If the receiver’s voltage does not display on the transmitter

- When the receiver has the transmitter’s ID in memory, a link is established and normal operation is allowed.
- When the transmitter has the receiver’s ID in memory, a link is established and telemetry functions are usable.

The transmitter stores receiver IDs by model; thus, if it does not have a particular receiver model ID stored in memory or has a different receiver ID stored, telemetry functions will be unusable. However, the device is operable as long as the receiver has the transmitter’s ID stored in memory.

---

**Link of model 1**

- **Tx ID:** xxxxxx2
- **Rx ID:** xxxxxx1

Operable

Telemetry usable

- Receiver ID: xxxxxx1 stored for Model 1

---

**Model 1 → Model 2**

- **Tx ID:** xxxxxx2
- **Rx ID:** xxxxxx1

Telemetry unusable

- Model 1: Receiver ID: xxxxxx1
- Model 2: Receiver ID: *******
- Model 3: Receiver ID: *******

Device is operable if receiver has transmitter’s ID stored in memory

Telemetry functions unusable because Model 2 does not have receiver’s ID stored in memory.

Transmitter switched to Model 2 and link reestablished

---

When setting up a new model, before using it, first establish a link with the receiver that will be used with it.
Range Testing Your R/C System

It is extremely important to range check your models prior to each flying session. This enables you to ensure that everything is functioning as it should and to obtain maximum enjoyment from your time flying. The T16SZ transmitter incorporates a system that reduces its power output and allows you to perform such a range check.

**Range check mode**

1. While pushing previously "U.MENU/MON." button.

2. THR Stick Slow.

3. T16SZ Power ON.

4. Select "Range check" at the System menu.

   - **System menu**
     - Display: コンディション1
     - Sound volume: 6.3V
     - Date and Time: Range check
     - H/W setting: Battery
     - S.Bus servo: Information

5. "Start" tap.

6. An HOME/EXIT button is pressed to end a range check.

**WARNING**

Do not fly in the range check mode.

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

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

The "Range check mode" continues for 60 seconds and after that the power will return to the normal level. To exit the "Range check mode" before the 60 seconds, press the "HOME/EXIT" button. NEVER start flying when the "Range check mode" is active.

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

**Range check procedure**

1. With the "Range check mode" on, walk away from the model while simultaneously operating the controls. Have an assistant stand by the model to confirm that all controls are completely and correctly operational. You should be able to walk approximately 30-50 paces from the model without losing control.

2. If everything operates correctly, return to the model. Set the transmitter in a safe, yet accessible, location so it will be within reach after starting the engine or motor. Be certain the throttle stick is in the low throttle position, then start the engine or motor. Perform another range check with your assistant holding the aircraft with the engine running at various speeds. If the servos jitter or move inadvertently, there may be a problem. We would strongly suggest you do not fly until the source of the difficulty has been determined. Look for loose servo connections or binding pushrods. Also, be certain that the battery has been fully charged.

**About 100 feet**

Range checking on low power.
**MODEL BASIC SETTING PROCEDURE**

### Airplane basic setting procedure

#### 1. Model addition and call

Initial setting assigns 1 model to the T16SZ transmitter. The Model Select function is used to add models and to select models which are already set.

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

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

#### 2. Model type selection

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

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

#### 3. Fuselage linkage

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

Note: The channel assignment of the T16SZ 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" of the Linkage menu.)

#### 4. Throttle cut setting

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

Set throttle cut with the Throttle cut function of the Linkage menu. After activating the throttle cut function and selecting the switch, adjust the throttle position so that the carburetor becomes fully closed. For safety, the throttle cut function operates the throttle stick in the 1/3 or less (slow side) position.
5. Idle down setting

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

*While the Throttle cut function is in operation, the Idle down function does not work.

6. AFR (D/R)

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

7. Airbrake

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

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

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

8. Addition of flight conditions

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

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

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

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

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

*The Condition delay can be programmed for each channel. The Condition delay is used to change the servo throw smoothly when switching conditions.
**Helicopter basic setting procedure**

This section outlines examples of use of the helicopter functions of the T16SZ. Adjust the actual values, etc. to match the fuselage used.

1. **Model addition and call**
   
   Default setting assigns 1 model to the T16SZ. To add new models or to call a model already set, use the Model select function.

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

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

2. **Model type and swash type selection**
   
   If a different model type is already selected, select helicopter with the Model type function of the Linkage menu, and then select the swash type matched to the helicopter.

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

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

3. **Flight condition addition**
   
   The transmitter can install up to eight flight conditions per model.

   The Condition select function automatically allocates five conditions for helicopter.

   (General setting)
   - Normal
   - Idle up1
   - Idle up2
   - Idle up3
   - Hold

   Note: Delete conditions you have not set up and will not use. Otherwise you may accidentally activate them during flight and cause a crash.

   *For a description of the condition deletion, refer to the Condition select function.

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

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

   Add other conditions, as required.

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

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

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

Note: The channel assignment of the T16SZ is different from that of our existing systems. (The channel assigned to each function can be checked at the Function menu of the Linkage menu.)

