T12Z Software Update

(Editor Version:1.6.0, Encoder Version:1.44)

The T12Z transmitter software version has been updated; the following functions have been added or modified. Reread the instruction manual supplied with this set.

PCM-G3+ support

[PCM-G3+] improved version of the current [PCM-G3] is supported.

■ Communication mode switching function (4L mode, 2L mode). A 2L mode with greater stability has been added.
  ※In the 2L mode, the response is approximately 40% lower than that of the 4L mode.
■ Channel mode switching function (14 channel mode, 10 channel mode)
  The response is improved approximately 40% from that in the past by switching to the 10 channel mode. (Compared to our PCM-G3)

Setting Method

1. Insert the MZ-FM RF module into the T12Z, and set the power switch to ON.
2. Select [FREQUENCY] from the linkage menu, and press the DATA button to call the frequency menu.
3. Select "MODULATION" and press the DATA button to call the modulation type selection screen.

```
FREQUENCY    MODEL1   CONDIT1  04:31:30 100%
BAND NO.(FREQ.CH): 17 (72.130MHZ)
FREQ.BAND / AREA : 72MHZ    JAPAN
MODULATION       : PCM G3 (4L 14CH G3-A)
RECEIVER ID      : 00001001
2ND RECEIVER ID  : NO USE
```

4. Select "MODE" of "PCM-G3".

```
FREQUENCY    MODEL1   CONDIT1  03:05:20 100%
PLS. SELECT A MODULATION TYPE
CURRENT: PCM G3(4L 14CH G3-A)
 PCM G3      PCM1024     PPM
MODE
 4L 14CH G3-A
```

5. Turn the DATA dial and select the modulation mode. See the table below for the meanings of the display.

```
FREQUENCY    MODEL1   CONDIT1  03:05:40 100%
PLS. SELECT A MODULATION TYPE
CURRENT: PCM G3(4L 14CH G3-A)
 PCM G3    PCM1024     PPM
MODE
 4L 14CH G3+
```

Modulation mode display	Corresponding receiver, operation mode
4L 14CH G3-A	R5014DPS/R5114DPS Mode A
4L 14CH G3-B	R5114DPS Mode B
4L 14CH G3+	PCM-G3+ 4L 14 channel mode
2L 14CH G3+	PCM-G3+ 2L 14 channel mode
4L 10CH G3+	PCM-G3+ 4L 10 channel mode
2L 10CH G3+	PCM-G3+ 2L 10 channel mode

Channel Mode Setting

When a PCM-G3+ receiver is used, the channel mode can be selected.

■ 14 channel mode
  Channels 1〜12, DG1, and DG2 operate the same as the current PCM-G3 receiver.
■ 10 channel mode
  This mode can use channels 1〜8, DG1, and DG2 for a total of 10 channels. The number of channels is small, but response is approximately 40% better than that of the 14 channel mode.

Communication Level Setting

When a PCM-G3+ receiver is used, the communication level can be selected.

■ 4L mode
  This is the same high-speed communication mode as the current PCM-G3 receiver.
■ 2L mode
  This is a communication mode that emphasizes stability. When communication in the 4L mode is unstable, select the 2L mode. The response is approximately 40% lower than that of the 4L mode.

Receiver Type Setting

Select the receiver type matched to the type of receiver.

■ When using an R5014DPS/R5114DPS in mode A, Select [4L 14CH G3-A].
■ When using an R5114DPS in mode B, Select [4L 14CH G3-B].
■ When using a PCM-G3+ receiver, Select one of the following:
  [4L 14CH G3+]
  [2L 14CH G3+]
  [4L 10CH G3+]
  [2L 10CH G3+]

1. When [PCM G3] is selected and the DATA button is pressed, a confirmation screen is displayed.

```
FREQUENCY    MODEL1   CONDIT1  04:31:44 100%
BAND NO.(FREQ.CH): 17 (72.130MHZ)
FREQ.BAND / AREA : 72MHZ    JAPAN
MODULATION       : PCM G3 (4L 14CH G3+ )
RECEIVER ID      : 00001001 CHANGED.
2ND RECEIVER ID  : NO USE   SURE ?
                                    YES
```

2. A channel relocation confirmation message is displayed. When [YES] is selected and the DATA button is pressed, the channel is changed to the modulation mode default value. When [NO] is selected and the DATA button is pressed, channel relocation is not performed.

```
FREQUENCY    MODEL1   CONDIT1  03:05:57 100%

CHANNEL RELOCATION ?

[YES] SELECTION SETS THE CHANNEL ORDER
SUITABLE FOR PCM G3 14CH.

      YES           NO
```

■ When the PCM-G3+ 10 channel mode was selected when the model type was helicopter, the standard layout of the channel functions is different from that of the 14 channel mode. The 10 channel mode channel location initial values are shown below.

Channel	H-1,H-2,HE3,HR3,HN3,H-3	H4,H-4X
1	Throttle	Throttle
2	Rudder	Rudder
3	Gyro	Gyro
4	Governor	Governor
5	Needle	Aileron
6	Aileron	Elevator
7	Elevator	Pitch
8	Pitch	Elevator 2
VC1	AUX1	AUX1
VC2	AUX1	AUX1
VC3	AUX1	AUX1
VC4	AUX1	AUX1

Other function additions and modifications

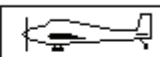### 2.4G model check operation

When the TM-14 2.4G module is installed, radio waves are now automatically radiated when the power is turned on.

■ When the MZ-FM module is installed, a radio waves confirmation screen is displayed the same as in the past.

Range check function operation procedure

When the TM-14 is installed, start in the state in which the radio waves are stopped by the following procedure, because the Range Check function cannot be performed while radio waves are being radiated.

1. While pressing the DATA button, turn on the power switch. A confirmation screen is displayed. Select [NO]. Since radio waves are not radiated, Range Check is performed.

```
FUTABA CORP  MODEL1   00:15:57 100%
BAND NO.: 2.4GHz
          FASST MULT

          TRANSMIT ? YES NO
```

■ In the Range Check mode, the LED of the transmitter blinks green.

Auto power off alarm

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

```
        AUTO POWER OFF TIME
               180
```

Multi-language support

Dutch, French, Spanish, Czech and Italian displays are supported.

1. Turn on the power, and select [INFORMATION] from the System Menu.

```
INFORMATION  MODEL1   CONDIT1  00:09:53 100%
PRODUCT: 00201001 LANGUAGE: ENGLISH
EDITOR/ENCODER : V. 1. 4. 0 / V. 1. 42
MEM. CARD SIZE :      256614400 BYTES
CARD FREE SIZE :      234360832 BYTES
AREA:  JAPAN        (  1788 MODELS)
```

2. Select the language by turning the DATA input dial, and press the enter button.
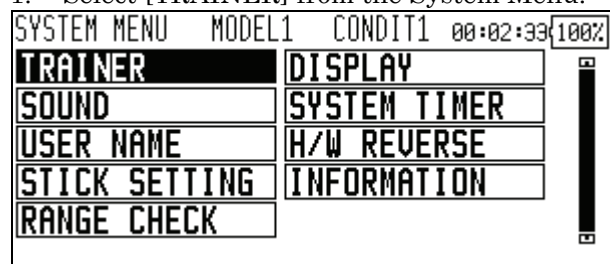
Trainer student channel setting function

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

■ When the instructor's transmitter mode is set to "NORM", the signal of the same channel of the student's transmitter is output as is. (The same as before.)
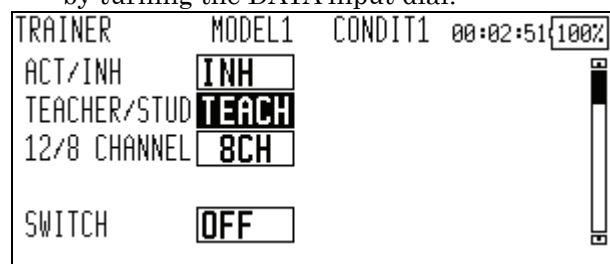
<Example of student CH settings>

Student side			Instructor side	Student CH
CH1	Aileron		Elevator	CH2
CH2	Elevator		Rudder	CH4
CH3	Throttle		Throttle	CH3
CH4	Rudder		Aileron	CH1
CH5	Gear		Aileron 2	--
CH6	Flap		Flap	CH6
CH7	Aileron 2		Gear	CH5
CH8	Aux 5		Aux 5	CH8
CH9	Aux 4		Aux 4	CH9
CH10	Aux 3		Aux 3	CH10
CH11	Aux 2		Aux 2	CH11
CH12	Aux 1		Aux 1	CH12

1. Select [TRAINER] from the System Menu.

```
SYSTEM MENU   MODEL1   CONDIT1   00:02:33 100%
TRAINER            DISPLAY
SOUND              SYSTEM TIMER
USER NAME          H/W REVERSE
STICK SETTING      INFORMATION
RANGE CHECK
```

2. Select "TEACHER/STUD" and select [TEACH] by turning the DATA input dial.

```
TRAINER       MODEL1   CONDIT1   00:02:51 100%
ACT/INH          INH
TEACHER/STUD     TEACH
12/8 CHANNEL     8CH

SWITCH           OFF
```

3. When [FUNC] or [MIX] is selected as the mode of the channel to be set, the [STU.CH] button is displayed. (When [NORM] [OFF], [STU.CH] setting is not performed.)
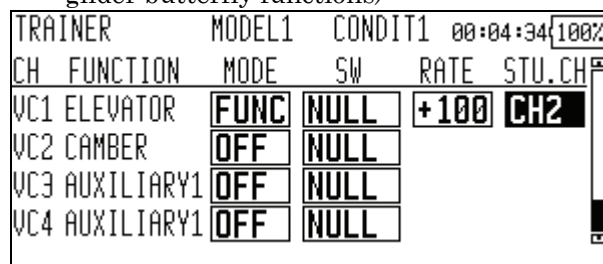
```
TRAINER       MODEL1   CONDIT1   00:03:12 100%
CH  FUNCTION   MODE    SW      RATE   STU.CH
1   ELEVATOR   FUNC    NULL    +100   CH2
2   RUDDER     OFF     NULL
3   MOTOR      OFF     NULL
4   AILERON    OFF     NULL
```
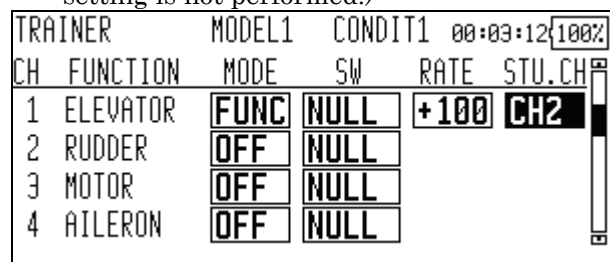
4. Turn the DATA input dial, and select the channel.

■ Addition of a student channel function allows use of mixing of the function assigned to VC by trainer function. (Tailless wing elevator and glider butterfly functions)
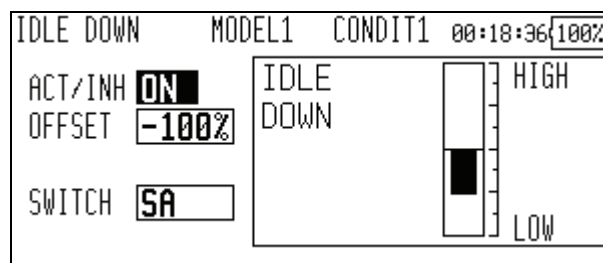
```
TRAINER       MODEL1   CONDIT1   00:04:34 100%
CH  FUNCTION    MODE    SW      RATE   STU.CH
VC1 ELEVATOR    FUNC    NULL    +100   CH2
VC2 CAMBER      OFF     NULL
VC3 AUXILIARY1  OFF     NULL
VC4 AUXILIARY1  OFF     NULL
```

Fail safe initial value

■ The throttle channel fail safe initial value has been changed to Hold.
■ The throttle channel battery fail safe initial value has been changed to OFF.
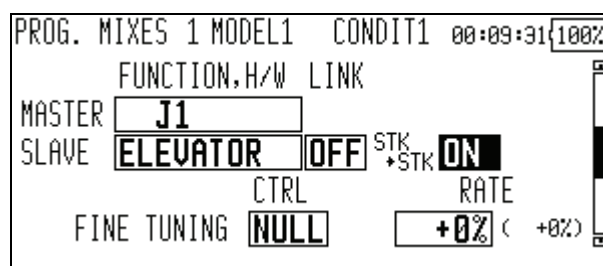■ The battery fail safe release switch initial value has been changed to NULL (OFF).

