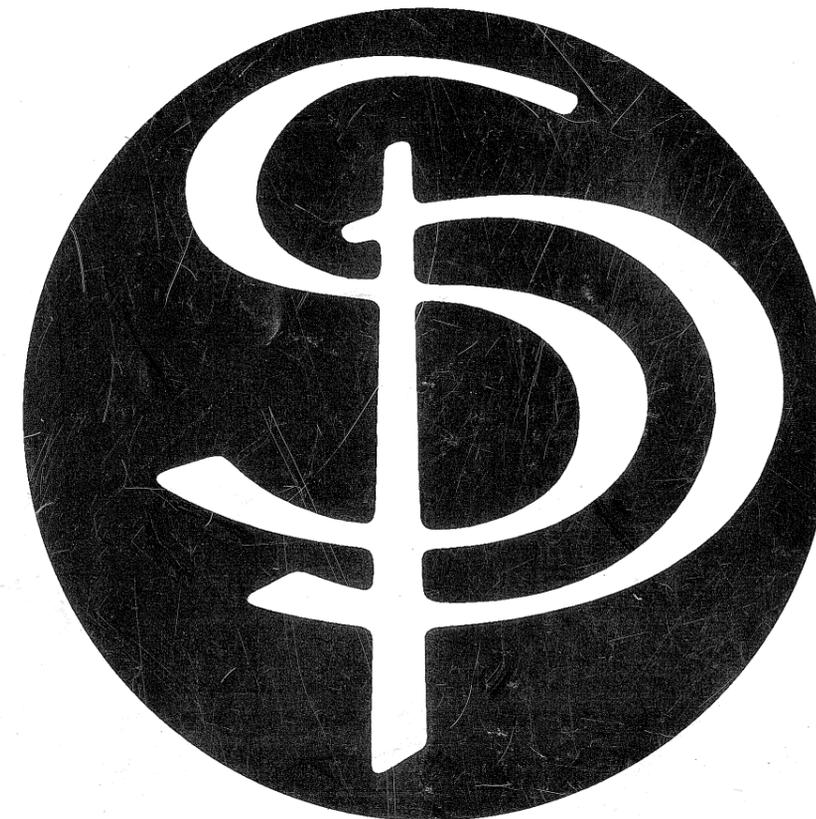




S.P. RADIO A/S

PORSVEJ 2 - DK-9200 AALBORG SV - DENMARK
TEL. INT. +45 98 18 09 99 - TELEX 69 789 SPRAD DK - TELEFAX +45 98 18 67 17

HESTBECH & CO.