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

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

5. Throttle/Pitch curve setting

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

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

-Throttle curve setting example-

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

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

Example of pitch curve setting

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

- Pitch curve (Normal)
  Make the pitch at hovering approximately +5°-6°. Set the pitch at hovering with the stick position at the 50% point as the standard.
  *Stability at hovering may be connected to the throttle curve. Adjustment is easy by using the hovering throttle function and hovering pitch function together.
- Pitch curve (Idle up 1)
  The idle up 1 pitch curve function creates a curve
8. Throttle hold setting

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

9. 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 INH.

10. Swash Mix corrects aileron, elevator and pitch interaction

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

11. Throttle mixing setting

*If throttle mixing is necessary to compensate for engine slowing caused when the swash plate operates at the same time as ailerons or elevator, please refer to the Throttle mixing function.

12. Other special mixings

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

- Governor mixing
  This mixing is dedicated governor mixing when a governor is used. Up to 3 rates (speeds) can be switched for each condition.
Servo connection by model type

The T16SZ 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

● Normal tail and V tail

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Normal

Elevator 1 servo

V-tail

50 < Model Basic Setting Procedure >
### Airplane/glider

#### Aileron

**Model Basic Setting Procedure**

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Elevator 2 servo
### Airplane/gliding

- Tailless wing

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**Flying Wing**

52  < Model Basic Setting Procedure >
### Tailless wing Winglet 2Rudder

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

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* FASST 7CH
* S-FHSS
* FASStest 12CH
* FASStest 18CH
* FASST MULT
* T-FHSS
Helicopter

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

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- FASSTest 12CH

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The output CH of each system FASST 7CH FASST 7CH FASST 12CH FASST 18CH FASST MULT T-FHSS
The System menu sets up functions of the transmitter. This does not set up any model data.

- When the System menu button is tapped, the menu shown below is called up. Tap the function button that you want to enter.

**System menu functions table**

- **[Display]**: Display adjustment.
- **[Sound volume]**: Adjust the volume of: Other sound, Warning, Voice
- **[Date and Time]**: Resets the system timer.
- **[H/W setting]**: Stick mode selection (Mode 1 - Mode 4). J1-J4 sticks correction can be performed.
- **[Battery]**: Battery alarm voltage setting. Auto power off time setting.
- **[Range check]**: The output of the transmitter is lowered, for Range checking.
- **[S.Bus servo]**: S.Bus servo setting.
- **[Information]**: Sets the User name, Language, and Unit system. Displays the program version, and SD card information.
Display

The following LCD screen adjustments:
● Backlighting brightness adjustment
● Backlighting decrease time adjustment
● Touch screen calibration

● Tap the [Display] button in the System menu to call the setup screen shown below.

• Return to System menu

Backlight max. brightness adjustment
1. Adjust the backlighting brightness with the value input buttons.
   *When the ▲ button is tapped, the backlighting becomes brighter. When the ▼ button is tapped, the backlighting becomes darker.

Backlight min. brightness adjustment
1. Adjust the backlight decrease brightness with the value input buttons.
   *When the ▲ button is tapped, the backlighting becomes brighter. When the ▼ button is tapped, the backlighting becomes darker.
   *It cannot be made brighter than Backlighting brightness adjustment.

Backlight decrease time
1. 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 that you turn off the backlight by setting the backlight power-off time to about one minute.

Touch calibration
This function adjusts the location of the Touch Panel. Press the "Touch calibration" button. The calibration screen will then pop up. Tap the center of the cross hair cursor on the screen with the soft 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.

*In ordinary operation, this calibration is not necessary. If you notice the Touch Panel is not functioning correctly after long use, we recommend that you carry out this calibration.
Sound volume

This function can set the volume of "Other sound" "Warning" "Voice" respectively.

- Tap the [Sound volume] button in the System menu to call the setup screen shown below.

Sound volume Setting method

1. When the Sound volume box is tapped, the above screen will appear.

2. You can change the sound volume by tapping the "▲▲" "▲" "▼▼" "▼" button of four items.
   *If you tap "▲", the volume will increase. If you tap the "▼", the volume will decrease.

Date and Time

This function adjusts the system timer of the T16SZ transmitter. The system timer can also be reset.

- Tap the [Date and Time] button in the System menu to call the setup screen shown below.

System timer reset

The system timer shows the total time that has elapsed since the last "reset".
1. Tap "Total" or "Model", to reset is chosen.
2. When the [System timer] button is tapped.
3. Tap "Yes" in the next screen, the timer is reset.
**H/W setting**

Stick mode selection and J1-J4 sticks calibration

Usually, this H/W setting is unnecessary.

Please perform this calibration only if a change at the center of a stick should arise after prolonged use.

- Tap the [Calibration] button in the System menu to call the setup screen shown below.

**How to Calibrate**

1. Tap the “Calibration”.

2. Choose the stick to calibrate right and left.

3. The stick is set at neutral and the [Set neutral] button is tapped.

4. The stick is held at full right and full bottom (diagonal). The [Set endpoint] button is tapped.

5. The stick is held at full left and full top (diagonal). The [Set endpoint] button is tapped.

*Please do not press the stick too firmly in any direction when doing the calibration. Check after calibration to make sure that neutral is 0%, the bottom right side is +100%, and the top left side is -100%.

