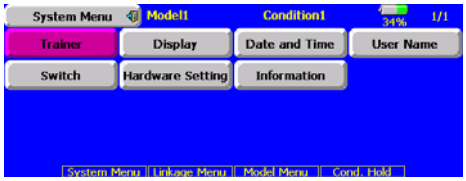
T14MZ Software Update Function Modification Contents (Version: 1.1.0, 1.2.0)

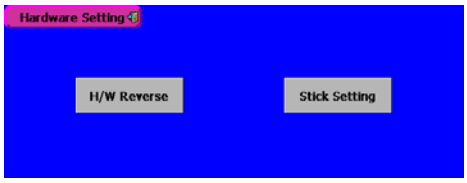
Hardware setting

This function is for adjusting the sticks, switches and trim characteristics.

[System menu]



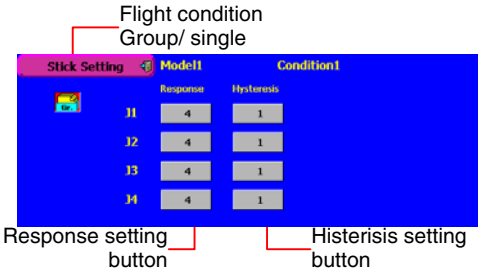
Push the “Hardware setting” button on the system menu. The LCD displays as below. The hardware reverse function is the same as before.



Stick setting

This function adjusts the stick’s response and histerisis (null control). You can set your favorite control feeling on each flight condition.

Push the “stick setting” button on the hardware setting screen. The LCD displays as below.



Adjusting the stick response

1. Push the response button for either stick you want to adjust. The rate adjustment button appears.
2. Adjust the stick response by pushing the rate button.
   Default: 4
   Adjusting ranges: 1-32 (the greater value produces response)

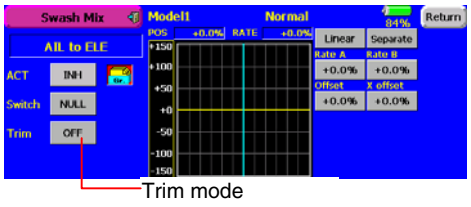
Adjusting the hiterisis

1. Push the histerisis button either stick you want to adjust. The rate adjustment button appears.
2. Adjust the histerisis by pushing the rate button.
   Default: 1
   Adjusting ranges: 0-32 (the grater value is to be more histerisis)

Push the “stick setting” button after finished the setting.

Swash mixing (Heli mixing)

The trim selection button is added.



Trim on /off setting

You can select mixing characteristics either with trim or without trim.

Changes the operation with model changes and frequency changes

The current software requires turning off the power switch when the model is changed or frequency is changed. The new version software moves to the confirmation screen of the radio after that operation. You will not be required to turn off the power switch as often, and continuous operation is available.

Change in how the buttons in the “Curve Setting”, “Model Select” and “Condition Select” screens are shown.

Although the previous version displayed the invalid buttons in grey, the new version has completely eliminated them from the screen in order to avoid confusion.

(Example: Curve setting screen)

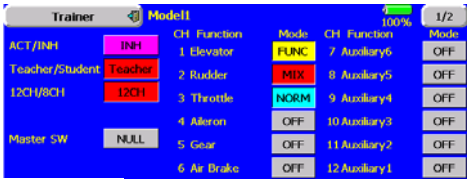
The new version shows the rate adjustment buttons in their full brightness such as the arrow and reset buttons when an item that needs rate adjustment is selected.

Meanwhile, it does not show them when an item that does not need rate adjustment is selected.

(Old version) (New version)

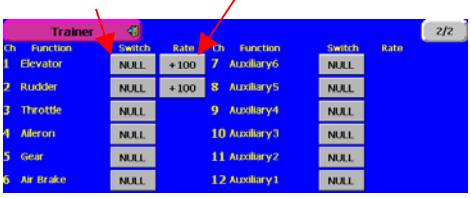
Trainer

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



Activate switch

Student rate



Set the trainer mode to either MIX or FUNC mode. The rate buttons appear on the 2nd page of the trainer screen. Set the student rate as desired.