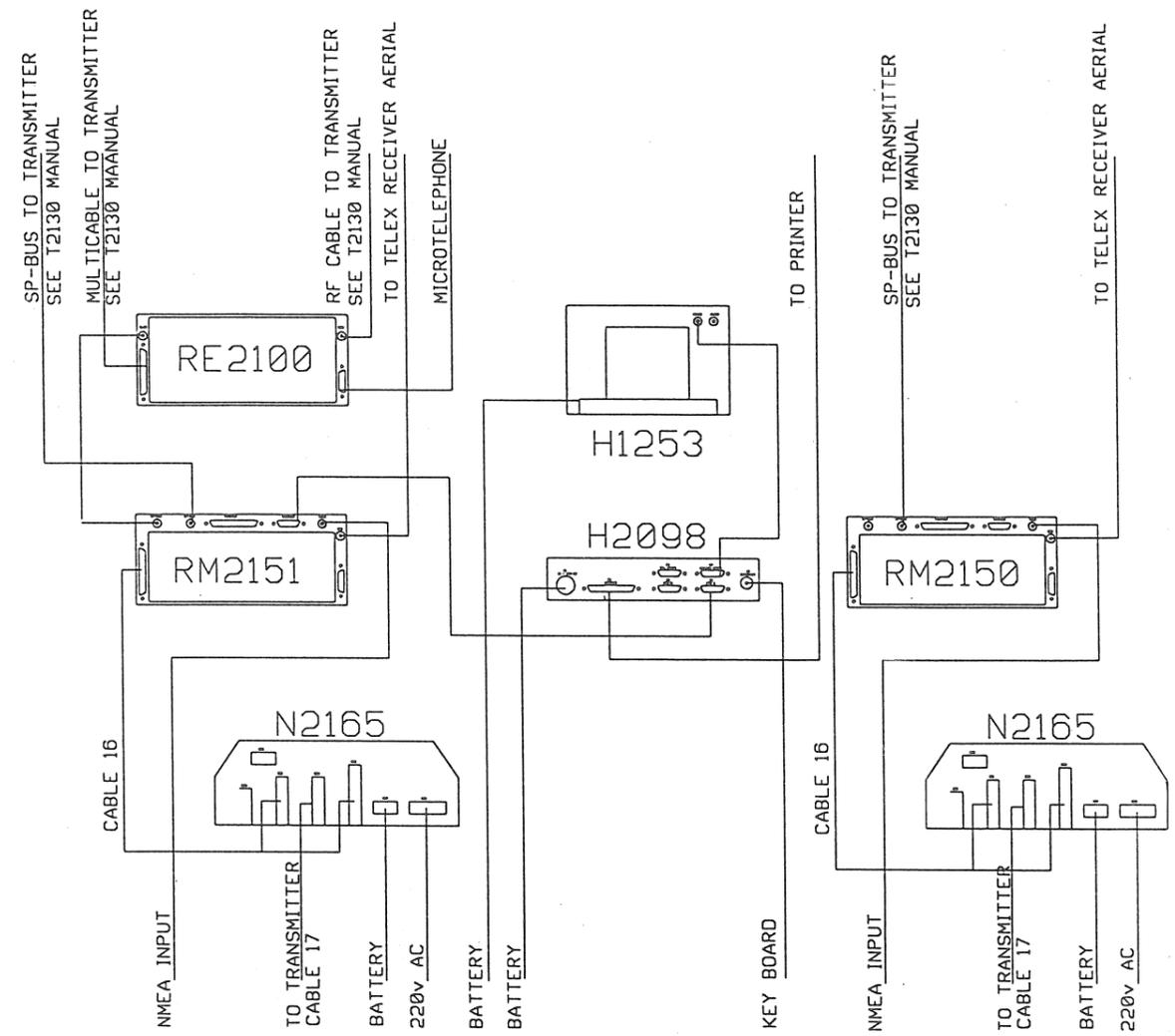


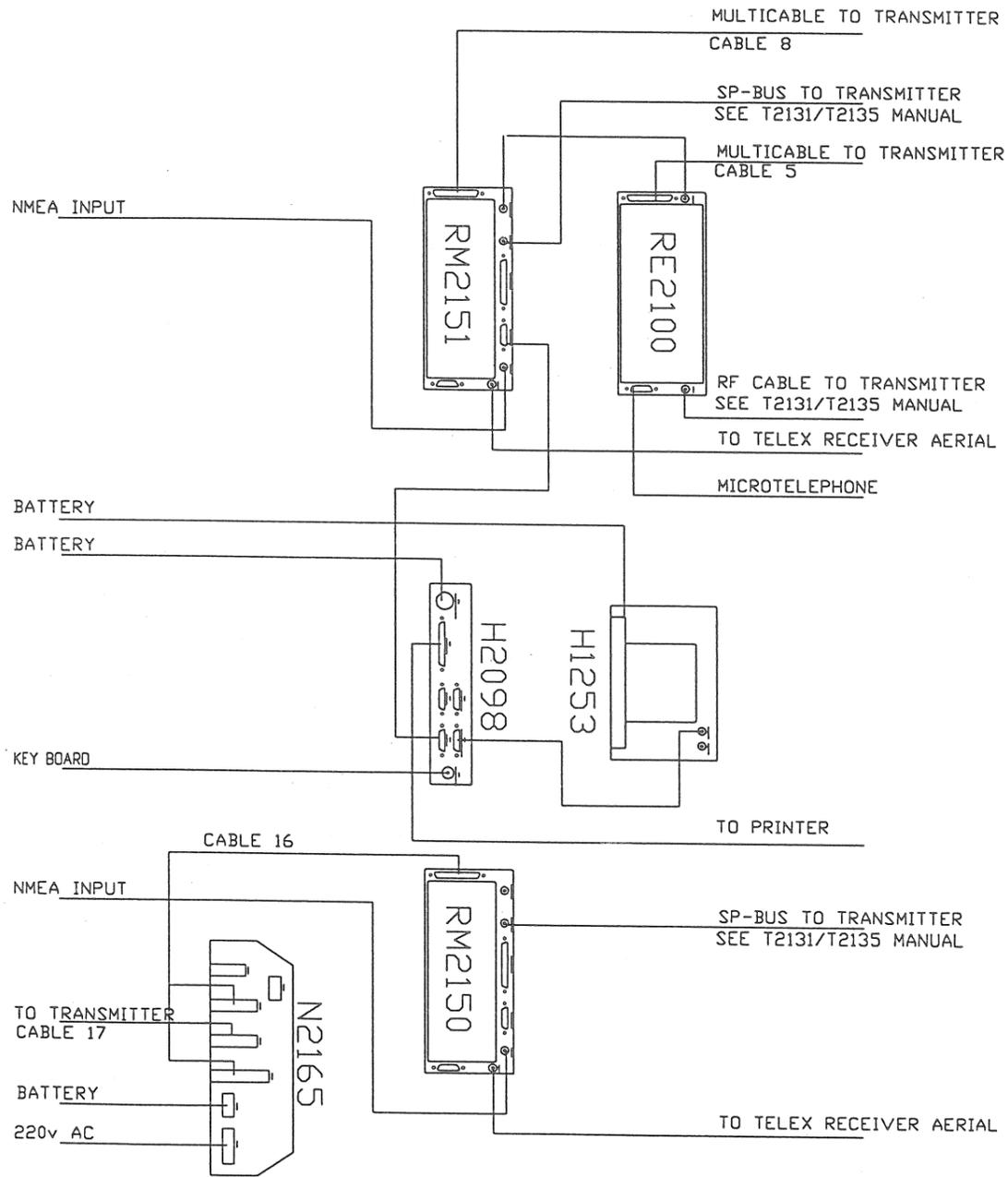
**INSTALLATION INSTRUCTION
FOR
SAILOR HF SSB SYSTEM
WITH
DSC AND TELEX**

WE RECOMMEND THAT YOU READ THESE INSTRUCTIONS
BEFORE BEGINNING THE INSTALLATION.