**Stick mode**

Mode 1-4 can be chosen. But, it isn't changed until data is reset.

To change the mode the stick ratchet must be changed. Request that this be done by Futaba Service. (Charged modification)
Battery

Select the battery alarm voltage according to the battery to be used.

• Return to System menu

Battery type change:
LiFe(2cells) → NiMH(5cells)
→ Manual setting

It isn't indicated in case of manual setting.

Vibrator Types

Type 1
Type 2
Type 3

When choosing manual setting, the numerical value can be input.

It's dangerous to set it manually in the low voltage.

*About low battery voltage, all the models included in one transmitter are changed in common. It cannot set to different voltage for every model. Moreover, data reset is not carried out.

Auto power off time setting

This function prevents battery discharging if the transmitter power supply does not erase.

1. Adjust the auto power off time with the value input buttons.
   *When the time the transmitter is inactive reaches 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 deactvated.
   *An audible alarm is sounded from 3 minutes before auto power off. When a stick or switch is operated while the alarm is cleared.

Warning:
Do not fly in the range check mode.

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

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 60 seconds unless the user exits this mode early. When the progress bar reaches 60 second mark, the RF transmission automatically returns to the normal operating power.

Refer to P.44
S.Bus servo

An S.BUS(2) servo can memorize the channel and various settings you input. Servo setting can be performed on the T16SZ screen by wiring the servo as shown in the figure.

* With some S.BUS(2) servos, there are some functions which cannot be used. If a function cannot be used, the display screen will change. (Only the function which can be used by a servo is displayed.)
* After reading completion, with connection of the above figure, if a stick is moved, servo operation can be tested.

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

![Setting Screen]

**Procedure for changing S.BUS servo setting**

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

**Servo ID number**

If you use multiple S.BUS servos, only the desired servo in the group can be set by entering the ID of that specific servo.

![ID Number Setting]

---

*Refer to the manufacturer's instructions for specific details on setting and use.*
S.BUS Servo Description of function of each parameter

*There are functions that can and cannot be performed according to the servo type.

• **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.

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

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

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

• **Neutral Offset**
  The neutral position can be changed. When the neutral offset is large value, the servo’s range of travel is restricted on one side.

• **Speed Control**
  Speeds can be matched by specifying the operating speed. The speed of multiple servos can be matched without being affected by motor fluctuations. This is effective for load torques below the maximum torque.
  However, note that the maximum speed will not exceed what the servo is capable of even if the servos operating voltage is increased.

• **Dead band**
  The dead band angle at stopping can be specified.

  **[Relationship between dead band set value and servo operation]**
  Small → Dead band angle is small and the servo is immediately operated by a small signal change.
  Large → Dead band angle is large and the servo does not operate at small signal changes.

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

• **Travel Adjust**
  The left and right travels centered about the neutral position can be set independently.

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

  **[Relationship between boost set value and servo operation]**
  Small → Motor reacts to a minute current and operation becomes smooth.
  Large → Initial response improves and output torque increases. However, if the torque is too large, operation will become rough.
• Boost ON/OFF
OFF : It is the boost ON at the time of low-speed operation.(In the case of usual)
ON : It is always the boost ON.(When quick operation is hope)

• Damper
The characteristic when the servo is stopped can be set.
When smaller than the standard value, the characteristic becomes an overshoot characteristic. If the value is larger than the standard value, the brake is applied before the stop position.
Especially, when a large load is applied, overshoot, etc. are suppressed by inertia and hunting may occur, depending on the conditions. If hunting (phenomena which cause the servo to oscillate) occurs even though the Dead Band, Stretcher, Boost and other parameters are suitable, adjust this parameter to a value larger than the initial value.

[Relationship between damper set value and servo operation]
Small → When you want to overshoot. Set so that hunting does not occur.
Large → When you want to operate so that braking is not applied. However, it will feel like the servo response has worsened.
(Note) If used in the hunting state, not only will the current consumption increase, but the life of the servo will also be shortened.

• Stretcher
The servo hold characteristic can be set. The torque which attempts to return the servo to the target position when the current servo position has deviated from the target position can be adjusted.
This is used when stopping hunting, etc., but the holding characteristic changes as shown below.

[Relationship between stretcher and servo operation]
Small → Servo holding force becomes weaker.
Large → Servo holding force becomes stronger.
(Note) When this parameter is large, the current consumption increases.

• Buzzer
When the power supply of a servo is previously turned on at the time of a power supply injection without taking transmit of a transmitter, the buzzer sound of about 2.5Hz continues sounding from a servo.
(Even when the transmit of a transmitter is taken out previously, a buzzer becomes until the signal of a servo is outputted normally, but it is not unusual.)

The transmitter has been turned OFF ahead of a servo power supply → The buzzer sound of about 1.25 Hz continues sounding as servo power supply end failure alarm.
(Do not insert or remove the servo connector while the receiver power is ON. A buzzer may sound by incorrect recognition.)
* Buzzer sound is generated by vibrating the motor of a servo.
Since current is consumed and a servo generates heat, please do not operate the number more than needed or do not continue sounding a buzzer for a long time.

