Futaba

FX-20

Radio Control

Instruction Manual

INTRODUCTION

Thank you for purchasing a Futaba digital proportional R/C system. In order for you to make the best use of your system and to use it safely, please read this manual carefully. If you have any difficulties while using your system, please consult the manual, our online Frequently Asked Questions (on the web pages referenced below), your hobby dealer.

Owner's Manual and Additional Technical Help

This manual has been carefully written to be as helpful to you, the new owner, as possible. There are many pages of setup procedures and examples. However, it need not be your sole resource of setup guidelines. For example, the back cover includes a quick-start set of instructions and the Frequently Asked Questions web page referenced below includes this type of step-by-step setup instructions for a variety of other model types.

Due to potential unforeseen changes in production procedures, the information contained in this manual is subject to change without notice. No part of this manual may be reproduced in any form, at any time, without prior permission.

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

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IN NORTH AMERICA

Please contact Uwe Frank Heinrich to assist you with any questions, problems or service needs.

Uwe Frank Heinrich

1214 SW 39th Street

Cape Coral, FL 33914

Phone: 239-540-7872

Cell: 239-223-8581

OUTSIDE NORTH AMERICA

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

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

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

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

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

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

CAUTION:

To assure continued FCC compliance:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Exposure to Radio Frequency Radiation