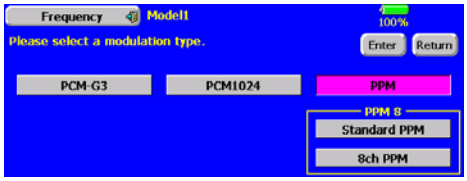
Push the switch button and select the desire switch.

Model select

Back to start-up screen when the model is changed.
Back to start-up screen when new model is added.

PPM modulation (for Europe and USA version only)

Added the modulation polarity selection at PPM mode.
Added 12 channels PPM mode.



The additional dialog box appears when the PPM modulation is set. Push the upper side button to select the PPM polarity. The Standard PPM corresponds to FUTABA receivers. Push lower side button to select the PPM channels. There are 3 kinds of selections, 8ch PPM, 12ch PPM (N 1.5), 12ch PPM (N 1.3). N means neutral pulse width.

PCM1024 10ch mode (for Europe and USA version only)

Added 10th channel of the PCM1024 mode.

The DG2 button is added on the function menu at the PCM1024 mode. It is 10th channel control selection.

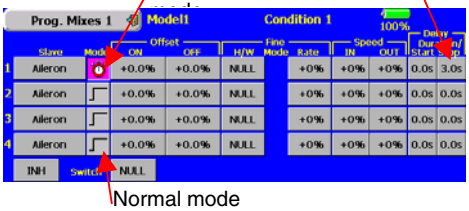
(Caution: The current 9ch receiver must be modified at your service department to use the 10th channel.)

PMIX

Added the timer mode on the offset PMIX mode. The on time can be set up to 9 seconds. It is useful for landing gear control of a Jet or scale plane, etc.

Timer

On time



Normal mode

Expanded the delay time to 9 seconds (all PMIX).

Added the ALT switching mode on mixing on/off control (all PMIX).

Speed and condition delay time

Adjusting values are increased to 0-27. The delay time is doubled to 26 and four times to 27 compared to 25. The 0-25 delay times are unchanged. Some Jet pilot asked to extend the delay time for engine starting up.

Fine-tuning aileron differential and butterfly differential

Both up and down moving rate are adjusted simultaneously. When you increase the up side, the down side is decreased.

The butterfly differential fine tune rate is increased to 0-120 %.

Flap trim

The flap-flap4 trim can be set and activated individually on the function menu.

Condition delay of the camber and butterfly

The condition delay button of the camber and butterfly on the condition menu are eliminated. They can be set by the camber mix and butterfly mix menu alternately.

Idle down

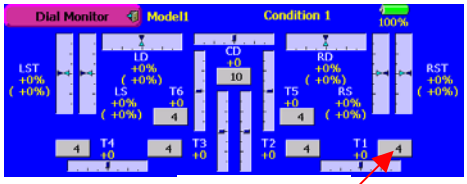
The amount of the servo travel is double. The rate adjustment range is the same as 0-100 %. The rate data is automatically changed to a half when the update is done so that the servo travel should be same as before setting.

RF power on/off

The RF-off button is added on the home screen at the RF is not activated condition. You can go back to the RF on/off selection screen to push the RF-off button without the power switch turned off.

Dial monitor

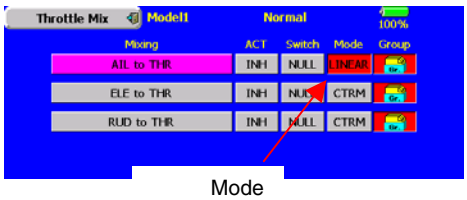
The trim step of the T1-T6 (T1-T8 for FX-40) and CD can be set directly on the dial monitor menu.



