power plug of the AC adapter to an AC100V outlet.

   *Don't connect AC plug to T18MZ without connecting with AC100V.

3. Open the back lid of the transmitter and insert the plug of the AC adapter into the CHG port.
4. The charging monitor of the transmitter lights red.

   *The LCD screen will come on for several seconds and then go off. It may take several tens of seconds for charging to start after the AC adapter is connected.

5. When the battery is fully charged the transmitter monitor will light green. A charge plug is pulled out and an AC adaptor is removed.

   *After using the AC adapter always disconnect the power cord from the AC outlet.

   *The charging time when charging a completely discharged battery pack is approximately 2 hours 30 seconds. However, the actual charging time may be different from the above depending on the ambient temperature and state of the battery pack.
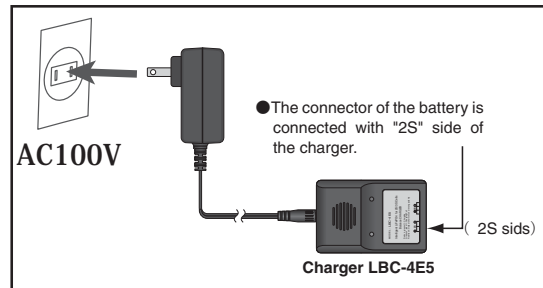
   *If the battery is improperly installed or is faulty, the transmitter monitor will not light and the battery will not be charged.

How to charge the Li-Fe battery FR2F1800(Option) for the receiver

Use the battery charger that is included in the set.

[Method of charging battery]

1. Connect the power cable of the charger to the wall socket (AC outlet).
2. Connect the connector to the Li-Fe battery.

   *Confirm that the charging indicator, LED lamp, Red lights.

3. Remove the battery after LED lamp Green lighting .

   *After completing the charge remove the battery from the charger and remove the charger from the wall socket.

⚠ Warning

🚫 The transmitter battery cannot be charged with the receiver charger. Conversely the receiver battery cannot be charged with the transmitter charger.

How to turn ON/OFF the power of the transmitter

Windows® CE is installed as a built-in operating system in the T18MZ transmitter. Compared to the conventional system, the T18MZ takes extra time for internal processing when it is turned on/off.

The right switch is pushed.
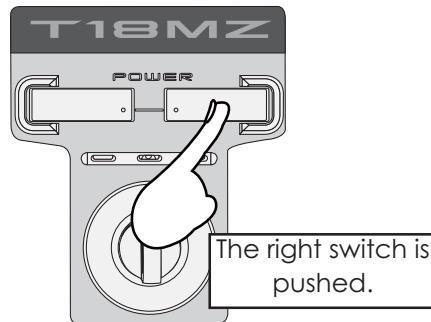
When turning on the power of the transmitter

1. Make a throttle stick slow.
2. Turn on the power switch of the transmitter.

   *After initialization of the transmitter is over, LED monitor turns on Purple.

   *If a throttle stick turns on by the high speed side (1/3 or more), warning will become. If it returns slowly, warning will stop and will become a "Transmit ?" screen.

   *If you push the button "NO", then the transmitter will not emit radio waves.

   *If you push the button "Yes", then the transmitter will emit radio waves.

Start-up time; The time required for initializing the internal circuit of the transmitter varies between the previous time you turned off the transmitter and the time you will turned on the power. There are two "start up" modes for your transmitter, see below:

Cold start;

If you turn on the transmitter more than four hours after you last turned it off, the mode is "Cold start". "Cold start" is normal for the first initial power up of the day. It will take about 30 seconds to be ready for use, as it takes time to initialize the internal circuit of the transmitter.

Hot start;

If you turn on the transmitter less than four hours after you last turned it off, the mode is "Hot start". Since initialization has been partly completed, the transmitter will be ready to use in several seconds.
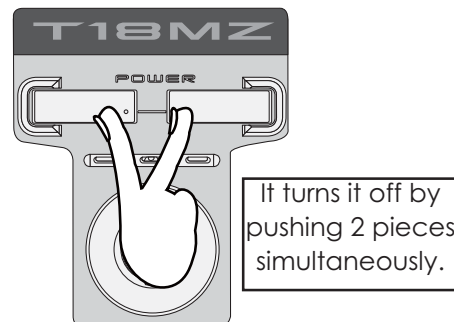
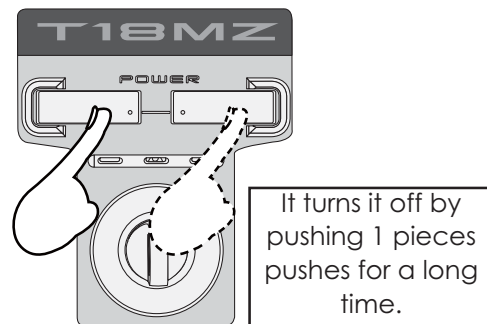"Hot start" takes place usually at a second flight or later flight in the day.

⚠ Warning

🚫 Once you turn on the power, never shut off the power switch until the power becomes stable (or until the first screen shows up). If you turn off the power switch while the transmitter is going through the initialization process, the data could be damaged. Note: The start-up time may be a little bit slower when the SD card is installed compared to when the card is not.

How to stop the transmitter

Turn off the power switch of the transmitter. The internal circuit of the transmitter starts the shut down process including saving the set-up data. The LED will blink yellow while the transmitter is in the shutdown process.

It turns it off by pushing 2 pieces simultaneously.

or

It turns it off by pushing 1 pieces pushes for a long time.

🚫 Once you turn off the power, never operate the power switch until the power shutdown process is fully completed. If you turn on the power switch again while the transmitter is still in the process of power shutdown, the data could be damaged.

As the internal circuit of the transmitter stays on the standby mode for 4 hours after turning off the power, some part of the circuit is consuming current. When you turn on the power during this period, the power starts in "Hot mode". But if more than four hours pass after shutting down the power, the power supply will completely shut down the internal circuit. When you turn on the power after this point, the power starts in "Cold start mode".

How to reset software

If the screen freezes for some reason and you cannot edit, the transmitter power supply is not shut off even if you turn OFF the power switch. You will need to use the remove the battery and reinsert it again. In this case, the power restarts in "Cold mode". Even though the screen freezes, all the other functions for radio control operation remain operative.

Registration of the user's name

T18MZ transmitter can register user's name.

How to register user's name

1. Turn on the power of the transmitter.
2. Push the area of the user's name shown on the home screen or the "user's name" in the linkage menu. Then the User's Name Set screen will pop up.
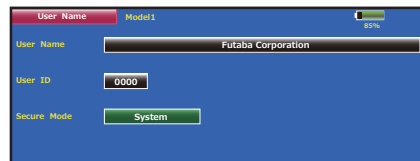
3. Push the user's name. Then the keyboard will pop up. You can use up to 32 characters as a user's name. Use the keyboard on the screen to enter user's name.

space key
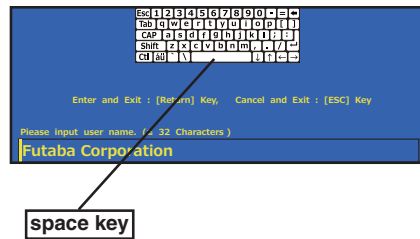
4. Push "Return" key to return to the previous screen after entering the user's name.

(If you want to protect the user's name)

If you don't want anybody else to change your user's name, set your ID in the following way.

  *Please be aware that you will not able to change user's name if you forget your password.

1. Make sure that the security mode is "User's name", and then push the User ID button.
2. Enter your password, using keyboard on the screen.

   You will need to enter your password for changing the user's name from the next time you turn on the power of the transmitter.

  *Even if you enter the same character, your password will be identified differently depending on whether you are using "Transform" mode or "Direct" mode for inputting.

Home screen

Here is the home screen and its descriptions. Use your finger or included stylus pen to operate the touch screen.

Timer

If one of two timer displays is pushed, it can move to the timer screen of a Linkage menu.

Digital trim (T1 to T6, CD)

Push this area to call the Dial Monitor screen.

Condition

The condition name that is currently used is displayed here.

• Push this area to call the Condition Select screen.

User's name

Push this area to call the User's Name Setting screen.

Model Name

The model name that is currently used is displayed here.

• Push this area to call the Model Select screen.

Battery Indicator

• When the remaining battery reaches 30%, the alarm will beep. Land your aircraft immediately.

(Menu Button)
●System
●Linkage

(Menu Button)
●Model

RF Indicator

"ON AIR"
or
"RF OFF"

Direct buttons

Select and push one of the direct buttons to call its setting screen.

voltage of Rx battery

Information from the receiver is displayed with an bidirectional system.

Clock

This shows the today's date and the current time.

• Push this area for the Date & Time Setting screen.

System timer/Reset

• This shows the accumulated time up to now since the latest reset.
(Hour):(Minute):(Second)
Push this area to reset the timer.

⚠ **Warning**

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

❗ Check the remaining battery as often as possible and try to charge the battery earlier. If the battery alarm makes a sound and its warning symbol is displayed, land your aircraft immediately.

●Although you may notice the flickering of the numbers on the LCD screen, this is not an abnormal, because the LCD screen is frequently refreshing those even if those numbers are unchanged.

●You can adjust the LCD contrast and the backlight brightness, and can change the duration time to turn off the backlight and color of the background by the screen setting in the system menu.

System Selection

• FASSTest 18CH
• FASSTest 12CH
• FASST MULT
• FASST 7CH
• S-FHSS 8CH

User Menu

   T18MZ has each menu of a System / Linkage / Model. User Menu can be created the item often used by itself for others can be chosen. Its own favorite original menu can be displayed if Rotary Key is pushed.

How to make a User Menu

1. From a home screen, a Rotary key is pressed long time.
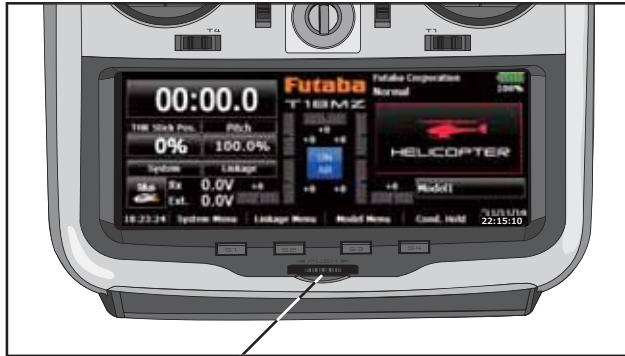
2. The place to register is pushed.

● Return to home screen

● Return to *User Menu*

3. Since all the items are displayed on all the 4 pages, an item to display is chosen.

● Return to home screen

4. The User Menu of all the 32 items can be created. From a home screen, a key is pressed for a long time, is called, and is used.

● It deletes from a user menu.

   It is not deleted from the menu of a basis.

*The item called from the user menu and the item called from the usual menu are the same. Change is reflected even if called from which.
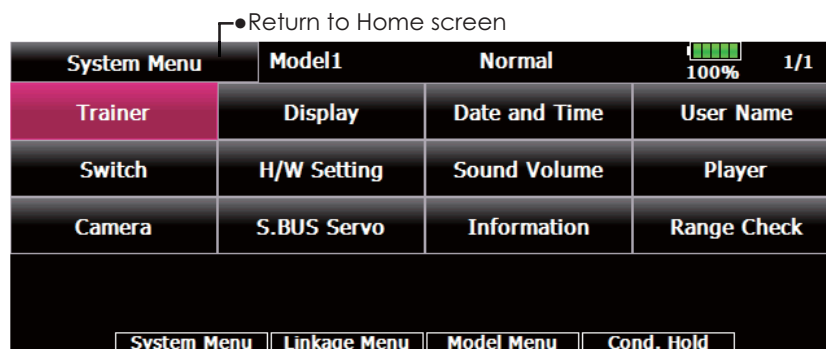
SYSTEM MENU

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

● When the System Menu button is touched, the menu shown below is called. Call the setup screen by pressing the function you want to set up.

●Return to Home screen

System Menu	Model1	Normal	100%	1/1
Trainer	Display	Date and Time	User Name	
Switch	H/W Setting	Sound Volume	Player	
Camera	S.BUS Servo	Information	Range Check	

| System Menu | Linkage Menu | Model Menu | Cond. Hold |

System Menu functions table

[Trainer]: Starts and sets the trainer system.

[Display]: Display adjustment and auto power off setting.

[Date & Time]: Sets the date and time (system clock setting) and resets the timer.

[User Name]: User name registration and ID Pin number.

[Switch]: Toggle switch type setting (Set when the switch is replaced.)

[H/W Setting]: Hardware reverse / Stick setting / Calibration.

[Sund Volume]: This volume is adjusted. Key Operation/Error Warning/Trim&Center Click/Timer Event.

[Player]: Reproduction of music file.

[Camera]: Function that takes pictures with a camera.

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

[Information]: Displays the program version, SD card information, and product ID.

[Range Check]: The output of the transmitter is lowered, and the Range checked.

Trainer — Trainer system starting and setting

T18MZ trainer system makes it possible for the instruction to chose which channels and operation modes are to be used at the instructor's transmitter. Because the switch and rate of each channel can be set, the training method can also be matched to the student's skill level. Two transmitters must be connected by an optional Trainer Cord, and the Instructors' 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. In the T18MZ (including FX-40, T12Z and T12FG) transmitter and a conventional transmitter, if the channel order is different. It is necessary to match the channel order in the Linkage Menu when connecting it with other than a T18MZ.

2. Be sure that all channels work correctly in both transmitters before flying.

Corresponding types of transmitters and trainer mode settings:

Types of transmitters		Instructor's transmitter settings		Student's transmitter settings			Trainer Cords
		Freq. setting	Trainer setting	Freq. setting	Trainer setting		
Instructor	Student	Mod. mode	CH mode	Mod. mode	CH mode	Mod. mode	
T18MZ	T18MZ	Arbitrary	16CH	Arbitrary	16CH	-	
T18MZ	T14MZ, FX-40, T12Z, T12FG, FX-30	Arbitrary	12CH	PCM-G3 2.4G	12CH	PPM	12FG/9C Trainer Cords
T18MZ	T8FG, FX-20	Arbitrary	12CH	FASST-MLT2	-	-	
			8CH	FASST-MULT	-	-	
T18MZ	T10C, T9C, T7C,T6EX, T4EX	Arbitrary	8CH	PPM	-	-	12FG Trainer Cords
T18MZ	T10CG,T7CG	Arbitrary	8CH	Arbitrary	-	-	12FG Trainer Cords
T18MZ	T8J,T6J	Arbitrary	8CH	Arbitrary	-	-	
T14MZ, FX-40, T12Z, T12FG, FX-30	T18MZ	Arbitrary	12CH	Arbitrary	12CH	-	12FG/9C Trainer Cords
T8FG, FX-20	T18MZ	Arbitrary	12CH	Arbitrary	12CH	-	
T10C, T10CG, T9C, T7C, T7CG,T8J	T18MZ	Arbitrary	-	Arbitrary	8CH	-	

*It cannot be used by the set of those other than a diagram.(As of November, 2011)

- Touch the [Trainer] button at the System Menu to call the setup screen. The setup screen for the student mode is shown below.
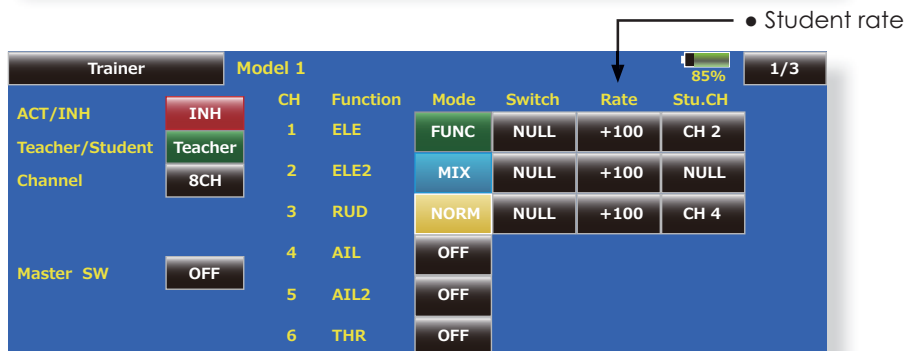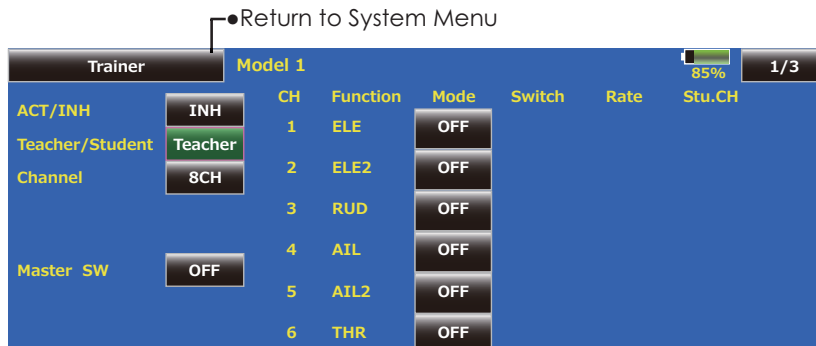
●Return to System Menu
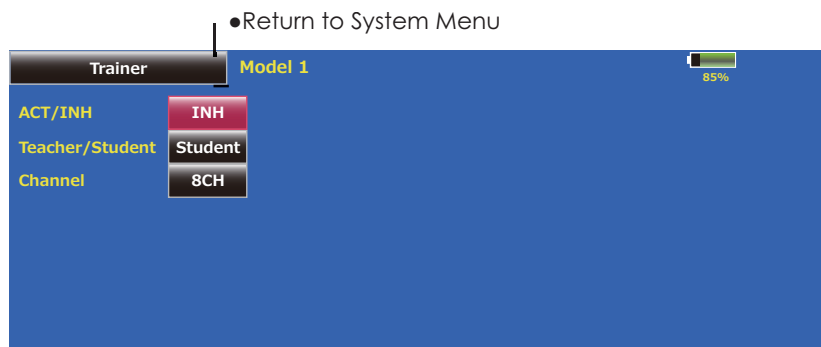
Student mode

1. Set "Teacher/ Student" button to "Student".
2. Change "ACT/INH" button from "INH" to "OFF" or "ON".
3. Set the CH mode to "16CH/12CH" or "8CH", see the above chart for the trainer mode settings.