**SAILOR
COMPACT 2000 PROGRAMME
ENGLISH**

INTERCONNECTION DIAGRAM FOR T2130





INTERCONNECTION DIAGRAM FOR T2131/T2135

2.3. INSTALLATION ELECTRICAL, BETWEEN CABINETS cont.:

CABLE 5

RE2100 - T2135:

Factory supplied: 2 pcs. 10 metres RG58C/U coax cable and
10 metres 21 x 0.5 mm² multicable

BLUE COAX CABLE to ST1 pin 2
RED COAX CABLE to ST1 pin 1

T2135	RE2100	COLOUR	SIGNAL
ST6	P3-5		
1	1	BLACK	RX MUTE
2	15	YELLOW/BROWN	VF/AE-CURRENT
3	11	VIOLET	+9V
4	12	GREY	+18V
5	13	WHITE	SUPPLY ON/OFF
6	14	PINK/BROWN	MIC KEY
7	2	BROWN	AF TO AMP COMMON
8	16	BROWN/GREEN	AF TO AMP
9	17	BROWN/GREY	0 dBm OUT COMMON
10	20	WHITE/GREEN	AUX AF TO TX
11	19	WHITE/YELLOW	EXT. RF CONTROL
12	18	WHITE/PINK	0 dBm OUT
13	21	WHITE/BLUE	TX-KEY
14	10	BLUE	-18V
15	25	RED/BLUE	-BATTERY
16	6	RED	SP-BUS INTERRUPT

PART I/1200W

2.3. INSTALLATION ELECTRICAL, BETWEEN CABINETS cont.:

CABLE 8

RM2150/RM2151 - T2135:

HT-ON:

Optocoupler:

12V < $V_{in\ high}$ < 22V
 10 mA < $I_{in\ high}$ < 20mA
 -1V < $V_{in\ low}$ < 2V

AUX AF TO TX:

Transformer:

Impedance 600 ohm
 Level 0 dBm to 10dBm

TX KEY:

Optocoupler:

12V < $V_{in\ high}$ < 22V
 10 mA < $I_{in\ high}$ < 20mA
 -1V < $V_{in\ low}$ < 2V

0 dBm OUT:

Transformer:

Impedance 600 ohm
 Level 0 dBm

T2135	RM2150/51	COLOUR	SIGNAL
ST7	P2-5		
1	11	GREY	+9V
2	12	WHITE	+18V
3	10	VIOLET	-18V
4	13	BROWN/PINK	SUPPLY ON/OFF
5	25	RED/BLUE	-BATT
6	-	-	HT ON-
7	-	-	HT ON +
8	15	BROWN/GREEN	TX-KEY-
9/2	-	-	TX-KEY+
10	18	WHITE/YELLOW	AUX AF TO TX
11	9	BLUE	AUX AF TO TX
12	6	YELLOW	SP-BUS INTERRUPT
13	-	-	SPARE
14	-	-	SPARE

ENCLOSURE NO. 5
 Main processor board version 3 dip switches

S1 VERSION 3

No	OFF	ON
1	Not used	
2	Dont't initialize EEPROM	Initialize EEPROM
3	Scan all distress frequencies when in Watch Receiver mode (RM2150)	Scan only 2187.5 kHz when in Watch Receiver mode. (RM2150)
4	Not used	

S2

No	OFF	ON
1	Only for factory test	Normaly used
2	DSC/Radio Telex modem (RM2151)	DSC Watch Receiver (RM2150)
3	Only for factory test	Normaly used
4	Function mode off	Function mode on

ENCLOSURE NO. 4
Main processor board version 4 dip switches

S1 VERSION 4

No	OFF	ON
1	Use of SP-BUS	Use of T-BUS
2	Use of SP-BUS	Use of T-BUS
3	Not used	
4	Dont't initialize EEPROM	Initialize EEPROM
5	Scan all distress frequencies when in Watch Receiver mode (RM2150)	Scan only 2187.5 kHz when in Watch Receiver mode. (RM2150)
6	Not used	

S2

No	OFF	ON
1	Only for factory test	Normaly used
2	DSC/Radio Telex modem (RM2151)	DSC Watch Receiver (RM2150)
3	Only for factory test	Normaly used
4	Function mode off	Function mode on

CABLE 16

N2165	RM2150 RM2151		
ST1	P2-5	COLOUR	SIGNAL
1	16	BROWN/GREY	HT-ON
2	6	YELLOW	SP-BUS INTERRUPT
3	15	BROWN/GREEN	TX-KEY
4	18	WHITE/YELLOW	AF TO TX
5	9	BLUE	AF TO TX COMMON
6	17	WHITE/PINK	DATA 1000B
7	21	WHITE/GREEN	CLOCK 1000B
8	24	GREY/PINK	EXT LOUDSP.
9	14	BROWN/YELLOW	RX-MUTE
10			SPARE

CABLE 16

N2165	RM2150 RM2151		
ST3	P2-5	COLOUR	SIGNAL
1	13	BROWN/PINK	SUPPLY ON/OFF
2	25	RED/BLUE	-BATT
3	12	WHITE	+18V
4	10	VIOLET	-18V
5	11	GREY	+9V
6	22	WHITE/BLUE	GROUND
7	4	PINK	EXT. ALARM
8	2	BROWN	ALARM IN
9	7	GREEN	ALARM OUT
10			SPARE
11			SPARE
12	1	BLACK	EXT. MUTE
13	3	RED	TX-READY
14	23	WHITE/GREY	COMMON

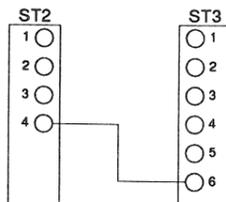
CABLE 17

Cable between N2165 and SAILOR HF SSB Transmitters				
Cable specification:				
T2130: 3 x 0.18 mm ² max. 30 metres				
T2131/35: 3 x 0.18 mm ² max. 30 metres				
T1130/H1233: 9 x 0.18 mm ² max. 10 metres				
T1135/H1275: 9 x 0.18 mm ² max. 10 metres				
N2165	T2130	T2131/ T2135	H1233/ H1275	SIGNAL
ST4	ST3 & ST2	ST7	ST102	
1			2	EXT. MUTE
2			5	TUNE READY
3			12	COMMON
4			3	HT ON
5	ST2-16	12		SP-BUS INTERRUPT
6	ST3-5	8	11	TX-KEY
7	ST3-7	10	13	AF TO TX
8	ST3-8	11	14	AF TO TX COMMON
9				
10				
	ST3-6 ST2-4	ST7-2 ST7-9		SEE NOTE 1 AND NOTE 2

R.28.03.92 orh

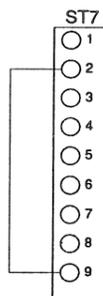
NOTE 1

T2130 connection board



NOTE 2

T2131/T2135 connection board



**ENCLOSURE NO. 3
ANSWERBACK CHARACTER SETTING**

The character codes used when entering the answerback sequence are based on the ASCII-code and CCITT rec. F.130.