Step button

Throttle mixing on Helicopter mode

The linear and CTRM working mode are added. The current one has only CTRM mode (the mixing rate is reduced by the throttle stick high and low position). The linear mode gives constant mixing rate to all the throttle stick ranges.



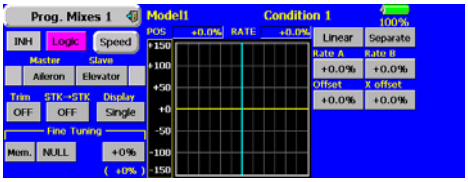
Mode

Logic switch

The Logic switch can activate functions by some switches combination.

Can be set up to 4 switch combinations.

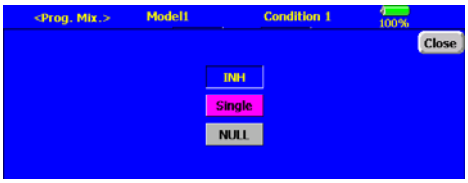
The Logic switch can be assigned to the mixing function as well as the flight condition select (except for Snap roll function on airplane mode).



Directions

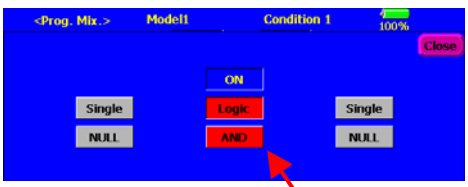
1. Push the switch selection button.
2. The switch selection screen appears and displays the status.

*In case of the flight condition select, the top of the switch on/off status display is not shown.



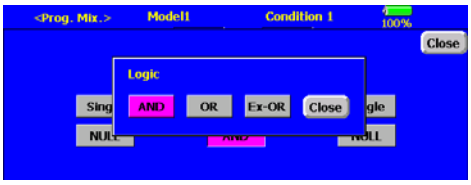
The display of the mixing on/off switch selection

3. The switch mode display is changed by pushing the switch mode button. The switch selection button is changed to the logic equation button by selecting the logic switch mode. At the logic switch mode, the switch selection buttons appear on both the left and right side of the display.



Logic mode button

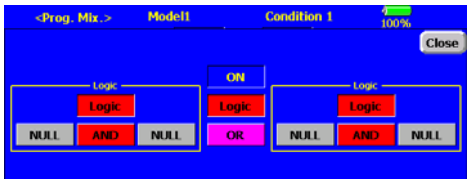
4. The logic selection dialogue appears when you push the logic mode button. The 3 types of logic, either AND, OR or EX-OR, can be selected.



Logic combination table

SWITCH		LOGIC		
SW1	SW2	AND	OR	Ex-OR
off	off	off	off	off
off	on	off	on	on
on	off	off	on	on
on	on	on	on	off

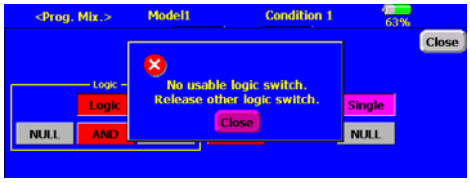
5. The left and right side of the switch mode can be set to the logic switch mode as well. In this case, a maximum of 4 switches can be assigned to the logic switch. The left and right logic are calulated first, then the center of the logic is calculated. Finally, switch on/off status determined by the 4 switches' combination.



In the above case, the SW-A and SW-B are calculated by AND logic. Next the SW-C and SW-D are calculated as same way. Finally the first case and 2nd case are calculated by OR logic.

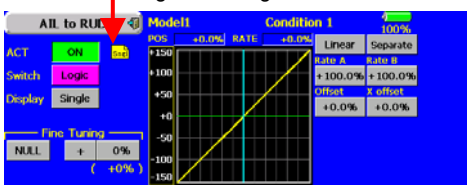
*Caution

1. The maximum number of the logic switch is 10 for the flight condition select and 8 for the mixing on/off selection on each flight condition. The error message will appear when the exceeded logic switch is going to be selected. In this case, delete the unused logic switch first, then select the new logic switch.