⚠️ WARNING
⚠️ While S.BUS servo writes, you aren’t supposed to remove a connection of a servo and turn off a power supply of a transmitter.
Data of S.BUS servo is damaged and breaks down.
Information

The program version, and SD card size are displayed. The User name, language and Unit system used by the system can also be changed.

This function registers the T16SZ user name and the language displayed at proportional can be changed.

Telemetry numerical values can be displayed in either metric or SAE (yard-pound) units.

The Information screen displays the T16SZ system program version information, SD card (memory size, card free size) information.

*If an SD card is not inserted, no memory card information will be displayed.

- Tap the [Information] button at the System menu to call the setup screen shown below.
- Return to System menu

Telemetry Display Unit

[Metric]
Distance --- m (meter)
Speed --- km/h (kilometers per hour)
Variometer --- m/s (meter per second)
Temperature --- °C (centigrade)

[Yard]
Distance --- yard
Altitude --- feet
Speed --- mph (mile per hour)
Variometer --- fpm (ft per min)
Temperature --- °F (fahrenheit)

Registration of the user's name

T16SZ transmitter can register user's name.

How to register user's name

1. Turn on the power of the transmitter.
2. Select "user's name" and then the keyboard will pop up.
3. You can use up to 15 characters as a user's name. Use the keyboard on the screen to enter user's name.

The language displayed at proportional can be changed. The initial setting is English, but different languages can be selected.
The Linkage menu is made up of functions which perform model addition, model type selection, end point setting, and other model basic settings.

- Tap the [Linkage menu] button in the Home screen to call the setup screen shown below.
- Select the function name and return to the Home screen.

<table>
<thead>
<tr>
<th>Linkage menu functions table</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Servo monitor]: Displays the servo test and operation position</td>
</tr>
<tr>
<td>[Model select]: Model addition, call, deletion, copy, model name setting</td>
</tr>
<tr>
<td>[Model type]: Model type, wing type, tail type, swash type, selection</td>
</tr>
<tr>
<td>[Servo reverse]: Servo direction reversal</td>
</tr>
<tr>
<td>[End point]: Servo basic rate adjustment and limit setting</td>
</tr>
<tr>
<td>[Servo speed]: Servo speed setting</td>
</tr>
<tr>
<td>[Sub-trim]: Adjusts the neutral position of each servo</td>
</tr>
<tr>
<td>[Function]: Channel assignment of each function can be changed</td>
</tr>
<tr>
<td>[Fail safe]: Fail safe function and battery fail safe function setting</td>
</tr>
<tr>
<td>[System type]: System mode selection, link of a transmitter and receiver, telemetry mode selection</td>
</tr>
<tr>
<td>[Trim setting]: Control step amount and mode selection of the digital trim</td>
</tr>
<tr>
<td>[Throttle cut]: Stops the engine safely and easily</td>
</tr>
<tr>
<td>[Idle down]: Lowers the idle speed of the engine</td>
</tr>
<tr>
<td>[Swash ring]: Limits the swash plate travel to within a fixed range. (helicopter only)</td>
</tr>
<tr>
<td>[Swash]: Swash AFR and linkage correction function (helicopter only except swash type H-1)</td>
</tr>
<tr>
<td>[Stick alarm]: Can be set so that an audible alarm sounds when the throttle stick reaches the set position.</td>
</tr>
<tr>
<td>[Timer]: Timer setting</td>
</tr>
<tr>
<td>[Function name]: Function name can be changed</td>
</tr>
<tr>
<td>[Sensor]: Various telemetry sensors setting</td>
</tr>
<tr>
<td>[Telemetry]: Displays various data sent from the receiver</td>
</tr>
<tr>
<td>[Tele. setting]: Telemetry data log</td>
</tr>
<tr>
<td>[Trainer]: Starts and sets the trainer system.</td>
</tr>
<tr>
<td>[Warning setting]: Mixing, throttle position warning reset</td>
</tr>
<tr>
<td>[User menu setting]: Original menu making</td>
</tr>
<tr>
<td>[Date reset]: Model memory set data reset (by item)</td>
</tr>
</tbody>
</table>
Servo monitor

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

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

- Select [Servo monitor] at the linkage menu and call the setup screen shown below.

![Servo monitor setup screen]

**WARNING**

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

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

This function is used to load the settings of the desired model into the T16SZ’s memory.

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

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

Model addition

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

*The added model is displayed in the model list.
*When a model is added, a receiver link is required.
Model call

1. Tap the Internal or SD card. Select the location to which the desired model is to be saved.
2. Tap the desired model in the model list.
3. Tap the [Select] button.
4. Tap [Yes] to call the model. (When you want to cancel model call, press [No].)

Model deletion

1. Tap the select model name or the model you want to delete in the model list. (The model currently selected cannot be deleted.)
2. Tap the [Delete] button.
3. Tap [Yes]. (When you want to stop model deletion, tap [No].)
**Model name change**

1. The model data chosen at current model can be changed. The current model name, tap.
2. When [Rename] is tapped, a keyboard appears on the screen.
3. Enter the model name from this keyboard.
   *Up to 15 characters can be input at the model name.

