FURUNO

Information

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Addenda No. 18 to Service Manual of FS-5000 SM-E5519

①

FS-5000/8000
ROM Program Change (Ver. 10)

The program version of the ROMs on the control and transceiver units has been changed to "10" from March 1992. ②

Version 8 → 9

1. Contents of Modification ③

① Highest Priority of Distress Command ("DRS")

The "DRS" (Distress Set) command has the highest priority in the MIF data protocol. The FS-5000/8000 accepts the "DRS" command from the DSC terminal to transmit a distress alert, even while transmitting. ④

② TX ON Command (TXS, TXR) added.

③ Frequency on DSC channel 9 amended. (5389kHz → 5380kHz)

Version 9 → 10 ⑤

1. Contents of Modification

① Additional System Settings (See next page.)

([STO] → Channel No. → [ENT])

⑥

⑦

⑧

<table>
<tr><th>Channel No.</th><th>LCD Display</th><th>Description</th></tr>
<tr><td>9947</td><td>SQ on Telex [0-Def, 1-OFF]</td><td>The "1" setting automatically turns off the SQ (if ON) when class of emission is changed to TELEX. (Note that AF signal to DP-5 is not passed through squelch circuit, so this setting is normally not necessary for DP-5 connection.)</td></tr>
<tr><td>9948</td><td>NB on Telex [0-Def, 1-OFF]</td><td>The "1" setting automatically turns off the NB (if ON) when class of emission is changed to TELEX.</td></tr>
<tr><td>9949</td><td>AGC on Telex [0-Def, 1-FAST]</td><td>The "1" setting sets AGC to FAST when class of emission is changed to TELEX.</td></tr>
<tr><td>9950</td><td>Duplex on Telex [0-Def, 1-OFF]</td><td>The "1" setting inhibits DUPLEX mode (unnecessary on TELEX) when class of emission is changed to TELEX.</td></tr>
<tr><td>9961</td><td>ITU Freq. Table [0-INT, 1-USA, 2-EU]</td><td>MF band ITU frequency list added.
(at [2-EU] selection)</td></tr>
<tr><td>9980</td><td>Country Code [44] (Enter numerals.)</td><td>Returns to default setting depending on country. See the next page.</td></tr>
<tr><td>9981</td><td>Dummy Load [0-NO, 1-YES]</td><td>Determines the functions of both 9911 and 9923 as follows:
<table>
<tr><th>9981</th><th>[0] NO</th><th>[1] YES</th></tr>
<tr><td>9911 : Alarm</td><td>0-Receive</td><td>1-Transmit</td></tr>
<tr><td>9923 : Dummy</td><td>1-Inhibit</td><td>0-Enable</td></tr>
</table></td></tr>
<tr><td>9982</td><td>A. BK relay or R. ANT [0-NO, 1-YES]</td><td>Determines the functions of both 9913 and 9917 as follows:
<table>
<tr><th>9982</th><th>[0] NO</th><th>[1] YES</th></tr>
<tr><td>9913 : System Delay</td><td>30ms</td><td>10ms</td></tr>
<tr><td>9917 : 50 ohm BK Relay</td><td>0-on/off</td><td>1-Permanently on (fixed)</td></tr>
</table></td></tr>
<tr><td>9989</td><td>Power setting for [1-EU, 2-NOR]</td><td>Setting of power data.
"EU"(Europe) Power data
1.6~2.5MHz : FS-5000 ····· 225
FS-8000 ····· 160
"NOR" (Norway) Power data
1.6~2.5MHz : FS-5000 only ··· 200
2.5~4.0MHz : FS-5000 only ··· 210
4.0~30 MHz : FS-5000 only ··· 225</td></tr>
</table>

			Country Code					
Setting Number	Function	Default 0	Japan 81	USA 1	Europe 44	Norway 47	Holland 31	Result of selection
9901	TX freq. selection	0				3		Marine
9903	TX o/p on MF band	0	2	1				50/150
9904	Class of emission on 2182 KHz	0		1				J3E
9907	Time display format	0		1	2	2	2	USA/EU
9910	Check meter numerics	0	1					
9913	System delay	30				10		
9917	50 ohm BK relay	0				1		on
9923	Dummy load	0	1	1	1	1	1	off
9926	Test tone	0		1	1	1	1	off
9927	Power reduction enable	0		1	1	1	1	2182
9928	Min o/p power	0		1	1	1	1	more than 60w
9947	SQ on TLX	0					1	off
9948	NB on TLX	0					1	off
9949	AGC FAST on TLX	0					1	FAST
9950	DUPLEX on TLX	0					1	Inhibit
9953	AM Operation	0		3	3	3	3	2182
9954	R3E Operation	0	1		1	1	1	RX
9955	FAX Operation	0	1		1	1	1	RX
9956	LSB Operation	0	1		1	1	1	RX
9961	ITU Freq. Table	0		1	2	2	2	USA/EU

Note: Where no data appears, default setting applies.