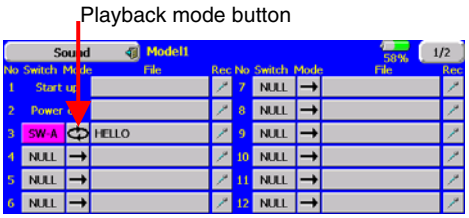
2. The mixing on/off switch modes are automatically assigned by single mode, not supported the group mode.

Assigned to single mode



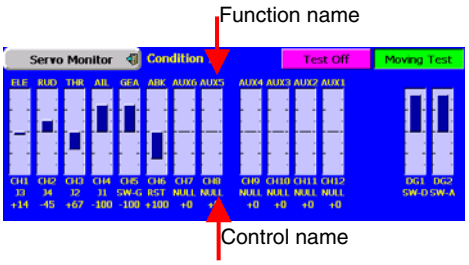
Sound playback

The repeating mode is added on the sound playback. When you select the playback mode button's repeat mode (), the selected sound is playback repeatedly while the switch is on.



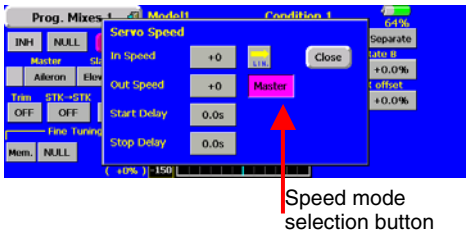
Servo monitor

The display of the servo monitor is added the function control name and changed from model name to flight condition name.



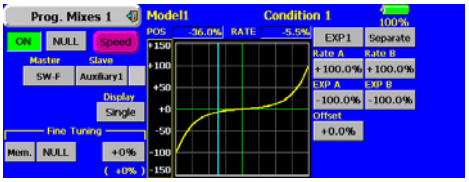
Programmable mixing

The speed mode selection is added on the programmable mixing. The slave mode works same as current speed function. The master mode is a new feature. The servo movement is traced by the setting curve at the master mode. The trace speed is adjusted by in and out speed same as before.



Directions

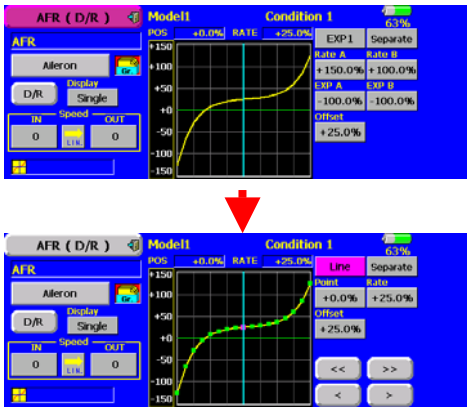
1. Select the programmable mixing to curve mode and push the speed button.
2. Push the speed mode button to master mode.
3. Set desired in and out speed.
4. Select the master channel to any toggle switch.
5. The slave channel's servo traces the setting curve as the master toggle switch is moved. Below the case, AUX1 servo traces an EXP1 curve as the SW-F is operated.



Curve mode

The curve shape is inherited when the curve mode is changed.

Example. Changes from EXP1 to Linear curve mode.



Changed to line or spline mode, the curve is retrieved as 17 points curve.

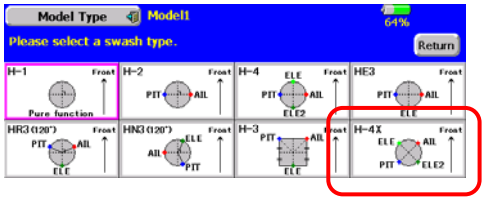
The Rate A and Rate B are inherited on the linear, EXP1, EXP2 and VTR.

Other data except Rate A and Rate B are retrieved from the previous setting data when changing the curve mode.