**Model copy**

1. The model data chosen at current model can be copied. The current model name, tap.
2. Tap the "Copy" button and tap the destination button and select the copy storage destination. (Internal or SD card)
3. When [Internal] or [SD card] is tapped, copying is executed.

*If there is no model with the same name in the copy destination, the name of the copied model is saved. If there is a model of the same name, a number is added at the end of the model name and the model is copied. You can change the name later.

*Indication date: When the model data is copied, the creation date for the current model is recorded.

---

**WARNING**

Never launch the Model Selection function while the engine is starting or the motor drive wiring is connected.

*Careless spinning of propellers or rotors is extremely dangerous.

**WARNING**

Carefully check that the aircraft to be used and the model selected match up.

*Using a model which does not match the aircraft runs the risk of the aircraft flying out of control and crashing. Perform a careful operations check prior to flight.
Model type

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

Seven types of main wings (six types of flying wing) 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.

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

- Select [Model type] at the linkage menu and call the setup screen shown below.

**Model type selection**

1. Model type selection [Model icon], tap.
2. Set the Model type, Wing type (Airplane/Glider), Tail type (Airplane/Glider), or Swash type (Helicopter) by using the appropriate button.
3. Set the type you choose by tapping [Enter] → [Yes] at the confirmation screen. (When you want to cancel model type selection, tap [No].)

- When a data change will occur, the confirmation screen of data initialization menu will be displayed.
  A push on [yes] will initialize data and allow changes.
  A push on [no] will stop data changes.
Set the type you choose by tapping

Airplane/Glider: Choose the wing type and tail.

Helicopter: Choose the swash type.

Wing type selection

Tail type selection
Servo Reverse  Use to reverse the servo 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/Glider 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 check that your model’s servo operation, the direction of control surfaces, and switch setup are correct.

⚠️ Default setting of the throttle/motor channel is always reverse.

● Tap the [Servo reverse] button in the Linkage menu to call the setup screen shown below.

● Tap the channel you wish to reverse.

● Tap the “Yes” → Reverse

(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. Tap the desired channel’s setting button to choose the proper direction for the servo.
2. Tap “Yes” in the next screen.
3. Repeat for each servo needing reversal.

When done, tap “Servo reverse” to return to the Linkage menu.
**End point**

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

The travel rate (normal full stick movement at high rates) can be varied from 30% to 140% in each direction on channels 1 to 16. Also, the limit point (how far the servo travels when a mix is involved) where servo throw stops may be varied from 0% to 155%.

---

**Servo travel adjustment**

1. Tap the travel button of the channel you want to set. Value input 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. Tap the limit button of the channel you want to set.
2. Use the value input buttons to adjust the limit point.
   - Initial value: 135%
   - Adjustment range: 0%~155%
3. Repeat this procedure for each limit point.
**Servo speed**

Sets the speed of each servo.

The Servo speed setting is used to set the servo delay for each channel, from channel 1 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.

- Tap the [Servo speed] button in the Linkage menu to call the setup screen shown below.

### Servo speed setting

1. Tap the speed button of the channel you want to set.
2. Use the value input 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, tap the [Servo speed] button.

### 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.

- Tap the [Sub-trim] button in the Linkage menu to call the setup screen shown below.

### Sub-trim adjustment

1. Tap the trim display part of the channel you want to adjust.
   - Value input buttons appears on the Sub-trim menu screen.
2. Use the value input buttons to adjust the sub trim.
   - Initial value: 0
   - Adjustment range: -240~+240 (steps)
   - See above
3. Repeat this step for each channel.
Function

Channel assignment for each function can be changed to suit your needs.

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 (On/Off) channels. You can freely change combinations between servo output channels and input controllers (sticks, switches, trim levers and trim switches).

Channel restrictions by a System Type

FASSTest 18CH---16 CH+2 Switch
FASSTest 12CH---10 CH+2 Switch
FASST MULTI ---16 CH+2 Switch
FASST 7CH --- 7 CH
S-FHSS --- 8 CH
T-FHSS ---16 CH+2 Switch

Function change

1. Tap the function button of the channel you want to change to call the Function select.

2. Select the function you want to change.

Operation control change

1. Tap 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.

*The same control can be assigned to multiple channels.
The Motor function is used when switching the motor ON/OFF (mostly for motor gliders). For most EP plane, the throttle can be left as-is when controlling the motor by stick. This means that the various throttle-related functions are usable via motor control.

2. The following items can be set at the trim setup screen.
   - Hardware setting (Selection of switch, etc. which controls trim)
   - Rate setting
   - Trim mode setting
   Normal mode: Normal trim (linear) operation
   ATL mode: ATL operation mode. (Works at only one end of operation) Reverse is also possible.
   Center mode: Maximum change near center by center trim operation (Does not change at end of the stick movement)

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.
Fail safe

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

The Fail safe function is used to set up positions that the servos will move to in the case of radio interference. Defines servo position when signals are lost and when receiver battery voltage becomes low.

You may set either of two positions for each channel: Hold, where the servo maintains its last commanded position, or fail safe, where each servo moves to a predetermined position. You may choose either mode for each channel.