② Default Setting of System Delay for FS-8000 : 10ms

③ ITU Frequency Table and class of Emission

For previous software, if an operator changes class of emission after entering an ITU channel number, the channel did not change; only the class of emission changed. Now, the channel changes to the one corresponding to the class of emission selected.

(e.g.) Enter ITU401(SSB). → Change class of emission to TELEX. → Frequency changes to ITU4001.

④ Reduction ratio of power data is incorrectly published as decreasing in steps of 50.

55 is correct

LCD display	*Power data*	
Full	255	-55
LOW1	200	-55
LOW2	145	

⑤ MIF data (except for distress command "DRS" from DSC terminal) is ignored when both TX and RX frequencies are set at 2182kHz.

2. Factory Modification

Model	Serial Number
FS-5000	2508-0367 and after
FS-8000	2522-0046 and after

3. ROM Code Number

Type	Code No.
ROM05-501-31-110	005-927-440

1. System Setting

Changeable specifications are shown in Table-1 and Table-2. If necessary, change the specifications with the following key sequence.

Item	Key Sequence
Calling up screen for specification change	**STO** (CH No.) **ENT** ↑ 9900 to 9999
Selecting setting No.	(setting No.) **ENT** ↑ 0 to 3

(EX) When only the frequencies stored in the user channel are authorized for transmitting.

STO 9 9 0 1 ENT 2 ENT

Note: The setting in the tables 1 and 2 are applicable to the two ROMs having version No. 06.

Table-1 Changeable Specifications

Shading shows factory setting.

Channel No.	Function	Setting No.			
		0	1	2	3
9900	Model (*1)	FS-5000	FS-2500	FS-1600	FS-8000
9901	TX freq. selection (*2)	Free (USA)	Limited (Other than USA)	ROM	–
9903	Output power of transceiver unit on MF band (adjustable)	400 (Other than USA)	150 (USA)	50	–
9904	Class of emission on 2182kHz	AM	SSB (USA)	–	–
9905	TX TUNE (**TX TUNE** key)	Enable	Disable	Auto (Tuning is done when setting TX freq.)	–
9906	Scan of TX channel	Enable	Disable	–	–
9911	Test alarm	Disable	Enable(*3)	–	–
9912	Test alarm frequency	2191 kHz (Enter another freq. if 2191kHz is inadequate.)			

Continued

Channel No.	Function	Setting No.			
		0	1	2	3
9913	TX delay time	30 ms (Selectable: 10 to 99ms)			
9914	Alarm sending time	45 sec. (1 to 9999 sec.)			
9917	50 ohm BK relay	ON/OFF	ON (Fixed) (*4)	–	–
9926	Test tone	Enable	Disable (Europe)	–	–
9927	Power reduction on 2182/2187.5 kHz	Enable	Disable	–	–
9928	Minimum output power (*5)	Less than 60W	60W or more	–	–
9930	Data to "REM1" terminal	MIF (*6)	TBUS (*7)	CIF	NMEA
9931	Data to "REM2" terminal	MIF	TBUS	CIF	NMEA
9932	Data to "REM3" terminal	MIF	TBUS	CIF	NMEA
9933	Data to "CIF/NMEA" terminal	MIF	TBUS	CIF	NMEA
9934	Class of emission of TX/RX, when unit connected to "REM1" is once keyed.	No change (*8)	SSB	AM	TLX
9935	Class of emission of TX/RX, when unit connected to "REM2" is once keyed.	No change	SSB	AM	TLX
9936	Class of emission of TX/RX, when unit connected to "REM3" is once keyed.	No change	SSB	AM	TLX
9937	Class of emission of TX only while unit connected to "REM1" is keyed.	No change	SSB	AM	TLX
9938	Class of emission of TX only while unit connected to "REM2" is keyed.	No change	SSB	AM	TLX
9939	Class of emission of TX only while unit connected to "REM3" is keyed.	No change	SSB	AM	TLX
9953	Operation on AM mode	T/Rx	RX only	No	2182 (*9) (Europe)
9954	Operation on R3E mode	T/Rx (USA)	RX only (other than USA)	No	–
9955	Operation on weather FAX mode	T/Rx (USA)	RX only (other than USA)	No	–

9956	Operation on LSB mode	T/Rx (USA)	RX only (other than USA)	No	–
9960	Recall of 27 MHz SSB/DSB frequencies (for Japanese vessels)	Disable	Enable	–	–
9998	System Lock (Important system settings are not changeable.)	[OFF /ON]: Enter "present time" to change setting. (*10)			
9999	System Initialization (Default)	Disable	Enable	–	–

Table-2 User Changeable Specifications

Shading shows factory setting.

