# Futaba.

# Futaba File System Utility for T14SG/FX-22/T12FG/T8FG/FX-20 (Version 6. x)

T14SG/FX-22/T12FG/T8FG/FX-20 use original file system that is different from a general file system (FAT, NTFS etc) of personal computer. Therefore, you cannot copy the model data from the SD card onto PC by using the Windows Explorer.

You have to use our utility software (Futaba File System Utility) to copy the model data between T14SG/FX-22/T12FG/T8FG/FX-20 and the PC.

\* The previous versions (before version 2.0) do not correspond to T14SG/FX-22/T8FG/FX-20.

# System requirements

- Microsoft Windows XP, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10
- Necessary memory and CPU specification is equal the system requirements of Operating System.

## 1. Installation

There is not installer. You have to only extract the compression file.

## 2. Uninstallation

There is not special uninstallation procedure. You have to only delete the file.

\*When FFS of the previous version has already been installed, please install FFS of the upgrade version after uninstalling of the previous version. Or please copy FFS of the upgrade product onto the previous version in the superscription.

## 3. Mount of SD card

To handle the SD card by this utility, you have to open the card. This operation is called "mount".

3.1. Please attach the SD card to the card reader.



- 3.2. Please run the utility software (FFS.EXE).
- 3.3. The utility software starts, and the following screens are displayed. Please select "File" menu  $\rightarrow$  "Mount" menu or push the mount button.

	🖺 Futab	a File Sys	tem Utilit;	у	(		
	File(F) Edit(E) Display(V) Help(H)						
	😭 ) :   陽 唱 🗙						
Mount button	Ø Mount	t – OFF					
Mount Button	No	File Type	TX Type	Model Type	Model Name		
	Ready						

3.4. The selection dialog of the drive is displayed. Please select the icon of SD card drive, and push the "OK" button.

Browse for Folder	? 🗙
Please select the drive that does the mount.	
OK Cano	el

3.5. When the utility software finish mount process, it display the content of the card.

### No.: File index

## File Type : Refer to following table.

File Type	Content
MODEL	They are files of Model data. You cannot write to file index of first to fourth, because file index of first to fourth is system reserved.
LOG	Telemetry log data. You cannot write to file index of first to fourth, because file index of first to fourth is system reserved. (*)
UPDATE	They are files for software update.
KEY	They are files for software update of Transmitter.
-	Not used.

\* The file number 1-4 cannot read and write a file because of the reservation domain of a system.

Model Type	content
AIRPLANE	They are the airplane models.
HELICOPTER	They are the helicopter models.
GLIDER	They are the glider models.
MULTIROTOR	They are the multirotor models.
UNKNOWN	They are not model data.
-	They are not used or not model data.

### Model Type : Refer to following table.

## Model Name : Model name is displayed.

📽 Futaba File System Utility 📃 🗖 🛛									
File( <u>F</u> )	File( <u>F)</u> Edit( <u>E</u> ) Display( <u>V</u> ) Help( <u>H</u> )								
📽 🖆 🗏	11 · · · · · · · · · · · · · · · · · ·								
🥥 Moun	t – G:¥TINYF:	S.IMG							
No	File Type	TX Type	Model Type	Model Name	~				
1	UPDATE	-	-	-					
2	UPDATE	-	-	-					
3	UPDATE	-	-	-					
4	KEY	-	-	-					
5	MODEL	T8FG	AIRPLANE	MODEL-01					
6	MODEL	T8FG	HELICOPTER	MODEL-02					
7	MODEL	T8FG	GLIDER	MODEL-03					
8	MODEL	T12FG	GLIDER	NEW1					
9	MODEL	T12FG	AIRPLANE	NEW2					
10	-	-	-	-					
11	MODEL	T8FG	HELICOPTER	MODEL-04					
12	MODEL	T12FG	HELICOPTER	NEW3					
13	-	-	-	-					
14	-	-	-	-	~				
Ready									

When it is telemetry log data (File Type is LOG), it is displayed as "LOG1."