Each character is represented by a 2-digit/letter code as follows:

Digits

Char	ASCII	Char	ASCII
0	30	5	35
1	31	6	36
2	32	7	37
3	33	8	38
4	34	9	39

Letters

Char	ASCII	Char	ASCII
A	61	N	6E
B	62	O	6F
C	63	P	70
D	64	Q	71
E	65	R	72
F	66	S	73
G	67	T	74
H	68	U	75
I	69	V	76
J	6A	W	77
K	6B	X	78
L	6C	Y	79
M	6D	Z	7A

Special characters

Char	ASCII
Carriage return	0D
Line feed	0A
Figure shift	7E
Letter shift	7F
Space	20

- Is a GMDSS ALARM UNIT C2149 connected to the system, it shall be connected to the power supply or to the connection board in T2131/2135.

Check that the software in the C2149 have the right version number, this can be see in inclosure 1.

If the C2149 has a microprocessor module with version number 5-0-27053A or 5-0-27053B then make a connection between U10 pin 6 (MAX690) and R25 pin 8 (8*10Kohm sil).

The Watch receiver RM2150 is from factory set to work with S.P. BUS-address number 2, this has to be programmed into RE2100.

- On the RE2100 activate 0 and 1 simultaneously, the display on the RE2100 change to:

SP -

Write 07 2 and then 1 at the bottom line, the display show now.

SP - 07 -2
1 0

This SP-menu can be entered at any time and be used to control that the SP-BUS works properly. The zero in the TX display line shall be changed to a one if the SP-BUS works

Activate the ENT key the display show now.

SP - 07 -2
 A

Activate the Tune/Clarif key to leave the SP menu.

The following programming and checks shall be done in the DSC Watch receiver RM2150

Check of right delivered type RM2150 or RM2151.

- Turn on the Watch receiver and control that the displaymenu after the initializing menu show the following menu.

RM 2150
DSC Watch Receiver

If you get the displaymenu indicating that the receiver is a Radio telex modem RM2151, you have to change the internal setting of the switch S2-2.

**ENCLOSURE NO. 1
SOFTWARE AND PC BOARD SUMMARY.**

H2098A	SOFTWARE	WILL NOT WORK	1.15	1.17
C2149	SOFTWARE	WILL NOT WORK	1100E	
RM2150/RM2151	SOFTWARE	WILL NOT WORK	1.04	1.07 1.08 1.09
C2140	SOFTWARE	WILL NOT WORK	1090.A.B &C	1090C
T2131/T2135	SOFTWARE	WILL NOT WORK	1096	
T2130	SOFTWARE 728103	1083 1083A 1083B 1083C 1083D 1083E	1083G 1083H 1083L	1083 1083A 1083B 1083C 1083D 1083E
	SOFTWARE 7281407/28186	1084 1084A 1084B 1084C 1084D	1085 1085A 1085B 1085C 1085D 1085E	1085F
	PROCESSOR MODULE 625635	VERSION A,B,C&D	VERSION E	VERSION F,G&H
	MAIN CABLE 56.033	ALL VERSIONS	WIRE NO. 1 BETWEEN RECEIVER AND EXCITER MODULES MUST BE CUT	
RE2100	EXCITER MODULE 625634	VERSION A,B&C WITH R10 (330 Ohm)	VERSION A,B&C WITHOUT R10	
	RECEIVER MODULE 625631	VERSION A,B,C&D	VERSION G&H	

SKEMAFB

To control that the setting of the radiotelex modem is done correct.

27. Write **set -a** and activate the **Enter** key, the CRT show now the settings of the radiotelex modem.

Terminal			
ALARM	= 1	ALPHA	= 0
ANSWERBACK	= 7E-0D-0A-31-32-33-34-35-7F-20-6F-78-6A-7A-20-7E-36-0A-0D	ANGLE	= 3
ARQERROR	= 0	BAUDRATE	= 4800
CAPTURE	= 0	BAUDRATE	= 4800
DATABITS	= 8	DELAY	= 3
DIVERSITY	= 2	DELAY	= 3
DWELL	= 4500	ECHO	= 1
ERROR	= 30	ECHO	= 1
FEC4	= 07700	FEC9	= 219000015
FINITE_START	= 0	GRP1	= 000000000
GRP2	= 0	GRP3	= 0
GRP4	= 0	GRP4	= 0
HARDFLOW	= 1	LIGHT	= 3
LINEFEED	= 1	LIGHT	= 3
LOG	= 0	MODE	= 111
PARITY	= NO	MODE	= 111
POLL	= 1	POSITION	= 57N01,009E53
PREKEY	= 1	POSITION	= 57N01,009E53
POSTKEY	= 3	POSTMUTE	= 3
PREKEY	= 1	POSTMUTE	= 3
PRINTER	= LPT:	QMIN	= 3
RESTART	= FINITE	QMIN	= 3
RETRY	= 5	RXADDRESS	= 2
RXENABLE	= 1	RXADDRESS	= 2
RXFREQ	= 1700	SEL4	= 07700
SEL9	= 219000015	SEL4	= 07700
SOFTFLOW	= 0	SPADDRESS	= 2
SPBUS	= S	SPADDRESS	= 2
STOPBITS	= 1	SUNSPOT	= 120
TERM	= T+T	SUNSPOT	= 120
TIMEZONE	= -1	TRACK	= 1
TXADDRESS	= 3	TRACK	= 1
TXENABLE	= 1	TXFREQ	= 1700
TXFREQ	= 1700	TXFREQ	= 1700

The set up after change of radiotelex modem software is now completed.