To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause   harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
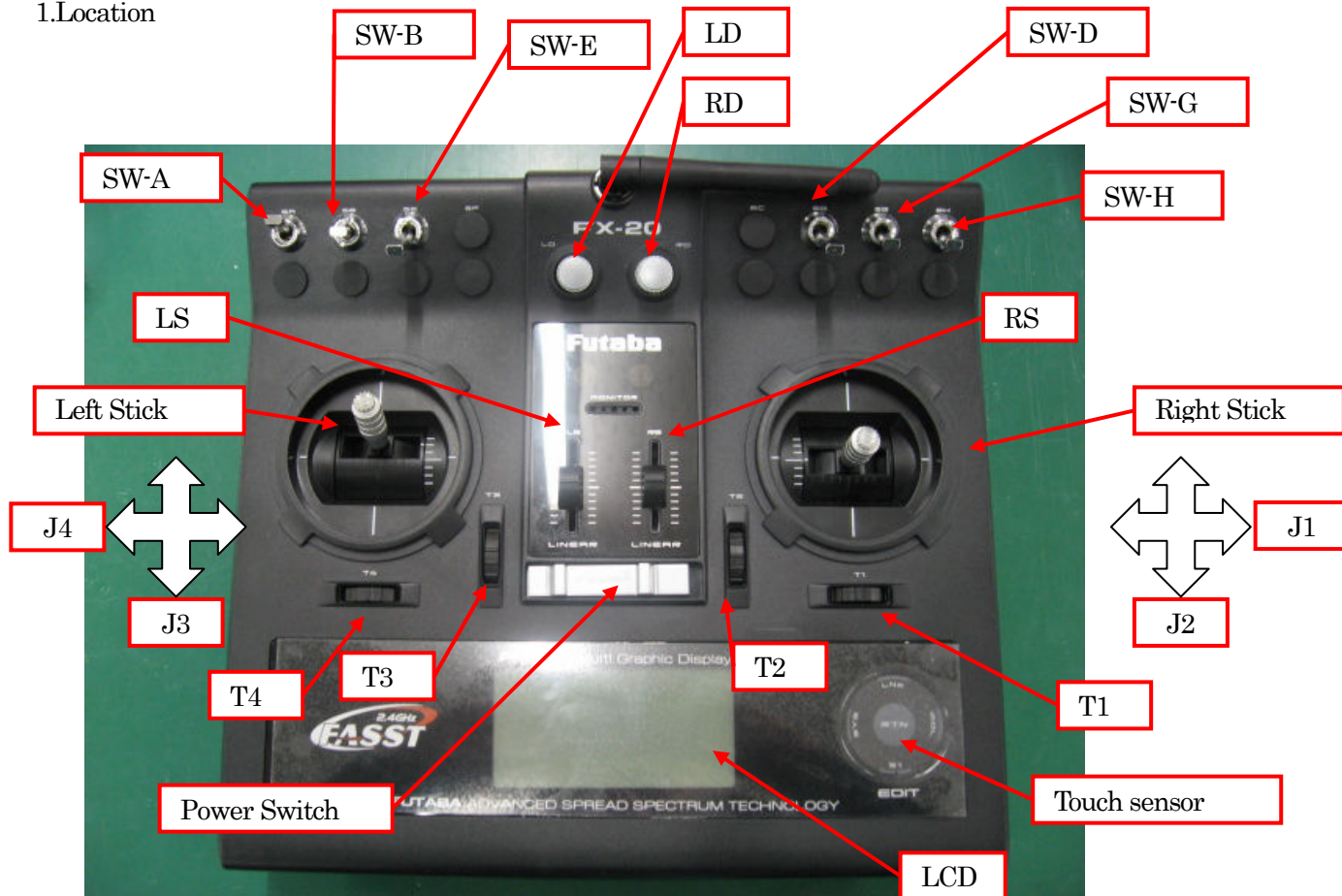
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Fig. Bottom view
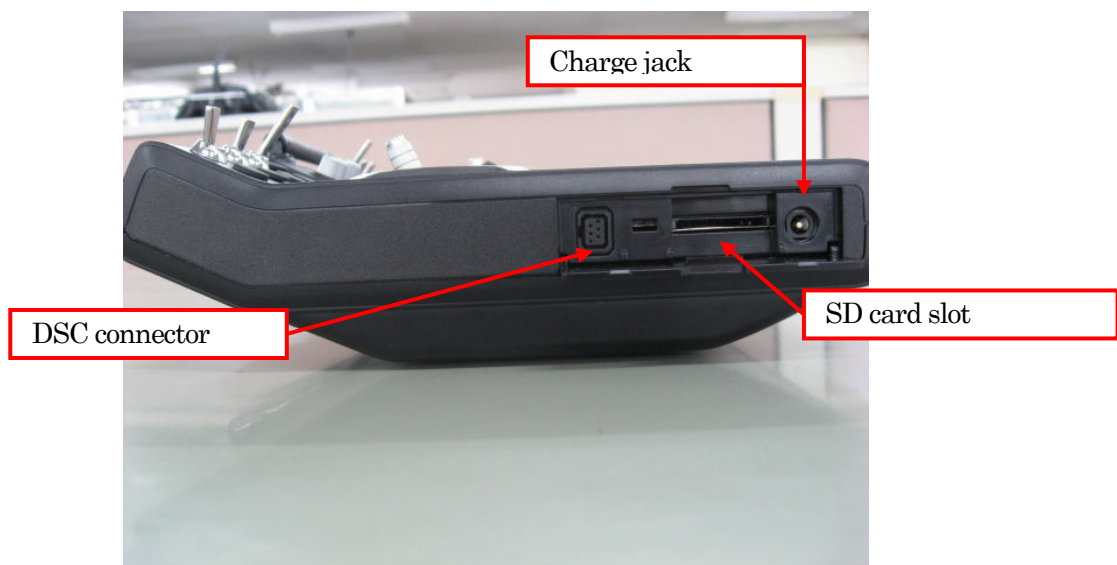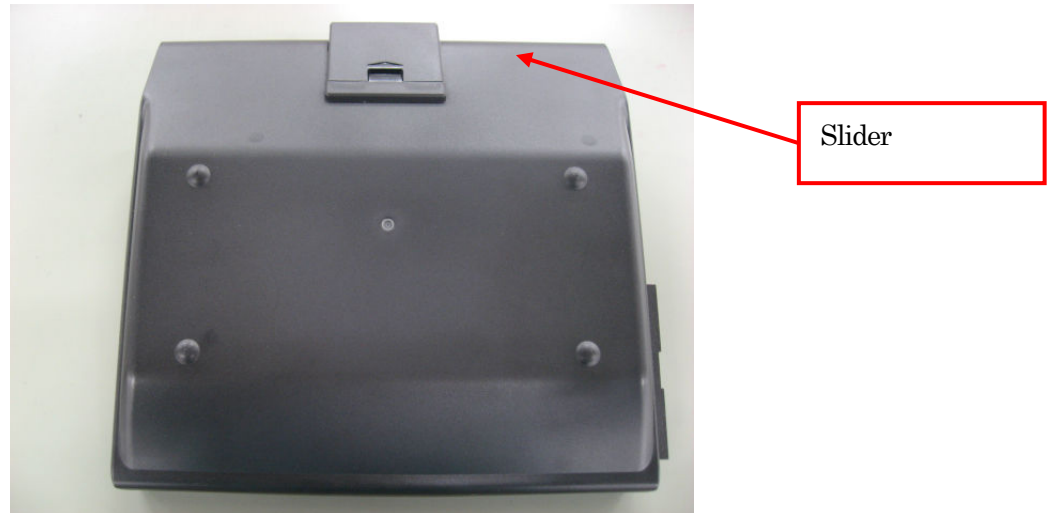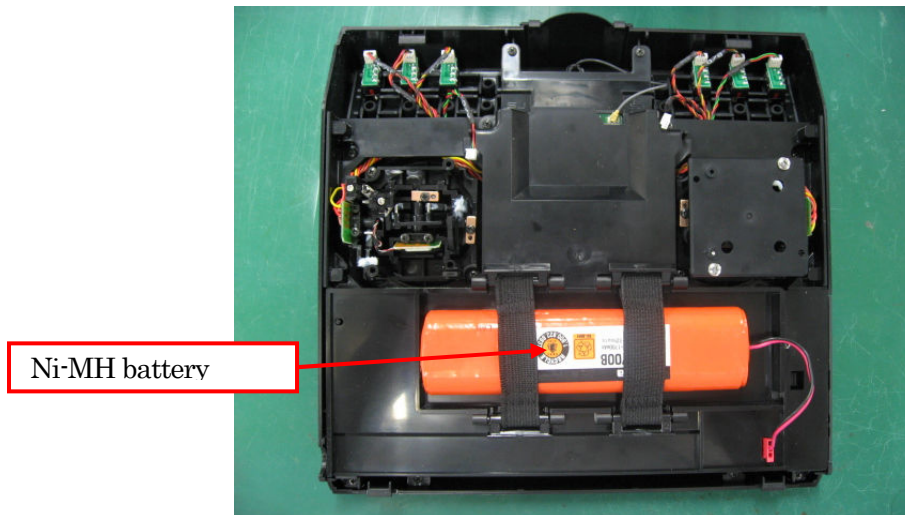
Slider