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

●The setup screen for the instructor mode is shown below.

●Return to System Menu

Trainer		Model 1						85%	1/3
			CH	Function	Mode	Switch	Rate	Stu.CH	
ACT/INH	INH		1	ELE	OFF				
Teacher/Student	Teacher		2	ELE2	OFF				
Channel	8CH		3	RUD	OFF				
			4	AIL	OFF				
Master SW	OFF		5	AIL2	OFF				
			6	THR	OFF				

● Student rate

Trainer		Model 1						85%	1/3
			CH	Function	Mode	Switch	Rate	Stu.CH	
ACT/INH	INH		1	ELE	FUNC	NULL	+100	CH 2	
Teacher/Student	Teacher		2	ELE2	MIX	NULL	+100	NULL	
Channel	8CH		3	RUD	NORM	NULL	+100	CH 4	
			4	AIL	OFF				
Master SW	OFF		5	AIL2	OFF				
			6	THR	OFF				

Teacher mode

1. Set "Teacher/Student" button to "Teacher".
2. Change "ACT/INH" button from "INH" to "OFF" or "ON".
3. Set the CH mode to "16CH/12CH" or "8CH", see the above-mentioned chart for the trainer mode settings.
4. Call up the Switch Setting screen by touching "Switch". Then set the desired switch and on/off direction.
5. Select the switch mode. If you select "NORM", the trainer function will be turned on or off by a switch position. If you select "ALT", ON and OFF of the trainer function switches alternatively every time the switch is turned on. This means the student side can be operated without holding the switch lever.
6. The Instructor side selects the channel for control. Three operating modes are available.

"NORM" mode (Normal mode);

Student side has no control of mixes and settings in Teachers radio..

"MIX" mode;

Student has full advantage of all setting in Teachers radio, plus Teacher has the option to change any setting while Student has control.

"FUNC" mode (Function mode);

Student has control of mixes and rate settings of Teachers radio.

7. Set the switches and rates of each channel.

Switch to the details setup screen by touching the page switching button [1/2] at the top right-hand corner of the screen. Student operation for each channel can be set here.

[Switch]: The switches that can be operated by the student can be set. SW-A~SWH, SS1, and SS3 can be selected.

[Rate]: Servo travel versus student operation can be set. (This can only be used in the FUNC/MIX/NORM modes.)
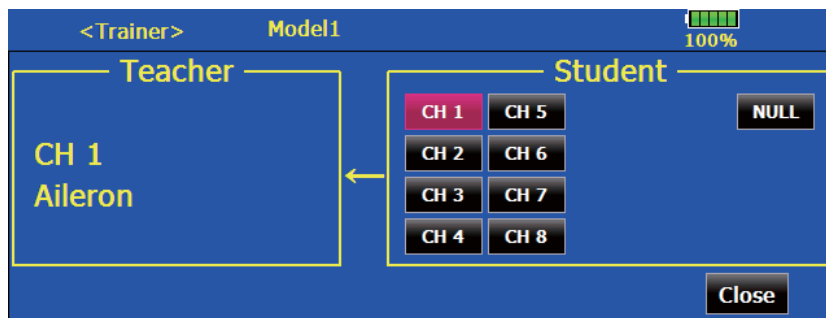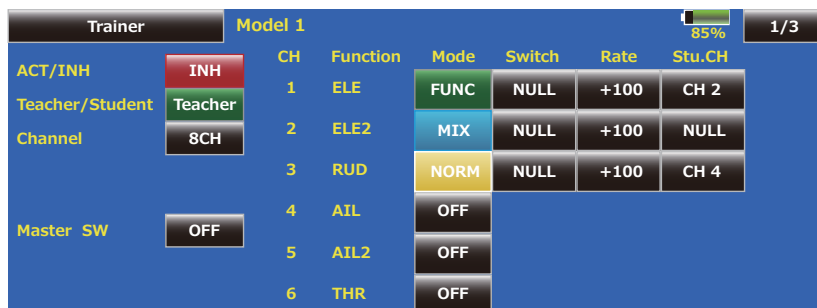
Note: In "teacher mode", the trainer function won't be turned on unless the Instructors' transmitter receives signals from the student's transmitter. Be sure to confirm this after connecting your trainer cable.

Trainer student channel setting function

Which channel of the signal from the student transmitter is fetched as the student function input signal when "FUNC""MIX""NORM" is set as the trainer function student's transmitter mode can be set. This makes trainer connection easy even when the instruction side and student side channel assignment is different.

<Example of student CH setting>

Student side			Instructor side	Student CH
CH1	Aileron		Elevator	CH2
CH2	Elevator		Rudder	CH4
CH3	Throttle		Throttle	CH3
CH4	Rudder		Aileron	CH1
CH5	Gear		Aileron2	--
CH6	Flap		Flap	CH6
CH7	Aileron2		Gear	CH5
CH8	Aux5		Aux5	CH8
CH9	Aux4		Aux4	CH9
CH10	Aux3		Aux3	CH10
CH11	Aux2		Aux2	CH11
CH12	Aux1		Aux1	CH12

Trainer	Model 1			85%	1/3

		CH	Function	Mode	Switch	Rate	Stu.CH
ACT/INH	INH	1	ELE	FUNC	NULL	+100	CH 2
Teacher/Student	Teacher	2	ELE2	MIX	NULL	+100	NULL
Channel	8CH	3	RUD	NORM	NULL	+100	CH 4
		4	AIL	OFF			
Master SW	OFF	5	AIL2	OFF			
		6	THR	OFF			

<Trainer> Model1 — 100%

Teacher ← **Student**

CH 1 Aileron

| CH 1 | CH 5 | NULL |
CH 2	CH 6	
CH 3	CH 7	
CH 4	CH 8	

Close

Student channel setting

1. Open the System Menu trainer screen.
2. Select [Teacher].
3. When [FUNC][MIX][NORM] is selected as the mode of the channel to be set,the [Student CH]setting button is displayed. (When [OFF],[Student CH] setting is not performed.)
4. When the [Student CH] button is pressed, the Channel Select screen is displayed. Select the channel.

Display

LCD screen adjustment and auto power off setting

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

- Auto power off time setting
- Backlighting brightness adjustment
- Background color change
- Touch panel screen position correction

- Touch the [Display] button in the System Menu to call the setup screen shown below.

●Return to System Menu
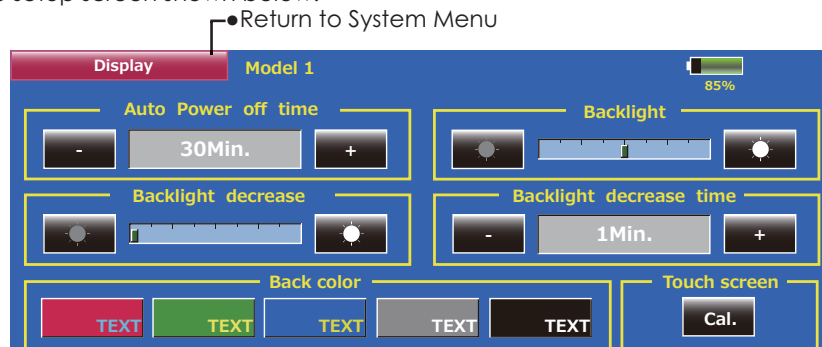
Auto power off time setting

1. Adjust the auto power off time with the left and right side buttons.

   *When the time the transmitter is inactive exceeds the set time, the power is turned off automatically. This time can be set up to 1 hour in 10 minutes increments. The auto power off function can also be deactivated.

   *An audible alarm is sounded and an alarm screen is displayed from 3 minutes before auto power off and the time remaining until auto power off is displayed. When a stick or switch is operated while the alarm screen is being displayed, the alarm is cleared and the display is returned to the home screen.

Backlighting brightness adjustment

1. Adjust the backlighting brightness with the left and right side buttons.

   *When the right side button is touched, the backlighting becomes brighter. When the left side button is touched, the backlighting becomes darker.

Backlight decrease brightness adjustment

1. Adjust the backlight decrease brightness with the left and right side buttons.

   *When the right side button is touched, the backlighting becomes brighter. When the left side button is touched, the backlighting becomes darker.

   *It cannot be made brighter than Backlighting brightness adjustment.

Backlight decrease time

You can set a time period to decrease the LCD backlight. This function counts the period that the touch panel has been not operated. This time can be set by ten-second steps. You can also turn off the backlight decrease" if you like.

   *The backlight consumes a large amount of power. We recommend you to turn off the backlight by setting the backlight power-off time to about one minute.

   *Since the backlighting power consumption is extremely high, we recommend that the backlighting off time be made short.

Background color

1. Touch the button of the color you want to change.

   *There are five background colors.

Touch screen calibration

This function adjusts the location of touch panel. Touch "Calibration" button and then press "Yes", the calibration screen will pop up. Touch the center of the cross hair cursor on the screen with the stylus pen. As soon as the system recognizes the position, the cursor will move on to the next position. Repeat this procedure as long as the cursor moves to next position. You will do this five times. Calibration will be carried out based on the five positions. Disappearance of the cross hair cursor means the calibration has been completed. Touch any point on the screen to return to the previous screen.

   *In ordinary operation, this calibration is not necessary. If you notice the touch panel is not functioning correctly after long use, we recommend you to carry out this calibration.
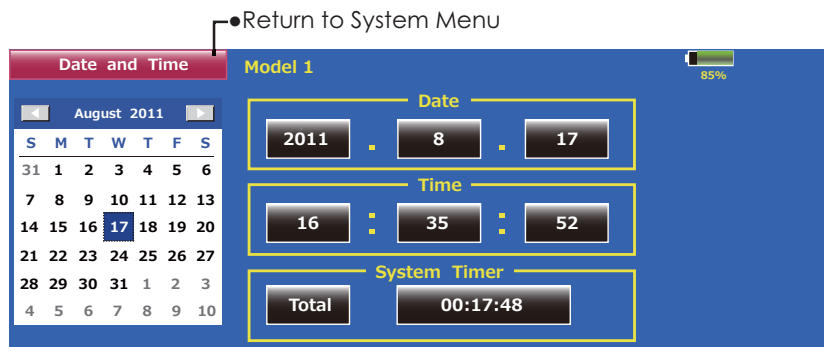
Date and Time

Date and time setting (system clock setting) and integrating timer resetting

This function adjusts the system clock of the T18MZ transmitter. Perform this setting when you purchase the set and when adjustment is necessary.

The integrating timer can also be reset.

*The integrating timer is displayed on the Home screen.

● Touch the [Date and Time] button in the System Menu to call the setup screen shown below.

●Return to System Menu

| Date and Time | Model 1 | 85% |

August 2011	**Date**
S M T W T F S	2011 . 8 . 17
31 1 2 3 4 5 6	
7 8 9 10 11 12 13	**Time**
14 15 16 17 18 19 20	16 : 35 : 52
21 22 23 24 25 26 27	
28 29 30 31 1 2 3	**System Timer**
4 5 6 7 8 9 10	Total 00:17:48

Date setting

1. Touch the "Year", "Month", or "Day" button and set the date by touching the [+] or [-] button.

   *The date can also be set by pressing the date on the calendar shown at the left.

Time setting

1. Touch the "Hour" or "Minute" button, and set the time by touching the [+] or [-] button.

2. When the "Second" button is touched, the timer is set to "00" seconds.

Integrating timer reset

The integrating timer shows the total time that has elapsed since the last resetting.

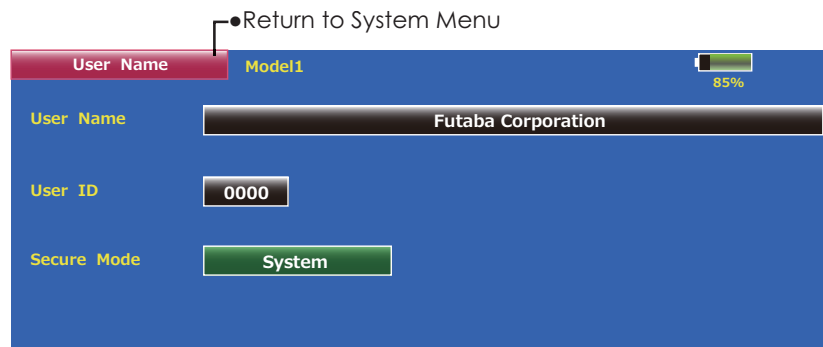1. When the [System Timer] button is touched, the timer is reset.

User Name

User name registration and PIN setting

This function registers the T18MZ user name.

A PIN can also be set to protect the set data or user name.

*Set the PIN carefully. When a system PIN is set, if you forget the PIN, none of the settings can be changed. In this case, the system must be reset by the Futaba Service Center.

● Touch the [User Name] button at the System Menu to call the setup screen shown below.

●Return to System Menu

User Name	Model1	85%
User Name	Futaba Corporation	
User ID	0000	
Secure Mode	System	

User name registration

1. When the User Name box is touched, a keyboard appears on the screen.

2. Enter the user name from this keyboard.

   *A user name of up to 32 characters can be entered.

   *The set user name is displayed on the Home screen.

   (For a detailed description of the input method, see [User Name Registration/Character Input Method] in the Basic Operation section.)

User name or set data protection

1. Touch the Security Mode button and select the mode. The mode is switched each time the button is touched.

   *User Name: Select when you want to protect the user name only.

   *System: Select when you want to protect all the set data.

2. When the user ID button is touched, a PIN input screen appears. Input a PIN of up to 4 digits.

3. When the "Return" key is touched , the display returns to the preceding screen.

4. When the transmitter power is turned off, the set security mode becomes active.

   *When a PIN is set at the user name, it must be entered the next time the User Name screen is opened.

   When a System PIN is set, a button displaying a key icon appears on the Home screen.

   When you want to change the setting, touch this button and enter the PIN.
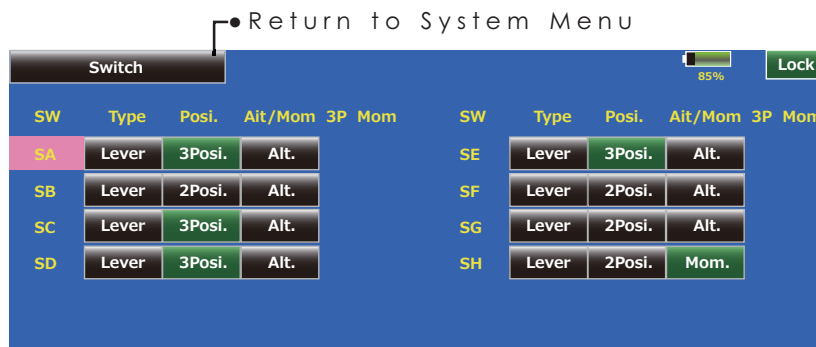
If you want to nullify your current password, set the password to "0000" (default value).

Switch Toggle switch type setting (Setting when the switch was replaced.)

If you modify the location of the switches on the right and left (top) of the transmitter, you should be sure to re-assign functions to the switches for proper operation.

A "Lock" is included to prevent settings from being modified by mistake. When you need to change settings, unlock this by pressing "Lock" it will then read "Unlock" and you can make changes as required.

● Touch the [Switch] button at the System Menu to call the setup screen shown below.

●Return to System Menu

SW	Type	Posi.	Ait/Mom	3P Mom	SW	Type	Posi.	Ait/Mom	3P Mom
SA	Lever	3Posi.	Alt.		SE	Lever	3Posi.	Alt.	
SB	Lever	2Posi.	Alt.		SF	Lever	2Posi.	Alt.	
SC	Lever	3Posi.	Alt.		SG	Lever	2Posi.	Alt.	
SD	Lever	3Posi.	Alt.		SH	Lever	2Posi.	Mom.	

Switch Lock 85%

Switch selection

1. Select the switch type by touching the [type] button corresponding to the switch to be replaced.
   [Lever]: Toggle switch
   [Button]: Pushbutton
   [Dial]: Knob
●Setting for toggle switch is shown above.

2/3 position selection

1. Touch the "Posi." button corresponding to the switch and select the position type.
   [2 Posi]: 2 position
   [3 Posi]: 3 position

[Alt/Mom] mode selection

1. Select the operation mode by touching the [Alt/Mom] button corresponding to the switch.
   [Alt.]: Alternate type
   [Mom.]: Self-return type
● Selection of the [Mom.] mode with a 3-position type switch is shown above.