IDLE DOWN

The IDLE DOWN rate input range has been changed from 0⌣+100% to -100⌣+100%.
■ When a minus rate is input, offset is applied to the High side.

```
IDLE DOWN      MODEL1   CONDIT1   00:18:36 100%
ACT/INH  ON              IDLE          HIGH
OFFSET   -100%           DOWN

SWITCH   SA                            LOW
```

Programmable mixing

The programmable mixing (in mixing mode) STK to STK mixing function can now be used even when the Master is a stick or other hardware.

```
PROG. MIXES 1 MODEL1   CONDIT1   00:09:31 100%
              FUNCTION.H/W LINK
MASTER    J1
SLAVE     ELEVATOR      OFF  STK→STK  ON
                  CTRL              RATE
       FINE TUNING  NULL            +0% ( +0%)
```

Acceleration

 Accelerator setting can now be performed at elevator and camber (ELE to CAMBER). (Glider and EP glider only)

- ■ This setting is divided into elevator setting and camber setting. The setting method is the same. Switch the page and select the function to be set.
- ■ CAMBER setting sets the acceleration function for ELE to CAMBER mixing. This setting is not performed when ELE to CAMBER mixing is INH.
- ■ The acceleration function can be set for both the UP side and DOWN side.
- ■ Function ON/OFF switch setting is performed for aileron to rudder setting only.
- ■ Aileron to rudder setting is acceleration function setting for aileron to rudder mixing. It is not performed when aileron to rudder mixing is INH.
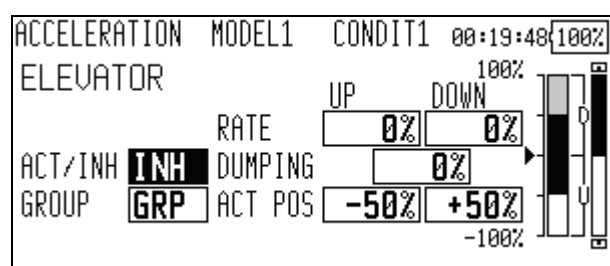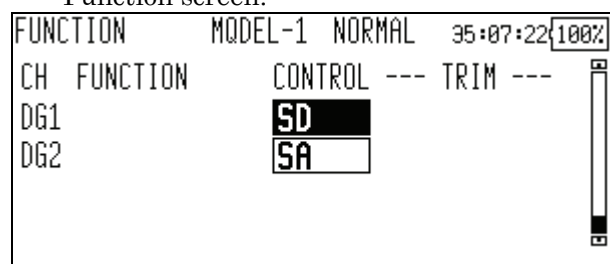

Switch channel

 Logic switches can now be assigned to DG1 and DG2.

- ■ The number of logic switches which can be set in combination with the condition switch is 10.
- ■ Alternate setting is also possible at logic switch setting.

1. Select operation switch DG1 or DG2 on the Function screen.

2. The logic switches can be assigned by changing the mode to "Logic" by pressing the "Single" button.
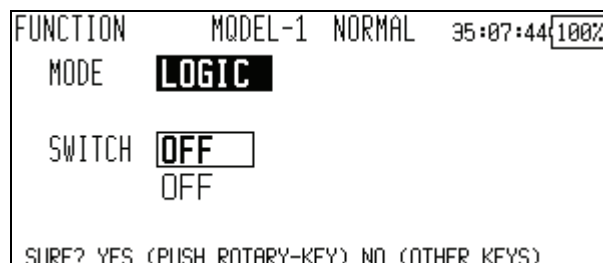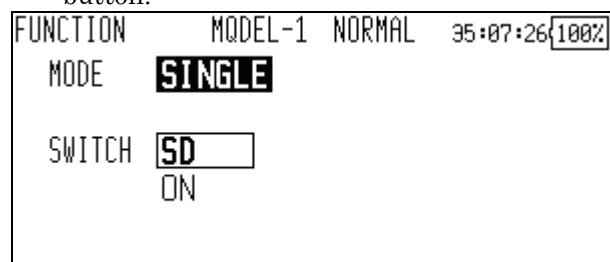
Throttle Limiter

Alarm Display
 When the power is turned on when throttle limiter "ACT/INH" is ON, a throttle limiter warning message is displayed. Cancel this message by one of the following methods:

a. Turn off operation by operating the function selection switch assigned to throttle limiter "Switch".
b. Set to the lowest position of the throttle limiter control hardware.
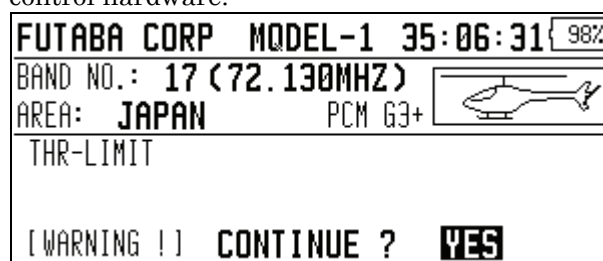
Throttle limiter limit value
 The limit value at the operation hardware neutral position can now be adjusted using the throttle limiter.

1. Set "CENTER" on the THR LIMITER screen to ACT.
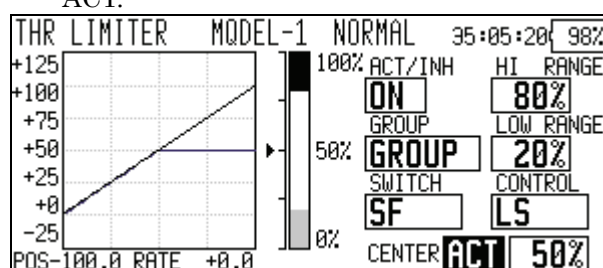
2. When the "Center position" rate is changed, the limit value at the operation hardware neutral position can be adjusted.
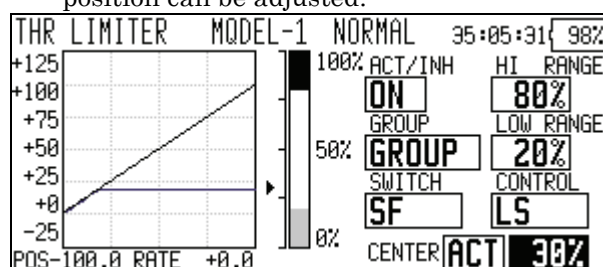
- The limit value at the operation hardware neutral position when "Center position" was switched to INH (at conventional operation) is the center value between "High side range" and "Low side range".
- The "Center position" rate when "Center position" was switched from INH to Operate is reset to the center value between "High side range" and "Low side range".
- The "Center position" rate can be set between "High side range" and "Low side range".

Butterfly offset setting

A function which automatically initializes the elevator setting curve when butterfly offset setting was performed has been added.

1. 1. Set "OFFSET" on the BUTTERFLY screen to Operate.

```
BUTTERFLY    MODEL-1 CONDIT1  35:03:27{ 98%
ACT/INH    OFF     SPEED  IN   OUT
GROUP      GRP     AIL     0    0
SWITCH     SF      FLAP    0    0
OFFSET     15%
```
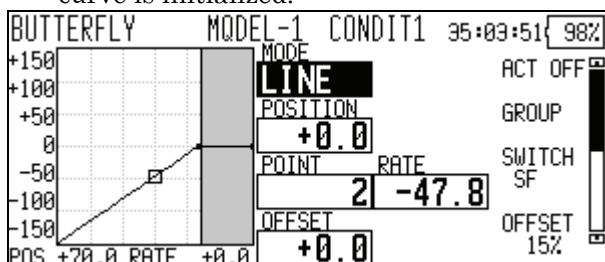
2. When YES is selected when "INITILIZE ELEVATOR CURVE?" was displayed; the elevator setting curve is initialized.

```
BUTTERFLY    MODEL-1 CONDIT1  35:03:34{ 98%
ACT/INH    OFF     SPEED  IN   OUT
GROUP      GRP     AIL     0    0
SWITCH     SF      FLAP    0    0
OFFSET     15%
INITIALIZE ELEVATOR CURVE ? YES NO
```

3. When the ELE SETTING screen is opened, the curve is initialized.

```
BUTTERFLY    MODEL-1 CONDIT1  35:03:51{ 98%
+150         MODE           ACT OFF
+100         LINE
+50          POSITION       GROUP
0            +0.0
-50          POINT  RATE    SWITCH
-100            2  -47.8    SF
-150         OFFSET         OFFSET
POS +70.0 RATE +0.0 +0.0    15%
```

- When NO was selected at step 2, the "ELE SETTING" curve is not initialized.

Governor

Speed display mode
The governor rate speed display mode can now be selected.

1. When the "Mode" button on the Governor screen is pressed, the display mode is switched.
- 2000: 2000rpm mode
- 2500: 2500rpm mode.

```
GOVERNOR     MODEL-1 NORMAL   40:23:57{ 77%
RATE 1 23  RATE 1  MODE    RATE
           ON
ACT   ON         2000 2000rPm (2040rPm)
UNIT  rPm        FINE TUNING
SWITCH ON        CTRL        RATE
GROUP GRP        RS   +    200r ( +40rPm)
```

- The 2500rpm mode and 2000rpm mode are different when the rate is 50.0% (=2500rpm) or greater. At rates below 50.0%, the rpm display is the same for both modes.
- When the 2500rpm mode is set, 100.0%=2500rpm. The maximum value is 110.0%=2700rpm.
- When the 2000rpm mode is set, 100.0%=200rpm. The maximum value is 110.0%=2100rpm. (Conventional specifications)
- There is no change in the transmitter output even when the 2500rpm mode and 2000rpm mode are switched. Calibration must be performed at the governor side.

End point initialization
The governor output channel end point "TRAVEL" and "LIMIT" are now initialized when the governor setting "ACT" button was pressed.

- When switched from INH to ACT (ON or OFF), "TRAVEL" is initialized to 100 and "LIMIT" is initialized to 155.
- When rate 1, 2 and 3 are switched to INH under all conditions, "TRAVEL" is initialized to 100 and "LIMIT" is initialized to 135.

Warning display

Throttle stick position warning
A warning is displayed when the throttle stick is at the high side (1/3 or more the same as THR cut operation) at power ON. (Airplane/helicopter only)

```
FUTABA CORP  MODEL-1  52:19:30 100%
BAND NO.: 2.4GHz
             FASST MULT
THR POSITION

[WARNING !]  CONTINUE ?   YES
```

- When the throttle stick is returned to the low side, the warning display goes off.

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

1. "Warning" of the Linkage menu opens.

```
LINKAGE MENU  MODEL-1 CONDIT1  52:20:07 100%
SERVO-REVERSE  FAIL SAFE
END POINT(ATV)  THROTTLE CUT
IDLE DOWN       TIMER
DIAL MONITOR    FUNCTION NAME
WARNING         DATA RESET
```

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

```
WARNING       MODEL-1 CONDIT1  52:20:16 100%
CONDITION     ON    MOTOR MIX    ON
THR CUT       ON    AIRBRAKE     ON
IDLE DOWN     ON    SNAP ROLL    ON
THR POSITION  ON
```

Timer

Alarm mode

A mode which sounds an alarm every minute during the remaining time up to the timer alarm time has been added.

1. Open the Timer screen.
2. Change the setting by pressing ⬆ or ⬇ button.
■ ⬆: An alarm sounds every minute of the elapsed time from timer start. (Conventional mode)
■ ⬇: An alarm sounds every minute of the remaining time up to the alarm time.

```
TIMER         MODEL-1 CONDIT1  62:01:12 100%
 03:30.0      TIMER1            RESET
MODE  DOWN    TIME: STOPPED    03:30⬆
RESET SW OFF  SPLIT TIME SW OFF
START SW SG   MEMORY          OFF
STOP SW  OFF
```

HOUR mode

An HOUR mode which counts up to 99 hours 50 minutes has been added to the timer modes.
■ This mode is convenient when used at engine maintenance period and other long-term measurements.
■ When the HOUR mode is set, "xx (hour) : xx (minute)" is displayed on the count time display. Seconds are not displayed.
■ When the HOUR mode is set, ":" blinks each second during timer operation.
■ When the HOUR mode is set, the alarm function/lap time measurement function are inhibited.