At the curve mode changes, the dialogue box asks whether the current curve is reset or inherited. The default curve is used when selecting the Yes button on the confirmation dialogue.

Model type

The H-4X model type is added to the heli mode.



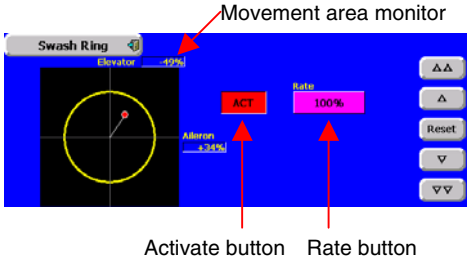
∗ The H-4X mode turns the swash plate to 45 degree from H-4 swash. It is familiar for big scale heli. Currently, H-4 mode and using the swash mixing makes the operation. Using the H-4X, no swash mixing is needed (must be inhibited the swash mixing). The linkage compensation on the swash detail setting is also available with H-4X mode.

Motor mixing

The motor mixing is added to the Airplane mode. The warning message is appears when the mixing is on status at the power on for safety.

Swash ring [for Heli setting]

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.

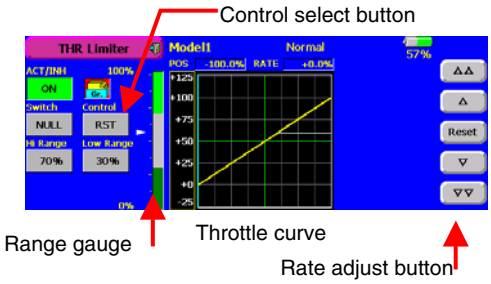


Directions

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. The rate adjustment range is 50～200%.

Throttle limiter [for Heli setting]

This function limits the high range of the throttle movement by any slider or trimmer. The adjustment range of the high and low end can be set.

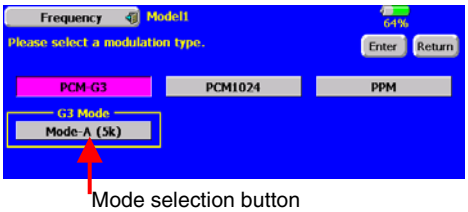


Directions

1. Push the Throttle limiter button on the model menu.
2. Activate the mixing and select the on/off switch.
3. Select the control for adjustment of the high limit.
4. Set the high range. The range gauge shows the setting position.
5. Set the low range same as high range setting.

PCM-G3 communication mode

Two PCM-G3 communication modes are added. The Mode-A is a current communication mode. Mode-B is a new one. The Mode-B is a more reliable communication mode than the Mode-A but the servo response is a little bit slower. Please choose either mode as required by your airfield.



Directions

1. Open the frequency setting menu on the linkage menu.
2. Push modulation mode button to PCM-G3 mode.
3. Select either Mode-A or Mode-B and push the Enter button.
4. The confirmation screen appears. Push yes button to activate the setting.

*Caution

1. The receiver must correspond to Mode-B. (R5014DPS does not support the Mode-B).
2. The servo response is about 20% slower than the Mode-A.

MODEL SELECT screen

Model names are displayed in the order of the latest model appearing at the top of the line. Currently, the old models are displayed on top of the line.

Changing the RF Modulation

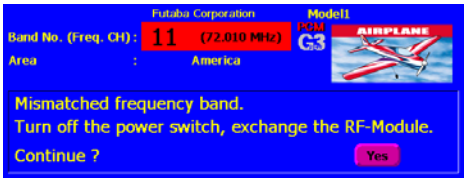
The T14MZ transmitter is compatible with Futaba's TM-14 Module FASST 2.4GHz system.

*When switching from the existing MZ-FM module to the TM-14, the TM-14 to the MZ-FM module, or similar situation, it is necessary to reset the band accordingly.
*When using the TM-14 and Futaba FASST receiver, it is necessary to link the transmitter module to the respective receiver prior to using them for the first time. This process will only be necessary the first time that these items are used. The unique identification code will be stored in the receiver.
*When using the TM-14 FASST system, the DSC function has been disabled as it is unnecessary. Futaba's FASST system will prevent any RF interference issues which might have arisen in the previous RF modulation.