"3P Mom" mode selection

1. Select the operation mode by touching the "3P Mom" button corresponding to the switch.
   [Single]: One-side self-return type
   [Dual]: Both directions self-return type

H/W Setting

Stick, switch, trim lever, and knob operation direction reversal (Hardware reverse)/Stick response and histerisis adjustment (Stick Setting)/Calibration
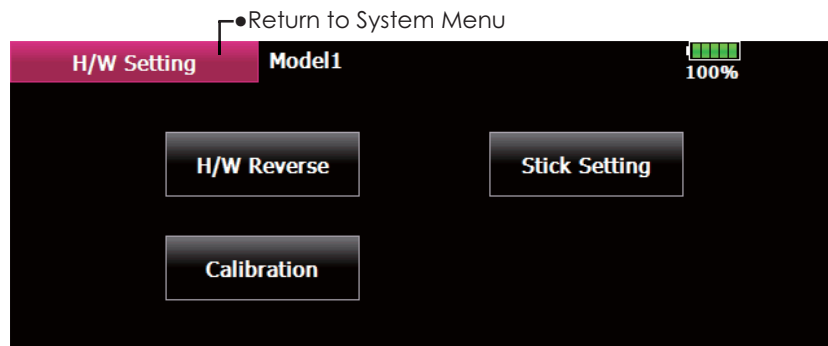
This function is for adjusting the sticks, switches, and trimmers characteristics. It is not used without necessity.
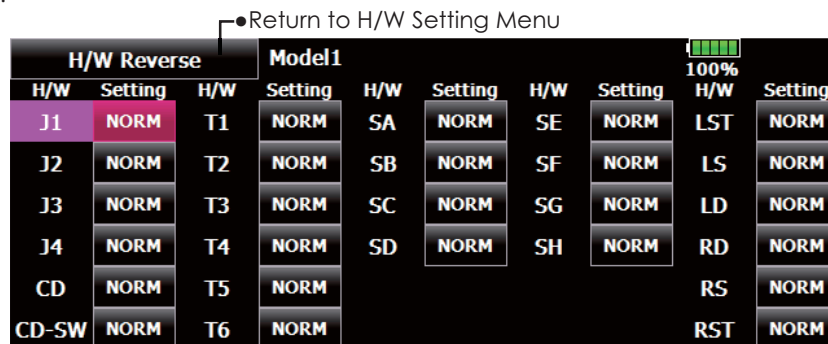
H/W Reverse

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 Setting

This function sets the servo response and hysteresis for stick operation for each condition. The control feeling of the stick can be adjusted to match the aerobatics.

Calibration

Usually, this calibration is unnecessary.

Please perform this calibration, if a gap of a stick should arise in prolonged use.

● Touch the [H/W Setting] button at the System Menu to call the setup screen shown below.

●Return to System Menu

● Touch the [H/W Reverse] button at the H/W Setting Menu to call the setup screen shown below.

●Return to H/W Setting Menu

Operation direction reversal method

1. Touch the setting button corresponding to the H/W (Hardware) you want to reverse.
2. Reverse the H/W by touching [Yes]. (When you want to stop operation, touch [No].)
   [Normal]: Normal operation direction
   [Reverse]: Reverses the operation direction.

● Touch the [Stick Setting] button at the H/W Setting
Menu to call the setup screen shown below.

●Return to H/W Setting Menu

Stick Setting	Model1	Normal	100%

	Response	Hysteresis
J1	4	1
J2	4	1
J3	4	1
J4	4	1
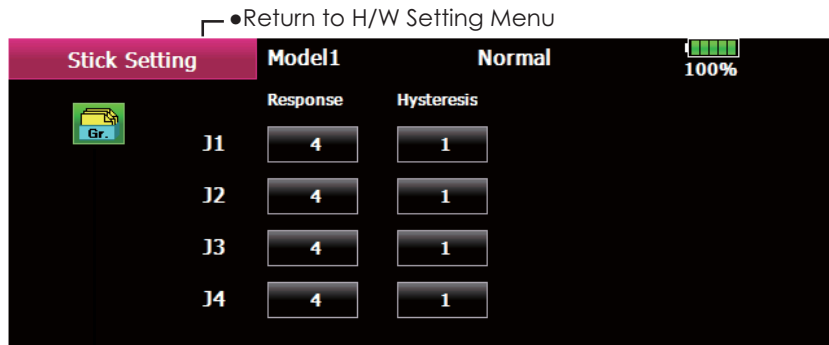
● Group/single mode switching (Gr./Sngl)
(For more information, see the description at the back of this manual.)

Response adjustment

1. Touch the setting button corresponding to the stick whose response you want to adjust. Adjustment buttons appear on the right-hand side of the stick setup screen.

2. Use the adjustment buttons to adjust the response.

Initial value: 4

Adjustment range: 1~8 (When the adjustment value is large, the response becomes slow.)

Hysteresis adjustment

1. Touch the setting button corresponding to the stick whose hysteresis you want to adjust. Adjustment buttons appear on the right-hand side of the stick setup screen.

2. Use the adjustment buttons to adjust the hysteresis.

Initial value: 1

Adjustment range: 0~32 (When the adjustment value is large, the hysteresis value becomes large.)

● Touch the [Calibration] button at the H/W Setting
Menu to call the setup screen shown below.

●Return to H/W Setting Menu

Calibration	Model1	100%

R/D

J3	+0%
J4	+0%

J1	-0%
J2	+101%
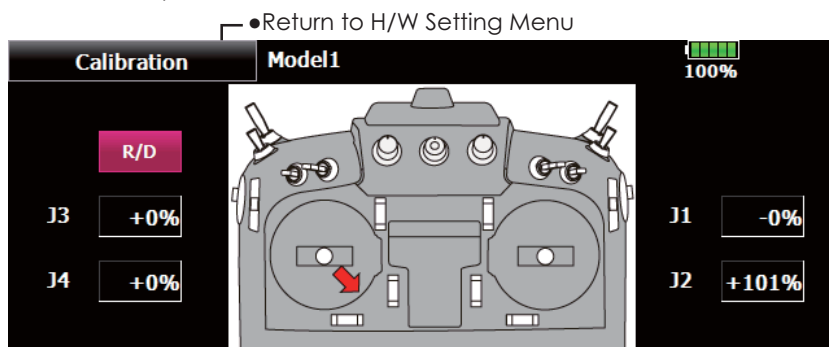
How to Calibration

1. A stick to carry out a calibration by right and left is chosen.
2. The stick is made neutral and a [neutral] button is pushed.
3. The stick is made full right and full bottom the [Right/Bottom] button is pushed.(The direction of an arrow)
4. The stick is made full left and full top the [Left/Top] button is pushed.(The direction of an arrow)

*Please do not push a stick too much strongly.

*An after-end should check that the neutral 0% and bottom right side will be +100%, and the top left side has become -100%.
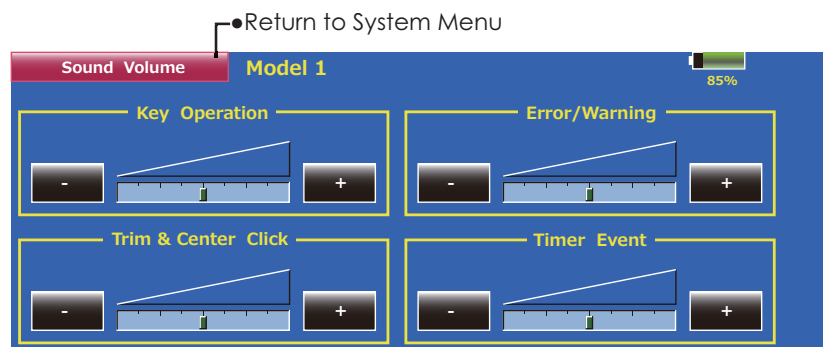
Sound Volume   Sound Volume setting

This function can set the volume of "Key Operation" "Error/Warning" "Trim&Center Click" "Timer Event" respectively.

*Set the PIN carefully. When a system PIN is set, if you forget the PIN, none of the settings can be changed. In this case, the system must be reset by the Futaba Service Center.

● Touch the [Sound Volume] button at the System Menu to call the setup screen shown below.

●Return to System Menu

Sound Volume Setting method

1. When the Sound Volume box is touched, a keyboard appears on the screen.
2. Please change the sound volume to the favor touching the "+" "-" button of four items.

   *If it touches "+", the volume of the item grows.

   *If it touches "-", the volume of the item becomes small.

Player

Music playback

The T18MZ transmitter can play back the ".wma" music files stored in the SD card and USB memory. You can listen to them through the built-in speaker or a headphone by the earphone plug.

[Important notice]

Before downloading files from your PC into the SD card, insert the SD card into the transmitter and turn on the power of the transmitter. Then the following folders will be automatically created in the SD card. When you download files from you PC, copy and paste the files into their corresponding files.

- BMP : picture files
- WMA : music files
- WAV : sound files
- MODEL : model data files

- Push the Music Playback button on the home screen to call the following set-up screen.

• Button to select either One-time Playback or Repeat Playback

• Return to the home screen

| Player | Model 1 | | 85% |

00:00:00 / 00:00:00

Playback File
File not found !

• Button to select either One Music Playback or Multiple Music Playback

• SW selection button

Push this button to call the SW select screen and choose the Music playback switch.

(Refer to the description in the end of this manual)

(Playback file list)

Buttons for music playback

- You can playback any music files listed on the right side of the screen.
- If you adjust the volume here, it adjusts not only music playback but also other applications.

To playback

- All the music files saved in the CF card will be shown here.
1. Push the file name to select the music file you want to hear.
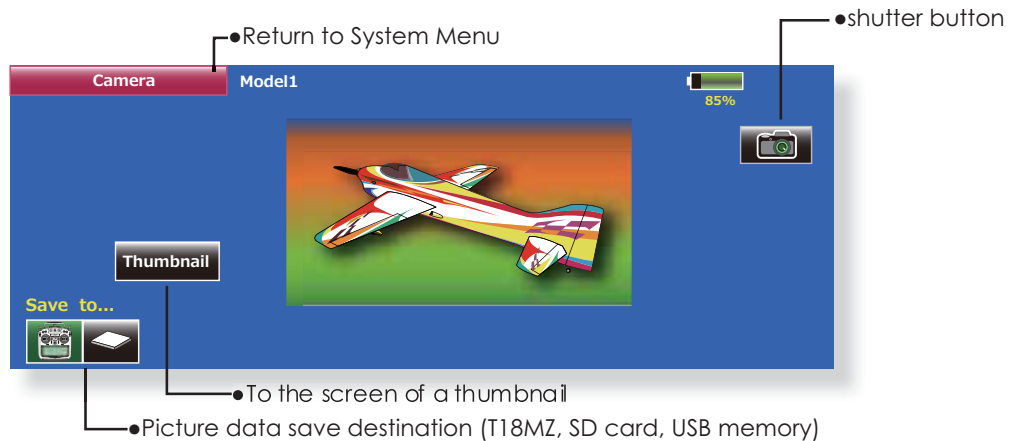2. Use the buttons on the left to playback or stop the music.

Camera

Camera photography and picture storage

Pictures can be easily taken with the camera in the T18MZ. The picture can be saved to the T18MZ, SD card, and USB memory. Your favorite model photographed by you can be displayed on the Home screen, Start screen, and Model Select screen.
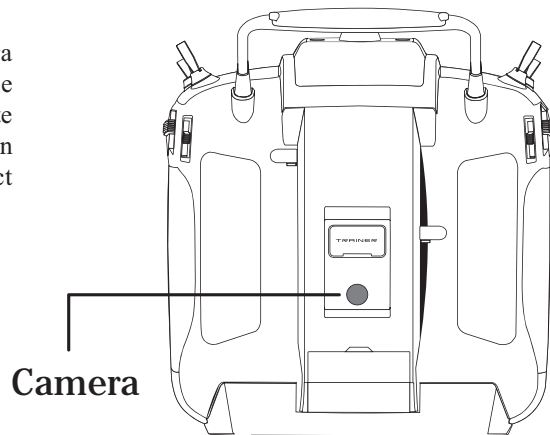
Camera

● Call the following setting screen by pressing the [Camera] button in the System Menu.

●Return to System Menu

●shutter button

Camera	Model1

85%

Thumbnail

Save to...

●To the screen of a thumbnail

●Picture data save destination (T18MZ, SD card, USB memory)

Shooting method

1. Turn on the transmitter and call [Camera] from the System Menu.

2. Select the picture save destination. (T18MZ, SD card, USB memory)

   *When an SD card and USB memory are connected, an icon is displayed and can be selected.

3. Point the camera at the back of the transmitter toward the subject and press the shutter button.

4. The picture can be checked with the [Thumbnail] button. A picture can be copied and deleted by pressing it.

Display pictures at the model data

1. Call [Camera] from the System Menu.

2. Make the save destination the same place as model data. If an SD card or USB memory is not connected, the T18MZ becomes the initial state.

3. Take the picture you want to display with the T18MZ.

(Position the picture inside the frame.)

4. Select the model whose picture you want to paste beforehand.

5. Press [Thumbnail] and then press the picture you took earlier.

6. Press[Entry].

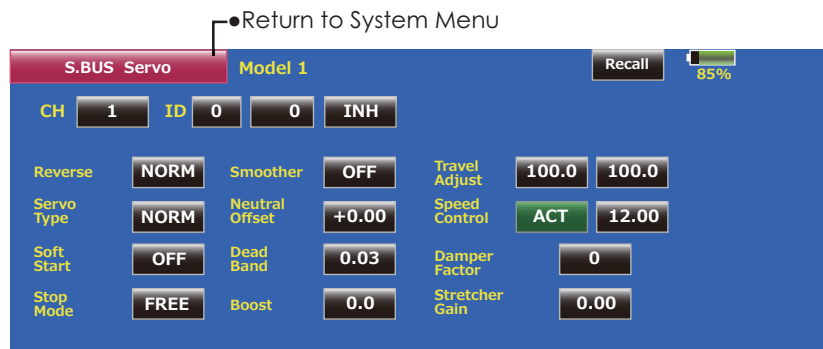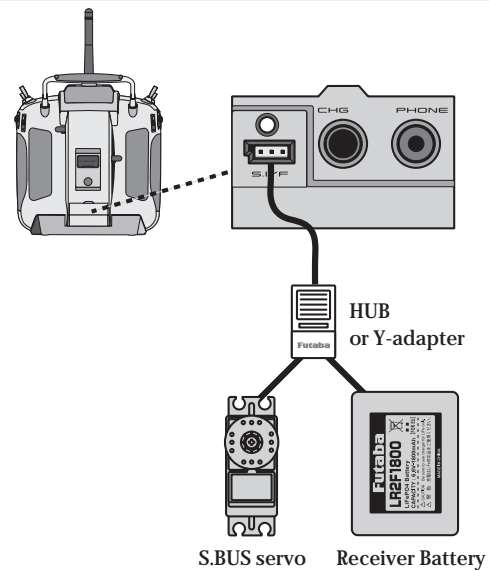7. The message "Sure?" is displayed. Press [Yes].

S.BUS Servo

S.BUS servo setting

An S.BUS servo can memorize the channel and various settings itself. Servo setting can be performed on the T18MZ screen by wiring the servo as shown in the figure.

●Servo ID number

Individual ID numbers are memorized at the S.BUS servos. When one servo is set as shown at the right, the servo ID number is automatically read. However, when you do not want to change one setting of multiple servos mounted to the fuselage, only the desired servo in the multi-connection state can be set by entering the ID of that servo.

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

HUB
or Y-adapter

S.BUS servo   Receiver Battery

●Return to System Menu

S.BUS Servo	Model 1		Recall	85%

CH [1] ID [0] [0] [INH]

Reverse	NORM	Smoother	OFF	Travel Adjust	100.0	100.0
Servo Type	NORM	Neutral Offset	+0.00	Speed Control	ACT	12.00
Soft Start	OFF	Dead Band	0.03	Damper Factor	0	
Stop Mode	FREE	Boost	0.0	Stretcher Gain	0.00	

Procedure for changing S.BUS servo setting

1. Select [S.BUS Servo] of the System Menu.

2. Wire the servo as shown in the figure above.

3. Press [Recall]. The ID and current setting of that servo are displayed.

4. When multiple servos are connected change [INH] at the right side of the ID number on the screen to [ACT] and enter the ID of the servo you want to set.

5. Set each item. (Please see the next page.)

6. Press [Write]. The settings are changed.

S.BUS Servo Description of function of each parameter

• ID

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

• Channel

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

• Reverse

The direction in which the servo rotates can be changed.

• Servo type

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

• Soft Start

Restricts operation in the specified direction the instant the power is turned on. By making this setting, only the first operation 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 operation signal changes. Normally use at Smooth setting. Especially, select the "OFF" mode when quick operation is necessary.

• 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 exceeded even if a speed over the maximum speed of the servo at each operating voltage is set.

• Dead band

The dead band angle at stopping can be specified.

[Relationship between dead band set value and servo operation]

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

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

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

• Travel Adjust

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

• Boost

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

[Relationship between boost set value and servo operation]

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

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

• Damper

The characteristic when the servo is stopped can be set.

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

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

[Relationship between damper set value and servo operation]

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

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

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

• **Stretcher**

The servo hold characteristic can be set.

The torque which attempts to return the servo to the target position when the current

servo position has deviated from the target position can be adjusted.

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

[Relationship between stretcher and servo operation]

Small → Servo holding force becomes weaker.

Large → Servo holding force becomes stronger.

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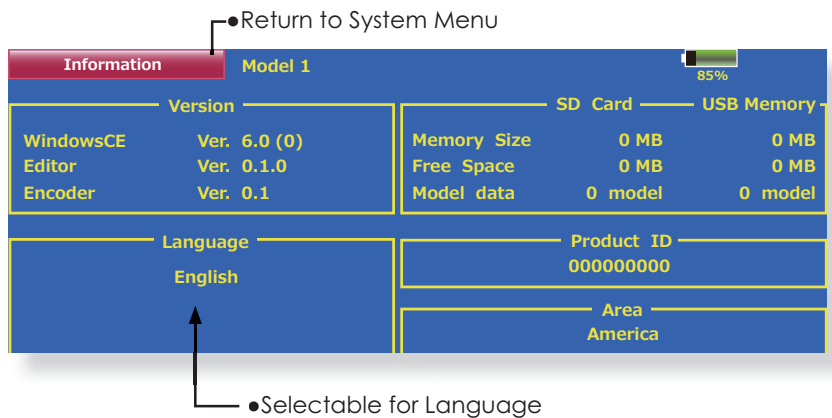
Information

The program version, CF card/USB memory data, and product ID are displayed. The language used by the system can also be changed.

The Information screen displays the T18MZ system program version information, T18MZ ,SD card and USB memory (memory size, vacant capacity, number of model data, and number of music files) information and product ID.

The language (Japanese, English) used on the screen can also be changed.

*When an SD card and USB memory are not inserted, their information is not displayed.