The T16SZ 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).

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.

**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 movement, the fail safe may be mistaken as an engine malfunction and will be reset at low throttle and the model will continue to fly. If you have any doubts, immediately land.

*Tap the [Fail safe] button in the Linkage menu to call the setup screen shown below.*

<table>
<thead>
<tr>
<th>Fail safe</th>
<th>New-Cond1</th>
<th>6.7V</th>
<th>1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch Function</td>
<td>Mode</td>
<td>B.F/S</td>
<td>F/S-POS</td>
</tr>
<tr>
<td>1 Aileron</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
<tr>
<td>2 Elevator</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
<tr>
<td>3 Throttle</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
<tr>
<td>4 Rudder</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
<tr>
<td>5 Gear</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
<tr>
<td>6 Air brake</td>
<td>Hold</td>
<td>OFF</td>
<td>+0</td>
</tr>
</tbody>
</table>

**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 fail safe 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. Tap 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 tap the F/S position button. That position is displayed in percentage.

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

**Battery fail safe setting procedure**

To select the B.F/S mode, tap the [B.F/S] button. Each time the button is tapped, it toggles between [OFF] and [B.F/S].

**B.F/S setting:**

1. Tap 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 tap the F/S position button. This position is displayed in percentage.

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

**Battery Fail safe release function**

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

1. Enter the control setting screen by tapping the Battery F/S release button. Now, you may choose whether moving the throttle resets the condition, or select a stick or switch to deactivate 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.
System Type selection

The T16SZ is for 2.4GHz only. The system can be changed from among 6 choices: FASSTest 18CH, FASSTest 12CH, FASST MULTI, FASST 7CH, T-FHSS, S-FHSS. It is FASSTest18CH and FASSTest12CH which can be chosen by R7008SB set. The method of selection is to the next page.

*If you change the System type, other model data is not reset.
*After any change, remember to test the model and fully check servo direction and motion.
*Analog servos cannot be used with the R7008SB in the FASSTest 12CH mode.

Receiver linking

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

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

Linking method P.41

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

Dual receiver function (only FASSTest 18CH)

Dual receivers can be linked with the T16SZ. Two receivers are recognized individually by ID numbers. For example, in R7008SB, CH output setting function is used, by setting the first as "1-8CH", and setting the second as "9-16CH". Two sets of receivers can be used as a set in the model, allowing you 16 channels. Separate fail-safe voltage can be set to each receiver.

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

Telemetry function (FASSTest / T-FHSS mode only)

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

DL Interval (FASSTest/T-FHSS mode only)

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

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

Battery fail-safe voltage setup (FASSTest / T-FHSS mode only)

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

Since power consumption varies with battery type, servos and condition, please select the fail-safe activation voltage for your own model.
The example for choosing System Type

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

\[ \text{FASSTest 18CH} \]
- Response speed has priority over number of channels
- Telemetry requires only the current receiver battery

\[ \text{FASST Multi} \]
- Want to use a previously used receiver as is
- Want to use an S-FHSS system receiver
- Want to use a large number of telemetry functions

\[ \text{T-FHSS Air} \]
- Want to use a T-FHSS system receiver
- Want to use a large number of telemetry functions
- Want to use an S-FHSS system miniatures receiver

\[ \text{S-FHSS} \]
- Want to use an S-FHSS system receiver

System type

- **FASSTest 18CH** — FASSTest system receiver mode. Applicable with the telemetry sensor unit. Up to 18 channels (linear16+ON/OFF2) can be used.

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

  - Analog servos cannot be used with the R7008SB in the FASSTest 12CH mode.

- **FASST Multi** — FASST-MULTI system receiver mode. Up to 18 channels (linear16+ON/OFF2) can be used.

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

- **T-FHSS Air** — T-FHSS system receiver mode. Applicable with the telemetry sensor unit. Up to 18 channels (linear16+ON/OFF2) can be used. (*R3106GF is different.)

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

(Usable receivers) (The time of march, 2017)
Trim setting

This function adjusts the digital trim's control step amount and operation mode (T1-T4).

1. Select [Trim setting] at the linkage menu and call the setup screen shown below.

Control step amount setting

1. The [Step] item tap the screen to the data input mode.

   Set the control step amount by tapping the "▲▲" "▲" "▼▼" "▼" button.

   Initial value: 4
   Adjustment range: 1~200
   (When the value is tapped, the control step amount is reset to the initial value.)

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

Separate/combination mode selection

[Comb.]: Combination mode. The trim data are reflected at all the flight conditions.
[Separ.]: Separate mode. Trim adjustment for each flight condition.
**Throttle cut**  
Stops the engine safely and easily.

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 "— — ".

- Tap the [Throttle cut] button in the Linkage menu to call the setup screen shown below.

![Throttle cut setup screen](image)

**Throttle cut setting procedure**

1. Tap the "INH" button.
2. Throttle cut function switch setting:
   - Tap the "—" button to call the <Hardware select> screen, and then select the switch and its ON direction.
   - (For a detailed description of the selection method, see [Switch selection method] at the back of this manual.)
3. Throttle cut position setting:
   - Tap the cut position button. Value input buttons appear on the screen.
   - Use these buttons to adjust the cut position rate.