When telemetry log data is recorded exceeding 1 file size, it is divided and recorded on two or more files. The display in that case  $\rightarrow$  [LOG1] [LOG2] [LOG3] ...

# 4. Read from SD card (export)

- 4.1. Please select the model data or telemetry log data.
- 4.2. Please select "Edit" menu  $\rightarrow$  "Export" menu or push the export button.

	📲 Futab	a File Sys	tem Utility	y				
	File( <u>F)</u> E	Edit( <u>E</u> ) Disp	play( <u>V)</u> He	lp( <u>H</u> )				
	🖻 🖬 🧐							
	👩 Mount	- G:¥TINYF	S.IMG					
	No	File Type	TX Type	Model Type	Model Name	<b></b>		
Export button	1	UPDATE	-	-	-			
•	2	UPDATE	-	-	-			
	3	UPDATE	-	-	-			
	5	MODEL	18FG	AIRPLANE	MODEL-UI			
	0	WODEL	18FG	HELIOOPTER	MODEL-02			
	7	MODEL	T8FG	GLIDER	MODEL-03			
	8	MODEL	T12FG	GLIDER	NEW1			
	9	MODEL	T12FG	AIRPLANE	NEW2			
	10	-	-	-	-			
	11	MODEL	T8FG	HELICOPTER	MODEL-04			
	12	MODEL	T12FG	HELICOPTER	NEW3			
	13	-	-	-	-			
	14	-	-	-	-	~		
	Ready				1			

4.3. Export dialog is displayed. Please select destination of copy and push "Save" button. The utility software copy the data from SD card to the selected folder of your PC. If telemetry log data is exported, it is saved by CSV. Please input a file name in an export dialog and push "Save" button. A file extension is added automatically.

Export(Read)					? 🛛
Save jn:	🗀 Untitled		-	🔶 🗈 💣 📰 🕈	
My Recent Documents Desktop My Documents					
My Computer	File name:	MODEL-01			Gave
Places	File name: Save as tune:	All Files (* *)			Cancel
	Care as gype.			<u></u>	

## 5. Write to model data (import)

- 5.1. Please select the destination of writing the model data.
- 5.2. Please select "Edit" menu  $\rightarrow$  "Import" menu or push the import button.

	📽 Futaba File System Utility 📃 🗖							
File( <u>F)</u> Edit( <u>E)</u> Display( <u>V</u> ) Help( <u>H</u> )								
	📽 🖻							
	🔘 Moun	t – G:¥TINYF	S.IMG					
	No	File Type	TX Type	Model Type	Model Name	<b>^</b>		
Import button 🧹	1	UPDATE	-	-	-			
•	2	UPDATE	-	-	-			
	3	UPDATE	-	-	-			
	4	KEY	-	-	-			
	5	MODEL	T8FG	AIRPLANE	MODEL-01			
	6	MODEL	T8FG	HELICOPTER	MODEL-02			
	7	MODEL	T8FG	GLIDER	MODEL-03			
	8	MODEL	T12FG	GLIDER	NEW1			
	9	MODEL	T12FG	AIRPLANE	NEW2			
	10	-	-	-	-			
	11	MODEL	T8FG	HELICOPTER	MODEL-04			
	12	MODEL	TIPEG	HELICOPTER	NEWO			
	13	-	-	-	-			
	14	-	-	-	-	~		
	Ready			·				

Import(Write)					? 🚺
Look jn	: 🗀 Untitled		•	+ 🗈 💣 📰 -	
My Recent Documents Desktop	MODEL-01				
My Documents	File <u>n</u> ame:	1		[	<u>O</u> pen
1 Iddes	Files of type:	All Files (*.*)		•	Cancel