● Touch the [Information] button at the System Menu to call the setup screen shown below.

●Return to System Menu

Information	Model 1			85%
Version		**SD Card**	**USB Memory**	
WindowsCE	Ver. 6.0 (0)	Memory Size	0 MB	0 MB
Editor	Ver. 0.1.0	Free Space	0 MB	0 MB
Encoder	Ver. 0.1	Model data	0 model	0 model
Language		**Product ID**		
English		000000000		
		Area		
		America		

●Selectable for Language

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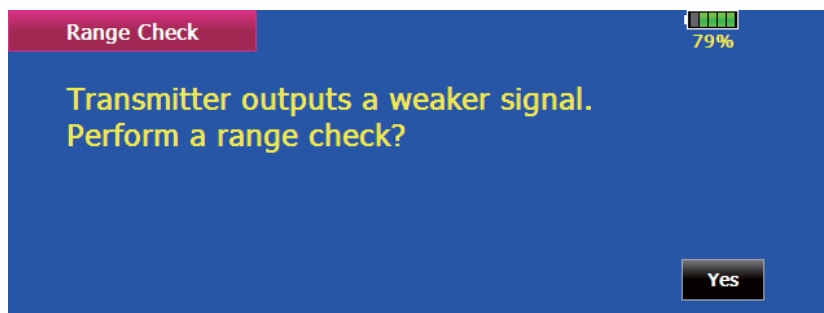
*The range check mode, when activated, will continue for 90 seconds unless the user exits this mode early. When the progress bar reaches 90s, the RF transmission automatically returns to the normal operating power.

● Push the [S4]Key → Turn ON the transmitter's power switch

└─ ● [NO] is pushed.

● Touch the [Range Check] button at the System Menu to call the setup screen shown below.

└─ ● [Yes] is pushed.

Rotation Range Check method

1. Push the [S4] Key → Turn ON the transmitter's power switch. Select [No] .

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

2. In the system menu, choose the 'Range Check' selection from the menu options.

3. The Range Check screen is displayed. To activate the Range Check mode press the [Yes] button. During the Range Check period, the RF power is reduced to allow the ground range tests to be performed.

4. The Range Check function automatically exits after the 90 second time limit has expired. The progress bar is displayed on the transmitter's screen. Should you complete the range check before the 90 seconds has pressed, press the [Exit] button.

   *When the [RESTART] botton is pressed, the range check mode timer is returned to 0.

*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 18MZ is transmitting at full power, it is not possible to enter the Range Check mode without first switching the transmitter Off and back On. This has been designed to prevent a modeler from inadvertently flying in the Range Check mode.

5. When the [Exit] button is pressed, the Range Check mode is disabled and the 18MZ 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.

MODEL BASIC SETTING PROCEDURE

## Airplane/glider basic setting procedure

1. Model addition and call

Initial setting assigns 1 model to the T18MZ transmitter. The Model Select function of the Linkage Menu is used to add models and to call models which are already set.

This is convenient when calling a model after its name has been registered. (Data can also be saved to the accessory SD card and USB memory)

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

When a new model was added, the Model type select screen/System mode/Receiver link automatically appear. Please be aware that the transmitter will stop transmitting when you change the model.
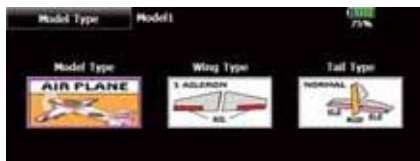
2. Model type selection

Select the model type matched to the fuselage with the Model Type select function of the Linkage Menu. For an airplane, select the model type from among the 3 types: airplane, glider, and motor glider. When the Wing type select screen is displayed and the wing type is selected when selecting the model type, the Tail type select screen is displayed. Select the tail type matched to the fuselage.

There are 13 wing types and 3 tail types for airplane, glider, and motor glider.
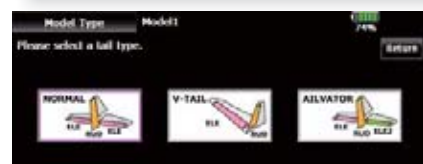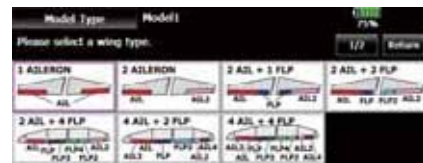
3. Fuselage linkage

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

Note: The channel assignment of the T18MZ is different from that of our existing systems. Note that even for the same "airplane model", when the wing type and tail type are different, the channel assignment may be different. (The channel assigned to each function can be checked at the Function menu of the Linkage Menu.)

- When the direction of the linkage is reversed, adjust the direction with the Reverse function of the Linkage Menu.

- Connect the throttle linkage so carburetor is open at full trim and full open then the throttle can be cut.
- Adjust the neutral position and rudder angle with the linkage, and fine tune them with the Sub Trim and End Point functions (rudder angle adjustment). To protect the linkage, a limit position can also be set with the End Point function. The End Point function can adjust the amount of up/down and left/right movement, limit, and servo speed of each channel.

4. Throttle cut setting

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

Set throttle cut with the Throttle Cut function of the Linkage Menu. After activating the throttle cut function and selecting the switch, adjust the throttle position so that the carburetor becomes full open. For safety, the throttle cut function operates the throttle stick in the slow position.
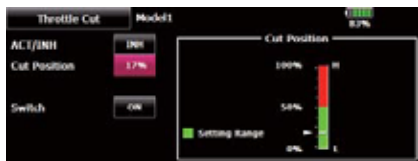
5. Idle down setting

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

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

6. AFR (D/R)

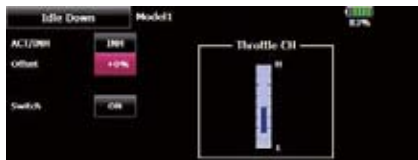AFR function is used to adjust the throw and operation curve of the stick, lever, and switch functions for each flight condition. This is normally used after End Point (ATV) has defined the maximum throw directions (End Point acts on ALL flight condition settings). When mixing is applied from one channel to another channel, both channels can be adjusted at the same time by adjusting the operation rate through the AFR function.

7. Airbrake

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

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

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

8. Addition of flight conditions

The transmitter can install up to eight flight conditions per model. You can assign all switches including sticks, switches, trim levers and trim switches as flight-condition selection switches. You can also add delayed mixing to these functions in order to avoid sudden changes. Moreover, you can set priority order for flight conditions when you set more than one condition. In addition, you can copy conditions and/or change names of conditions. This command may also be used to define what switches and/or controls are used to activate each flight condition.

The Condition Select function automatically allocates the Condition 1 for each model type. Condition 1 is the default condition, also referred to as Normal, and is the only one active when a new model type is defined. This condition is always on, and remains on until other conditions are activated by switches.

The Condition Delay can be programmed for each channel. The Condition Delay is used to change the servo throw smoothly when switching conditions.
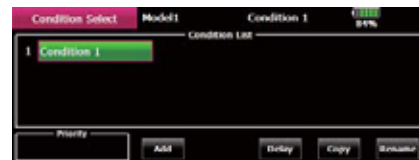
*When a new condition is added, "Condition1" data is automatically copied.

*Select the condition switch and set the new condition data in the switch ON state. However, if the group mode (Gr.) was selected in advance, the same data will be input at all the conditions. Select the single mode (Sngl) and adjust the condition you want to change.

Helicopter basic setting procedure

1. Model addition and call

Default setting assigns 1 model to the T18MZ. To add new models or to call a model already set, use the Model Select function of the Linkage Menu.

This is convenient when calling a model after registering the model names in advance. (Data can also be saved to the accessory SD card and USB memory)

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

Please be aware that the transmitter will stop transmitting when you change the model.

When a new model was added, the Model type select screen/System mode/Receiver link automatically appear. Please be aware that the transmitter will stop transmitting when you change the model.
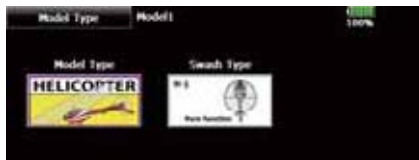
2. Model type and swash type selection

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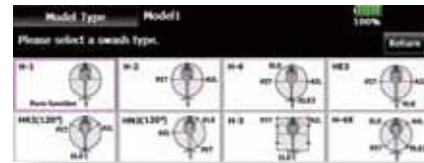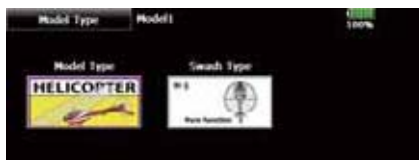

3. Flight condition addition

The transmitter can install up to eight flight conditions per model. You can assign all switches including sticks, switches, trim levers and trim switches as flight-condition selection switches. You can also add delayed mixing to these functions in order to avoid sudden changes. Moreover, you can set priority order for flight conditions when you set more than one condition. In addition, you can copy conditions and/or change names of conditions. This command may also be used to define what switches and/or controls are used to activate each flight condition.

The Condition Select function automatically allocates the Condition 0 for each model type. Condition 0 is the default condition, also referred to as Normal, and is the only one active when a new model type is defined. This condition is always on, and remains on until other conditions are activated by switches.

The Condition Delay can be programmed for each channel. The Condition Delay is used to change the servo throw smoothly when switching conditions.
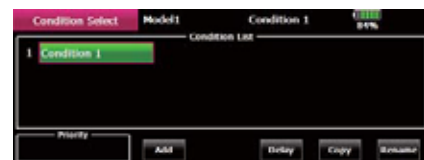
(General flight condition setting example)

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

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

Add other conditions, as required.

4. Fuselage linkage

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

*The channel assignment of the T18MZ is different from that of our existing systems. (The channel assigned to each function can be checked at the Function menu of the Linkage Menu.)

● When the direction of operation of the linkage is reverse, use the Reverse function of the Linkage Menu. Also use the swash AFR function in other than the H-1 mode.

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

● Swash plate correction (Except H-1 mode)
Operation of the swash plate near the hovering point can be corrected by swash AFR function correction mixing. Use this when pitch, aileron, and elevator operation causes the swash plate to deviate from the normal direction.
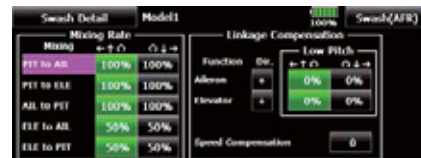
(Call the Swash setup→Swash details screen.)
Pitch slow side and high side linkage correction is also possible. Adjust so that pitch operation causes the swash plate to move up and down in the horizontal state.

5. Throttle curve setting

This function adjusts the pitch operation curve in relation to the movement of the throttle stick for each condition.
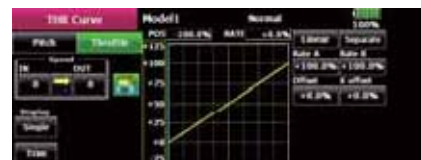
(17 points curve)

The pitch curve can be freely selected from linear operation curve to smooth curve, and adjusted to match the curve you want by means of the T18MZ's powerful Curve Edit Function (6 types of curves can be selected). Up to 17 points can be set for linear or curve types. However, when using the 3 points or 5 points specified to create a curve, a simple and smooth curve can be created by selecting the curve type and reducing the number of input points to 3 or 5, and then entering the specified value at the corresponding points that you created.

<Setting example>

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

●Normal curve adjustment
Normal curve uses Normal (Linear) type and creates a basic pitch curve centered near hovering. This curve is adjusted together with the Throttle Curve (Normal) so that the engine speed is constant and up/down control is easiest.

●Idle up curve adjustment
The high side pitch curve sets the maximum pitch regardless of the engine load. The low side pitch curve creates a curve matched for aerobatics (loop, roll, 3D, etc.).

Note: When the curve type is changed, the data is reset.

●Throttle hold curve adjustment
The throttle hold curve is used when performing auto rotation dives.
Confirm that the rate of the slowest position (0%) of the stick is 0% (initial setting).
Be sure that when set to high side 100%, the curve of any condition does not exceed 100%.

Example of pitch curve setting:

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

 *Pitch curve graph display can be switched to pitch angle direct reading display.

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

 *Stability at hovering may be connected to the throttle curve. Adjustment is easy by using the hovering throttle function and hovering pitch function together.

B. Pitch curve (Idle up 1)
The idle up 1 pitch curve function creates a curve matched to airborne flight.
Set to -7°~+12° as standard.

C. Pitch curve (Idle up 2)
The high side pitch setting is less than idle up 1.
The standard is +8°.

D. Pitch curve (Hold)
At auto rotation, use the maximum pitch at both the high and low sides.
[Pitch angle setting example]
Throttle hold: -7°~+12°

6. Throttle hold setting

Call the Throttle Hold function from the Model Menu and switch to the throttle hold condition with the condition select switch.

Note: At initial setting, the setting mode is the group mode. Since this function is not used at other conditions, switch to the single mode before setting.

●Setting to the state which activates the function
The throttle hold function allows setting for throttle cut and switching of the function fixed at the idle position by switch for training. Either one or both functions can be performed.

●Hold position setting
This function sets the servo operation position at throttle hold. (Throttle cut and idle positions)

●Other settings
When you want to link operation with stick manipulation, the Auto mode can be set.
When you want to adjust the servo speed, adjust [Speed].

7. Pitch to RUD mixing setting

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

Note: When using a GY701, GY601, GY502, GY401, or other heading hold gyro, this Pitch to RUD mixing should not be used. The reaction torque is corrected at the gyro side. When operating the gyro in the AVCS mode, the mixed signal will cause neutral deviation symptoms and the gyro will not operate normally.

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

(17 points curve)

Curve setting of up to 17 points is possible. However, in the following setting example, a simple curve can be adjusted by using the [Linear] curve type.

Note: At initial setting, the setting mode is the group mode. In this mode, the same contents are set at in all conditions. When you want to set the selected condition only, switch to the single mode.

<Setting example>

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

1. A curve setting example is shown below.

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

*For this curve, use the initial setting [Linear] curve type and adjust the left and right rates in the [Separate] mode.

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

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

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

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

●Other settings
The mixing rise characteristic at pitch operation can be adjusted. An acceleration (ACLR) function , which temporarily increase and decrease the mixing amount, can be set.

8. Swash Mix corrects aileron, elevator and pitch interaction

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.

9. Throttle mixing setting

RPM loss caused by swash operation at aileron or elevator operation can be corrected with the Throttle Mix function of the Model Menu. How clockwise and counterclockwise torque is applied when pirouetting can also be corrected.

10. Gyro sensitivity and mode switching

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

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

11. Throttle cut setting

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

*With throttle stick at idle, adjust the cut position until the engine consistently shuts off, but throttle linkage is not binding. When finished, touch the "Throttle Cut" button to exit.

12. Other special mixings

●Pitch to Needle mixing
This mixing is used with engines with a construction which allows needle control during flight (fuel-air mixture adjustment). A needle curve can be set. The needle servo rise characteristics at throttle stick acceleration/deceleration operation can be adjusted. (Acceleration function)

●Fuel mixture function
This mixing is used in needle adjustment of engines which use a fuel mixture control carburetor.

●Governor mixing
This mixing is dedicated governor mixing when a governor is used. Up to 3 rates (speeds) can be switched for each condition.

Receiver and servos connection

  Connect the receiver and servos in accordance with the connection diagram shown below. Always read [Precautions when mounting the receiver and servos] of [Before using]. When mounting the receiver and servos to the fuselage, connect the necessary points in accordance with the kit instruction manual.

Receiver and servos connection diagram

●Always connect the necessary number of servos.
●The receiver channel assignment depends on the model type. See the Servo connection by model type tables.

R7008SB (output connector section)
  (Receiver connectors)
  ●1~6: Output for conventional system CH1~6
  ●7/B: Output for conventional system CH7/Power supply
  ●8/SB: Output for conventional system CH8 or S.BUS port
  ●S.BUS2: S.BUS2 port → Telemetry sensor etc.
  ●Monitor LED

S.BUS not using it (CH1-8)

In S.BUS use (8/SB)

(7/B)

Receiver battery

Charging port/ DSC connector

Receiver switch

Servos

●The Servo connection by model type tables are shown on the following pages.
  Connect the servos to match the fuselage used.

Servo connection by model type

The T18MZ transmitter channels are automatically assigned for optimal combination according to the type selected with the Model Type function of the Linkage Menu. The channel assignment (initial setting) for each model type is shown below. Connect the receiver and servos to match the type used.

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

Airplane/glider/motor glider

●Airplane and V tail

RX CH	1AIL			2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP			EP	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
DG1												
DG2												

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

●Ailevator

RX CH	1AIL			2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP			EP	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
DG1												
DG2												

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

●**Tailless wing**

RX CH	2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

●**Tailless wing Winglet 2Rudder**

RX CH	2AIL			2AIL+1FLAP			2AIL+2FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

RX CH	2AIL+4FLAP			4AIL+2FLAP			4AIL+4FLAP		
	Airplane	Glider		Airplane	Glider		Airplane	Glider	
		EP			EP			EP	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DG1									
DG2									

●**FASSTest 18CH / FASST MULTI / FASST 7CH / S-FHSS**

CH	H-4/H-4X Swash	All Other
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
DG1		
DG2		

●**FASSTest 12CH**

CH	H-4/H-4X Swash	All Other
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
DG1		
DG2		

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.

● When a button in the Linkage Menu of the Home screen is touched, the menu shown below is called. Touch the button of the function you want to set.

●Return to Home screen

Linkage Menu	Model 1	Normal	85%	1/2
Servo Monitor	Model Select	Model Type	Picture	
Sound	System Type	Function	Sub-Trim	
Servo Reverse	Fail Safe	End Point(ATV)	Throttle Cut	
Idle Down	Swash Ring	Swash	Timer	
INH	--Condition Hold			
	System Menu	Linkage Menu	Model Menu	Cond.Hold

Condition Hold function ON/OFF button

For a detailed description, see p.75 (Condition Hold function).