1. Open the Timer screen.
2. Set MODE of the Timer screen to HOUR.

```
TIMER         MODEL-1 CONDIT1  62:02:07 100%
 00:00        TIMER1            RESET
MODE  HOUR    TIME: STOPPED
RESET SW OFF
START SW J2   MEMORY          ON
STOP SW  OFF
```

Switch setting

The timer switches can now be set for each condition.

■ Group setting is performed at all the switches (start/stop/reset/lap).
■ The default setting is Group.

1. Open the Timer screen.

```
TIMER         MODEL-1 CONDIT1  00:05:25 99%
<SWITCH>              CD-SW        NULL
           SF                       SH
GROUP      SE  SA SB  LD CD RD  SC SD  SG
USE ↺↻     LS  J3     T3  T2  J2    RS
(ROTARY)       J4 T4    T1    J1
```

2. Set the group setting button of the condition you want to set the switches individually to the single mode "SINGL".

```
TIMER         MODEL-1 CONDIT1  00:05:32 99%
<SWITCH>              CD-SW        NULL
           SF                       SH
SINGL      SE  SA SB  LD CD RD  SC SD  SG
USE ↺↻     LS  J3     T3  T2  J2    RS
(ROTARY)       J4 T4    T1    J1
```

3. Set the switches.

```
TIMER         MODEL-1 CONDIT1  00:05:39 99%
<SWITCH>              CD-SW        NULL
           SF                       SH
SINGL      SE  SA SB  LD CD RD  SC SD  SG
USE ↺↻     LS  J3     T3  T2  J2    RS
(ROTARY)       J4 T4    T1    J1
```

4. Switch the condition and set the switch of each condition.

```
TIMER         MODEL-1 CONDIT2  00:05:46 99%
<SWITCH>              CD-SW        NULL
           SF                       SH
GROUP      SE  SA SB  LD CD RD  SC SD  SG
USE ↺↻     LS  J3     T3  T2  J2    RS
(ROTARY)       J4 T4    T1    J1
```

⚠CAUTION

🛈 To support new features model memories must be updated to version 1.2.0.   Once the 1.2.0 update is installed into your transmitter, the model memory update will automatically occur when you select the model the first time. After this update has been performed the model memory will no longer be compatible with software versions prior to 1.2.0.

Changing the RF Modulation

The T12Z 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.

■ The multiprop function cannot be used.

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 DATA button.

```
FUTABA CORP  MODEL1   00:01:07 77%
BAND NO.: 11(72.010MHZ)
AREA:  AMERICA      PCM G3
MISMATCH FREQUENCY BAND.
TURN OFF THE POWER SWITCH,
EXCHANGE THE RF-MODULE.
              CONTINUE ?   YES
```

3. In the linkage menu, select the frequency setting [FREQUENCY], and push the DATA button.   A message confirming the band change is displayed. Press the DATA button once again.

```
FREQUENCY    MODEL1  CONDIT1 00:01:17 77%
BAND NO.(FREQ.CH): 11 (72.010MHZ)
FREQ.BAND / AREA : 72MHZ   AMERICA
MODULATION       : PCM G3   MISMATCHED
RECEIVER ID      : 00020151  FREQ. BAND
2ND RECEIVER ID  : NO USE   CHANGE FREQ?
```

■ 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. A channel mode selection screen is displayed. Press the EDIT button.

```
FREQUENCY    MODEL1   NORMAL  02:21:59 61%


SYSTEM          : FASST MULT
                          CHANGED.
                          SURE ?
                              YES
```

5. A function channel relocation confirmation screen is displayed. When [YES] is selected and the DATA button is pressed, the function channel assignment is changed to the optimum setting in the FASST system. When [NO] is selected and the DATA button is pressed, the setting is not changed.

🛈 After the channels have been relocated you must verify that the receiver connections are correct and verify that all of the settings within the transmitter are correct before flying.

■ In the FASST system, the optimum channel assignment and optimum setting in the conventional modulation mode are different.

```
FREQUENCY    MODEL1   CONDIT1 00:08:50 100%
CHANNEL RELOCATION ?

[YES] SELECTION SETS THE CHANNEL ORDER
SUITABLE FOR FASST MULT.

      YES              NO
```

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

```
FUTABA CORP  MODEL1  00:08:56 [100%]
BAND NO.: 2.4GHz
            FASST MULT              [airplane icon]


            TRANSMIT ?   YES  NO
```
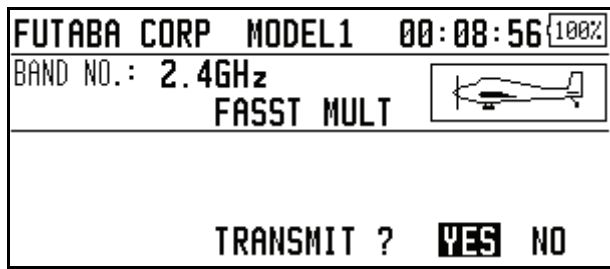
Range Check Mode Operation

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

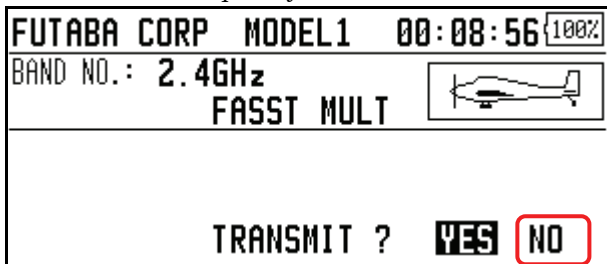■ The range check mode, when activated, will continue for 90 seconds unless the user exits this mode early. When the progress bar reaches 90s, the RF transmission automatically returns to the normal operating power.
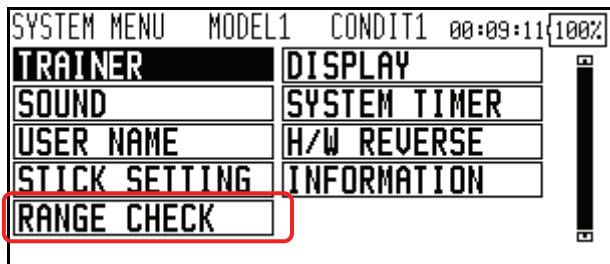
⚠ WARNING

🚫 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.

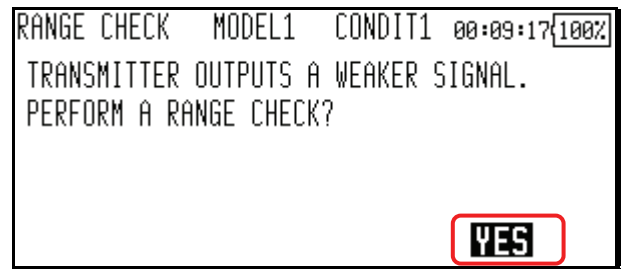1. Turn ON the transmitter's power switch. Select [NO] on the frequency confirmation screen.

```
FUTABA CORP  MODEL1  00:08:56 [100%]
BAND NO.: 2.4GHz
            FASST MULT              [airplane icon]


            TRANSMIT ?   YES  NO
```

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

2. With the system menu selected press the DATA button, choose the [RANGE CHECK] selection from the menu options and press the DATA button.

```
SYSTEM MENU  MODEL1  CONDIT1  00:09:11 [100%]
TRAINER        DISPLAY
SOUND          SYSTEM TIMER
USER NAME      H/W REVERSE
STICK SETTING  INFORMATION
RANGE CHECK
```
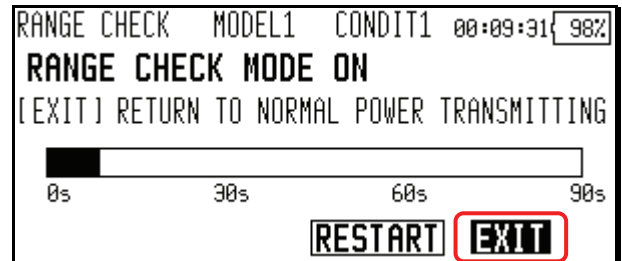
3. The RANGE CHECK screen is displayed. To activate the RANGE CHECK mode select [YES] and then press the DATA button. During the RANGE CHECK period, the RF power is reduced to allow the ground range tests to be performed.

■ Operation can be cancelled by pressing the "RETURN" or "HOME" button.

```
RANGE CHECK  MODEL1  CONDIT1  00:09:17 [100%]
TRANSMITTER OUTPUTS A WEAKER SIGNAL.
PERFORM A RANGE CHECK?




                              YES
```

4. The Range Check function automatically exits after the 90 second time limit has expired. Should you complete the range check before the 90 seconds has passed, select [EXIT] and press the DATA button.

■ When [RESTART] is selected and the DATA button is pressed, the range check mode timer is returned to 0.

```
RANGE CHECK  MODEL1  CONDIT1  00:09:31 [98%]
RANGE CHECK MODE ON
[EXIT] RETURN TO NORMAL POWER TRANSMITTING

[████                              ]
0s         30s        60s        90s
                      RESTART  EXIT
```

■ Please note, upon expiration of the 90 seconds, or when [EXIT] is selected, the transmitter will automatically return to the normal RF operation as noted on the display.

■ Once the 14MZ is transmitting at full power, it is not possible to enter the Range Check mode without first switching the transmitter Off and back On. This has been designed to prevent a modeler from inadvertently flying in the Range Check mode.

5. When [EXIT] is selected and the DATA button is pressed, the RANGE CHECK mode is disabled and the 12Z will begin transmitting at full power.

```
RANGE CHECK  MODEL1  CONDIT1  00:09:48 [96%]
CURRENTLY TRANSMITTING (RF ON)
RANGE CHECK IS UNAVAILABLE


```
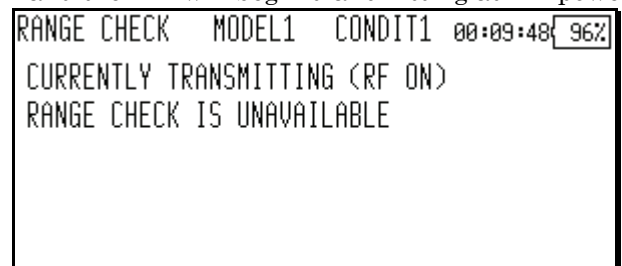
■ After the RANGE CHECK mode was reset, it cannot be selected again. To select the RANGE CHECK mode again, turn on the power switch and start from the beginning.