To make sure that the system works again:

1. Use the external test function to send a DSC test call to a coaststation which enclosed into the stations table.
2. Check that the stations table works correct.
3. Send a telex prepared in the editor. Remember to check your answerback.

Remove the back plate and cabinet, set switch **S2-2** in on position (please see enclosure 2). Turn on the Watch Receiver RM2150 and check that the display menu now show the above menu. Mount the cabinet and the backplate again.

Check of right setting of control interface (**SP-BUS**) on the watch Receiver RM2150.

10. Turn on the RM2150 and wait until the displaymenu show the scan running menu.

Activate **FUNC:** and the displaymenu change to.

```
Display:Pos:Stns:Time
Test:Options:Print:Sun
```

Chose the Options menu and activate the **NEXT** key, the displaymenu change to.

```
Options:
MID numbers
```

Use the up/down arrow key until the displaymenu show.

```
Options:
Control interface
```

Activate the **NEXT** key, the displaymenu change to.

```
Type:
T-Bus:SP-Bus:Non
```

The SP-Bus is chosen for serial communication activate the **NEXT** key, the display-menu change to.

```
Bus address:
2-3-4-5-6
```

The bus address number 2 is blinking, indicating that Bus address 2 is chosen. Is one of the other bus addresses blinking it is necessary to change it to number 2. Change of Control interface type or address can not be done unless the function switch **S2-4** is in on position. To set the function switch **S2-4** in on position it is necessary to dismount the backplate and the cabinet, set the switch **S2-4** on (please see enclosure 2). Turn the watch receiver RM2150 on and wait until the displaymenu show the scan running menu.

Activate **FUNC**: and the displaymenu change to the function menu again, find the **Options** menu, and go to the **control interface** menu. Correct the type and the Bus address and.

Activate the **NEXT** key, the displaymenu change again to.

```
Options:
Control interface
```

Turn the RM2150 off, and if the function switch has been set in on position change the switch **S2-4** to off and mount the cabinet and the backplate again.

IT IS VERY IMPORTANT TO SET THE SWITCH S2_4 OFF.

The Self-identification number (**MID**) has to be programmed into the watch receiver RM2150.

11. Remove the back plate and cabinet, set switch **S2-4** on (please see enclosure 2). Turn on the RM2150 and wait until the display menu show the scan running menu.

Activate **FUNC**: and the displaymenu change to.

```
Display:Pos:Stns:Time
Test:Options:Print:Sun
```

Chose the Options menu and activate the **NEXT** key, the displaymenu change to.

```
Options:
MID numbers
```

Activate the **NEXT** key, the displaymenu change to.

```
Ship MID: <219416841>
```

Key in the ships own MID number activate the **NEXT** key, the displaymenu change to.

```
Press ENT to store
```

Activate **NEXT** and then **ENT** until the displaymenu change to.

Five digit Telex Fec group call number. This number is normally set to the same number as the five digit Telex number.

set fec4 yyyyy activate <ENT> and Enter key.

The DSC group call numbers can be programmed in the same way, but it is not necessary to activate the **<ENT>** key.

set grp1 012345678 activate Enter

The other 3 group call numbers (grp2, grp3, grp4) can be set with the same command.

When the Stations MID numbers has been set the menu st –operator can be left.

24. Write **exit** and activate the **Enter** key the prompt change to **>** and you are now in the normal operation mode.
25. If the radiotelex modem shall be used as a watch receiver the spaddress is set correct in the RMSET.100 file, but if the radiotelex modem shall be used as telex modem the spaddress shall be changed.
26. **NOTE:** only for RM2151.

The message terminal is still in terminal mode.

Write **set spaddress 3** and activate the **Enter** key.

To programme the stations answerback write

Write **set answerback XX-XX-XX-XX-XX-XX-XX** where XX is the ACIII-code for max. 20 characters in the answerback text line (please see enclosure 3).

The stations answerback can be programmed as illustrated below.

The five digit telex number is : 12345
The Ships call sign : OXJZ 6

1 2 3 4 5 O X J Z 6
Set answerback 7E-0D-0A-31-32-33-34-35-7F-20-6F-78-6A-7A-20-7E-36-0A-0D
and activate the **Enter** key.

18. Write **Batch RMFREQ.100** and activate the **Enter** key.

The file RMFREQ.100 is now transferred from the RAM memory to the EEPROM memory in the radiotelex modem.

While this file transfer is going on the file contents is seen on the monitor. Wait 30 sec after the prompt > has appear again to make sure that the file transfer has stopped.

The next file to be transferred is a file with a standard stations table, if the ship owner or the skipper use another stations table this file transfer has not to be done.

19. Activate **Shift** and **F9** simultaneously. The monitor menu change to the Transfer file menu.
20. Highlight **Select** and the file **RMSTN.102** and activate the **Enter** key two times. The file RMSTN.100 will now be transferred from the message terminal to the radiotelex modem.
- Wait until the sign **WORKING** has disappeared and you get a new prompt.
21. Write **Batch RMSTN.102** and activate the **Enter** key.

The file RMSTN.102 is now transferred from the RAM memory to the EEPROM memory in the radiotelex modem.

While this file transfer is going on the file contents is seen on the monitor. Wait 30 sec after the prompt > has appear again to make sure that the file transfer has stopped.

As noted above it is necessary to reprogramme the DCS and Telex numbers when the file RMSET.100 has been transferred.