5.3. Import dialog is displayed. Please select the model data and push "Open" button.

5.4. The utility software copy the model data to the SD card.

📲 Futal									
File(E) Edit(E) Display(V) Help(H)									
🖻 🖬	🖻 💣 🖓 🍇 🗙								
🥥 Moun	t - G:¥TINYF	S.IMG							
No	File Type	TX Type	Model Type	Model Name	<b>^</b>				
1	UPDATE	-	-	-					
2	UPDATE	-	-	-					
3	UPDATE	-	-	-					
4	KEY	-	-	-					
5	MODEL	T8FG	AIRPLANE	MODEL-01					
6	MODEL	T8FG	HELICOPTER	MODEL-02					
7	MODEL	T8FG	GLIDER	MODEL-03					
8	MODEL	T12FG	GLIDER	NEW1					
9	MODEL	T12FG	AIRPLANE	NEW2					
10	-	-	-	-					
11	MODEL	T8FG	HELICOPTER	MODEL-04					
12	MODEL	T12FG	HELICOPTER	NEW3					
13	MODEL	T8FG	AIRPLANE	MODEL-01					
14	-	-	-	-	~				
Ready									

## 6. Delete data

- 6.1. Please select the model data or telemetry log data.
- 6.2. Please select "Edit" menu  $\rightarrow$  "Delete" menu or push the delete button.

	📽 Futaba File System Utility					
	File( <u>F</u> )	Edit( <u>E</u> ) Dis	play( <u>V</u> ) He	lp( <u>H</u> )		
	📽 📫 🗐	₽ ( X	)			
	Moun'	t - G:¥TINYF	S.IMG			
	No	File Type	TX Type	Model Type	Model Name	<b>^</b>
Delete button	1	UPDATE	-	-	-	
	2	UPDATE	-	-	-	
	3	UPDATE	-	-	-	
	4	KEY	-	-	-	
	5	MODEL	T8FG	AIRPLANE	MODEL-01	
	6	MODEL	T8FG	HELICOPTER	MODEL-02	
	7	MODEL	T8FG	GLIDER	MODEL-03	
	8	MODEL	T12FG	GLIDER	NEW1	
	9	MODEL	T12FG	AIRPLANE	NEW2	
	10	-	-	-	-	
	11	MODEL	T8FG	HELICOPTER	MODEL-04	
	12	MODEL	TI2EG	HELICOPTER	NEW/9	
	13	MODEL	T8FG	AIRPLANE	MODEL-01	
	14	-	-	-	-	~
	Ready					

6.3. The confirm dialog is displayed. Push "OK" button.



6.4. The utility software delete the selected data.

📲 Futab										
File( <u>F</u> )	File(F) Edit(E) Display(V) Help(H)									
🖻 🖬 🗏	₩ <b>₩</b> ×									
🥥 Moun	t - G:¥TINYF	S.IMG								
No	File Type	TX Type	Model Type	Model Name	<b>^</b>					
1	UPDATE	-	-	-						
2	UPDATE	-	-	-						
3	UPDATE	-	-	-						
4	KEY	-	-	-						
5	MODEL	T8FG	AIRPLANE	MODEL-01						
6	MODEL	T8FG	HELICOPTER	MODEL-02						
7	MODEL	T8FG	GLIDER	MODEL-03						
8	MODEL	T12FG	GLIDER	NEWI						
9	MODEL	T12FG	AIRPLANE	NEW2						
10	-	-	-	-						
11	MODEL	T8FG	HELICOPTER	MODEL-04						
12	MODEL	T12FG	HELICOPTER	NEW3						
13	-	-	-	-						
14	-	-	-	-	~					
Ready										

## 7. Display SD card infomation

7.1. Please select "Display" menu → "Property" menu. The utility software dispaly the card infomation dialog.

Property	×
Block Size (KB)	256
Total Blocks	1940
Free Blocks	1928
Total Entries	968
Free Entries	955
(OK	

### 8. Unount SD card

Before SD card detach the card reader, You have to close the SD card. This operation is called "unmount".