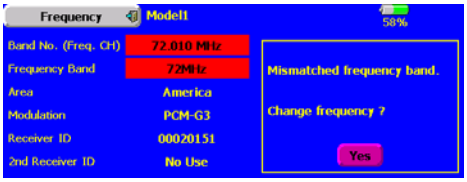
How to Set the Band

1. With the transmitter's power OFF, remove the existing RF module and replace it with the TM-14 module.

2. Turn ON the transmitter's power switch. Since the RF module was replaced by an RF module that varies from the previous settings, an on-screen warning is displayed. To change the modulation settings, push the 'Yes' button.

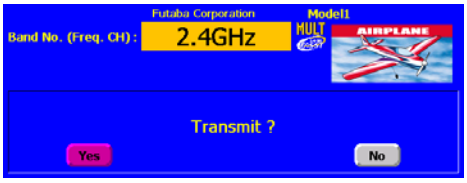


3. In the linkage menu, select the frequency setting [Frequency]. A message confirming the band change is displayed. Press the 'Yes' button once again.



Please note: This will automatically select Futaba's FASST MULT setting. If, however, you are using a receiver which employs the FASST 7-Channel settings, please see the section entitled Channel Mode Selection which follows.

4. The band setting changes accordingly to reflect the selection of the 2.4GHz band. The display will return to the frequency confirmation screen.



Range Check Mode Operation

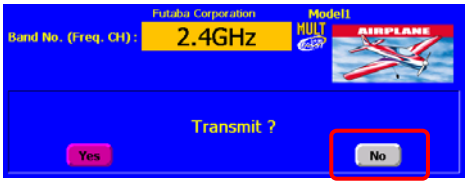
The 'range check mode' reduces the transmission range of the radio waves to allow for a ground range check.

*The range check mode, when activated, will continue for 90 seconds unless the user exits this mode early. When the on-screen timer reaches zero (0), the RF transmission automatically returns to the normal operating power.

⚠WARNING

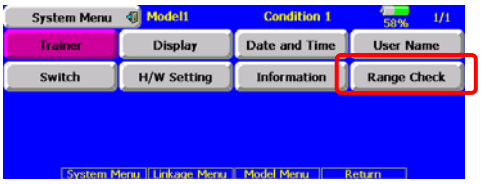
⃠ Do not fly in the range check mode.
Since the range of the radio waves is short, if the model is too far from the transmitter, control will be lost and the model will crash.

1. Turn ON the transmitter's power switch. Select 'No' on the frequency confirmation screen.

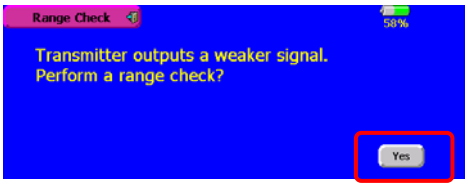


*For safety, the RANGE CHECK mode can not be selected while the RF transmission is active.

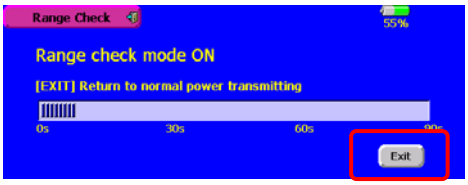
2. In the system menu, choose the 'Range Check' selection from the menu options.



3. The Range Chcek 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.



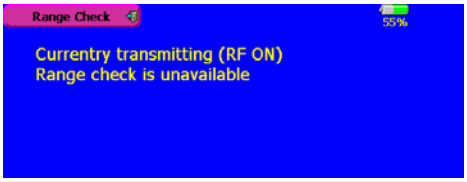
4. The Range Check mode is automatically reset after the 90 second time limit has expired. The remaining time is displayed on the left side of the transmitter's screen. Should you complete the range check before the 90 seconds has passed, press the 'Exit' button.