Channel Mode Selection

When using the TM-14 RF module with the T12Z, 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 R616FFM	R607FS R617FS	R608FS R6014FS
TM-14 Module	Multi-ch mode	–	–	Compatible
	7ch mode	Compatible	Compatible	–

1. Access the frequency setting [FREQUENCY] in the linkage menu and then press the DATA button. The currently selected transmission mode is displayed.

```
FREQUENCY    MODEL1  CONDIT1  00:09:59 96%



SYSTEM         :FASST MULT


```
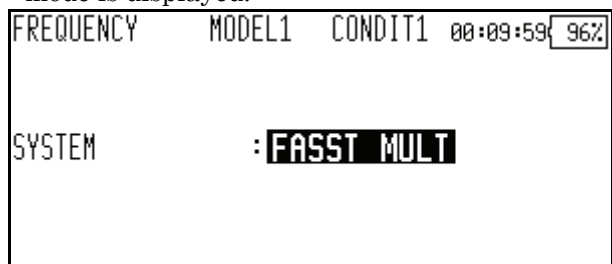
2. To change the mode selection, select the alternate transmission mode.
   [FASST MULT] : Multi channel mode
   [FASST 7CH] : 7 channels mode

```
FREQUENCY    MODEL1  NORMAL  02:22:30 59%
  CURRENT:   FASST MULT

             FASST MULT

             FASST 7CH

```

3. Press the DATA button, the display will return to the confirmation screen.

```
FREQUENCY    MODEL1  NORMAL  02:22:36 57%



SYSTEM         :FASST 7CH
                        CHANGED.
                        SURE ?
                             YES
```

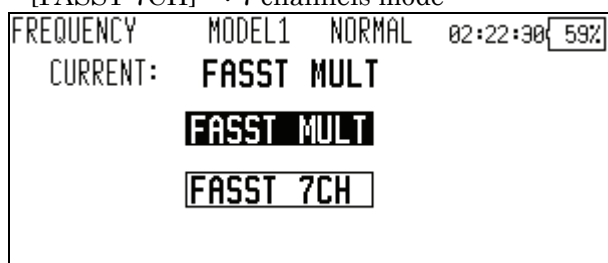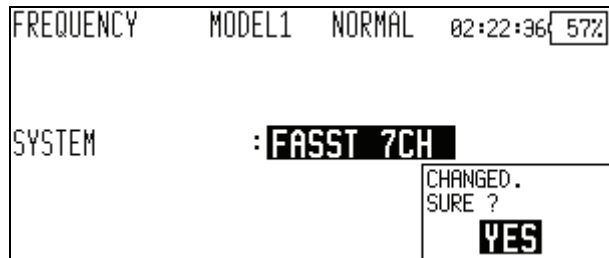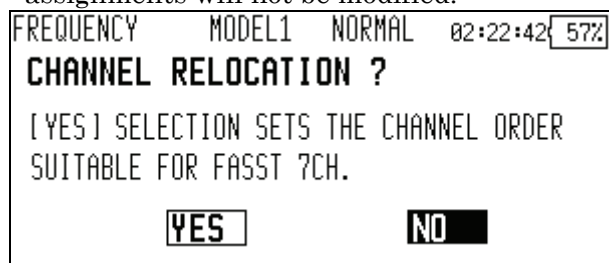4. A channel relocation screen will appear. If you wish to relocate the channel assignments, select the [Yes]. If not, select [No]. The channel assignments will not be modified.

```
FREQUENCY    MODEL1  NORMAL  02:22:42 57%
CHANNEL RELOCATION ?

[YES] SELECTION SETS THE CHANNEL ORDER
SUITABLE FOR FASST 7CH.

    YES            NO
```

(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	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

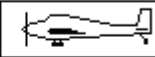When using the TM-14 RF module, the T12Z channel assignment function allows the automatic relocation of the channels (servo output) to maximize performance of the FASST system.

(Example) Change from the MZ-FM module to the TM-14 module
1. Replace the RF module of the T12Z with the TM-14.
2. Turn on the transmitter.
3. Select LINKAGE menu.
4. Select FREQUENCY menu.
5. A message is displayed. Push the DATA button.

```
FREQUENCY    MODEL1   CONDIT1  00:01:17 77%
BAND NO.(FREQ.CH): 11 (72.010MHZ)
FREQ.BAND / AREA : 72MHZ    AMERICA
MODULATION      : PCM G3    MISMATCHED
RECEIVER ID     : 00020151  FREQ. BAND
2ND RECEIVER ID : NO USE    CHANGE FREQ?
```

6. A CHANNEL RELOCATION message will appear. If you wish to relocate the channel assignments, select [YES] and press the DATA button. If not, select [NO]. The channel assignments will not be modified.
7. Band setting changes to 2.4GHz.

```
FUTABA CORP  MODEL1    00:08:56 100%
BAND NO.: 2.4GHz
             FASST MULT

         TRANSMIT ?  YES  NO
```

8. The channel assignment is changed to suitable assignment of FASST.
9. After the channels have been relocated you must verify that the receiver connections are correct and verify that all of the settings within the transmitter are correct before flying.

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, please pivot 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.

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.)

Cumulative Model Timer

A cumulative model timer has been added to this version of the software. To show this timer on the home screen please follow the instructions below. The Cumulative Model Timer and System Timer values are maintained even if they are not displayed on the home Screen.
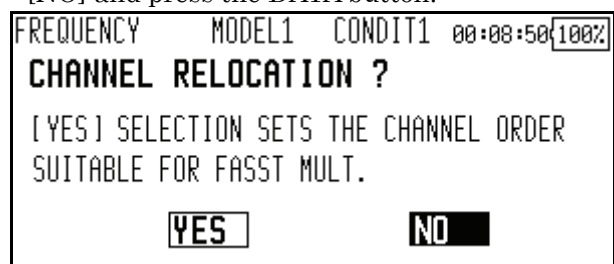
1. Open [SYSTEM TIMER] of the System Menu.
2. Select "MODE" and turn the DATA dial and switch the display to [TOTAL] or [MODEL].
   ※ The display blinks.
   [TOTAL] : Operation is the same as in the past.
   [MODEL] : The elapsed time of each model is recorded.
3. When the DATA button is pressed, the setting is changed.

```
SYSTEM TIMER  MODEL1   CONDIT1  00:17:07 100%

         MODE              TOTAL

         RESET SYSTEM TIMER 00:17:07
```
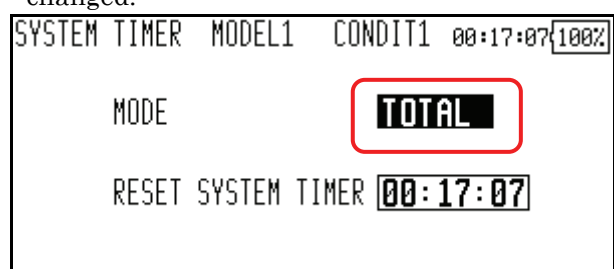
Automatic channel assignment

The 12Z will automatically relocate channel assignments as necessary to achieve the highest performance. This automatic channel relocation will occur when you change the modulation type. To minimize latencies and obtain the highest performance you should allow the transmitter to automatically relocate the channels when requested. Once the channels have been relocated it will be necessary to verify that the servos are plugged into the proper channels on the receiver.
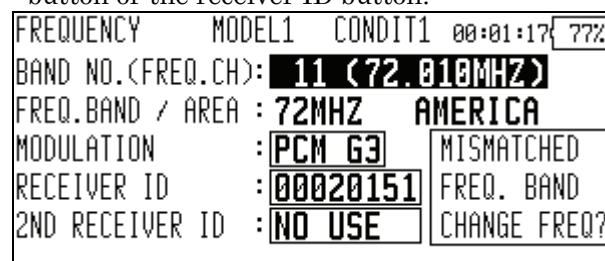
1. Change the modulation mode using the [FREQUENCY] function of the Linkage Menu.
2. A channel relocation confirmation screen is displayed. To change the channel allocation, select [YES] and press the DATA button. To maintain the current channel allocations, select [NO] and press the DATA button.

```
FREQUENCY      MODEL1    CONDIT1  00:08:50 100%
CHANNEL RELOCATION ?

[YES] SELECTION SETS THE CHANNEL ORDER
SUITABLE FOR FASST MULT.

        YES            NO
```

Frequency setting

The frequency, modulation and receiver ID can be set at same time from this version. It is not necessary to return to the frequency setting screen for each setting.
1. Change the frequency, the modulation mode or receiver ID using [FREQUENCY] function of the Linkage Menu.
2. A confirmation screen is displayed.
3. If you want to change other setting, press the frequency channel button, the modulation type button or the receiver ID button.

```
FREQUENCY      MODEL1   CONDIT1  00:01:17 77%
BAND NO.(FREQ.CH): 11 (72.010MHZ)
FREQ.BAND / AREA : 72MHZ    AMERICA
MODULATION       : PCM G3   MISMATCHED
RECEIVER ID      : 00020151 FREQ. BAND
2ND RECEIVER ID  : NO USE   CHANGE FREQ?
```

Model type

2 ailerons + 4 flaps and 4 ailerons + 2 flaps have been added to the glider model types which can be selected in the PCM1024 mode and the PPM mode.
■ Motor gliders cannot be handled.

```
MODEL TYPE    MODEL1    NORMAL   00:58:03 73%
            WING TYPE SELECTION

AIL FLP3 FLP4 AIL2    AIL3 FLP FLP2 AIL4
    FLP     FLP2          AIL    AIL2
2AIL+4FLP            4AIL+2FLP
```
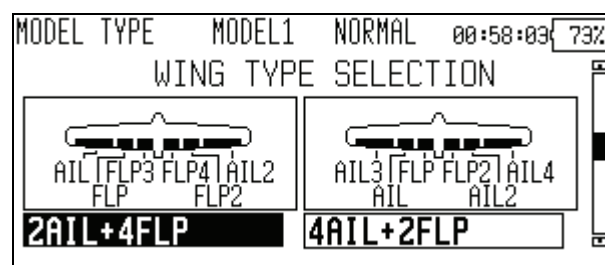
Data initialization after swash type switching

In the past when the swash type was changed, all of the model data had to be initialized. Starting with version 1.3.0 it is possible to change the swash type and the software will automatically transfer the settings. There are a few swash type conversions that are not possible, please see the table below for more information.
■ If the swash type data can be retained the transmitter will prompt with "Initialize all data?" Answer [No] if you would like to retain the swash settings answer. Answer [Yes] if you would like the data initialized then answer.
■ It may not be possible to continue the model data, depending on the swash type before and after modification.

Before modification	After modification	Continuation
H-1,H-2,HE3, HR3,HN3,H-3	H-1,H-2,HE3, HR3,HN3,H-3	Possible
H-4,H-4X	H-4,H-4X	Possible
H-1,H-2,HE3, HR3,HN3,H-3	H-4,H-4X	Impossible
H-4,H-4X	H-1,H-2,HE3, HR3,HN3,H-3	Impossible

1. When the swash type is changed, and if the data can be retained, a data initialization confirmation screen is displayed. When [YES] is selected and the DATA button is pressed, the data is initialized. When [NO] is selected and the DATA button is pressed, the data is retained.

```
MODEL TYPE    MODEL1   NORMAL   00:12:36  96%
      ┌─────────────────────────────┐
      │   MODEL TYPE CONFIRMATION    │
      │                             │
      │     INITIALIZE ALL DATA ?   │
      │                             │
      │       YES        NO         │
      └─────────────────────────────┘
HELICOPTER              SWASH HR3
```
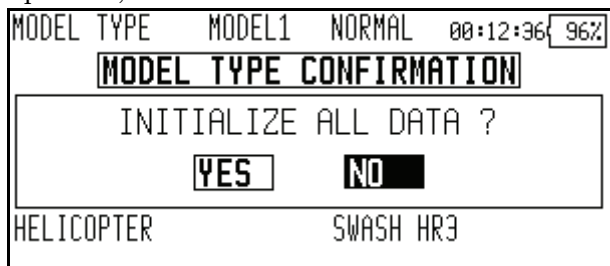
■ Verify that all of the settings are correct before operating your model.

Mixing switch NULL-ON/OFF setting

When the switch type "NULL" is selected, you can toggle the On/Off option manually.

1. Open the mixing switch selection screen. Select [NULL] and press the DATA button.

```
PROG. MIXES   MODEL1   CONDIT1   00:12:02  96%
<SWITCH>              CD-SW  NULL ON/OFF  NULL
SF                                            SH
SE    SA SB   LD CD RD   SC SD                SG
 LS   J3                 J2                   RS
        J4   T3  T2        J1
        T4   T1
```

2. The on/off setup screen is displayed. Turn the DATA dial and switch the display to [ON] or [OFF].
   ※ The display blinks.
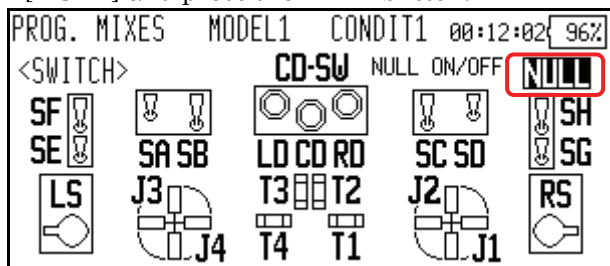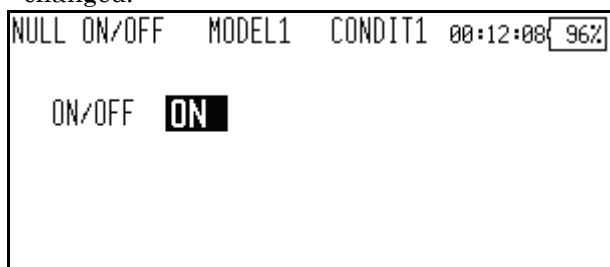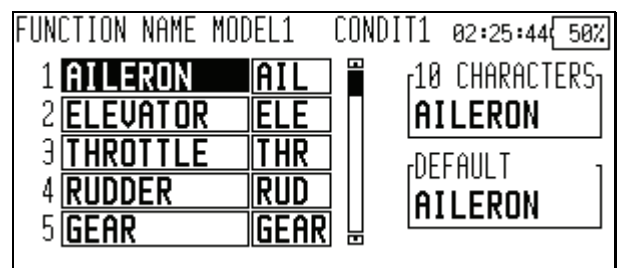   [ON] : Mixing always on.
   [OFF] : Mixing always off.
3. When the DATA button is pressed, the setting is changed.

```
NULL ON/OFF   MODEL1   CONDIT1   00:12:08  96%

   ON/OFF    ON
```

Function name

The function name can be changed for the full name (10 characters) or for the abbreviated name (4 characters).