- Initial value: 17%
- Adjustment range: (LOW) 0%~50% (Middle)

*With throttle stick at idle, adjust the rate until the engine consistently shuts off.

To exit the setting, tap the [Throttle cut] button.
Idle down

Lowers the engine idling speed.

The Idle down function lowers the engine's 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 "--".

- Select [Idle down] at the linkage menu and call the setup screen shown below.

Tapping this will change INH to either OFF or ON and activated.

Tapping this will pull up the hardware selection screen. Select the idle down switch and ON-OFF direction.

This is the idle down throttle position. Tapping this will display value input buttons on-screen. Set the engine's max. low position.

Range: (↑)-100 ~ +100 (↓)
Pressing and holding a value will reset it to 0.

Idle down setting procedure

1. Tap the "INH" button to activate the Idle down function.
2. Idle down function switch setting:
   Tap the "--" button to call the <Hardware select> screen, and then select the switch and its ON direction.
   (For a detailed description of the selection method, see [Switch selection method] at the back of this manual.)

3. Offset rate setting:
   Tap the offset rate button. Value input 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, tap the [Idle down] button.

---

Landing

Idling, lower

Offset rate
Swash ring Limits the swash travel within a fixed range to prevent linkage damage (Helicopter only)

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

- Tap the [Swash ring] button in the Linkage menu to call the setup screen shown below.

**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 (helicopter only, except swash type H-1).

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

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

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

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

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

- Select [Swash] at the linkage menu and call the setup screen shown below.
- Return to Linkage menu
Neutral point setting procedure
*Becomes the compensation reference 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 tap 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, tap the [Swash] button.

Swash AFR setting procedure
Adjust so that the specified operation amount is obtained by aileron, elevator, and pitch operation.
1. Tap the button of the AFR rate to be adjusted. Value input buttons appear on the screen.
2. Use the value input buttons to adjust the AFR rate.
Initial value: +50%
Adjustment range: -100%~+100%
+or- the direction of operation changes.
To exit setting, tap 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, tap the [Swash] 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, tap the [Swash] 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, tap the [Swash] button.

Notes:
If the linkage is too long or short, correct compensation will not be applied. Correct this before continuing. The pitch angle changes after any adjustment. Reset the pitch angle when actually flying after compensation processing.
Stick alarm

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

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

This is the throttle stick alarm position. Push the throttle stick to the desired position and tap the value.

Range: (Low) 0 ~ 100 (High)

Tapping this will pull up the hardware selection screen. Select the switch and ON-OFF direction if turning the function ON-OFF by switch.

If the throttle stick reaches the desired position, an alarm (single beep) will sound.

If the throttle stick reaches the yellow line, an alarm will sound.

This is the current position display bar for the throttle stick.

Tapping this will change INH to ON and activated.
Timer

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.

- Select [Timer] at the linkage menu and call the setup screen shown below.

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

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

Timer setting

- Return to Linkage menu

- Inhibit] → [Type1-4] If it carries out like this, a vibration function will work.

OFF: Turning the power OFF and switching models will reset the timer.
ON: Previous timer is put into memory and will restart from where it stopped.

Up timer/Down timer selection

1. Tap the mode button and select the type of timer.
2. Timer time setting.

   Tap the Mode minutes or seconds button. Value input buttons appear on the screen. Use these buttons to set the timer time.

Start/Stop/Reset switch setting

1. Tap the Start/Stop/Reset SW "--" 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 selection method] at the back of this manual. The timer switches can be set for each condition.)
Function name

The name of the spare functions (Auxiliary 1-8) can be changed for the full name (10 characters) or for the abbreviated name (4 characters).

- Tap the [Function name] button in the Linkage menu to call the setup screen shown below.

![Function name setup screen]

Function name change method

1. Select [Function name] of the Linkage menu and tap the screen.
2. The Function name setup screen is displayed.
3. When the function whose name is to be changed is selected and the screen is tapped, a modification screen is displayed.
4. Select the function to be renamed and select [Rename] and tap the screen. A character input screen is displayed. Input the function name.
5. When [Reset] is selected and the screen is held down, the function name is set to the initial state function name.

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

This screen displays and sets the various information from the receiver. An alarm and vibration can be generated depending on the information. For example, a drop in the voltage of the receiver battery housed in the aircraft can be reported by an alarm.

- This function can only be used in the FASSTest 18CH mode and T-FHSS mode. The FASST/S-FHSS mode cannot use telemetry.
- FASSTest 12CH mode. Applicable with receiver voltage display.
- Telemetry sensors sold separately can be mounted in the aircraft to display a variety of information. (Receiver voltage does not require a sensor.)
- The telemetry function cannot be used if the telemetry mode of the parameters is not ACT.
- T-FHSS : When 2 receivers are used with 1 transmitter, the telemetry function cannot be used.
- If the transmitter and receiver are linked, but the receiver’s ID is not recorded in the transmitter’s memory, the telemetry function cannot be used.
- Turning OFF the receiver after use will cause the telemetry data just prior to this to be displayed. (Even when the receiver’s power is turned OFF, the receiver voltage is not 0.0V.)