Ni-MH battery

Fig. Inside view (Battery box)

2.Charging the battery

1-1. Please confirms the power switch is off.

1-2. Insert the plug of the charger to charging bush of transmitter.

1-3. During the charging, the LED of the charger is on.

The charging time is appx. 15 hours. Please do not charge the battery for 15hours or more.

The overcharge damages the battery.

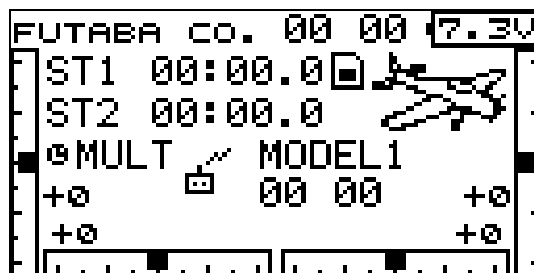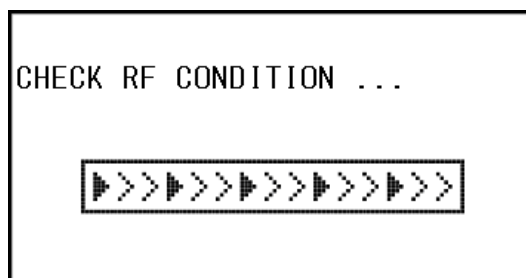The battery is 6 cells Ni-MH battery the capacity is 7.2 V/ 1,700mAH.

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3．Operation of the touch sensor

Operation	Contents		
	Touch part	Condition	Working
Short touch	S1	At the screen have some pages. （Ex. P-MIX screen）	The cursor jumps to top of next page
		At the screen have Only one（1） page.	The cursor jumps the top of page.
		At the input data mode with blinking the setting data.	The setting data is canceled.
	RTN	At the moving cursor mode.	Change to the input data mode.
		At the input data mode.	Change to the moving cursor mode.
		At the input data mode with blinking the setting data.	The data is entered.
Long touch（1 second）	SYS	Home screen, System menu, Linkage Menu, Model menu, Selecting ON/OFF Switch, USER NAME, MODEL NAME, DISPLAY, INFO, MODEL SELECT, MODEL TYPE, FREQUECY, DATA RESET, TIMER, Selecting Control, Selecting Function, SERVO MONITOR	Jump to "System Menu" screen directly.
		Except of above	Jump to "SERVO MONITOR" screen directly.
	LNK	At all screens	Jump to "Linkage Menu" screen directly.
	MDL	At all screens	Jump to "Model Menu" screen directly.
	S1	HOME screen	Key lock On or Off
		Except the HOME screen	Jump to HOME screen directly.
	RTN	At the input data mode with blinking the setting data.	Entered decision.
		At the input data mode without blinking the setting data.	Reset to the initialized value.
Scrolling	Outline	At the moving cursor mode	The cursor is moved.