1. Select [FUNCTION NAME] of the Linkage Menu and press the DATA button.
2. The FUNCTION NAME setup screen is displayed.

```
FUNCTION NAME MODEL1   CONDIT1   02:25:44  50%
1 AILERON    AIL          ┌10 CHARACTERS┐
2 ELEVATOR   ELE          │ AILERON     │
3 THROTTLE   THR          └─────────────┘
4 RUDDER     RUD          ┌DEFAULT┐
5 GEAR       GEAR         │ AILERON     │
```

3. Select the function to be renamed and select the [Rename] and the DATA button is pressed. A character input screen is displayed. Type in the new function name and select [Enter] and press the DATA button to store the new function name, or press the RETURN button to cancel.

```
FUNCTION NAME MODEL1   CONDIT1   00:11:12  96%
                          ┌10 CHARACTERS┐
      RENAME              │ AILERON     │
                          └─────────────┘
                          ┌DEFAULT┐
      RESET               │ AILERON     │
```

```
FUNCTION NAME MODEL1   CONDIT1   00:11:17  96%
 AILERON          A B C D E F G H I J
                  K L M N O P Q R S T
 AILERON          U V W X Y Z a b c d
      ENTER       e f g h i j k l m n
                  o p q r s t u v w x BS
MOVING CURSOR:↩ ↪ y z / . ! : + - ,
```
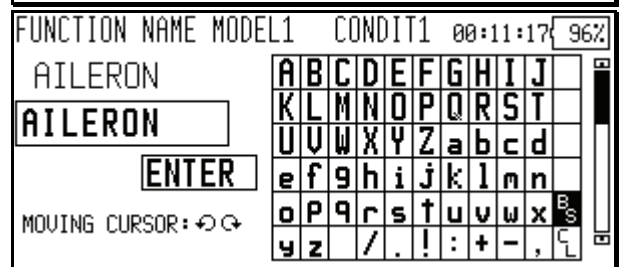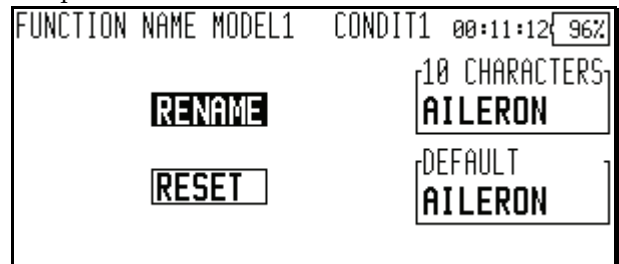
4. When [RESET] is selected and the DATA button is held down, the function name is reset to the initial state function name.
5. The function name may be displayed in 10 characters or 4 characters, depending on the setup screen. For 4 characters display, input the function name as required.

```
FUNCTION NAME MODEL1   CONDIT1   02:25:58  50%
1 AILERON    AIL          ┌4 CHARACTERS┐
2 ELEVATOR   ELE          │ AIL        │
3 THROTTLE   THR          └────────────┘
4 RUDDER     RUD          ┌DEFAULT┐
5 GEAR       GEAR         │ AIL        │
```
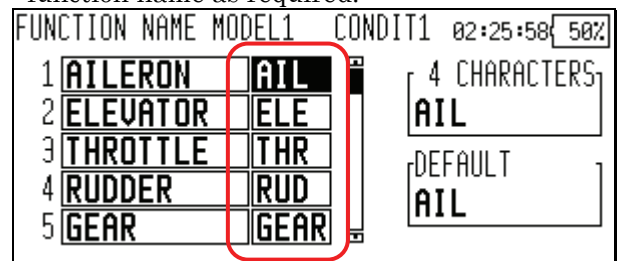
Timer

A timer can now be set to maintain its value even when the power is turned off or the model is switched.

1. Open [TIMER] of the Linkage Menu.
2. Select "MEMORY" and turn the DATA dial and switch the display to [ON] or [OFF].
   ※ The display blinks.
   [ON] : Memory mode. The timer value is held even after power off and model switching.
   [OFF] : The timer is reset by power off and model switching as in the past.
3. When the DATA button is pressed, the setting is changed.

```
TIMER        MODEL1    NORMAL    00:14:28 100%
  00:00.0          TIMER1          RESET
MODE    UP        TIME: STOPPED    10:00
RESET SW OFF   SPLIT TIME SW OFF
START SW OFF   MEMORY        OFF
STOP SW OFF
```
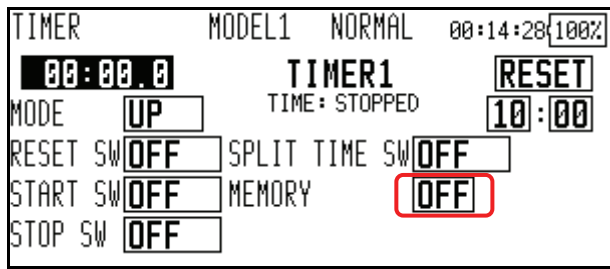
Trim display units

Percentage (%) display can be selected at trim.

1. Open [DIAL MONITOR] of the Linkage Menu.
2. Turn the DATA dial and switch "TRIM UNIT" to [%] or [-].
   ※ The display blinks.
   [%] : Trim is displayed in % units.
   [--] : Trim is displayed numerically the same as in the past.
3. When the DATA button is pressed, the setting is changed.

```
DIAL MONITOR  MODEL1  CONDIT1   TRIM UNIT  %
LD            CD                          RD
    +0%(  +0%)     +0%  10    +0%(  +0%)
  LS        T3        T2          RS
   +0%       +0%       +0%        +0%
   (  +0%)   4        4       (   +0%)
      +0%  4                +0%  4
           T4        T1
```

Volume modification

The volume can be set according to the type of sound. The types of sound which can be selected are:
• Key operation sound
• Error/Warning sound
• Trim and center click sound
• Timer event sound
• Other sound

1. Select [SOUND] of the System Menu and press the DATA button.
2. The volume setup screen opens.
3. Select the item whose volume is to be set. When the DATA dial is turned clockwise, the volume increases and when the dial is turned counterclockwise, the volume decreases. When the DATA button is held down, the volume is reset to the initial value.

```
SOUND        MODEL1    NORMAL    00:13:04  96%
KEY OPERATION SOUND   L          H
TRIM & CENTER CLICK   L          H
ERROR/WARNING SOUND   L          H
TIMER EVENT SOUND     L          H
OTHER SOUND           L          H
   PUSH ROTARY-KEY (1SEC) TO RESET DATA
```

■ For safety, the error/alarm sound cannot be set to below a certain volume.

Japanese/German display compatibility

The set has been made compatible with Japanese and German display.

Display switching
1. Open [INFORMATION] of the System Menu.
2. Turn the DATA dial and select the display language.
   ※ The display blinks.
   [ENGLISH] : English mode
   [JAPANESE] : Japanese mode
   [GERMAN] : German mode

```
INFORMATION   MODEL1   CONDIT1  00:17:44 100%
PRODUCT:00200051 LANGUAGE: JAPANESE
EDITOR/ENCODER : V. 1. 3. 0 / V.  1. 39
MEM. CARD SIZE :          32279552 BYTES
CARD FREE SIZE :           2552832 BYTES
AREA:   JAPAN        (     19 MODELS)
SURE? YES (PUSH ROTARY-KEY) NO (OTHER KEYS)
```

3. When the DATA button is pressed, the setting is changed.

```
FUTABA CORP   MODEL1    00:18:06 100%
タイマー1  10:00      +0%  システム    リンケージ
  00:00.0 UP
タイマー2  10:00             +0%
  00:00.0 UP              PCM G3 CONDIT1
                         77(40.770MHZ)
     +0%                  +0%    RF OFF
```
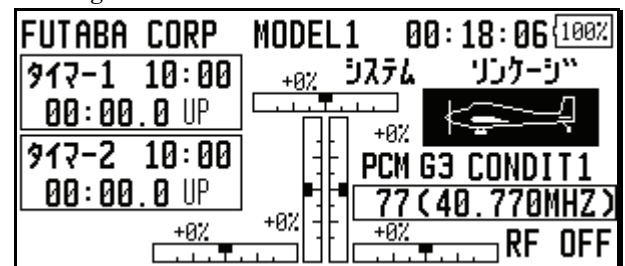
Character input
Lower case alphabetic characters and katakana, etc. can be used.

1. When the DATA dial is turned, the input character field cursor moves left and right.
2. When the CURSOR lever is moved up, down, left, or right, the candidate characters list moves. When the DATA button is pressed, the character on the cursor is input.
3. When the CURSOR lever is pressed, the candidate characters list is switched alphabet, numbers/symbols and katakana.
4. To enter the input, operate the CURSOR lever and select [ENTER] and press the DATA button.
5. To cancel input, operate the CURSOR lever and select [CANCEL] and press the DATA button.

```
FUNCTION NAME MODEL1   CONDIT1  00:11:17  96%
 AILERON          A B C D E F G H I J
AILERON           K L M N O P Q R S T
                  U V W X Y Z a b c d
        ENTER      e f g h i j k l m n
MOVING CURSOR: ↶ ↷ o p q r s t u v w x BS
                   y z / . ! : + - , ↵
```
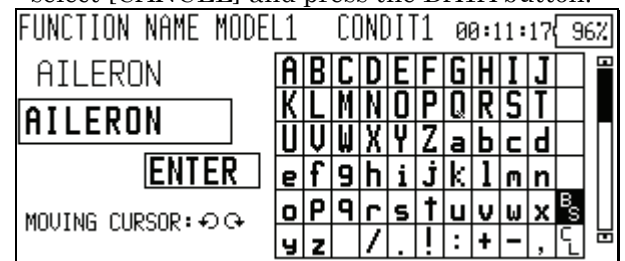
Pitch angle display mode

The system has been made compatible with pitch angle display.