Viewing the telemetry data

- **Viewing the receiver voltage.** Setting is unnecessary. When menu telemetry is listened to, the voltage appears.  
  - P.89
- **Viewing the drive battery voltage.** CA-RVIN-700 and wiring work are necessary.  
  - P.96
- **Using various optional telemetry sensors.** Optional telemetry sensors are necessary. T16SZ setting is unnecessary.  
  - P.91
- **Using several telemetry sensors of the same type.** Setting by "sensor" in the menu is necessary. (Register is necessary.)  
  - P.92
- **Setting alarms from the telemetry information.** Setting by “Telemetry” in the menu is necessary.  
  - P.94 ~ 111

**CAUTION**

- **Do not stare at or set the transmitter setting screen while flying.**
  - Losing sight of the aircraft during flight is very dangerous.
  - When you want to check the information during flight, call the telemetry screen before flight and have the screen checked by someone other than the operator.

Receiver → Transmitter. The reception of the signal from the receiver to the transmitter is shown. This does not affect flight.

Receiver voltage and Ext voltage display

< Home display >

< Linkage menu > 89
HOME/EXIT is pushed

*Be aware that pressing and holding this activates the key lock

4 of telemetry data is displayed

You can choose which type of sensor to display for four displays. Tap the sensor type.

For some sensor types, you can choose the display item. Tap to select.

Telemetry Schematic

Drive battery voltage is displayed at the transmitter. Battery voltage is displayed at the transmitter.

CA-RVIN-700 with external power input must be less than 70V

T16SZ
Sensor

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

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

- Tap the [Sensor] button in the Linkage menu to call the setup screen shown below.

< Assignable slot >

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

<table>
<thead>
<tr>
<th>Sensor</th>
<th>The required number of slots</th>
<th>The number which can be used as a start slot</th>
<th>Selling area</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMP (SBS-01T/TE)</td>
<td>1slot</td>
<td>1-31</td>
<td></td>
</tr>
<tr>
<td>RPM (SBS01RM/RO/RB)</td>
<td>1slot</td>
<td>1-31</td>
<td></td>
</tr>
<tr>
<td>Voltage (SBS-01V)</td>
<td>2slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,22,24,25,26,27,28,29,30</td>
<td></td>
</tr>
<tr>
<td>Altitude (SBS-01/02A)</td>
<td>3slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,24,25,26,27,28,29,30</td>
<td></td>
</tr>
<tr>
<td>Current (SBS-01C)</td>
<td>3slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,16,17,18,19,20,21,24,25,26,27,28,29,30</td>
<td></td>
</tr>
<tr>
<td>S.BUS Servo sensor</td>
<td>6slots</td>
<td>1,2,8,9,10,16,17,18,24,25,26</td>
<td>Europe</td>
</tr>
<tr>
<td>GPS(SBS-01/02G)</td>
<td>8slots</td>
<td>8,16,24</td>
<td>Europe</td>
</tr>
<tr>
<td>TEMP125-F1713</td>
<td>1slots</td>
<td>1-31</td>
<td>Global</td>
</tr>
<tr>
<td>VARIO-F1712</td>
<td>2slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,22,24,25,26,27,28,29,30</td>
<td>Global</td>
</tr>
<tr>
<td>VARIO-F1672</td>
<td>2slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,14,16,17,18,19,20,21,24,25,26,27,28,29,30</td>
<td>Global</td>
</tr>
<tr>
<td>CURR-F1678</td>
<td>3slots</td>
<td>1,2,3,4,5,6,8,9,10,11,12,13,16,17,18,19,20,21,24,25,26,27,28,29,30</td>
<td>Global</td>
</tr>
<tr>
<td>GPS-F1675</td>
<td>8slots</td>
<td>8,16,24</td>
<td>Europe</td>
</tr>
<tr>
<td>Kontronik ESC</td>
<td>8slots</td>
<td>8,16,24</td>
<td>Europe</td>
</tr>
<tr>
<td>Castle TL0</td>
<td>8slots</td>
<td>8,16,24</td>
<td>Europe</td>
</tr>
<tr>
<td>JetCat V10</td>
<td>14slots</td>
<td>1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18</td>
<td></td>
</tr>
<tr>
<td>PowerBox</td>
<td>16slots</td>
<td>8,16</td>
<td></td>
</tr>
</tbody>
</table>
Sensor : Reload

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

When using multiple sensors of the same type the sensors must be registered in the transmitter. Connect all the sensors to be used to the T16SZ as shown in the figure at the right and register them by the following procedure. The ID of each sensor is registered in the transmitter.

- Call page 3/3 from the [Sensor] menu.

Reading all the sensors to be used

1. Connect the sensor to the T16SZ as shown in the figure above.
3. Tap “Reload”.

All the sensors are registered and can be used.

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

Sensor : Register

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

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

- Call page 3/3 from the [Sensor] menu.

Additional sensor registration

1. Connect the sensor to the T16SZ as shown in the figure above.
3. The sensor is registered and can be used.

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