Pease 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 transmitter is transmitting the normal RF signal, it is not possible to enter the Range Check mode once again without powering OFF the transmitter. This has been designed to prevent a modeler from inadvertently flying in the Range Check mode. If a longer period of time is needed, please turn OFF the transmitter and follow this procedure once again.

5. When the 'Exit' button is pressed, the Range Check mode is reset and radio waves are transmitted in the normal mode.



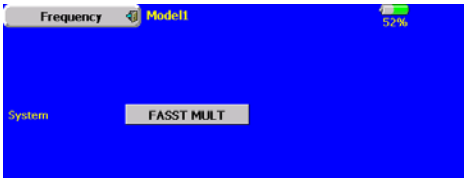
*After the Range Check mode was reset, it cannot be selected again. To select the Range Check mode again, turn on the power switch and start from the beginning.

Channel Mode Selection

When using the TM-14 RF module with the T14MZ, there are two modes of operation available: multi-channel mode (as utilized in conjunction with the R6014FS receiver) and 7-channel mode (used for receivers such as the R617FS). It is important to set the channel mode selection to match the receiver being utilized in the model. Please refer to the chart below as a reference guide.

Transmitter		Receiver		
		R606FS	R607FS R617FS	R608FS R6014FS
TM-14 Module	Multi-ch mode	—	—	*Okay*
	7ch mode	*Okay*	*Okay*	—

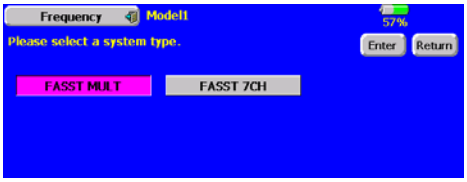
1. Access the frequency setting 'Frequency' in the linkage menu. The currently selected transmission mode is displayed.



2. To change the mode selection, press the transmission mode button.

3. Transmission mode buttons are displayed. Pless the new transmission mode button.

[FASST MULT] : Multi channel mode
[FASST 7CH] : 7 channels mode



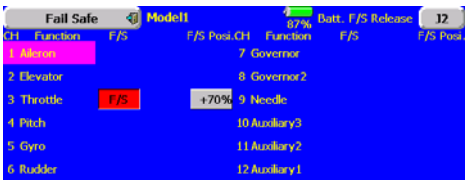
4. Press the 'Enter' button. The display will return to the frequency confirmation screen.

(Information pertaining to the 7 channel mode)

When the 7 channel mode is selected, the following conditions are applicable:

*While the setting items of channels 8 and above may appear in the various menu options (e.g., sub trims, servo reverse, etc.), the only settings which are applicable are those of channels 1-7.

*When using the 7 channel mode, fail safe is only available for channel three (throttle). If/when the fail safe for channel three has been activated, the battery fail safe is also active. Unlike the multi channel mode, the fail safe and the battery fail safe can not be set independently.



Channel Assignment

Servo connection

Below is a reference chart which has been created to obtain the optimum performance from the FASST system in conjunction with the channel mode and various swash types. It is important to note and adhere to this reference information in order to achieve the maximum performance from the model. As such, please connect the servos to the corresponding channels in the chart below.

CH	Multi channel mode		7 channels mode	
	Except H-4, H4X	H-4, H4X	Except H-4, H4X	H-4, H4X
1	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator
3	Pitch	Pitch	Throttle	Throttle
4	Rudder	Elevator2	Pitch	Pitch
5	Gyro	Rudder	Gyro	Gyro
6	Throttle	Throttle	Rudder	Rudder
7	Governor	Gyro	Governor	Elevator2
8	Governor 2	Governor	AUX5	AUX5
9	Needle	Governor 2	AUX4	AUX4
10	AUX3	Needle	AUX3	AUX3
11	AUX2	AUX2	AUX2	AUX2
12	AUX1	AUX1	AUX1	AUX1
VC1	AUX1	AUX1	AUX1	AUX1
VC2	AUX1	AUX1	AUX1	AUX1
VC3	AUX1	AUX1	AUX1	AUX1
VC4	AUX1	AUX1	AUX1	AUX1

*It is important to note that these settings differ from that used in the previous G3 receivers. Utilizing the channel assignments from the G3 receivers will not allow you to obtain the ideal performance from your model.
*Please note that the settings in the chart above are the default settings. As such, when the data is reset, the channel assignments above will be utilized.