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, switch type, etc. selection

[Picture]: Picture paste for each model

[Sound]: Sound recording and playback

[System Type]: System selection, receiver link

[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 (ATV)]: Servo basic rudder adjustment and limit setting

[Throttle Cut]: Stops the engine safely and easily (airplane and helicopter only)

[Idle Down]: Lowers the idle speed of the engine (airplane and helicopter only)

[Swash Ring]: Limits the decline of the swash plate to prevent linkage damage (helicopter only)

[Swash]: Swash AFR and linkage correction function (helicopter only)

[Timer]: Timer setting and lap time display

[Dial Monitor]: Dial, sliding lever, and digital trim position display

[Function Name]: Function Name can be changed

[Telemetry]: Displays various data sent from the receiver.

[Sensor]: Various telemetry sensors setting

[Warning]: Setting of warning sound and vibration

[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. Touch "Moving Test" (repetition mode) or "Neutral Test" (fixed position mode) depending on which one shows on the screen. To get from one to the other, simply touch the field again, and you will move from "Moving Test" to "Neutral Test" automatically. Next touch the "Test" on/off button to start testing your servos. The "Neutral test" is good for finding the neutral position of a servo horn.

● Touch the [Servo Monitor] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Control name

Function name
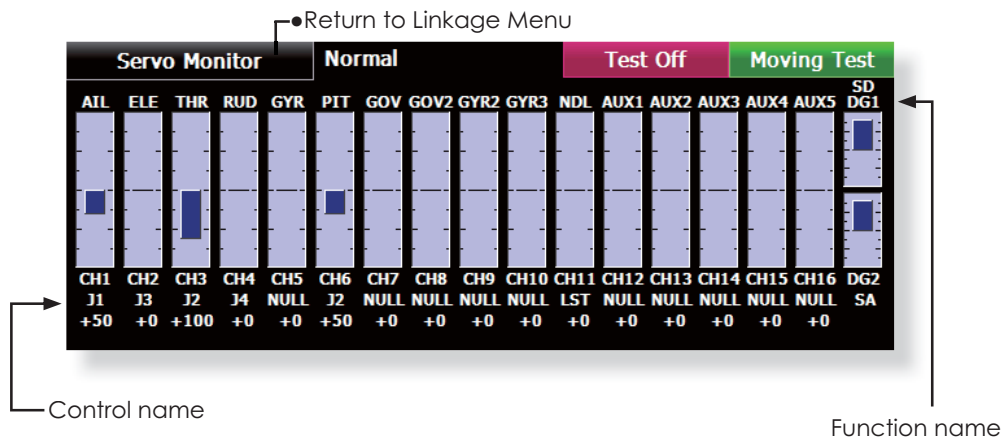
Servo test operation

1. Select a test mode ([Moving] or [Neutral]).
   [Repeat]: Each servo repeats operation.
   [Neutral]: Each servo is locked in the neutral position.

2. When the [Test Off] button is touched, testing begins in the selected mode.

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 T18MZ's memory.

The settings may be selected from either the transmitter's built-in memory or a SD card/USB memory.

The name of the model stored in the transmitter and the SD card/USB memory may be changed. This can be very useful to tell different models settings apart. Each model name can be as long as 32 characters, and the model name always appears in the display screen.

The Copy function is used to copy one set of model data into a second memory within the transmitter and the SD card/USB memory. 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.

● Touch the [Model Select] button in the Linkage Menu to call the setup screen shown below.

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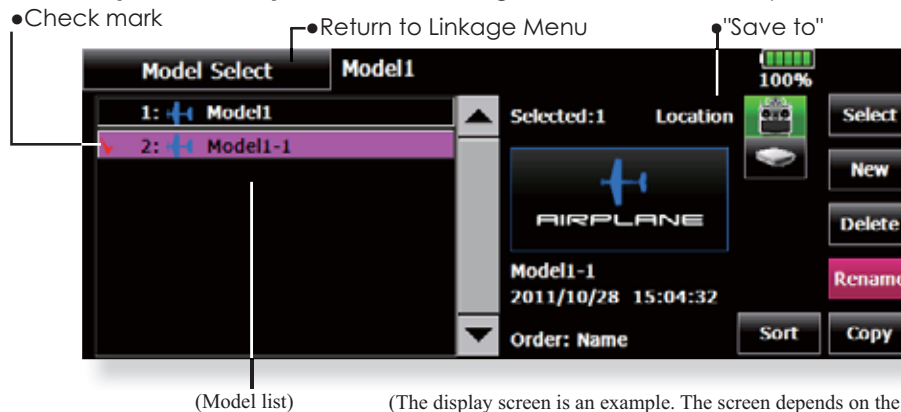
Model call

1. Touch the "Save to" icon, and select the location to which the desired model is to be saved.
   Transmitter icon: Transmitter memory
   SD card icon: SD card
   USB memory icon: USB memory
2. Touch the desired model in the model list.
3. Touch the [Select] button.
4. Touch [Yes] to call the model. (When you want to cancel model call, press [No].)

Model addition

1. Touch the [New] button.
2. Touch [Yes] to add the model. (When you want to cancel model addition, touch [No].)

   *When a new model is added, the Model Type screen are automatically displayed. Check or change the model. If there are no changes, touch the Model Type icons.

   *The added model is displayed in the model list.

Model deletion

1. Touch the "Save to" icon or the model you want to delete in the model list. (The model currently selected cannot be deleted.)

   A check mark is attached to the model.
2. Touch the [Delete] button.
3. Touch [Yes]. (When you want to stop model deletion, touch [No].)

Model name change

1. Select the model by touching the "Save to" icon or the desired model in the model list.
2. When [Change Name] is touched, a keyboard appears on the screen.
3. Enter the model name from this keyboard.

   *Up to 32 characters can be input at the model name. Japanese language input is also possible.

   (For a detailed description of the input method, see "User Name Registration/Character Input Method" of the Basic Operation section.

Model copy

1. A model to copy from a model list is pushed.
2. Check mark is attached to the model and a "Copy" button is displayed on the right.
2. Touch the "Copy" button and Touch the "Destination" button and select the copy storage destination. (Transmitter or SD card/USB memory)
4. Touch the center [Copy] button.
5. When [Yes] is touched, copying is executed. (When you want to cancel copying, touch [No].)

   *If there is no model of the same name at the copy destination, the name of the copy source is saved. If there is a model of the same name, a number is appended to the end of the model name and the model is copied. Change the name later.

   *When the model data was copied, the model date

   data is reset to the date the model was copied.

Model Type

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

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

Note: The Model Type function automatically selects the appropriate output channels, control functions, and mixing functions for the chosen model type. When the Model Type Selection command is accessed, all of the data in the active memory is cleared. Be sure that you don't mind losing this data, or back it up to another memory using the copying functions.

● Touch the [Model Type] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu
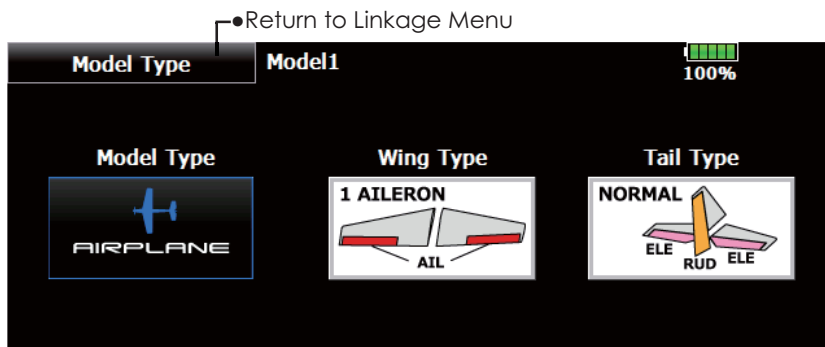
(The display screen is an example. The screen depends on the model type.)

Model type selection

1. Call the Type select screen by touching the model type, wing, tail, swash type, or other type button.
2. Select the type you want to set, and execute type selection by touching [Yes] at the confirmation screen. (When you want to cancel model type selection, touch [No].)

Data taking over after a swash type change

Data taking over may be possible in the swash type of a helicopter at the time of a change. (Refer to the following table) Even when it succeeds, the data of a [swash setting] screen is initialized.

Before	After	Data taking over
H-1, H-2, HE3, HR3, HN3, H-3	H-1, H-2, HE3, HR3, HN3, H-3	OK
H-4, H-4X	H-4, H-4X	OK
H-1, H-2, HE3, HR3, HN3, H-3	H-4, H-4X	NG
H-4, H-4X	H-1, H-2, HE3, HR3, HN3, H-3	NG

● When data taking over is possible, the confirmation screen of data initialization is displayed.

A push on [yes] will initialize data.

A push on [no] will succeed data.

●Model type selection

Model Type | Model 1 | 85%
Please select model type. | Return

| AIR PLANE | HELICOPTER | GLIDER | MOTOR GLIDER |
| Airplane | Helicopter | Glider | EP Glider |
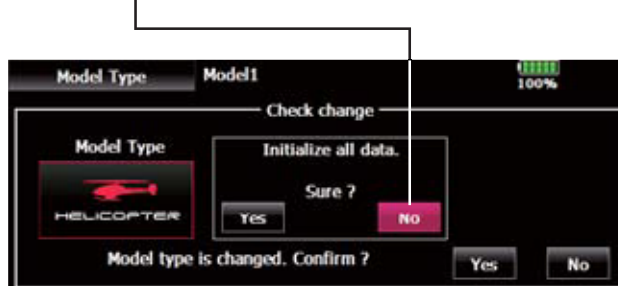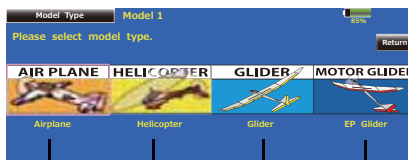
Model type

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

(Airplane, glider)

Model Type | Model1 | 100%

Model Type — AIRPLANE | Wing Type — 1 AILERON / AIL | Tail Type — NORMAL / ELE RUD ELE

(Helicopter)

Model Type | Model 1 | 85%

Model Type — HELICOPTER | Swash Type — H-1 / Pure function

●Wing type selection (1/2)

Model Type | Model 1 | 85%
Please select a wing type. | 1/2 | Return

| 1 AILERON / AIL | 2 AILERON / AIL AIL2 | 2 AIL + 1 FLP / AIL FLP AIL2 | 2 AIL + 2 FLP / AIL FLP FLP2 AIL2 |
| 2 AIL + 4 FLP / AIL FLP FLP4 AIL2 FLP3 FLP2 | 4 AIL + 2 FLP / AIL AIL3 FLP AIL2 AIL4 | 4 AIL + 4 AIL / AIL AIL3 FLP FLP4 AIL2 FLP3 FLP2 AIL4 | |

●Wing type selection (2/2)

Model Type | Model 1 | 85%
Please select a wing type. | 2/2 | Return

| Flying Wing 2AIL / AIL AIL2 | Flying Wing 2AIL+1FLP / AIL FLP AIL2 | Flying Wing 2AIL+2FLP / AIL FLP FLP2 AIL2 |
| Flying Wing 2AIL+4FLP / FLP AIL FLP3 FLP4 AIL2 | Flying Wing 4AIL+2FLP / AIL AIL3 FLP FLP2 AIL2 AIL4 | Flying Wing 4AIL+4FLP / FLP2 AIL AIL3 FLP3 FLP4 AIL2 AIL4 |

●Rudder type selection

Model Type | Model 1 | 85%
Please select a Rudder type. | Return
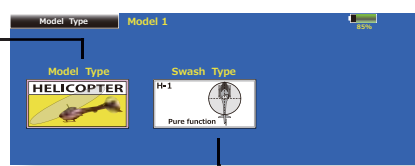
| Normal Rudder / RUD | Winglet (2RUD) / RUD RUD2 |

● Tail type selection

Model Type | Model 1 | 85%
Please select a tail type. | Return

| NORMAL / ELE RUD ELE | V-TAIL / ELE RUD | AILVATOR / ELE RUD ELE2 |

●Swash type selection

Model Type | Model 1 | 85%
Please select a swash type. | Return

| H-1 / Pure function | H-2 / PIT AIL | H-4 / PIT AIL ELE2 | HE3 / PIT AIL ELE |
| HR3(120°) / PIT AIL ELE | HN3(130°) / PIT | H-3 / PIT | H-4X / ELE PIT AIL ELE2 |

Helicopter swash type

Select from among H-1, H-2, H-4, HE3, HR3, HN3, H-3, and H-4X.
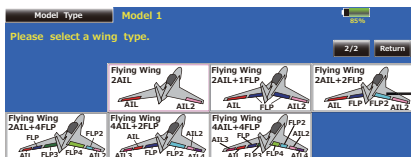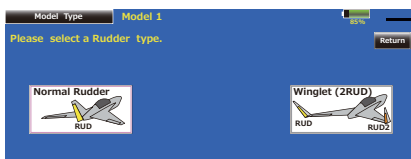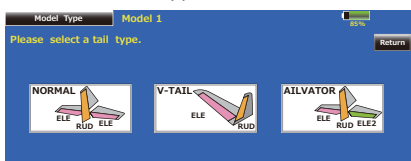
Wing type (1/2) (Normal)

Select from among :
1 aileron, 2 ailerons, 2 ailerons + 1 flap,
2 ailerons + 2 flaps, 2 ailerons + 4flaps,
4 ailerons + 2 flaps, 4 ailerons + 4 flaps.

Wing type (2/2) (Tailless wing)

Selection from among:
2 ailerons, 2 ailerons + 1 flap,
2 ailerons + 2 flaps, 2 ailerons + 4 flaps,
4 ailerons + 2 flaps, 4 ailerons + 4 flaps.
 *For tailless wing, the rudder type can be selected
  from normal rudder and winglet.

Tail type

Select from normal, V tail, and elevator.

Picture

A picture can be pasted for each model. (Simplifies identification of the model data during screen operation.)

A photograph of the model taken with a T18MZ camera, digital camera or other file can be pasted as the screen display data for each model. This is convenient in identifying models with the same model name.

*The picture files which can be displayed on the screen are size 168 x 80 pixels, file type .bmp (bit map picture)and JPEG files. If a file larger than this is pasted, the It reduces of the picture is displayed.

When a picture is pasted, it is displayed as the following screen image:
- ●Model Select screen
- ●Home screen
- ●Startup screen

● Touch the [Picture] button in the Linkage Menu to call the setup screen shown below.

┌●Return to Linkage Menu

Picture	**Model 1**			85%
Current File		**File List**		
🖼 **IMG00001**		**File not found !**	▲	
Preview				**Thumbnail**
File not found !				▼
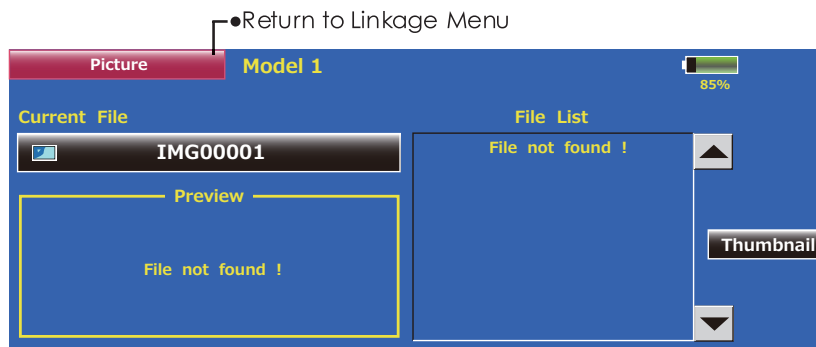
Pasting of picture

*Picture data is pasted to the model memory currently in use.

*The picture can choose only what is saved in the place (T18MZ, SD card, USB memory) same now as the model data under selection.

1. Select the picture from the Thumbnail by touching the desired picture data.

*Before selection, touch the scroll button at the top or bottom of the Thumbnail and confirm the contents of the picture files saved at the preview screen.

2. To paste the picture, touch [Yes]. (When you want to cancel pasting, touch [No].)

[Important]

Before reading data from the PC, insert the SD card/USB memory into the transmitter and turn on the power. The following folders are automatically written. To read a file from the PC, copy the file to a folder by file type.
- ●BMP: Picture file   ●WAV: Audio file
- ●WMA: Music file   ●MODEL: Model data

Sound
Sound recording and playback.

Sounds recorded with the microphone built into the transmitter and audio files (.wav) can be played back when the power switch is turned on and off or by preset switch.

*Only the voice file saved in the same place (T18MZ, SD card, a USB memory) as the model data under present selection can be chosen.

*The recording time from the microphone is up to 3 seconds/ recording. Twenty-four audio files can be saved.

*The only audio file type which can be recorded is .wav. Only the sounds recorded with the built-in microphone or an audio file saved from your PC to the data pack can be played back.

Setup screens No. 3 to 24 can be individually

assigned to audio file switches, etc. The playback files can be switched each time the same switch is operated. This can be used when playing back the name of maneuvers, etc.

[Sound starting]
No. 1: When transmitter power switch turned on
No. 2: When transmitter power switch turned off
No. 3~24: Switch can be set.

[Important]

Before reading data from a PC, insert the SD card/USB memory into the transmitter and turn on the power. The following folders are automatically written. When reading a file from the PC, copy it to a holder by file type.