Channel No.	Function		Setting No.			
			0	1	2	3
9902	ITU frequency		CURRENT	FUTURE	–	–
9907	Time display format		JAPAN	USA	EUROPE	–
9908	Second unit display		ON	OFF	–	–
9909	Display of class of emission		NOR(SSB)	ITU(J3E)	–	–
9910	Numerical display of check meter data		OFF	ON	–	–
9915	Check meter items		FULL	SHORT (*11)	–	–
9916	Keyboard lock (controlled by [*] key)		OFF	ON (*12)	–	–
9918	Time adj. (Clock)		Auto	Man	–	–
9919	Control unit priority (*13)		No	#1	#2	–
9920	Beep sound	ON/OFF	OFF	ON	–	–
9921		Level	6 (0 to 10)			
9922		Freq.	2000 Hz (100 to 3000 Hz)			

9923	Dummy (*14)		Enable	Disable	Shorten-ing capacitor	—
9924	Freq. range in which shortening capacitor turns on. (9923 should be set at "2".)	Lower limit	2500.0 kHz			
9925		Upper limit	3999.9 kHz			
9940	Receiver bandwidth in kHz (Change-able thru keyboard)	SSB	6 k	3 k	0.3 k	—
9941		CW	6 k	3 k	0.3 k	—
9942		TELEX	6 k	3 k	0.3 k	—
9943		AM	6 k	3 k	0.3 k	—
9944		R3E	6 k	3 k	0.3 k	—
9945		FAX	6 k	3 k	0.3 k	—
9946		LSB	6 k	3 k	0.3 k	—
9997	All user CH clear		—	ON	—	—

(*1): Output power of ITU/DSC channels and direct key-in frequencies are preset as shown below.

Table-3 Model vs Max. Output Power (*): for Japanese vessels only.

	FS-5000	FS-2500 (*)	FS-1600 (*)	FS-8000
Output Power	400W	250W	150W	800W

(*2): Free ------- Any frequencies (1.6065 to 29.9999 MHz) can be transmitted by direct key-in.
Limited--- The frequencies in the ITU/DSC and user channels can be transmitted.
ROM ----- Only the frequencies stored in the user channel can be transmitted.

(*3): To test the transmitter press **TEST** and **START** keys in this order. The dummy load (if equipped) is connected automatically and the test signal of 2191kHz, modulated by two-tone alarm, is sent to the dummy load.

(*4) Selective if installation contains a specialty receiving antenna or ANT BK RELAY board (in antenna coupler). For high speed switching between receiving and transmitting (for example, telex) set to "1." Then, TX delay time (system setting 9913) is shortened to "10ms." (In actual practice, data is transmitted with 14 ms delay.)

(*5): For 1988 SOLAS Convention ships (GMDSS) set to "1." Then, minimum output power is automatically set at 60W (power data: 100), except for minimum power data already stored into user channel.

(*6): MIF ----- Furuno Multi Interface for Radio communication
Select MIF when DP-5, DSC-5, selcall or intership FAX is connected.

(*7): TBUS ----- For equipment made by "Thrane & Thrane A/S" of Denmark.
If TBUS data is used, it is not necessary to connect TXD/RXD lines.

(*8): Ex. ----- Selcall is connected to "REM1".
If you wish to change the class of emission only while the selcall is transmitted and to restore it automatically to previous status after transmission, set the channel Nos. 9934 and 9937 to "0" (No change) and "2" (AM), respectively.

(*9): Transmission ----- 2182 kHz, Reception ----- all frequencies

(*10): Ex. ----- Preset time is 12 : 35.
Press **1 2 3 5 ENT** in this order to turn on or off the system lock function. The following system settings are not changeable when you turn on the system lock function.

- **STO FULL** (or **LOW**) ----- Power Adjustment
- **STO**
  - **9900** ----- Model
  - **9901** ----- Tx freq. selection
  - **9903** ----- Output power of SSB on MF band
  - **9914** ----- Alarm sending time
  - **9960** ----- Recall 27MHz freq.
  - **9999** ----- System initialization

(*11): If you select "1" (short), only check data for Ia, Vc, Ic and Pi are displayed repeatedly every pressing of the **CHECK METER** key.

(*12): To enable to lock the keys except for **SEND, START, 2182,** and **2187.5** keys, select "1" (ON). Then press the * key to turn on the key lock function. First press of the * key make the keys inactive. ("Keyboard Lock [ON]" will be displayed.)

(*13) For control unit priority, select the same setting numbers for both control units.

No. 1 Control Unit priority

Control Unit	Setting No.
No. 1	"1"
No. 2	"1"

No. 2 Control Unit priority

Control Unit	Setting No.
No. 1	"2"
No. 2	"2"

(*14)

Setting No.	Contents	LCD Indication	Remarks
"0" (Enable)	Dummy load can be switched by **DUMMY** key.	DUMMY	With DUMMY LOAD PCB.
"1" (Disable)	**DUMMY** key is not operative.	—	Without DUMMY LOAD PCB.
"2" (Short Cap.)	Shortening capacitor automatically turns on in the range set by 9924/9925. Further, **DUMMY** key is allowed to turn on/off shortening capacitor.	S. CAP (Shortening Capacitor)	With modified DUMMY LOAD PCB. (Ref. to page AP2-12.)

CONFIRMATION OF SETTING

To confirm settings, press **RCL, 9, 9, 9, 9** and **ENT** in this order. Then press **ENT** key successively.