1. Open [PITCH CURVE] of the Model Menu.
2. Move the cursor and display the page 4.
3. Select "UNIT" and turn the DATA dial and switch the display to [DEG.] or [%].
   ※ The display blinks.
   [DEG.] : Angle display mode
   [%] : % display mode
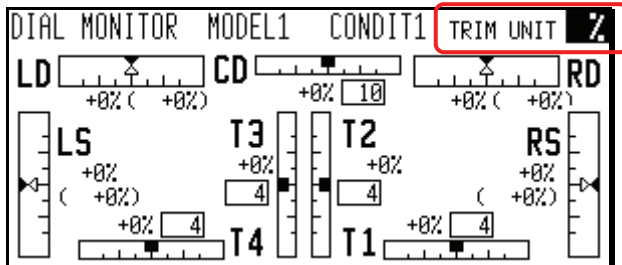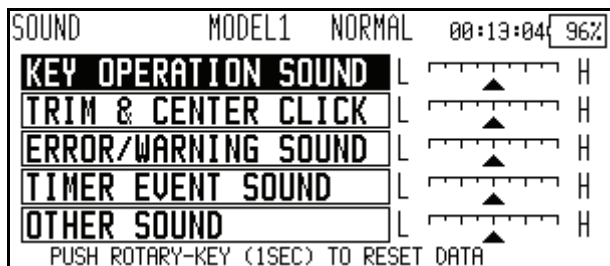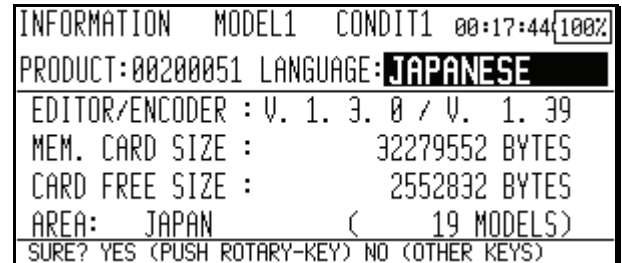4. When the DATA button is pressed, the setting is changed.

```
PIT CURVE     MODEL1  NORMAL   00:18:51 100%

GROUP  GROUP               ANGLE
       IN   MODE    OUT     UNIT
SPEED   0 LINEAR    0      DEG.

SURE? YES (PUSH ROTARY-KEY) NO (OTHER KEYS)
```
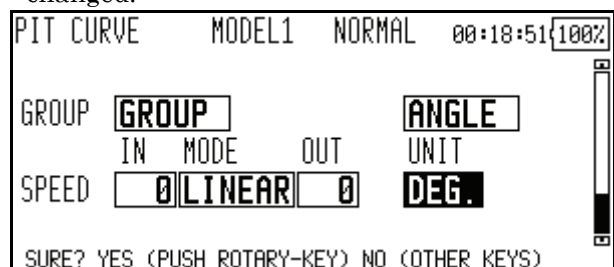
5. When [ANGLE] is selected and the DATA dial is pressed, the angle setup screen is displayed.

```
PITCH ANGLE   MODEL1  NORMAL   00:19:08 100%
+15          HIGH      THR-POS RANGE(%)
+10         +10.0°     +100.0 to  +90.0
+5          CENTER
+0           +0.0°     +10.0 to  -10.0
-5          LOW
-10        -10.0°     -90.0 to -100.0
-15
POS-100.0 RATE -10.0    LOW RANGE: EDIT LOW ANGLE
```

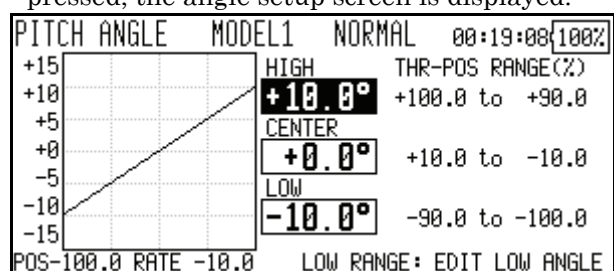6. Set high pitch. Move the pitch control to high pitch and move the cursor to [HIGH]. Turn the DATA dial and set the angle.
7. Set center pitch. Move the pitch control to the hovering point and move the cursor to [CENTER]. Turn the DATA dial and set the angle.
8. Set low pitch. Move the pitch control to low pitch and move the cursor to [LOW]. Turn the DATA dial and set the angle.

AFR, D/R

The following functions cannot be selected at AFR and D/R because they are not effective.
- Ailerons 2,3,4
- Flaps 2,4
- Rudder 2
- Throttle (helicopter only)
- Pitch
- Camber
- Gyro 1,2,3
- Governor 1,2
- Mixture
- Multiprop

Stick setting

The adjustable range of the stick response is reduced to 1-16.

Function channel initialization

PCM1024 mode and PPM mode function channel setting was changed as shown below.

■ If you want to see the function channel setting in other modulation modes, please see the manual.

■ Normal and V-tail

CH	1Aileron			2Aileron			2Aileron + 1Flap		
	Airplane	EP Glider	Glider	Airplane	EP Glider	Glider	Airplane	EP Glider	Glider
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX1	Throttle	Motor	AUX1	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX7	AUX7	Gear	AUX7	AUX7	Gear	AUX6	AUX6
6	Airbrake	Airbrake	Airbrake	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	AUX6	AUX6	AUX6	AUX6	AUX6	AUX6	Aileron2	Aileron2	Aileron2
8	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5
VC1	AUX1	AUX1	AUX1	Camber	Camber	Camber	Camber	Camber	Camber
VC2	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
VC3	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
VC4	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1

CH	2Aileron + 2Flap			2Aileron + 4Flap	4Aileron + 2Flap
	Airplane	EP Glider	Glider	Glider	Glider
1	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX6	Rudder	Rudder
4	Rudder	Rudder	Rudder	Aileron2	Aileron2
5	Gear	AUX5	AUX5	Flap	Aileron3
6	Aileron2	Aileron2	Aileron2	Flap2	Aileron4
7	Flap	Flap	Flap	Flap3	Flap
8	Flap2	Flap2	Flap2	Flap4	Flap2
VC1	Camber	Camber	Camber	Camber	Camber
VC2	AUX1	Butterfly	Butterfly	Butterfly	Butterfly
VC3	AUX1	AUX1	AUX1	AUX1	AUX1
VC4	AUX1	AUX1	AUX1	AUX1	AUX1

■ Flying wing

CH	2Aileron			2Aileron + 1Flap		
	Airplane	EP Glider	Glider	Airplane	EP Glider	Glider
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Rudder2	Rudder2	Rudder2	Rudder2	Rudder2	Rudder2
3	Throttle	Motor	AUX1	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX7	AUX7	Gear	AUX6	AUX6
6	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	AUX6	AUX6	AUX6	Aileron2	Aileron2	Aileron2
8	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5
VC1	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
VC2	Camber	Camber	Camber	Camber	Camber	Camber
VC3	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly
VC4	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1

CH	2Aileron + 2Flap			2Aileron + 4Flap	4Aileron + 2Flap
	Airplane	EP Glider	Glider	Glider	Glider
1	Aileron	Aileron	Aileron	Aileron	Aileron
2	Rudder2	Rudder2	Rudder2	Aileron2	Aileron2
3	Throttle	Motor	AUX7	Aileron3	Aileron3
4	Rudder	Rudder	Rudder	Rudder2	Aileron4
5	Gear	AUX6	AUX6	Flap	Rudder
6	Flap	Flap	Flap	Flap2	Rudder2
7	Aileron2	Aileron2	Aileron2	Flap3	Flap
8	Flap2	Flap2	Flap2	Flap4	Flap2
VC1	Elevator	Elevator	Elevator	Elevator	Elevator
VC2	Camber	Camber	Camber	Camber	Camber
VC3	AUX1	Butterfly	Butterfly	Butterfly	Butterfly
VC4	AUX1	AUX1	AUX1	AUX1	AUX1

■ Ailevator

CH	1Aileron			2Aileron			2Aileron + 1Flap		
	Airplane	EP Glider	Glider	Airplane	EP Glider	Glider	Airplane	EP Glider	Glider
1	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX1	Throttle	Motor	AUX1	Throttle	Motor	AUX7
4	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder	Rudder
5	Gear	AUX7	AUX7	Gear	AUX7	AUX7	Gear	AUX6	AUX6
6	Airbrake	Airbrake	Airbrake	Aileron2	Aileron2	Aileron2	Flap	Flap	Flap
7	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Elevator2	Aileron2	Aileron2	Aileron2
8	AUX5	AUX5	AUX5	AUX5	AUX5	AUX5	Elevator2	Elevator2	Elevator2
VC1	AUX1	AUX1	AUX1	Camber	Camber	Camber	Camber	Camber	Camber
VC2	AUX1	AUX1	AUX1	AUX1	Butterfly	Butterfly	AUX1	Butterfly	Butterfly
VC3	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1
VC4	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1	AUX1

CH	2Aileron + 2Flap		
	Airplane	EP Glider	Glider
1	Aileron	Aileron	Aileron
2	Elevator	Elevator	Elevator
3	Throttle	Motor	AUX6
4	Rudder	Rudder	Rudder
5	Elevator2	Elevator2	Elevator2
6	Aileron2	Aileron2	Aileron2
7	Flap	Flap	Flap
8	Flap2	Flap2	Flap2
VC1	Camber	Camber	Camber
VC2	AUX1	Butterfly	Butterfly
VC3	AUX1	AUX1	AUX1
VC4	AUX1	AUX1	AUX1

■ Helicopter

CH	H-1,H-2,HE3,HR3,HN3,H-3	H4,H-4X
1	Aileron	Aileron
2	Elevator	Elevator
3	Throttle	Throttle
4	Rudder	Rudder
5	Gyro	Gyro
6	Pitch	Pitch
7	Governor	Governor
8	Needle	Elevator2
VC1	AUX1	AUX1
VC2	AUX1	AUX1
VC3	AUX1	AUX1
VC4	AUX1	AUX1

STICK SETTING [System Menu]

This function sets the servo response speed (response) and dead band width (hysteresis) relative to stick operation for each condition. The operation feel of the stick can be adjusted to match the in-flight aerobatics.

Call the setting screen shown below by selecting [STICK SETTING] from the System Menu.

STICK SETTING MODEL1   CONDIT1 03:32:02 100%
          RESPONSE   HYSTERESIS   GROUP
    J1   4   1   GROUP
    J2   4   1
    J3   4   1
    J4   4   1

Condition group/single switching

Response setting

Hysteresis setting
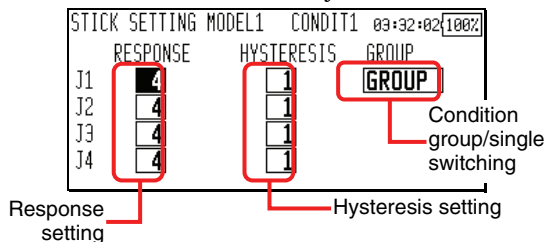
Response adjustment

1. Use the cursor lever to move the cursor to the set value display of the stick whose response you want to adjust.
2. Use the dial to set the response.
   Initial value : 4
   Adjustment range : 1~16 (The larger the adjustment value, the slower the response.)

Hysteresis adjustment

1. Use the cursor lever to move the cursor to the set value display of the stick whose hysteresis you want to adjust.
2. Use the dial to adjust the response.
   Initial value : 1
   Adjustment range : 0~32 (The larger the adjustment value, the larger the hysteresis.)
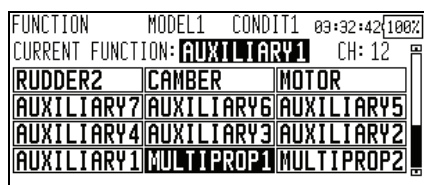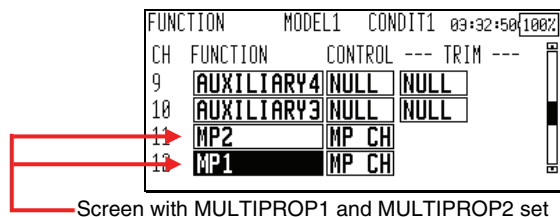
MULTIPROP CHANNEL

[Linkage Menu]

One channel can be expanded to 8 channels by using an MPDX-1 (Multiprop Decoder). Up to two MPDX-1 can be used with the 12Z system.
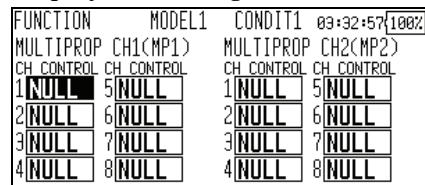
Multiprop function assignment

1. Open the function setting screen of the Linkage Menu, and set the function of the channel to which you want to connect the **MPDX-1** to **MULTIPROP1** or **MULTIPROP2**.

FUNCTION   MODEL1   CONDIT1 03:32:50 100%
CH FUNCTION   CONTROL --- TRIM ---
 9 AUXILIARY4 NULL   NULL
10 AUXILIARY3 NULL   NULL
11 MP2   MP CH
12 MP1   MP CH

Screen with MULTIPROP1 and MULTIPROP2 set

FUNCTION   MODEL1   CONDIT1 03:32:42 100%
CURRENT FUNCTION: AUXILIARY1   CH: 12
RUDDER2   CAMBER   MOTOR
AUXILIARY7 AUXILIARY6 AUXILIARY5
AUXILIARY4 AUXILIARY3 AUXILIARY2
AUXILIARY1 MULTIPROP1 MULTIPROP2

Operation control setting method

1. After assigning the function as described above, use the cursor lever to move the cursor to MP CH of the channel you want to set to multiprop. Push the DATA button to display the setting screen shown below.