- BMP: Picture file
- WMA: Music file
- WAV: Audio file
- MODEL: Model data

● Touch the [Sound] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu
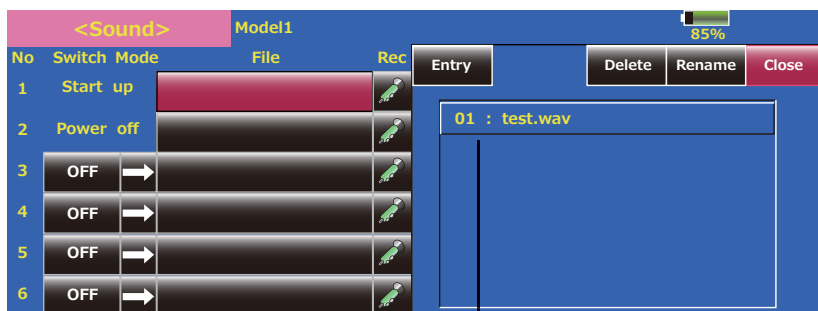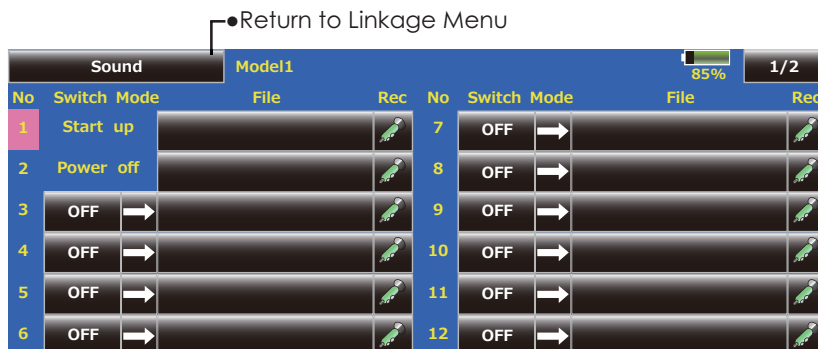
(Saved sound file)

Voice Recording

1. Touch any REC button to call up the SOUND RECORDER screen.

2. Touch the REC button to start recording. (Recording time: 3 seconds)

3. Record your voice as you are facing the transmitter's microphone.

   *Please record to a loud sound.

4. To finish, press "CLOSE". Also sound files

created by your PC may be played back by assigned switches. (File types; .wav file only)

*A voice file is saved automatically in the same place (a main part, SD card, a USB memory) as the model data under present selection, and a file name is displayed on the file button corresponding to a recording button.

Assignment of audio files to switches

*Audio files can be saved to SD card beforehand.

1. Touch the file button of the No. you want to set. A list of the files stored on the SD card is displayed.

2. Select the audio file you want to play back from the list of audio files.

   *Since the audio files are played back when the audio file names in the list are touched, the file contents can be checked before assignment.

3. Touch the [File] button to assign the files.

4. (Switches are also selected for No. 3~24.) Touch the [NULL] button to call the Switch select screen.

5. Select the switch and its ON direction at the Switch select screen.
   (For a detailed description of the selection method, see "Switch setting method" at the back of this manual.)

Mode button	
➡️	Playing back registered file only once
⮆	Playing back registered file repeatedly
↻	Sequentially playing back registered file each time operated by 1 switch

No	Switch	Mode	File	Rec	No	Switch	Mode	File	Rec
1	Start up				7		⮆		
2	Power off				8		⮆		
3	SG	⮆			9		⮆		
4		⮆			10		⮆		
5		⮆			11		⮆		
6		⮆			12		⮆		

Sound Model1 85% 1/2

Sequentially playing back registered file each time operated by 1 switch

This is used when calling the order of maneuvers, etc.

[Setting method]

1. After selecting the switch, press the [→] button. The button display thereafter is switched as shown in the screen above.

2. Assign the audio files in the order in which you want to play them back.

The audio files are played back each time the switch selected by the above setting is turned on.

System Type
System mode setting, Receiver link

System mode selection

The T18MZ is for 2.4GHz only. The system can be selected from among the 5 systems FASSTest 18CH, FASSTest 12CH, FASST MULT, FASST 7CH, S-FHSS. Select the system matched to the type of receiver

Receiver linking

The receiver can be controlled without being affected by other transmitters by linking it with the transmitter used. When using a receiver other than that of the purchased set, linking is necessary.

Dual receiver function (only FASSTest 18CH mode)

Two sets of receivers, and a function which can be linked. Two sets of receivers are recognized individually. For example, in R7008SB, CH output setting function is used, by setting one set as "1-8CH", and setting one more set as "9-16CH", two sets of receivers can be carried in one set of the model, and 1-16CH can be used now. If a Dual receiver function is used, the following function can set up individually.

· Battery fail-safe voltage setup
· Telemetry function ON/OFF
· Sensor setup

Telemetry function (FASSTest mode only)

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

D/L Interval (FASSTest mode only)

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

● Touch the [System Type] button in the Linkage Menu to call the setup screen shown below.

If a D/L interval is enlarged, although renewal of a sensor data display becomes slow, a stick response will improve.

Battery fail-safe voltage setup (only FASSTest mode)

The voltage which battery fail-safe commits at the time of a link can be set up. (3.5-8.4V) A receiver memorizes at the time of a link.

Linking method

1. Bring the receiver to be linked to within 50cm of the transmitter.
2. Press the [Link] button in the [Link] box of [System Type].
3. The transmitter emits a chime sound and enters the link mode.
4. The receiver power is immediately turned on. About 2 seconds after the power is turned on the receiver enters the link wait state. (Receiver link wait is about 1 second)
5. If linking is successful, the receiver LED changes from red to green, the link mode ends, and the receiver ID code is displayed.
6. If linking fails, an error message is displayed. Bring the transmitter closer to the receiver and repeat the procedure above from Step 2.

*Do not perform the linking operation when the drive motor is connected and the engine was started.

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

*Since two sets of receivers cannot be individually recognized when the setup a "primary" and "secondary" is not carried out, it becomes impossible to receive telemetry data correctly, and makes it.

* The link of two sets of receivers should perform one link operation at a time. If two power supplies of a receiver are switched on simultaneously, it is correctly unreceivable by the transmitter side.

* If a dual receiver function is used, in order to receive sensor information by turns from two sets of receivers, renewal of telemetry data becomes slow rather than a single receiver's case.

* It cannot link with three sets of receivers.

●Return to Linkage Menu

-Response speed has priority over number of channels

-Telemetry requires only the remaining receiver battery

-Want to use a previously used receiver as is

-Want to use a miniature receiver for indoor planes

-Want to use an S-FHSS system miniature receiver

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

S-FHSS

R2006GS
R2106GF
R2008SB

FASST 7CH

R617FS
R6004FF
R616FFM
R6106HF
R6106HFC
R6203SB
R6203SBE
R6202SBW

FASST MULT

R608FS
R6008HS
R6108SB
R6208SB
R6014HS
R6014FS
R6203SB
R6203SBE
R6202SBW

FASSTest 12CH

R7008SB

FASSTest 18CH

R7008SB

(Usable receivers)

(The time of December, 2011)
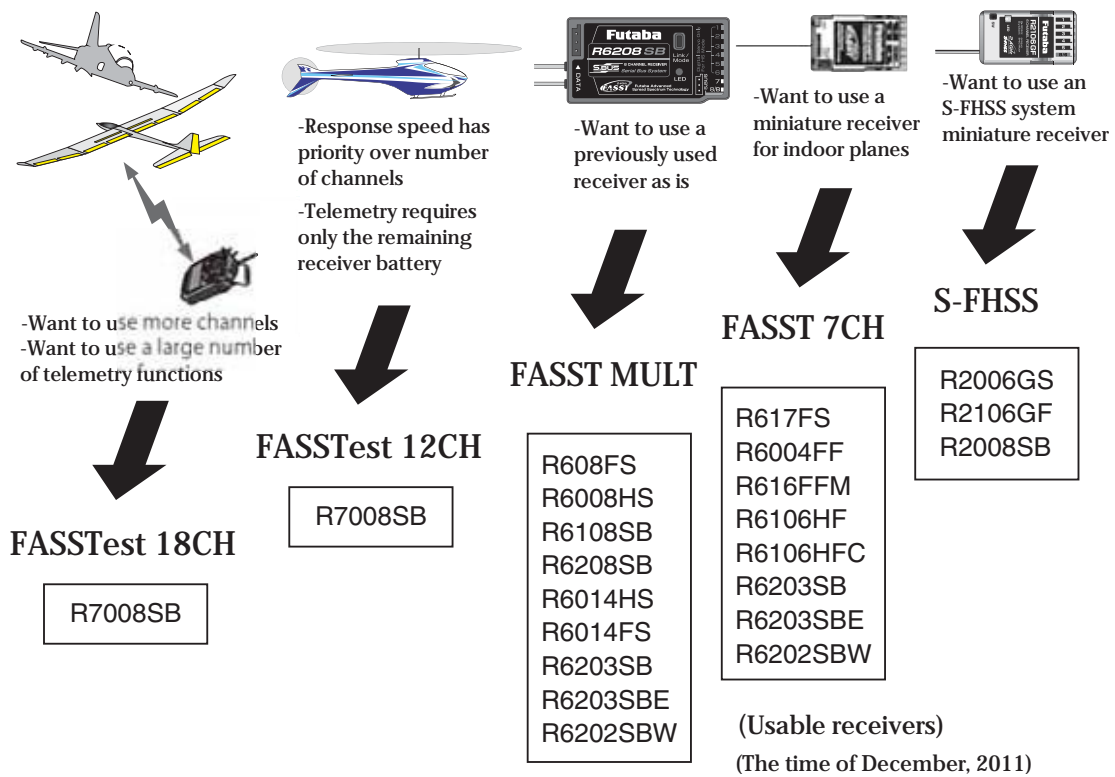
System Type

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

■ **FASSTest 12CH** --- FASSTest system receiver mode. Applicable with receiver voltage display. Up to 12 channels (linear10+ON/OFF2) can be used. Telemetry Sensorcannot be used, but the response speed is a faster than that of the 18CH mode.

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

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

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

Function — Channel assignment of each function can be changed.

When you select model and wing (swash) types, you will find that the optimized combinations of servo output channels and functions have been already preset. If you would like, on the function-setting screen of the linkage menu, you can freely change combinations of servo output channels, functions (aileron, elevator, etc), and input controllers (sticks, switches, trim levers and trim switches). You can also assign the same function to multiple servo output channels such as assigning elevator function to CH2 and CH3.

DG1, DG2 (switch channels)

These two channels can be used as switch channels. You can freely change combinations between servo output channels and input controllers (sticks, switches, trim levers and trim switches).

● Touch the [Function] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

CH	Function	Control	Trim		CH	Function	Control	Trim
1	Aileron	J1	T1	Comb	7	Aileron4	NULL	NULL
2	Elevator	J3	T3	Comb	8	Flap	LS	NULL
3	Throttle	J2	T2	Comb	9	Flap2	NULL	NULL
4	Rudder	J4	T4	Comb	10	Flap3	RS	NULL
5	Aileron2	NULL	NULL		11	Flap4	NULL	NULL
6	Aileron3	NULL	NULL		12	Gear	SG	NULL

Function — Model1-1 — Condition 1 — 100% — CH1-12

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

CH	Function	Control	Trim		CH	Control
13	Auxiliary1	NULL	NULL		DG1	SD
14	Auxiliary2	NULL	NULL		DG2	SA
15	Auxiliary3	NULL	NULL			
16	Camber	LST	NULL			SWAP

Function — Model1-1 — Condition 1 — 100% — CH13-

●to [SWAP]

Function change

1. Touch the function button of the channel you want to change to call the function list.
2. Select the function you want to change.
3. Touch [Yes]. The display returns to the original screen. (When you want to cancel function change, touch [No].)

 *Multiple channels can be assigned to 1 function.

Operation control change

1. Touch the control button of the channel you want to change. A Control select screen (stick, switch, knob, trim lever, etc.) is displayed.
2. Select the control you want to operate.
3. Touch [Close]. The display returns to the preceding screen.

 *The same control can be assigned to multiple channels.

SWAP

If [SWAP] is pushed, it can become the following screen and can replace two functions with the data set as each channel.

1. Touch the Trim button two channels to change is pushed.
2. If [OK] is pushed, two channels will interchange.

*It can choose only to two.

Ch	Function	Ch	Function	Ch	Function
1	Aileron	7	Aileron4	13	Auxiliary1
2	Elevator	8	Flap	14	Auxiliary2
3	Throttle	9	Flap2	15	Auxiliary3
4	Rudder	10	Flap3	16	Camber
5	Aileron2	11	Flap4		
6	Aileron3	12	Gear		OK CANCEL

Trim change

1. Touch the Trim button to call the Trim setup screen.
2. The following items can be set at the Trim setup screen.
● Hardware setting (Selection of switch, etc. which controls trim) (The select screen is called by touching the [H/W Select] button.)
● Rate setting
● Operation step setting
● Trim mode setting
Normal mode: Normal trim (parallel shift trim) operation

ATL mode: ATL operation mode. Reverse is also possible.
CTRM mode: Maximum change near center by center trim operation

● Separate/combination mode: Trim data are set to flight conditions
Separate mode: Trim adjustment for each flight condition

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

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.

● Touch the [Sub Trim] button in the Linkage Menu to call the setup screen shown below.

┌─●Return to Linkage Menu

Sub-Trim	Model1		85%

+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0	+0
CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14	CH15	CH16
ELE	RUD	THR	AIL	GEA	ABK	AUX6	AUX5	AUX4	AUX3	AUX2	AUX1	AUX1	AUX1	AUX1	AUX1
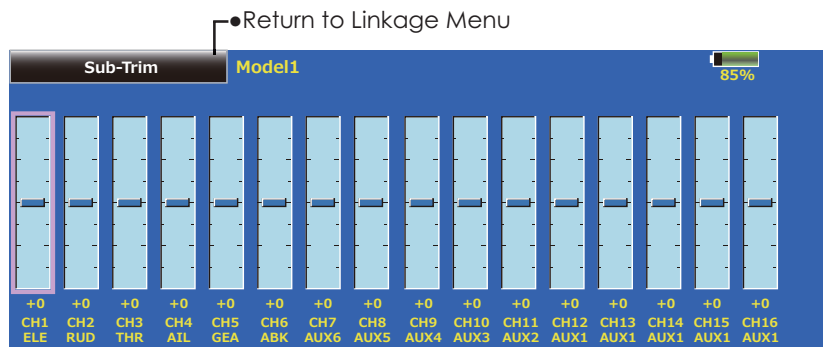
(The display screen is an example. The screen depends on the model type.)

Sub trim adjustment

1. Touch the trim display part of the channel you want to adjust.
   Adjustment buttons appears on the Sub Trim menu screen.
2. Use the adjustment buttons to adjust the sub trim.
   ●Initial value: 0
   ●Adjustment range: -240~+240 (steps)
   *See above
3. Repeat this step 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.

⚠WARNING

❗ Before a flight, it always certainly checks that a selection model, servo operation, the direction of servo operation, and a switch setup are right.

❗ Initial setting of a motor channel is reverse.

● Touch the [Servo Reverse] button in the Linkage Menu to call the setup screen shown below.

┌●Return to Linkage Menu

Servo Reverse		Model1-1					100%
CH	Function	Setting	CH	Function	Setting	CH	Function	Setting
1	Aileron	NORM	7	Aileron4	NORM	13	Auxiliary1	NORM
2	Elevator	NORM	8	Flap	NORM	14	Auxiliary2	NORM
3	Throttle	REV	9	Flap2	NORM	15	Auxiliary3	NORM
4	Rudder	NORM	10	Flap3	NORM	16	Camber	NORM
5	Aileron2	NORM	11	Flap4	NORM		DG1	NORM
6	Aileron3	NORM	12	Gear	NORM		DG2	NORM

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

Servo reversing procedure

After setting up a new model, be sure to define all special menus. Be sure that all servos are plugged into the proper receiver channels. Now, determine whether you need to reverse any channels by moving each stick and observing the corresponding movement in the model's controls.

1. Touch the desired channel's Setting button to choose the proper direction for the servo
2. Touch "Yes" in the next screen.
3. Repeat for each servo needing reversal.
When done, touch "Servo Reverse" to return to the Linkage Menu.

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.

When the receiver battery voltage drops, the servo can be moved to a preset position. (Battery fail safe function) A battery fail safe function reset switch can be set. (Initial setting: Throttle stick maximum slow side)

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 T18MZ 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 (default is throttle),

● Touch the [Fail Safe] button in the Linkage Menu to call the setup screen shown below.

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.

● Especially 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 fail safe is reset by 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.

●Return to Linkage Menu

CH	Function	Mode	B.F/S	F/S Posi.	CH	Function	Mode	B.F/S	F/S Posi.
Fail Safe	Model1			85%		Batt. F/S Release	OFF	CH13-	
1	Elevator	Hold	OFF		7	Auxiliary6	Hold	OFF	
2	Rudder	Hold	OFF		8	Auxiliary5	Hold	OFF	
3	Throttle	Hold	OFF		9	Auxiliary4	Hold	OFF	
4	Aileron	Hold	OFF		10	Auxiliary3	Hold	OFF	
5	Gear	Hold	OFF		11	Auxiliary2	Hold	OFF	
6	Air Brake	Hold	OFF		12	Auxiliary1	Hold	OFF	

●To <Switch> screen

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

Fail safe setting procedure

Decide which channels you want to go to preset positions, and which ones you want to maintain their last commanded position. To select the failsafe mode you wish to set, use the F/S button. This button toggles between the two modes. (Hold, F/S)

F/S mode setting:

1. Touch the F/S button of the channel you want to set, and set that channel to the [F/S] mode.

2. Hold the corresponding stick, control, slider, or other control in the position you want the servo to move to when the fail safe function is activated, and touch the F/S position button. That position is displayed in percentage.

   *When you want to return that channel to the Hold mode, touch the [F/S] button again.

Battery fail safe setting procedure

To select the B.F/S mode, touch the [B.F/S] button. Each time the button is touched, it toggles

between [OFF] and [B.F/S].

B.F/S setting:

1. Touch the [B.F/S] button of the desired channel to set it to the B.F/S mode.

2. Hold the corresponding stick, VR, slider, or other control in the position you want the servo to move to when the battery fail safe function is activated, and touch the F/S position button. This position is displayed in percentage.

   *When you want to return that channel to OFF, touch the [B.F/ S] button again.