8.1. Please select "File" menu  $\rightarrow$  "Unmount" menu or push the unmount button.

	🖺 Futab	a File Sys	tem Utility	y		
	File( <u>F)</u> I	Edit( <u>E</u> ) Dis <sub>l</sub>	play(V) He	lp( <u>H</u> )		
		14 🗛 🗙				
	Mount	: - G:¥TINYF:	S.IMG			
	No	File Type	TX Type	Model Type	Model Name	<b>^</b>
Unmount button	1	UPDATE	-	-	-	
	2	UPDATE	-	-	-	
	3	UPDATE	-	-	-	
	4	KEY	-	-	-	
	5	MODEL	T8FG	AIRPLANE	MODEL-01	
	6	MODEL	T8FG	HELICOPTER	MODEL-02	
	7	MODEL	T8FG	GLIDER	MODEL-03	
	8	MODEL	T12FG	GLIDER	NEW1	
	9	MODEL	T12FG	AIRPLANE	NEW2	
	10	-	-	-	-	
	11	MODEL	T8FG	HELICOPTER	MODEL-04	
	12	MODEL	T12FG	HELICOPTER	NEW3	
	13	-	-	-	-	
	14	-	-	-	-	~
	Ready					

8.2. The confirm dialog is displayed, Push "OK" button.

Futaba File Syst	tem Utility	×
1 There is	s an unmount.	
OK	キャンセル	

8.3. You can detach the SD card, after this operation.

## 9. Telemetry log data

Telemetry log file created with the transmitter corresponding to a telemetry log function is convertible for CSV.

The file of CSV can be opened by software, such as Microsoft Excel.

(The contents of a telemetry log data)

- The record time of data
- Each channel signal of a transmitter

Slot number

The kind of sensor

Telemetry data



FFS Ver.4.0 can combine two or more log files.

When the telemetry log data is longer than 1 file size, T14SG/FX-22 divides and records it into two or more files.

🖀 Futaba File System Ubility Ver.4.0									
File(F) E	idit(E) Disp	ilay(V) [Lo	g File(L) Help(H)						
🔊 💕 🕅	5略×-		UNIT(U)	•	<	METRIC(N	4)		
🥥 Mount -	- E¥TINYFSJI	VIG	Convert(C)			YARD/PO	UND(Y)	Combine	
No	File Type	тх туре	модет туре	M	ode	l Name			*
1	-	-	-	-					
2	-	-	-	-					
3	-	-	-	-					1
4	-	-	-	-					

#### There is a check mark on the current mode .

#### There is a check mark on the current mode .

File(F)	Edit(E) Dis	play(V) L	og File(L) Help(H	)			
🗟 🖬	勉絶X		UNIT(U)				
Mour	nt – E¥TINYFSI	MG	Convert(C)	5	parate(5)	Combine	
Na	File Type	ТХ Туре	Model Type	-	Combine(C)		
1	12	+	(+)	-		1	
2	112	-	1	-			
3	-	+	(+);	14			
4	-			-			

## 11. How to convert and combine the telemetry data

When the telemetry log data is longer than 1 file size, records it into two or more files.

A display becomes like this.  $\rightarrow$  [LOG1] [LOG2] [LOG3]...

A file is combinable in the following procedures.

11.1. Please select "Combine" mode at "Log File" menu.

File(F)	Edit(E) Dis	play(V) Log	File(L) Help(H)				
i 🖉	<b>₽ ₽</b> ×						
🥥 Mou	nt - E¥TINYFSJ	MG			Metric	Gambine	
No	File Type	TX Type	Model Type	Model Name			
1	-	+		-			
2	-	-	-	-			
3	4	(+)	10410	-			

If "LOG1" file is chosen even if "Combine" is chosen, a file will be created and changed newly.

- 11.2. Please select "LOG1".
- 11.3. Please execute "Export" menu.