Automatic channel assignment

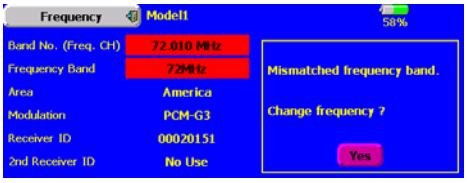
When using the TM-14 RF module, the T14MZ channel assignment function allows the automatic relocation of the channels (servo output) to maximize performance of the FASST system.

*It is important to note that the automatic channel assignment is only functional in the helicopter mode.
*The automatic channel assignment feature is not applicable when using either the PCM 1024 mode or the PPM RF mode.

(Example) Change from the MZ-FM module to the TM-14 module

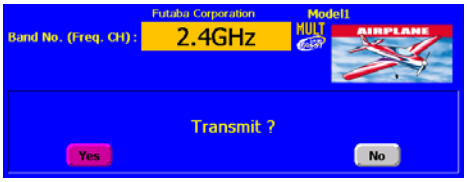
1. Replace the RF module of the T14MZ with the TM-14.
2. Turn on the transmitter.
3. Select Linkage menu.
4. Select 'Frequency' menu.

5. A band change confirmation message is displayed. Push the 'Yes' button.



6. A channel relocation dialog will appear. If you wish to relocate the channel assignments, press the 'Yes' button. If not, select 'No'. The channel assignments will not be modified.

7. Band setting changes to 2.4GHz.



8. The channel assignment is changed to suitable assignment of FASST.

Range Check the Radio

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 TM-14 transmitter module incorporates a system that reduces its power output and allows you to perform such a range check.

1. Turn on the transmitter and activate the 'RANGE CHECK' mode through the transmitter's System menu. Please note: if the RF is activated, the 'RANGE CHECK' mode will not be available to utilize. As such, do NOT activate the RF when the transmitter is turned ON.

2. The LEDs on the rear of the TM-14 module will indicate that a radio frequency link has been established between the transmitter and receiver. This is noted by a solid green LED and a blinking red LED on the TM-14 module. The solid green LED indicates that the radio frequency link has been established. As indicated by the blinking red LED, the radio frequency power has been reduced to allow for the range check. Note: the transmitter will remain in the RANGE CHECK mode for a maximum of 90 (ninety) seconds. This time limit has been established to ensure that the modeler not inadvertently forget to return to the standard power output when flying his/her model.

3. 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.

4. 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.

Antenna of TM-14

1. As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the TM-14 transmitter module's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.
2. Please do not grasp the transmitter's antenna during flight. Doing so may degrade the quality of the RF transmission to the model

TM-14 LED indication

*When the transmitter is powered up, the LEDs on the rear of the module will begin to glow or blink accordingly. The chart below provides you with an easy reference as to the meaning of the LEDs.

LED Indication

Green	Red	Status
Solid	***Solid***	Initializing
Blink	***Off***	RF is off
Alternate Blink		Check nearby RF condition
Solid	***Off***	RF power on
Solid	***Blink***	RF power on (Power reduced to perform the range check function)

R6014FS LED Indication

Green	Red	Status
Off	***Solid***	No signal received
Solid	***Off***	Signal received, normal operation
Blink	***Off***	Receiver is receiving signals but the ID is unmatched
Alternate Blink		Unrecoverable error (EEPROM, etc.)