22. Activate the **Enter** key a couple of times to make sure that the prompt > appear.
23. Write **st -operator** and activate the **Enter** key. A new prompt **th>** appear.

Nine digit DSC and Telex number.

Write: **set sel9 xxxxxxxx**

activate the key <ENT> on the RM2151 and press <return>, keep the <ENT> key activated until a new prompt "th" appears on the screen.

Nine digit Telex Fec group call number. This number is normally set to the same number as the nine digit DSC and Telex number.

Write: **set fec9 xxxxxxxx** activate <ENT> and **Enter**.

Five digit Telex number.

set sel4 yyyyy activate <ENT> and **Enter** key.

Grp1 MID: <012345678>

The ships group number can be keyed in, activate the **NEXT** key the displaymenu change to a menu where the second group number can be keyed in. The ship can have up to four group numbers and you can key this numbers into the next three menus, before the displaymenu again change to

Options:
MID numbers

Turn the Watch receiver RM2150 off, change the switch **S2-4** to off and mount the cabinet and the backplate again.

IT IS VERY IMPORTANT TO RESET THE SWITCH S2-4.

To make sure that the system works again:

12. Use the external test function to send a DSC test call to a coaststation which is enclosed into the stations table.

INSTALLATION CHECK LIST FOR RM2151.

1. In an installation with a 250W transmitter T2130 the radiointerface plug at the back of radiotelex modem RM2151 shall be connected to the power supply N2165, and from the power supply the wires:

S.P. BUS-interrupt
 AF to TX
 AF to TX com.
 TX-KEY
 GND

Shall be connected to the transmitter T2130 connection board.

In an installation with a 600/1200W transmitter T2131/T2135 the radiointerface plug at the back of RM2151 can be connected directly to the connection board in the transmitter. the following connections are necessary:

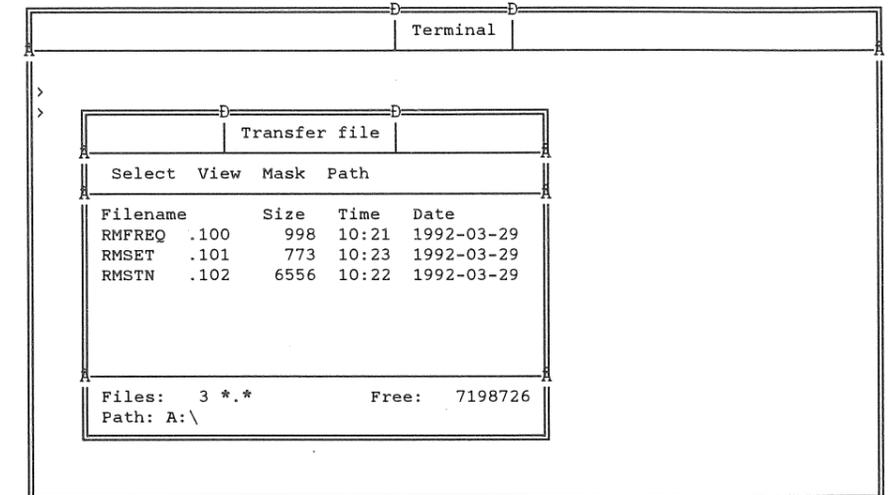
S.P. BUS-interrupt
 AF to TX
 AF to TX com.
 TX-KEY
 +18V
 -18V
 +9V
 GND

If the installation consist of a watch receiver and a radiotelex modem only one of them can be connected directly to the transmitter. The other radio unit shall be connected through a power supply N2165 as described above.

2. The S.P.BUS shall be connected to either to RE2100 or to the transmitter T2130. The serial S.P.BUS must be terminated with 50 Ohm in each end of the cable. In all units there is a strap, which terminates the cable with 50 Ohm, in case the strap is fitted. A 50 Ohm strap is always mounted from factory, this strap must therefore be removed in case the unit is not mounted in the end of the S.P.BUS cable. In RM2150/51 the 50 Ohm strap is called W5 (please see enclosure 2).
3. The handset holder to RE2100 shall have a switch to indicate whether the handset is placed in the holder or not.
4. The RX antenna input terminal shall be connected to a separate antenna.
5. The console plug on the RM2151 shall be connected to the message terminal console plug (COM.1).
6. The NMEA navigation interface can be connected to a GPS unit.
7. The printer can be connected to either the radiotelex modem or the message terminal. To get the best use of the printer it shall be installed at the message terminal.
8. The message terminal and the monitor shall be connected to a 24VDC power supply and the message terminal and the monitor shall be interconnected.

13. Activate **Shift** and **F9** simultaneously. The monitor menu change to the Transfer file menu.

Is a PC. with a radiotelex programme used it can be necessary to define the path. Highlight **Path** and activate the **Enter** key, you will now be asked to define the new path, write **A:** and activate the **Enter** key.



14. Highlight **Select** and the file **RMSET.101** and activate the **Enter** key two times. The file RMSET.101 will now be transferred from the message terminal to the radiotelex modem.
- Wait until the sign **WORKING** has disappeared and you get a new prompt.
15. Write **Batch RMSET.101** and activate the **Enter** key.
- The **ENT** key on the radiotelex modem has to be activated during this part of the file transfer.
- The file RMSET.101 is now transferred from the RAM memory to the EEprom memory in the radiotelex modem.
- While this file transfer is going on the file contents is seen on the monitor. Wait 30 sec after the prompt > has appear again to make sure that the file transfer has stopped.
- NOTE:** the stations MID numbers shall be set up after the transfer of the file **RMSET.-101**.
16. Activate **Shift** and **F9** simultaneously. The monitor menu change to the Transfer file menu.
17. Highlight **Select** and the file **RMFREQ.100** and activate the **Enter** key two times. The file RMFREQ.100 will now be transferred from the message terminal to the radiotelex modem.
- Wait until the sign **WORKING** has disappeared and you get a new prompt.