Battery Failsafe Release Function

This function releases the predefined control from it's held position after indicating that your receiver battery is low.

1. Enter the control setting screen by touching the Battery F/S Release button. Now, you may choose that moving the throttle resets the condition, or select another stick or switch deactivates it. To set a desired throttle release position, move the throttle stick to the point at which you wish the B.F/S to be released.

End Point (ATV)

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 16. Also, the Limit point where servo throw stops may be varied from 0% to 155%.

NOTE: The indicators on the screen display actual servo throw of the each channel. The center position of the indicator is based on the Sub-Trim settings. Therefore the Sub-Trim adjustment changes the Limit point display of the indicator. The Servo Speed setting is used to set the servo delay for each channel, from channel l to channel 16. 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.

● Touch the [End Point (ATV)] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

End Point(ATV)	Model1								85%	CH7-12
CH	Function	Limit	Travel	←↑↻		↻↓→	Travel	Limit	Speed	
1	Elevator	135%	100%				100%	135%	0	
2	Rudder	135%	100%				100%	135%	0	
3	Throttle	135%	100%				100%	135%	0	
4	Aileron	135%	100%				100%	135%	0	
5	Gear	135%	100%				100%	135%	0	
6	Air Brake	135%	100%				100%	135%	0	

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

Servo travel adjustment

1. Touch the Travel button of the channel you want to set. Adjustment buttons appear on the screen.
2. Use these buttons to adjust the rate.
   ●Initial value: 100%
   ●Adjustment range: 30%~140%
3. Repeat the procedure above for each rate.

Limit point adjustment

1. Touch the Limit button of the channel you want to set.
2. Use the adjustment buttons to adjust the limit point.
   ●Initial value: 135%
   ●Adjustment range: 0%~155%
3. Repeat this procedure for each limit point.

Servo speed setting

1. Touch the Speed button of the channel you want to set.
2. Use the adjustment buttons to adjust the servo speed.
   ●Initial value: 0
   ●Adjustment range: 0~27 (steps)
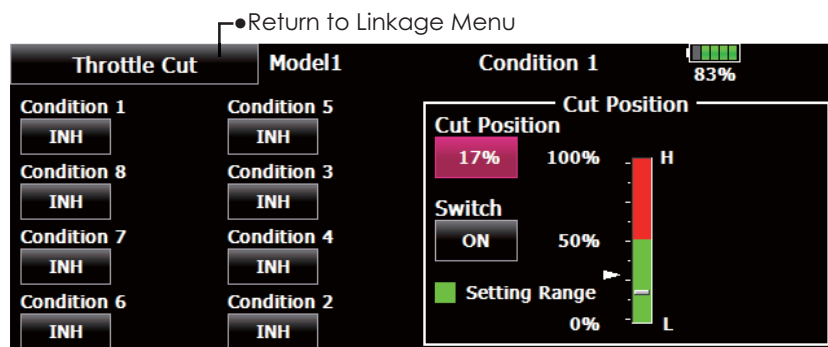3. Repeat this procedure for each channel.

To close this screen, touch the [End Point (ATV)] button.

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.

NOTE: When condition is set up, a setup of ON/OFF can be performed for every condition. Only as for the condition to which the throttle cut is an operating state (ON/OFF) from INH, a throttle cut can turn ON. While the throttle cut has been ON, when a throttle cut changes to the condition of INH, a cut is canceled by the throttle cut switch OFF with ON, and the throttle cut cannot turn ON in the condition.

● Touch the [Throttle Cut] button in the Linkage Menu to call the setup screen shown below.

┌●Return to Linkage Menu

| Throttle Cut | Model1 | Condition 1 | 83% |

Condition 1	Condition 5
INH	INH
Condition 8	Condition 3
INH	INH
Condition 7	Condition 4
INH	INH
Condition 6	Condition 2
INH	INH

Cut Position
Cut Position
17%   100%   ─ H
Switch
ON   50%
■ Setting Range
0%   ─ L

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

Throttle cut setting procedure

1. Condition to set up touch the "INH" button to activate the Throttle Cut function.
2. Throttle cut function switch setting:

   Touch the "NULL" button to call the <Switch> screen, and then select the switch and its ON direction.

   (For a detailed description of the selection method, see [Switch Setting Method] at the back of this manual.)
3. Throttle cut position setting:

   Set the throttle stick to maximum slow, and touch the Cut Position button. Adjustment buttons appear. At the same time, the numerical value of the current maximum slow side is displayed at "Cut Position".

Use the adjustment buttons to adjust the servo travel when the throttle cut function is activated.

●Initial value: 17%

●Adjustment range: 0%~50%

*With throttle stick at idle, adjust the rate until the engine consistently shuts off, but throttle linkage is not binding. When finished, touch the "Throttle Cut" button to exit.

To exit the setting, touch the [Throttle Cut] button.

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.

● Touch the [Idle Down] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Idle Down	Model 1		85%
ACT/INH	INH	Throttle CH	
Offset	+0%		H
Switch	OFF		L
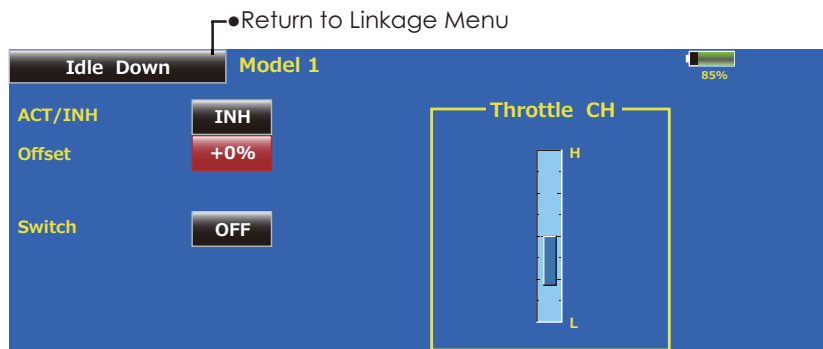
(The display screen is an example. The screen depends on the model type.)

Idle down setting procedure

1. Touch the "INH" button to activate the Idle Down function.

2. Idle Down function switch setting:

   Touch the "NULL" button to call the <Switch> screen, and then select the switch and its ON direction.

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

3. Offset rate setting:

   Touch the Offset Rate button. Adjustment buttons appear on the screen.

   Use these buttons to adjust the offset rate.

   ●Initial value: 0%

   ●Adjustment range: -100%~100%

   *(-)becomes an idle up.

   To exit the setting, touch the [Idle Down] button.

Swash Ring

Limits the decline of the swash plate to prevent linkage damage.
(Helicopter only)

This function limits the decline of the swash plate to prevent linkage damage as the aileron and elevator operation is added. It is useful for 3D heli setting.

●Touch the [Swash ring] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Swash Ring	Model 1

Elevator +0%

Rate
ON 100%

Aileron +0%

85%

△△
△
Reset
▽
▽▽

Activate button   Rate button
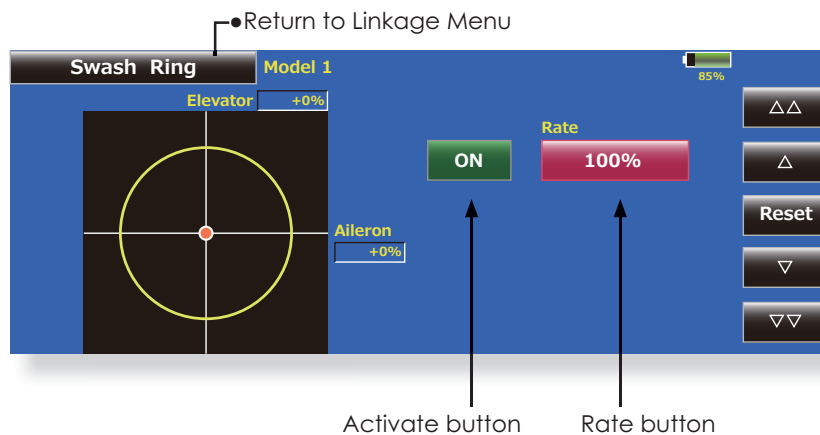
Swash ring setting procedure

1. Push the Swash ring button on the linkage menu.

2. Push ACT/INH button to activate.

   *The movement area monitor shows the current aileron and elevator values and limit ranges by the yellow circle.

3. Adjust the rate to the maximum amount of swash plate decline.

   *The swash movement is limited within the circle.

   Adjustment range: 50 - 200%.

Swash

Swash operation linkage correction function
(This swash setup screen does not appear for swash type H-1.)

Neutral Point

At your linkages, if the servo horn deviates from the perpendicular position at neutral, the linkage compensation functions may not compensate effectively. This neutral point setting reads the linkage compensation neutral position. However, this adjustment only changes the datum point of the compensation function on the swash details screen and does not affect the neutral position of other functions.

*Before using the compensation function, set the neutral point.

Swash AFR

The swash AFR function adjusts (increases/decreases/reverse) the rate (travel) of the aileron, elevator, and pitch functions.

Mixing Rate

(Normally, the initial value is used.)

This mixing rate is used for correction so that the swash plate moves in the correct direction for aileron, elevator, and pitch operation.

Compensation mixing is shown below.

*PIT->AIL/PIT->ELE/AIL->PIT/ELE->AIL/ELE->PIT

*Use the corresponding compensation mixing and compensate so that the swash plate moves in the correct direction.

Linkage Compensation

This compensation mixing is used to correct for mutual interference when the ailerons or elevators were operated when the throttle stick was in the slow or high position.

Speed Compensation

This speed compensation function compensates the mutual interference when the travel of each servo is different at swash plate operation. For HR-3, it compensates the speed by dropping the operating speed of the aileron and pitch servos at elevator operation.

●Touch the [Swash] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Swash	Model 1	85%	Swash Detail	●To Swash Details screen

Neutral Point

100% H
50% 50% [Enter]
0% L

■ High Pitch
■ Low Pitch

Swash AFR

Aileron +50%
Elevator +50%
Pitch +50%

●Return to Linkage Menu

Swash Detail	Model 1	85%	Swash(AFR)	●To Swash AFR screen

Mixing Rate

Mixing	←↑↻	↻↓→
PIT to AIL	100%	100%
PIT to ELE	100%	100%
AIL to PIT	100%	100%
ELE to AIL	50%	50%
ELE to PIT	50%	50%

Linkage Compensation

Low Pitch

Function	Dir.	←↑↻	↻↓→
Aileron	+	0%	0%
Elevator	+	0%	0%

Speed Compensation   0%

Neutral point setting procedure

*Becomes the compensation datum point.

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

1. Hold the servo horn at a right angle to the linkage rod, and then touch the [Enter] button and read the actual neutral point.

   *The neutral point is displayed on the screen.

   After reading this neutral point, use other compensation functions to make further adjustments.

   To exit the setting, touch the [Swash] button.

Swash AFR setting procedure

Adjust so that the specified operation amount is obtained by aileron, elevator, and pitch operation.

1. Touch the button of the AFR rate to be adjusted. Adjustment buttons appear on the screen.

2. Use the adjustment buttons to adjust the AFR rate.

   Initial value: +50%

   Adjustment range: -100%~+100%

   To exit setting, touch the [Swash] button.

Mixing rate setting procedure

HR-3 is described as an example. The mixing applied in other swash modes is different, but the setting procedure is the same.

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

   *A little adjustment using sub trim should be OK.

   *Adjust so that pitch operation when the pitch curve is straight is maximum.

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

   *Adjust the left and right sides separately.

3. Adjust the ELE->AIL and ELE->PIT amounts so there is not interference in the aileron or pitch direction when the elevator stick is moved up and down.

   *Adjust the up and down sides separately.

4. Adjust the PIT->AIL and PIT->ELE amounts so that the swash plate is horizontal when the throttle stick is set to maximum slow and full high.

   *Adjust the slow and high sides separately.

   To exit setting, touch the [Swash Details] button.

Linkage correction setting procedure

*Set the linkage compensation after setting the mixing rate.

*This function compensates for elevator interference by aileron operation or aileron interference by elevator operation at Low pitch and Hi pitch at collective pitch (HR3, etc.) control.

1. Set the throttle stick 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 minimal.

   *The left and right sides can be adjusted separately.

   *If the interference increases when the compensation amount is increased, make the compensation direction "-".

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

3. Perform aileron and elevator compensation similarly for the throttle stick full high side.

   To exit setting, touch the [Swash Details] button.

Speed compensation setting procedure

1. Set the throttle stick to the neutral point position. Move the elevator stick quickly and adjust the speed compensation amount so that the interference in the pitch direction is minimal.

   To exit setting, touch the [Swash Details] button.

   Notes:

   If the linkage sticks out or is stretched tight, correct compensation will not be applied. Perform correction with surplus linkage.

   The pitch angle changes after adjustment. Reset the pitch angle when actually flying after compensation processing.

Timer

Timer setting and lap time display.

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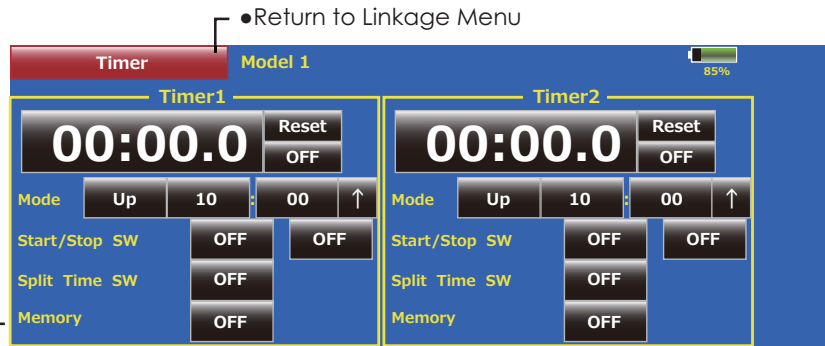
The timers may be set to start and stop from the motion of any switch or stick. You may set the ON and OFF directions freely. Each timer has a capacity of up to 59 minutes 59 seconds.

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

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.

● Touch the [Timer] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Timer	Model 1			85%

Timer1

00:00.0 Reset / OFF

Mode Up 10 : 00 ↑
Start/Stop SW OFF OFF
Split Time SW OFF
Memory OFF

Timer2

00:00.0 Reset / OFF

Mode Up 10 : 00 ↑
Start/Stop SW OFF OFF
Split Time SW OFF
Memory OFF

● Memory is turned ON, the power OFF and a model change will not be reset timer, either.

<Lap time list>

| Split Time | Model 1 | | | 85% | 1 / 5 |

Timer1

Lap#	Split Time	Lap#	Split Time	Lap#	Split Time	Lap#	Split Time
1	00:00.0	7	00:00.0	13	00:00.0	19	00:00.0
2	00:00.0	8	00:00.0	14	00:00.0	20	00:00.0
3	00:00.0	9	00:00.0	15	00:00.0	21	00:00.0
4	00:00.0	10	00:00.0	16	00:00.0	22	00:00.0
5	00:00.0	11	00:00.0	17	00:00.0	23	00:00.0
6	00:00.0	12	00:00.0	18	00:00.0	24	00:00.0

▲ ▼ Clear Return

●Return to Timer screen

Up timer/Down timer selection

1. Touch the mode button and select the type of timer.

   *Each time this button is touched, it toggles between UP and DOWN.

2. Timer time setting

   Touch the Mode minutes or seconds button. Adjustment buttons appear on the screen.

   Use these buttons to set the timer time.

Start/SWtop switch setting

1. Touch the Start/Stop SW "NULL" button to call the <Switch> screen, and then select the switch and its ON direction.

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

Lap time switch selection

1. Touch the Lap SW "NULL" button to call the Prog. Mix screen, and then select the switch and its ON direction.

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

Timer operation

● Timer 1 and Timer 2 are started and stopped by start/stop switch set beforehand.

● To count the lap time, operate the lap time switch selected beforehand. Each time this switch is operated, the lap time is stored. To display the lap time, touch the respective [List] button.

● To reset a timer, touch the respective [Reset] button.

   To exit the setting, touch the [Timer] button.

Dial Monitor

LDisplays the position of the dials, slider levers, and digital trim.

Digital trim position display (T1-T6, CD)

The Dial Monitor displays the current position and the operation step amount of each Digital Trim. The trim step can be set directly on the dial monitor menu.

VR and slide lever position display (LST, LS, LD, RD, RS, RST)

Displays the current position (black▼) and last operating position (green△) of the VRs and slider levers.

Digital trim step amount (T1-T6, CD)

The trim step of the T1-T6 and CD can be set directly on the dial monitor menu.

● Touch the [Dial Monitor] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

● Trim changes from the step to % display.

●Digital trim step amount
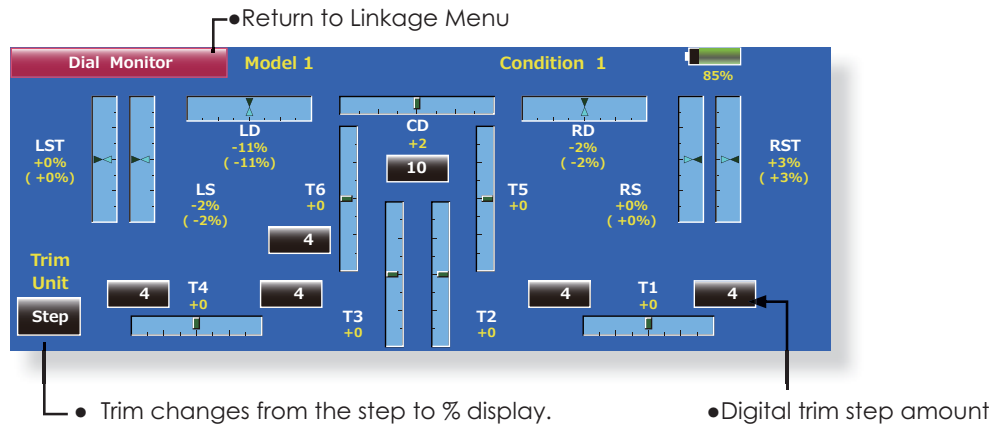
Knob and Lever Position display (LD, RD, LS, LST, RS, RST)

The Dial Monitor displays the current position and last operation position of each knob and lever. Although neither knob nor lever can hold the last operation position because of they are "analog" type, the position data during the last operation is memorized in the model memory. By moving the knob and lever to the position displayed on this monitor, the last operation position is recalled.