FUNCTION   MODEL1   CONDIT1 03:32:57 100%
MULTIPROP CH1(MP1)   MULTIPROP CH2(MP2)
CH CONTROL CH CONTROL   CH CONTROL CH CONTROL
1 NULL   5 NULL   1 NULL   5 NULL
2 NULL   6 NULL   2 NULL   6 NULL
3 NULL   7 NULL   3 NULL   7 NULL
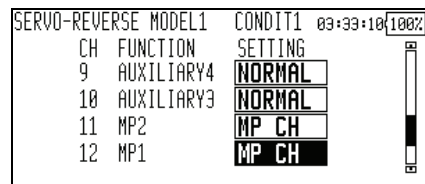4 NULL   8 NULL   4 NULL   8 NULL

2. Use the cursor lever to move the cursor to CH CONTROL of the multiprop channel you want to set. Push the DATA button to display the control selection screen. Select control.
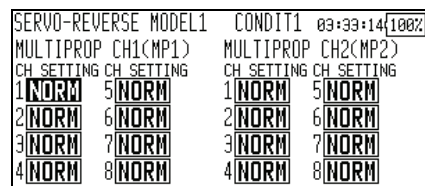
Reverse setting

*Use this function when you want to reverse the direction of servo operation.

1. Open the servo reverse setting screen of the Linkage Menu. Use the cursor lever to select MP CH of the channel you want to set to multiprop. Push the DATA button.

SERVO-REVERSE MODEL1   CONDIT1 03:33:10 100%
    CH FUNCTION   SETTING
     9 AUXILIARY4   NORMAL
    10 AUXILIARY3   NORMAL
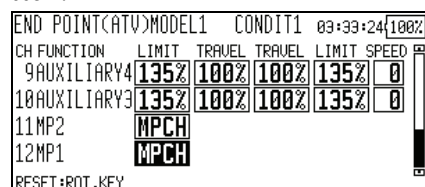   11 MP2   MP CH
    12 MP1   MP CH

2. The multiprop channel reverse setting screen is displayed. Use the cursor lever to move the cursor to the channel whose direction of operation you want to reverse. Use the dial to switch between NORM (normal) and REV (reverse), and push the DATA button.

SERVO-REVERSE MODEL1   CONDIT1 03:33:14 100%
MULTIPROP CH1(MP1)   MULTIPROP CH2(MP2)
CH SETTING CH SETTING   CH SETTING CH SETTING
1 NORM   5 NORM   1 NORM   5 NORM
2 NORM   6 NORM   2 NORM   6 NORM
3 NORM   7 NORM   3 NORM   7 NORM
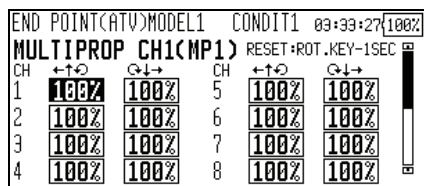4 NORM   8 NORM   4 NORM   8 NORM

End point adjustment

1. Open the end point (ATV) setting screen of the Linkage Menu. Use the cursor lever to select MP CH of the channel you want to set to multiprop. Push the DATA button.

END POINT(ATV)MODEL1   CONDIT1 03:33:24 100%
CH FUNCTION   LIMIT TRAVEL TRAVEL LIMIT SPEED
 9AUXILIARY4   135% 100%   100%   135% 0
10AUXILIARY3   135% 100%   100%   135% 0
11MP2   MPCH
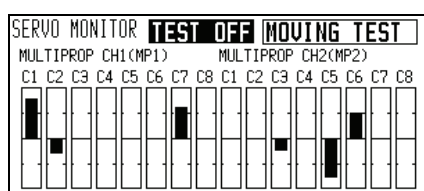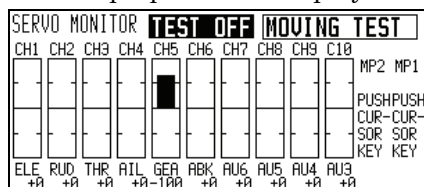12MP1   MPCH
RESET:ROT.KEY

2. The multiprop channel end point (ATV) setting screen is displayed. Use the cursor lever to move the cursor to the channel whose end point you want to adjust. Use the dial to change the rate. (Left and right, up and down can be adjusted individually.)

END POINT(ATV)MODEL1   CONDIT1 03:33:27 100%
MULTIPROP CH1(MP1) RESET:ROT.KEY-1SEC
CH   ←↑↺   ↻↓→   CH   ←↑↺   ↻↓→
1   100% 100%   5   100% 100%
2   100% 100%   6   100% 100%
3   100% 100%   7   100% 100%
4   100% 100%   8   100% 100%

*When both MULTIPROP1 and MULTIPROP2 are set, pushing the cursor lever switches the MULTIPROP1 and MULTIPROP2 displays.

Servo monitor

1. When the cursor lever is pushed, the normal channel display and multiprop channel display are switched.

SERVO MONITOR TEST OFF MOVING TEST
CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8 CH9 C10   MP2 MP1
                                           PUSH PUSH
                                           CUR- CUR-
                                           SOR SOR
                                           KEY KEY
ELE RUD THR AIL GEA ABK AU6 AU5 AU4 AU3
 +0 +0 +0 +0 +0-100 +0 +0 +0 +0 +0

<Normal channel display>

SERVO MONITOR TEST OFF MOVING TEST
MULTIPROP CH1(MP1)   MULTIPROP CH2(MP2)
C1 C2 C3 C4 C5 C6 C7 C8 C1 C2 C3 C4 C5 C6 C7 C8

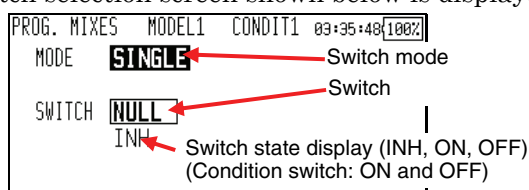<Multiprop channel display>

LOGIC SWITCH [Model Menu]

The logic switch function lets you turn operation on and off by combining multiple switches. For instance, "Turn on the function when 2 switches are turned on simultaneously" can be set.

· Up to 4 switches can be combined.
· Up to 10 circuits can be used with the condition switches and up to 8 circuits can be used with the ON/OFF switch of each mixing function, except airplane snap roll.
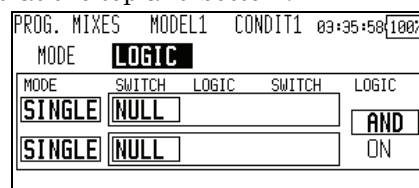
PROG. MIXES 1 MODEL1   CONDIT1 03:35:42 100%
                 IN MODE   OUT
ACT   INH   SPEED   0 LINEAR 0
SWITCH LOG   MASTER SLAVE
                    START STOP
             DELAY 0.0s 0.0s

<Mixing ON/OFF switch display>
(example of program mixing)

Setting procedure

1. Use the cursor lever to move the cursor to the switch display of the function you want to set. Push the DATA button.
2. The switch selection screen shown below is displayed.

PROG. MIXES   MODEL1   CONDIT1 03:35:48 100%
   MODE   SINGLE ←——— Switch mode
                     ←——— Switch
   SWITCH NULL
           INH ←——— Switch state display (INH, ON, OFF)
                     (Condition switch: ON and OFF)

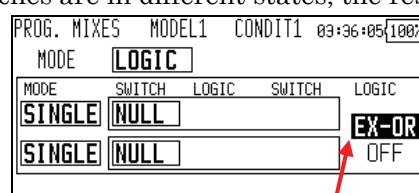<Mixing ON/OFF switch display>
(example of program mixing)

3. Use the cursor lever to move the cursor to the switch mode. Use the dial to select the single switch mode or logic switch mode, and push the DATA button. The single switch mode is used with individual switches, the same as in the past. When switched to the logic switch mode, the switch mode and switches are displayed as shown below. ON/OFF is determined by the combination of the switch and logic mode displayed at the top and bottom.
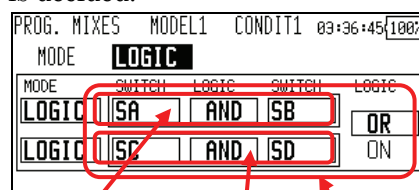
PROG. MIXES   MODEL1   CONDIT1 03:35:58 100%
   MODE   LOGIC
MODE   SWITCH LOGIC SWITCH LOGIC
SINGLE   NULL
                                  AND
SINGLE   NULL   ON

4. Use the cursor lever to move the cursor to the logic mode. Use the dial to select the logic from the three types AND, OR, and Ex-OR, and push the DATA button. Logic operation is shown in the table at below right. For AND, both switches are ON, for OR, either one of the switches is ON, and for Ex-OR, when the two switches are in different states, the result is ON.

PROG. MIXES   MODEL1   CONDIT1 03:36:05 100%
   MODE   LOGIC
MODE   SWITCH LOGIC SWITCH LOGIC
SINGLE   NULL
                                 EX-OR
SINGLE   NULL   OFF

Mode selection ——

5. Use the cursor lever to move the cursor to the top or bottom switch mode. Use the dial to select the logic switch mode, and push the DATA button. Switch display is added to each. A combination of up to 4 switches can be registered in this manner. When 3 or more switches are registered, the left and right switch combinations surrounded by the frame are judged first. Next, the combination in the judged frame are judged by the logic displayed at the far right side. Finally, ON/OFF is decided.

PROG. MIXES   MODEL1   CONDIT1 03:36:45 100%
   MODE   LOGIC
MODE   SWITCH LOGIC SWITCH LOGIC
LOGIC   SA   AND   SB
                                  OR
LOGIC   SC   AND   SD   ON

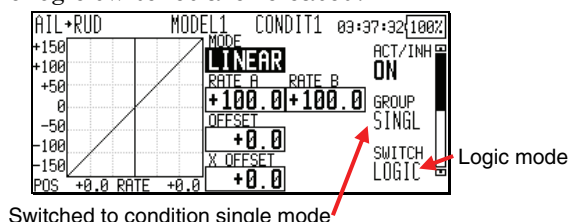Judgment(1)   Judgment(2)   Judgment(3)

*In the above example, first SW-A and SW-B are judged by AND condition and then SW-C and SW-D are judged by AND condition. Lastly, the result of judgment of the SW-A and SW-B judgment result and SW-C and SW-D judgment result by OR condition becomes the final result. In this case, when SW-A and SW-B are simultaneously ON or SW-C and SW-D are simultaneously ON, the result is ON.

Restrictions:

1. Logic switches can be used in mixing the ON/OFF setting with up to 8 circuits for each condition. In condition switching, it can be used with up to 10 circuits. When logic switches exceeding the maximum settable value are selected, an error message is displayed. Release the unnecessary logic switches and then reselect.

┌─ Information ─────────┐
No usable logic switch.
Release other logic switch.
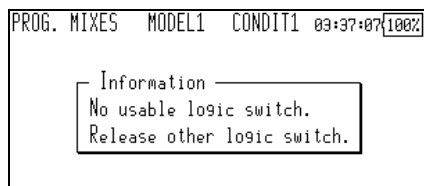
2. Mixing using logic switches as ON/OFF switches is forcibly switched to the condition single mode. Switching to the condition group mode is impossible until the logic switches are released.
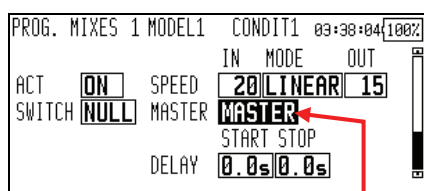
AIL→RUD   MODEL1   CONDIT1 03:37:32 100%
MODE
LINEAR   ACT/INH ON
RATE A RATE B
+100.0 +100.0   GROUP SINGL
OFFSET
+0.0
X OFFSET   SWITCH LOGIC ← Logic mode
+0.0

Switched to condition single mode

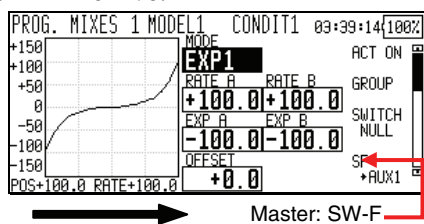# PROGRAM MIXING [Model Menu]
Speed Mode
This function lets you set the operation switch at the program mixing master side. The servo can be operated outside the set curve by switch operation by using this function.