This displaymenu is of course dependent of the switch **S2-4**, select of watch scan receiver or DSC/telex receiver.

RM 2151
 DSC/Telex Receiver

WAIT until the displaymenu automatic change to one of the scan menus.

Scanning DSC from
 Message Terminal

7. Turn of the radiotelex modem and set the switch **Initializing EEPROM** in off position.
8. Mount the cabinet and the back cover, connect all the plugs again.
9. Connect the radiotelex modem to the message terminal or to a PC. with installed radiotelex software.
10. Turn on the radiotelex modem and the message terminal or the PC.
11. Insert the disk **INITIAL SET UP OF RADIOTELEX MODEM 1.03** into the diskdrive.

This disk contain three files:

RM_SET	.101	102
RM_FREQ	.100	100
RM_STN	.102	103

12. Activate the message terminal or PC in terminal mode.

F3 - Options - Terminal mode

Activate the **Enter** key a couple of times until you have the prompt >

9. Control the software version, check if the versions are in agreement with the software summary in inclosure 1.
There shall be agreement between the software versions of RE2100. the transmitter (T2130/T2131/T2135), the DSC/radiotelex modem RM2150/51 and the Message terminal H2098A to get the system to work properly. The software versions which will work together can be seen in inclosure 1.

10. Is a GMDSS ALARM UNIT C2149 connected to the system, it shall be connected to the power supply or to the connection board in T2131/2135.

Check that the software in the C2149 have the right version number, this can be see in inclosure 1.

If the C2149 has a microprocessor module with version number 5-0-27053A or 5-0-27053B then make a connection between U10 pin 6 (MAX690) and R25 pin 8 (8*10Kohm sil.

The Radiotelex modem RM2151 has to work with S.P. BUS address number 3, this has to be programmed into RE2100.

11. On the RE2100 activate **0** and **1** simultaneously, the display on the RE2100 change to:

SP -

Write **07 3** and then **2** at the bottom line, the display show now.

SP - 07 -3
 2 0

This SP-menu can be entered at any time and be used to control that the SP-BUS works properly. The zero in the TX display line shall be changed to a one if the SP-BUS works
Activate the **ENT** key the display show now.

SP - 07 -3
 A

Activate the **Tune/Clarif** key to leave the SP menu.

The following programming and checks shall be done in the DSC/Radiotelex modem RM2151

Check of right delivered type RM2150 or RM2151.

12. Turn on the DSC/Radiotelex modem on and control that the displaymenu after the initializing menu show the following menu.

RM 2151
DSC Telex Receiver

If you get the displaymenu indicating that the receiver is a DSC Watch receiver RM2150, you have to change the internal setting of the switch S2-2.

Remove the back plate and cabinet, set switch S2-2 in off position (please see enclosure 2). Turn on the DSC/Radiotelex modem RM2151 and check that the display menu now show the above menu. Mount the cabinet and the backplate again.

Check of right setting of control interface (SP-BUS) on the watch Receiver RM2150.

SPBUS programming using the Terminal mode on the message terminal.

13. To get into terminal mode activate

F3 - Options - Terminal Mode

Write **set -a** and activate the **Enter** key. The screen will show all the settings (please see enclosure 1).

The showed settings include the settings of the connected radio modem RM2151. Find the parameter "SPADDRESS", check whether this is set to the same as programmed into RE2100. If not, the value in "SPADDRESS" is changed in the following way:

Write **set SPADDRESS X** and activate the **Enter** key, where X is the new value (2-6). The SPADDRESS shall in this case be set to 3.

Then check the parameter "SPBUS", this must be set to "S". In case the parameter has another value than "S", this is changed in the following way:

Write **set SPBUS S** and activate the **Enter** key.

The Self-identification number (MID) as well as the telex numbers has to be programmed into the DSC/Radiotelex modem RM2151.

The programming of the DSC and telex number of the station using the terminal mode on the message terminal.

14. To get into the terminal mode.

F3 - Options - Terminal mode

Activate the **Enter** key a couple of times to make sure that the prompt > appear.

Write **st -operator** and activate the **Enter** key. A new prompt **th>** appear. The DSC and the Telex numbers can now be entered.

HOW TO CHANGE SOFTWARE.

RADIOTELEX MODEM.

Change of software in the DSC/Radiotelex modem can not be done without changing the stored data and the modem settings.

Change of software and restore of data in the DSC/Watch receiver RM2150 and the DSC/Radiotelex modem RM2151 are both done by using the below procedure. In the below procedure the DSC/Watch receiver or the DSC/Radiotelex modem are connected to a message terminal.

This means that the DSC/Watch receiver and the message terminal shall be interconnected by the serial communication ports, this connection shall be from the console port on the DSC/Watch receiver to the COM 1 port on the message terminal.

NOTE: the stations MID numbers shall be set up after the transfer of the file RMSET.-101.

1. Turn the radiotelex modem of.
2. Dismount the plastic back cover and the cabinet.
3. Change the Eproms U10, U11 and U12 on the MAIN PROCESSOR unit with the Eproms with the new software.
4. Connect the radiotelex modem with the radiointerface plug.
5. Set the switch **Initializing EEprom** in the on position.

Initializing EEprom is switch S1-2 in PC board version 3.
Initializing EEprom is switch S1-4 fom PC board version 4.
6. Turn on the radiotelex modem, the displaymenu show the following menus.

Initializing.

WAIT until the displaymenu automatic change to.

Initializing.EEprom

WAIT until the displaymenu automatic change to.

HOW TO CHANGE SOFTWARE.