Recalling Dial Position (LST, LS, LD, RD, RS, RST)

The dial position data at the last operation is displayed for each knob and lever in this monitor. (Green arrow)
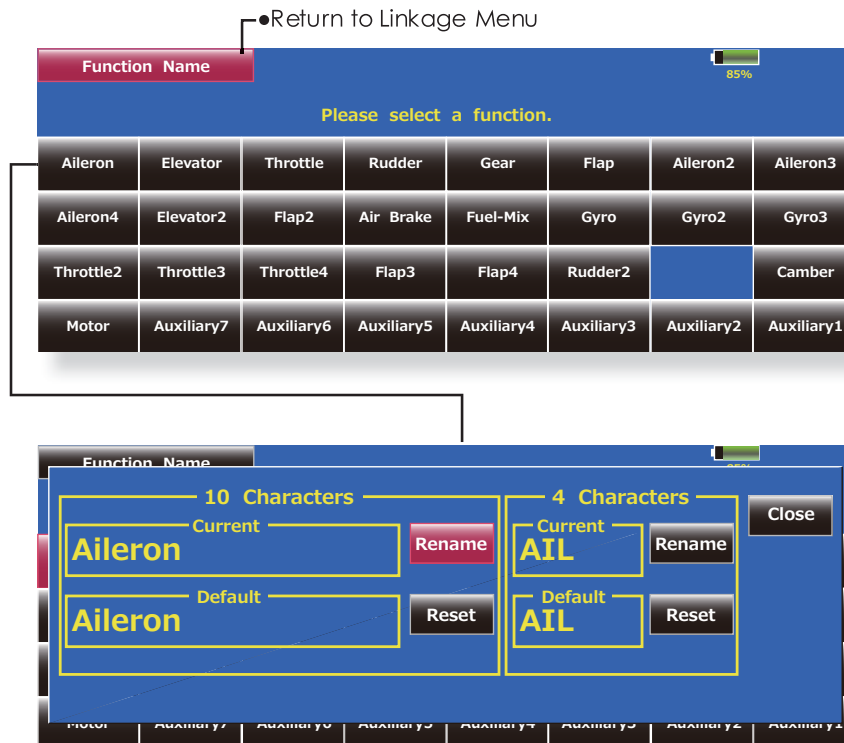
1. Move the black arrow (current position) to the green arrow position by operating the desired knob or lever to recall the last operating position.

Function Name

Function Name can be changed

The setup screen can display functions names of up to 10 characters and up to 4 characters.

● Touch the [Function Name] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Function Name							85%
Please select a function.							
Aileron	Elevator	Throttle	Rudder	Gear	Flap	Aileron2	Aileron3
Aileron4	Elevator2	Flap2	Air Brake	Fuel-Mix	Gyro	Gyro2	Gyro3
Throttle2	Throttle3	Throttle4	Flap3	Flap4	Rudder2		Camber
Motor	Auxiliary7	Auxiliary6	Auxiliary5	Auxiliary4	Auxiliary3	Auxiliary2	Auxiliary1

Function Name

10 Characters		4 Characters		Close
Current		Current		
Aileron	Rename	**AIL**	Rename	
Default		Default		
Aileron	Reset	**AIL**	Reset	

Procedure for changing the functions name

1. Select [Function Name] from the Linkage Menu.

2. Select the function whose name you want to change.

3. Press the [Change name] button and enter the name in 10 characters and 4 characters each from the displayed keyboard. After the characters are entered, press the keyboard [Return] key

4. When the [Reset] key is pressed, the function name is reset its original name.
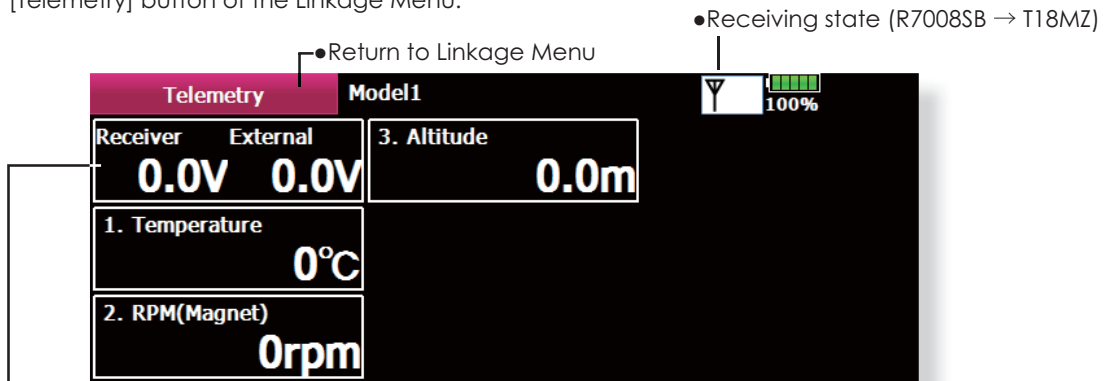
Telemetry

Displaying data from the receiver

This screen displays the data from the receiver. An alarm can also be generated according to the data. For example, if the receiver voltage drops, the operator can be warned by a transmitter alarm.

● Call the following setting screen by pressing the [Telemetry] button of the Linkage Menu.

●Receiving state (R7008SB → T18MZ)

●Return to Linkage Menu

Telemetry	Model1	100%
Receiver External	**3. Altitude**	
0.0V 0.0V	**0.0m**	
1. Temperature		
0°C		
2. RPM(Magnet)		
0rpm		

Receiver Battery Display

● Receiver Battery voltage

● External Input voltage (Extra Voltage connector)

●Return to Telemetry

● If voltage falls rather than the voltage set up here, the alarm will operate.

Receiver Battery	Model1	Current	Alert	Threshold	Vibration	100%
Receiver Battery		**5.9V**	INH	4.0V	OFF	
5.0V - 6.4V						
External Input		**0.0V**	INH	4.0V	OFF	
0.0V - 0.0V						
					Min/Max	
					Clear	

● A setup of an alert of operation.
  It operates by INH → ON/OFF.

● A setup of vibration.
  OFF → each type, the vibration will operate.
  4 types to selection of the kind of vibration is possible.

● The display of the maximum and the minimum.
  [Clear] is reset with a male.

Temperature Display

● Temperature Display

●Return to Telemetry

● Temperature is set up. When it becomes high temperature from preset temperature, the alarm operates.

Temperature	Model1			100%
	Current	Alert	Threshold	Vibration
Temperature	0°C	INH	100℃	OFF

Min/Max
Clear

● A setup of an alert of operation.
  It operates by INH → ON/OFF.

● A setup of vibration.
  OFF → each type, the vibration will operate.
  4 types to selection of the kind of vibration is possible.

● The display of the maximum and the minimum.
  [Clear] is reset with a male.

RPM Display

● RPM Display

●Return to Telemetry

● RPM is set up. When it becomes high RPM from preset RPM, the alarm operates.

RPM	Model1			100%
	Current	Alert	Threshold	Vibration
RPM	0rpm	INH	1500rpm	OFF

Type
Magnet

Min/Max
Clear

● A setup of an alert of operation.
  It operates by INH → ON/OFF.

● A setup of vibration.
  OFF → each type, the vibration will operate.
  4 types to selection of the kind of vibration is possible.

● Select the type: optical sensor or magnetic sensor.
  In optical sensor, the number of a fin is inputted.

● The display of the maximum and the minimum.
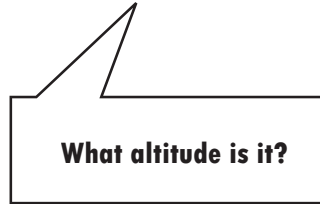 [Clear] is reset with a male.

Altitude Display

Atmospheric pressure is measured by a sensor and an altitude is judged with a difference with ground atmospheric pressure.

Atmospheric pressure when the power supply of an altitude sensor is set to ON is displayed as a standard (0 m).

[Preset] A push on a button will re-set up a standard altitude.

What altitude is it?

- Variometer Display   How many meter rise (descent) in 1 second.
- Atmospheric pressure Display
- Altitude Display
- Altitude is set up. When it becomes high altitude from preset altitude, the alarm operates.

- Return to Telemetry

Altitude	Model1					100%
	Current		Alert	Threshold	Vibration	
Altitude	**0.0m**		INH	1000.0m	OFF	
			Reference(Altitude)			
Pressure	**0Pa**		Preset			
Variometer	**0.0m/s**				Min/Max	
					Clear	

- A setup of an alert of operation. It operates by INH → ON/OFF.

- A setup of vibration. OFF → each type, the vibration will operate. 4 types to selection of the kind of vibration is possible.

- The display of the maximum and the minimum. [Clear] is reset with a male.

Sensor

Various telemetry sensors setting.

The telemetry sensor slot No. and which sensor is used at each slot can be changed at this screen.

Since the sensor at each slot is determined at initialization and the same slot No. is memorized even for sensors sold separately, sensors can be used by simply connecting them to S.BUS2. When customizing the sensors yourself, perform setting at this screen.

*Three slots of altitude sensor are used. Slot 6.7.14.15.22.23.30.31 cannot be used for an altitude sensor.

[What is a slot?]

Servos are classified by CH, but sensors are classified in units called "slot". There are slots from No. 1 to No. 31.

Altitude sensor and other voluminous data sensor units use multiple slots.

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

● Touch the [Sensor] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Sensor	Model1				99%	1/2
Slot	Sensor	Slot	Sensor	Slot	Sensor	
1	Temperature	7	Inhibit	13	Inhibit	
2	RPM	8	Inhibit	14	Inhibit	
3	Altitude	9	Inhibit	15	Inhibit	
4	Altitude	10	Inhibit	16	Inhibit	
5	Altitude	11	Inhibit	17	Inhibit	
6	Inhibit	12	Inhibit	18	Inhibit	

| <Sensor>	Model1		99%
<Sensor> Slot3		Inhibit	Close
Temper...	RPM	Altitude	

Procedure for changing the sensor of each slot No.

1. Select [Sensor] from the Linkage Menu.
2. Select the sensor of the slot No. to be changed.
3. Select the type of displayed sensor.
4. When the [Yes] key is pressed, the type of sensor is changed.

   *In the case of the sensor which uses more slots, it may be unable to assign.
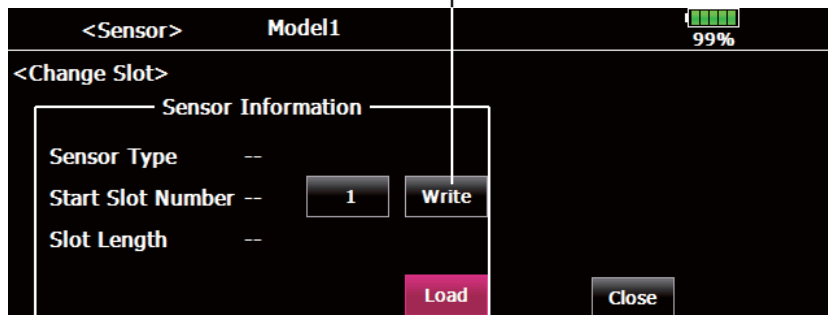
Procedure for changing the slot No. of each sensor unit

1. Select [Sensor] on page 2 of the Linkage Menu.

2. Call page 2 by pressing [1/2] and press [Change Slot].

3. Connect the receiver battery and the sensor unit to the S.I/F connector behind the rear cover of the transmitter using a 3-way hub or 2-way cord.

4. Press the [Read] key. The current slot No. is displayed.

5. When a number is pressed, the [△], [▽], [△△] and [▽▽] keys appear. Now change the desired No.

6. When the [Write] key is pressed, the desired No. is written to the sensor

T18MZ

HUB
or Y-adapter

Sensor

Receiver battery
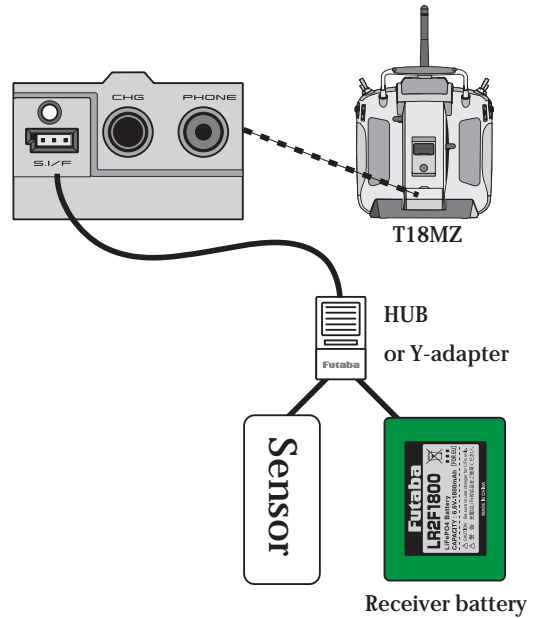
● Call this screen by switching to page 2 by pressing the [1/2] button on the Sensor screen and then pressing [Change Slot].

● The slot No. is written to the sensor.

<Sensor>	Model1	99%

<Change Slot>

━━ **Sensor Information** ━━

Sensor Type   --

Start Slot Number   --   [1]   [Write]

Slot Length   --

[Load]   [Close]

● When pressed, the current slot No. is displayed.

● Returns to the Sensor screen.

Warning

Setting of warning sound and vibration

Warning when a power supply is turned on can be set up for every function. All initial setting is ON. Please turn ON the function in which it seems that it is dangerous in accordance with the purpose of use. Alarm is stopped if the function of each item is operated at OFF.

* If a throttle stick turns on a power power supply in the high state in case of the electric body, it may begin to turn to high rotation suddenly, and is very dangerous. We recommend you to use the warning of a throttle position with ON. Please be sure to turn on each power supply in the state where a throttle stick is slow.

● Touch the [Warning] button in the Linkage Menu (2/2) to call the setup screen shown below.

●Return to Linkage Menu
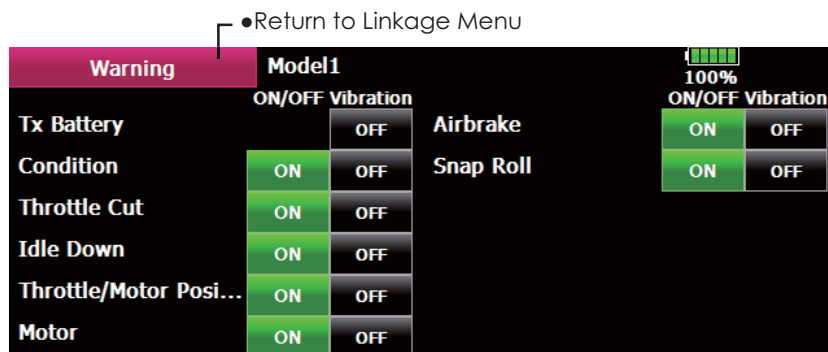
●If it turns ON, warning will be told with vibration.

●If it changes at OFF, alarm stops coming out at the time of the power supply ON.

●If a throttle stick uses the power supply ON in the state by the side of a high, the next screen will come out and alarm will sound.

The throttle stick should turn on a power supply in the state by the side of a low at any cost.

●If a throttle stick is lowered, alarm will stop and it will become a confirmation screen. It starts by YES.

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, CD:

Reset the digital trim setting.

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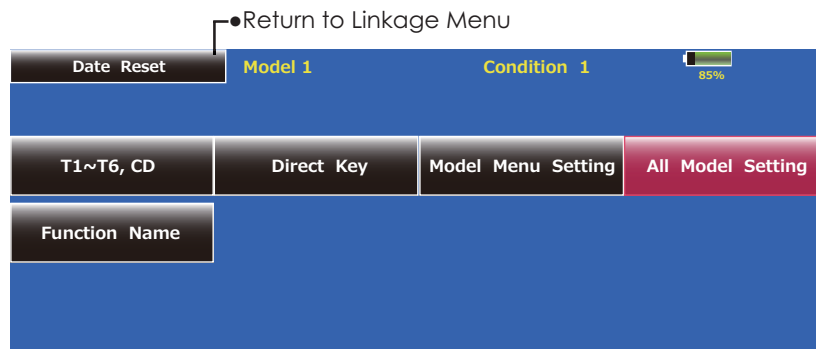
Direct key:

Resets direct key assignment.

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 Syatem Type, Model Select, and Model Type.

● Touch the [Data Reset] button in the Linkage Menu to call the setup screen shown below.

●Return to Linkage Menu

Date Reset	Model 1	Condition 1	85%

T1~T6, CD	Direct Key	Model Menu Setting	All Model Setting
Function Name			

Data Resetting

1. Touch the desired button to reset the set of data.
2. Perform the data resetting according to the instructions displayed on a screen. When complete, touch the Data Reset button to exit.

❗ Initial setting of a motor channel is reverse. After reset is reverse.

Condition Hold

Condition hold function (Helicopter only)

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 racing dangerously when adjusting the Idle-Up settings.

While this function is active, the throttle servo position is fixed at the point where you operate 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. Set the throttle stick lower than the 1/3 point.
2. Push the direct key S4 (Cond. Hold) to activate the condition hold function.

   *When this function is active, "Condition Hold is active" appears on the screen.

(LINKAGE menu/MODEL menu)

1. Set the throttle stick lower than the 1/3 point.
2. Push the INH (or the direct key S4) button to activate the condition hold function.

   *Operation is displayed at the bottom of the menu.

   Function ON: "ON" is displayed.

   Function OFF: "INH" is displayed.