3		+	+	-			
4	-	-	-	-			
5	MODEL	T145G	MULTIROTOR	MODEL-01			
6	MODEL	T145G	AIRPLANE	MODEL-02			
7	MODEL	T145G	HELICOPTER	MODEL-03			
8	MODEL	T14SG	GLIDER	MODEL-04			
9	LOG	T145G	UNKNOWN	LOGI			
10	LOG	T145G	UNKNOWN	LOG2	Export(R)	Shift+R	
11	LOG	T145G	UNKNOWN	LOG3	Import(W)	Shift+W	
12	LOG	T145G	UNKNOWN	LOG4	Delete(D)	Shift+D	
13	LOG	T145G	UNKNOWN	LOG5	• •		
14	-			-			
15	-		-	-			
16	÷.			-			

11.4. The file dialog is opened. Please enter the file name after conversion. After that, please click SAVE button.



11.5. If RPM sensor is registrated, the dialog for setting the parameter is opened. Please set the parameters same as transmitter. After that, please click OK button.

When MAGNETIC type is selected, GEAR RATIO is needed.

RPM Sensor Type	)
Start Slot No. 2 Sensor RPM SENSOR Type C MAGNETIC C DEPTIC C BLS motor	
Number of FIN 2	

When OPTIC type is selected, Numbers of fins are needed.

RPN	Sensor Type
	tart Slot No. 2 OK kensor RPM SENSOR
	Number of Pole 2
	1

When BLS motor type is selected, Numbers of poles are needed. 11.6. If GPS sensor is registrated, the dialog for setting the parameter is opened. Please set the parameters same as transmitter. After that, please click OK button.

GPS Distance Mo	de	×
Start Slot No. Sensor	8 GPS	ССК
Mode © SLANT © SURFACE		

11.7. If ROXXY Smart Controller (Robbe) is registrated, the dialog for setting the parameter is opened. Please set the parameters same as transmitter. After that, please click OK button.

ROXXY Smart (	Controller	×
Start Slot No. Sensor POLE	1 ROXXY Smart Control	ОК

11.8. If Castle ESC is registrated, the dialog for setting the parameter is opened. Please set the parameters same as transmitter. After that, please click OK button.

Castle ESC RPM Sensor Type
Start Slot No. 8 Sensor Castle ESC Type C GEAR RATIO O POLE
GEAR RATIO 1.00 -

Castle ESC RPM Sensor Type	
Start Slot No. 8 Sensor Castle ESC Type GEAR RATIO POLE	
Number of Pole 2	

- 11.9. 1st telemetry file is converted.
- 11.10. Please select next file "LOG2".
- 11.11. Please execute "Export" menu.

👪 Futaba	File System	Utility Ver.4	.0				
File(F)	Edit(E) Disp	olay(V) Log	File(L) Help(H)				
🖙 💣 🎙	L 🔍 🗙						
🥥 Mount	- E¥TINYFSI	MG			Metric	Combine	
No	File Type	TX Type	Model Type	Model Name			*
1	-	-	-	-			
2	-	-	-	-			
3	-	-	-	-			
4	-	-	-	-			
5	MODEL	T14SG	MULTIROTOR	MODEL-01			
6	MODEL	T14SG	AIRPLANE	MODEL-02			
7	MODEL	T145G	HELICOPTER	MODEL-03			
8	MODEL	T145G	GLIDER	MODEL-04			
9	LOG	T14SG	UNKNOWN	LOG1			
10	LOG	T14SG	UNKNOWN	LOG2			
11	LOG	T14SG	UNKNOWN	LOG3	Export(R)	Shift+R	
12	LOG	T14SG	UNKNOWN	LOG4	Import(W)	Shift+W	
13	LOG	T14SG	UNKNOWN	LOG5	Delete(D)	Shift+D	
14	-	-	-	-			
15	-	-	-	-			
16	-	-	-	-			

11.12. Message box is opened. Please click OK button. "LOG2" is converted. And, it is added in the end of "LOG1".



If the file order is mistaken (the elapsed time is error), the warning screen is displayed. And, this file is not converted and combined.

C	ombin Mode
	The elapsed time error !!
	ОК

- 11.13. Please select next file which you would like to convert and append. And, please repeat to operate from10 to 13.
- 11.14. If you select "LOG1", you can create new file and restart convert and combine.



# < The example of a conversion file >