MESSAGE TERMINAL.

Change of software in the message terminal can be done without destruction of the stored data or the terminal settings.

1. Dismount the top cover of the message terminal.
2. Dismount the four screws holding the disk drive and remove the diskdrive.
3. Change the Eproms U9, U10 and U11 with the Eproms with the new software.
4. Mount the diskdrive and the top cover again.

The message terminal is now ready for power on.

In the start up window the software version can be checked.

To make sure that the system works again:

1. Print out a file from disk.
2. Check that the stations table works correct.
3. Send a telex prepared in the editor.

Nine digit DSC and Telex number.

Write: **set sel9 xxxxxxxxx**

activate the key <ENT> on the RM2151 and press <return>, keep the <ENT> key activated until a new prompt "th>" appears on the screen.

Nine digit Telex Fec group call number. This number is normally set to the same number as the nine digit DSC and Telex number.

Write: **set fec9 xxxxxxxxx** activate <ENT> and then Enter.

Five digit Telex number.

set sel4 yyyyy activate <ENT> and then Enter.

Five digit Telex Fec group call number. This number is normally set to the same number as the five digit Telex number.

set fec4 yyyyy activate <ENT> and then Enter.

The DSC group call numbers can be programmed in the same way, but it is not necessary to activate the <ENT> key.

set grp1 012345678 activate Enter

The other 3 group call numbers (grp2, grp3, grp4) can be set with the same command.

When the Stations MID numbers has been set the menu st –operator can be left.

Write **exit** and activate the Enter key the prompt change to > and you are now in the normal operation mode.

Programming of the answerback of the station is done from the Message Terminal. The message terminal is still in terminal mode.

15. To programme the stations answerback write

Write **set answerback XX-XX-XX-XX-XX-XX-XX** where XX is the ACIII-code for max. 20 characters in the answerback text line (please see enclosure 3).

The stations answerback can be programmed as illustrated below.

The five digit telex number is : 12345
The Ships call sign : OXJZ 6

Set answerback 7E-0D-0A-31-32-33-34-35-7F-20-6F-78-6A-7A-20-7E-36-0A-0D

To control that the setting of the radiotelex modem is done correct.

16. Write **set -a** and activate the **Enter** key, the CRT show now the settings of the radiotelex modem.

Terminal			
ALARM	= 1	ALPHA	= 0
ANSWERBACK	= 7E-0D-0A-31-32-33-34-35-7F-20-6F-78-6A-7A-20-7E-36-0A-0D	ANGLE	= 3
ARQERROR	= 0	BAUDRATE	= 4800
DATABITS	= 8	CAPTURE	= 0
DWELL	= 4500	DELAY	= 3
FEC4	= 07700	DIVERSITY	= 2
FINITE_START	= 0	ECHO	= 1
GRP2*	= 0	ERROR	= 30
HARDFLOW	= 1	FEC9	= 219000015
LOG	= 0	GRP1	= 000000000
POLL	= 1	GRP3	= 0
POSTKEY	= 3	GRP4	= 0
PRINTER	= LPT:	LIGHT	= 3
RETRY	= 5	LINEFEED	= 1
RXFREQ	= 1700	MODE	= 111
SEL9	= 219000015	PARITY	= NO
SOFTFLOW	= 0	POSITION	= 57N01.009E53
STOPBITS	= 1	POSTMUTE	= 3
TIMEZONE	= -1	PREKEY	= 1
TXENABLE	= 1	RESTART	= FINITE
		RXADDRESS	= 2
		RXENABLE	= 1
		SEL4	= 07700
		SPADDRESS	= 2
		SPBUS	= S
		SUNSPOT	= 120
		TERM	= T+T
		TRACK	= 1
		TXADDRESS	= 3
		TXFREQ	= 1700

The set up of the radiotelex modem is now completed.

To make sure that the system works again:

1. Use the external test function to send a DSC test call to a coaststation which enclosed into the stations table.
2. Check that the stations table works correct.
3. Send a telex prepared in the editor. Remember to check your answerback.

GOOD ADVICE AND HELP.

GENERAL INFORMATION:

In brief the difference between RM2150 and RM2151, is that RM2150 only has one scanning programme where distress and calling frequencies are normally programmed. The RM2150 is not used for telex and therefore no address book is included.

NO CONNECTION BETWEEN RADIOTELEX MODEM AND MESSAGE TERMINAL:

The connection is an ordinary RS232 serial communication line.

IF there is no communication between the two stations, the following can be tested.

On the message terminal activate the system menu by keying **F9 - Option - Serial**. The settings of the serial communication line in the message Terminal is opened.

Normal setting: Com1 - 4800 - N - 8 - 1.

On the radiotelex modem RM2150/51 the programming of the serial communication can be tested in the **FUNC.** menu.

FUNC - OPTIONS

With the up/down arrows find the menu **Terminal port settings** and check that. Baudrate:4800 / Parity:NON / Databits:8 / Stopbits:1 / Softflow:off / Hardflow:on.

Check whether the terminal cable is connected to the Com1 gate at the back of the message terminal.

NO PRINTER RESPONSE:

The printer can be installed on the radiotelex modem or on the message Terminal. Therefore is necessary to tell the system where the printer is placed and this is done in the radiotelex option menu on the message terminal. Normally the printer is installed on the message terminal.

F3 - Option - Printer

The printer setting menu is displayed highlight **Message Terminal** or **Modem**, all depending on where the printer is installed activate the enter key. The prompt >> in front of a word indicates that the word has been chosen.

In order to get all telexes sent and received printed out, **Save to printer** must be chosen.

F3 - Directcall - Commands

Highlight **save to printer** and activate the enter key. The prompt >> in front of "Save to printer" indicates that save to printer is activated.