PROG. MIXES 1 MODEL1   CONDIT1 03:38:04 100%
            IN   MODE   OUT
ACT   ON   SPEED 20 LINEAR 15
SWITCH NULL MASTER MASTER
            START STOP
      DELAY 0.0s 0.0s
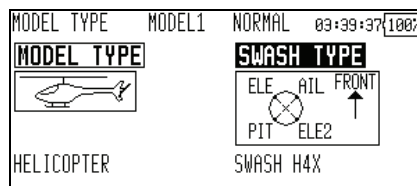
Speed mode selection

Setting method
1. Set program mixing to the curve mode. The ACT, SWITCH, etc. setting screen shown above appears.
2. Use the cursor lever to move the cursor to speed mode selection. Use the dial to select the master mode, and push the DATA button.
3. Set the in speed and out speed.
4. Set the toggle switch to program mixing master.
5. When the switch set to master is operated, the master position marker of the curve is shifted at the set servo speed and the slave function operates along the curve setting. In the below example, when SW-F is operated, the slave auxiliary 1 function automatically operates along the EXP1 curve.

PROG. MIXES 1 MODEL1   CONDIT1 03:39:14 100%
MODE
EXP1   ACT ON
RATE A RATE B
+100.0 +100.0   GROUP
EXP A   EXP B   SWITCH NULL
-100.0 -100.0
OFFSET   SR →AUX1
+0.0
POS+100.0 RATE+100.0

Master: SW-F

MODEL TYPE [Linkage Menu]
The H-4X mode has been added to the swash types available.   The H-4X swash type is the same as the H-4 type, except the control points are rotated 45 degrees.

MODEL TYPE   MODEL1   NORMAL 03:39:37 100%
MODEL TYPE   SWASH TYPE
                   ELE AIL FRONT
   PIT ELE2
HELICOPTER   SWASH H4X

MOTOR MIXING [Model Menu]
Motor mixing was added to airplane model. In addition, when the power is turned on in the mixing on state, a warning message is output.

SWASH RING [Model Menu]
This function limits the swash travel to within a fixed range to prevent damaging of the swash ring by simultaneous operation of the ailerons and elevators. It is effective in 3D aerobatics which use a large travel.

SWASH RING   MODEL1   NORMAL 03:39:50 100%
ELEVATOR
-58%
                 ACT/INH RATE
AILERON
+44%   ACT   100%
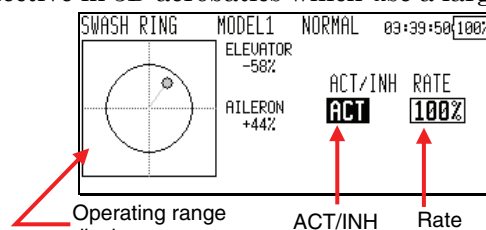
Operating range display area   ACT/INH   Rate

Setting method
1. Open the swash ring setting screen by selecting SWASH RING from the linkage menu.
2. The operating range display area mark shows the stick position. The vertical direction shows the aileron travel. When ACT is displayed by pushing the ACT/INH button, the swash ring function is activated, and a circle is displayed in the operating range display area. Stick
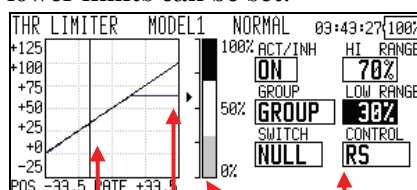
Switch		Combination logic		
SW1	SW2	AND	OR	Ex-OR
off	off	off	off	off
off	on	off	on	on
on	off	off	on	on
on	on	on	on	off

operation is limited to within the area of this circle.
3. Use the cursor lever to move the cursor to the rate display. Use the dial to set the rate. The adjustment range is 50~200%. Adjust the rate to maximum swash tilt.

THROTTLE LIMITER [Model Menu]
This function sets the upper limit position of the throttle curve. Limit position adjustment can be assigned to an arbitrary control. Adjustment range upper and lower limits can be set.

THR LIMITER   MODEL1   NORMAL 03:43:27 100%
+125   100% ACT/INH HI RANGE
+100   ON   70%
+75   GROUP   LOW RANGE
+50   50% GROUP   30%
+25   SWITCH   CONTROL
+0   NULL   RS
-25
POS -33.5 RATE +33.5   0%
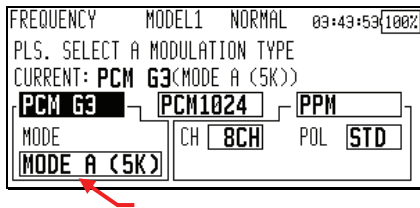
Throttle curve
Limit control position
Adjustment range gauge
Limit control

Setting method

1. Open the throttle limiter setting screen by selecting THR LIMITER from the Model Menu.
2. Use the cursor lever to move the cursor to the ACT/INH display. Use the dial to select ACT, and push the DATA button. ON or OFF is displayed.
3. Use the cursor lever to move the cursor to the SWITCH display and push the DATA button. The switch selection screen opens. Select the throttle limiter function ON/OFF switch.
4. Use the cursor lever to move the cursor to the CONTROL display and push the DATA button. The control selection screen opens. Select the control which is to adjust the limit position.
5. Use the cursor lever to move the cursor to the HI RANGE display. Use the dial to set the limit adjustment range upper limit. An adjustment range gauge is displayed.
6. Use the cursor lever to move the cursor to the LOW RANGE display. Use the dial to set the limit adjustment range lower limit. An adjustment range gauge is displayed.

PCM-G3 COMMUNICATION MODE

Two types of PCM-G3 communication modes can be selected: Mode A and Mode B. Mode A is the conventional mode. Mode B is a mode with enhanced communication quality. Choose the mode matched to the usage environment.

```
FREQUENCY    MODEL1  NORMAL   03:43:53 100%
PLS. SELECT A MODULATION TYPE
CURRENT: PCM G3(MODE A (5K))
PCM G3     PCM1024     PPM
MODE          CH  8CH    POL  STD
MODE A (5K)
```

Setting method

1. Open the frequency setting screen from the Linkage Menu.
2. Open the modulation type setting screen from the frequency setting screen.
3. Use the cursor lever to move the cursor to PCM-G3 mode selection.
4. Use the dial to select the mode, and push the DATA button.
5. Use the cursor lever to move the cursor to PCM G3, and push the DATA button.
6. A change confirmation screen is displayed. When the DATA button is pushed, the modulation type is changed and the Startup screen appears.

Notes:

· When using communications mode B, a receiver compatible with mode B is necessary. (The R5014DPS is not mode B compatible.)
· In communication mode B, the servo response to stick operation is approximately 20% lower than that of mode A.
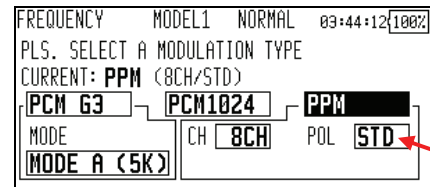
PCM1024 CH10

10th channel is added to the PCM1024 mode. DG2 is added on the function menu at the PCM1024 mode. It is 10th channel control selection.
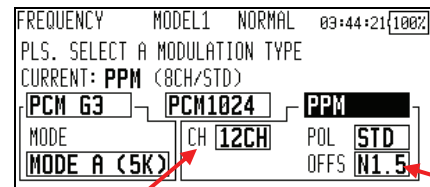
Notes:

The current 9ch receiver must be modified at the servicing department to implement the 10th channel.

Modulation PPM mode

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

```
FREQUENCY    MODEL1  NORMAL   03:44:12 100%
PLS. SELECT A MODULATION TYPE
CURRENT: PPM (8CH/STD)
PCM G3     PCM1024     PPM
MODE          CH  8CH    POL  STD
MODE A (5K)
```
Polarity selection STD or INV

```
FREQUENCY    MODEL1  NORMAL   03:44:21 100%
PLS. SELECT A MODULATION TYPE
CURRENT: PPM (8CH/STD)
PCM G3     PCM1024     PPM
MODE          CH 12CH    POL  STD
MODE A (5K)              OFFS N1.5
```
CH selection 8CH or 12CH

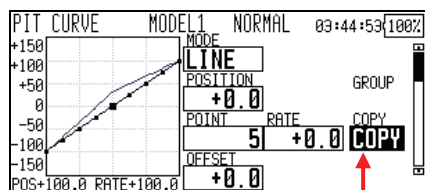Neutral pulse width selection. N1.5 or N1.3 (This appears at only 12CH.)

Setting method

1. Open the frequency setting screen from the Linkage Menu.
2. Open the modulation type setting screen from the frequency setting screen.
3. Use the cursor lever to move the cursor to PPM setting item.
4. Use the dial to select the mode, and push the DATA button.
   CH : 8CH or 12CH, POL : STD or INV, OFFS : N1.5 or N1.3
   OFFS is appeared at only selected 12CH.
5. Use the cursor lever to move the cursor to PPM, and push the DATA button.
6. A change confirmation screen is displayed. When the DATA button is pushed, the modulation type is changed and the Startup screen appears.

Notes:
· The PPM setting of "8CH" and "STD" corresponds to FUTABA receivers.

PITCH CURVE [Model Menu]

A function which copies a curve containing the pitch trim (hovering pitch, low side pitch, high side pitch) when the curve mode is LINE and SPLINE was added.

```
PIT CURVE   MODEL1  NORMAL   03:44:53 100%
+150                MODE
+100                LINE
 +50                POSITION        GROUP
   0                 +0.0
 -50                POINT   RATE   COPY
-100                     5  +0.0  COPY
-150                OFFSET
POS+100.0 RATE+100.0     +0.0
```

Copy function added

Setting method

1. Open the pitch curve setting screen.
2. Set the curve mode to LINE or SPLINE.
3. Set the pitch trim (hovering pitch, low side pitch, high side pitch).
4. Operate the pitch trim (hovering pitch, low side pitch, high side pitch).
5. Use the cursor lever to move the cursor to COPY, and push the DATA button for at least 1 second.
6. The pitch curve becomes a curve containing the pitch trim (hovering pitch, low side pitch, high side pitch). A curve containing the pitch trim (hovering pitch, low pitch, high pitch) is also displayed at the new pitch curve.
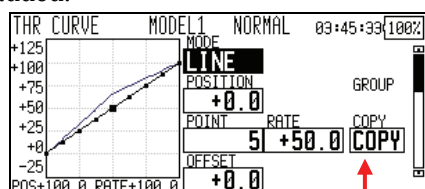
Notes:

When the curve mode is only "LINE" and "SPLINE", the COPY button is displayed.
When the pitch trim is INH or the control of the pitch trim is not set, the copy function doesn't work.

THROTTLE CURVE [Model Menu]

A function which copies a curve containing the hovering throttle trim when the curve mode is LINE and SPLINE has been added.

```
THR CURVE   MODEL1  NORMAL   03:45:33 100%
+125                MODE
+100                LINE
 +75                POSITION        GROUP
 +50                 +0.0
 +25                POINT   RATE   COPY
  +0                     5 +50.0  COPY
 -25                OFFSET
POS+100.0 RATE+100.0     +0.0
```

Copy function added

Setting method

1. Open the throttle curve setting screen.
2. Set the curve mode to LINE or SPLINE.
3. Set the hovering throttle trim.
4. Operate the hovering throttle trim.
5. Use the cursor lever to move the cursor to COPY, and push the DATA button for at least 1 second.
6. The throttle curve becomes a curve containing the hovering throttle trim. A curve containing the hovering throttle trim is also displayed at the new throttle curve.

Notes:

When the curve mode is only "LINE" and "SPLINE", the COPY button is displayed.
When the hovering throttle trim is INH or the control is not set, the copy function doesn't work.

FUNCTION [Linkage Menu]

When the modulation is "PCM-G3", the switch channel DG1 and DG2 are added to the function setting.
The control of DG1 and DG2 are able to select.

```
FUNCTION      MODEL1  CONDIT1 03:46:06 100%
CH  FUNCTION        CONTROL --- TRIM ---
VC3 AUXILIARY1 NULL    NULL
VC4 AUXILIARY1 NULL    NULL
DG1            SD
DG2            SA
```

SERVO REVERSE [Linkage Menu]

When the modulation is "PCM-G3", the switch channel DG1 and DG2 are added to the servo reverse setting.

```
SERVO-REVERSE MODEL1  CONDIT1 03:46:20 100%
  CH  FUNCTION     SETTING
  11  AUXILIARY2   NORMAL
  12  AUXILIARY1   NORMAL
  DG1              REVERSE
  DG2              NORMAL
```