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	of "RTN"	Input data mode	Increment or decrement the data. Select Yes or No, and so on.

4.Turns on the transmitter

4-1 Power switch is to be on. The red LED is light. LCD displays the bar graph at moment.

4-2 Then, LCD displays the Home screen immediately.

```
CHECK RF CONDITION ...

  ▶>>▶>>▶>>▶>>▶>>
```

```
FUTABA CO.  00 00 7.3V
ST1  00:00.0
ST2  00:00.0
 MULT     MODEL1
+0        00 00      +0
+0                   +0
```

5. Basic operation of editing

LCD screen is consists of editing button and monitor display. You can go through editing menu by touch sensor. If you want t o go back to previous menu, you move the cursor to screen title and touch "RTN".

6.Home screen

You always enter this screen after turning on the power. It is a base screen to edit.

1. User Name	8. Mode (MULT / 7CH)
2. Timer #1	9. Timer #2
3. Model Name	10. Trim Indicator
4. Clock icon (Jump to timer screen)	11. Model Type Icon
5. Integrated Timer	12. Memory Card Icon (at detected card)
6. Model Timer	13. RF Transmit
7. Battery Gauge	

7.Linkage menu

The linkage menu sets the primary data of the each model. These data are common to every flight condition.

If you touch "LNK" of the touch sensor over 1 second, you can get into the linkage menu screen.

```
┌─────────────────────────────┐
│█LINKAGE MENU█        1/2     │
├──────────────┬──────────────┤
│SERVO         :SUB-TRIM       │
│MODEL SEL.    :REVERSE        │
│MODEL TYPE    :FAIL SAFE      │
│FREQUENCY     :END POINT      │
│FUNCTION      :THR CUT        │
└──────────────┴──────────────┘
```

8.Model Menu

The model menu sets the data of mixer. These data of each flight condition can be set.

If you touch "MDL" of the touch sensor over 1 second, you can get into model menu screen.

```
┌─────────────────────────────┐
│█MODEL MENU█         1/2      │
├──────────────┬──────────────┤
│SERVO         :THR CURVE      │
│CONDITION     :THR HOLD       │
│DUAL RATE     :SWASH MIX      │
│PROG. MIX     :THR MIX        │
│PIT CURVE     :PIT→RUD        │
└──────────────┴──────────────┘
```

9.System Menu

The system menu sets the transmitter setting data. For example, display contrast, stick mode.

If you touch "SYS" of the touch sensor over 1 second, you can get into system menu screen

```
┌─────────────────────────────┐
│█SYSTEM MENU█                 │
├──────────────┬──────────────┤
│TRAINER       :              │
│DISPLAY       :              │
│USER NAME     :              │
│H/W SET       :              │
│INFO          :              │
└──────────────┴──────────────┘
```

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Specification

FX-20-2.4G SPECIFICATIONS

1 Radio Characteristics

Engineering standard	Part 15.247 FCC (U.S.)
RF power output	50mW
Modulation	Direct-Sequence Spread-Spectrum
Communication scheme	Single communication
Frequency band	2405.376MHz - 2477.056MHz (general mode)
	2407.424MHz - 2450.432MHz (France mode)
Channel	36 or 22
Data barer rate	136 kbps
Frequency control	Crystal controlled frequency synthesizer
Antenna	1/2 λ Pencil type antenna 1.5dBi (MAX)

2 Radio communication control

Error checking	CRC-CCITT

3 Terminal interface

Physical interface	none

4 Power Supplying

Supply voltage	7.2V DC
Current consumption	250 mA

5 Environmental

Operating temperature	-10 to +45 ℃
Storage temperature	-20 to +60 ℃

6 Miscellaneous

Indicator	LCD display, 2 LED
Frequency setting	programmable
Case	Plastic
Outer dimensions	220(W)×210(D)×64(H) mm
Weight	Approx. 740g