TRP 7200
TRP 7201
TRP 7203
TRP 7204
TRP 7208

Technical Manual

INTERFACE-A 718

SKANTI

DISTRESS OPERATION ON 2182 kHz

1. Transmission of two-tone Alarm Signal

- **Press** [Supply On/Off] **to turn the Transceiver on**

- **Press** [2182]

- **Press** [Test Alarm] [Stop Alarm] **simultaneously**

Transmission of Alarm Signal starts automatically and proceeds for 45 seconds.

Press [Stop Alarm] *to interrupt the Alarm Signal transmission.*

2. Transmission of Distress Message

- **When the Alarm Signal ceases press the handset key and transmit your Distress Message by speaking into the handset microphone with a clear and calm voice**

- **Release the handset key and wait for reply**

3. Repeat Distress Operation

- **If no reply is received, repeat the above procedures at intervals until a reply is received**

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993 801 01

TRP 7200 SERIES INTERFACE-A 718 SOFTWARE COMPATIBILITY

NOTE

TO ENSURE CORRECT OPERATION WITH INTERFACE-A 718 THE TRP 7200 MUST HAVE THE BELOW LISTED PROGRAM AND CONFIGURATION PROMS.

TRP 7200 Program Prom:

Issue 5.00 And Up.

TRP 7200 Configuration Prom:

Issue 2.00 And Up.

TRP 7200 SERIES

INTERFACE-A 718

TECHNICAL MANUAL

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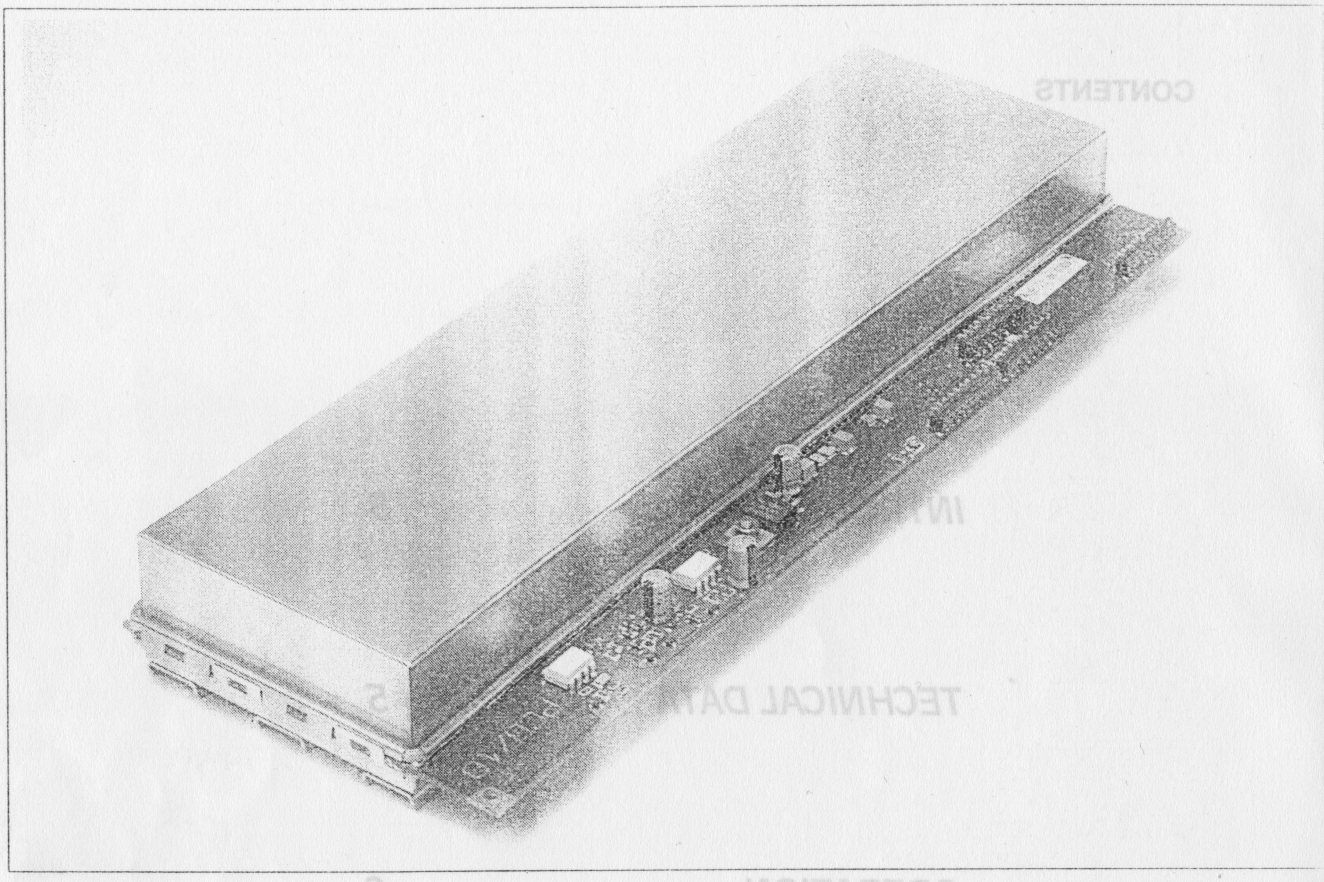
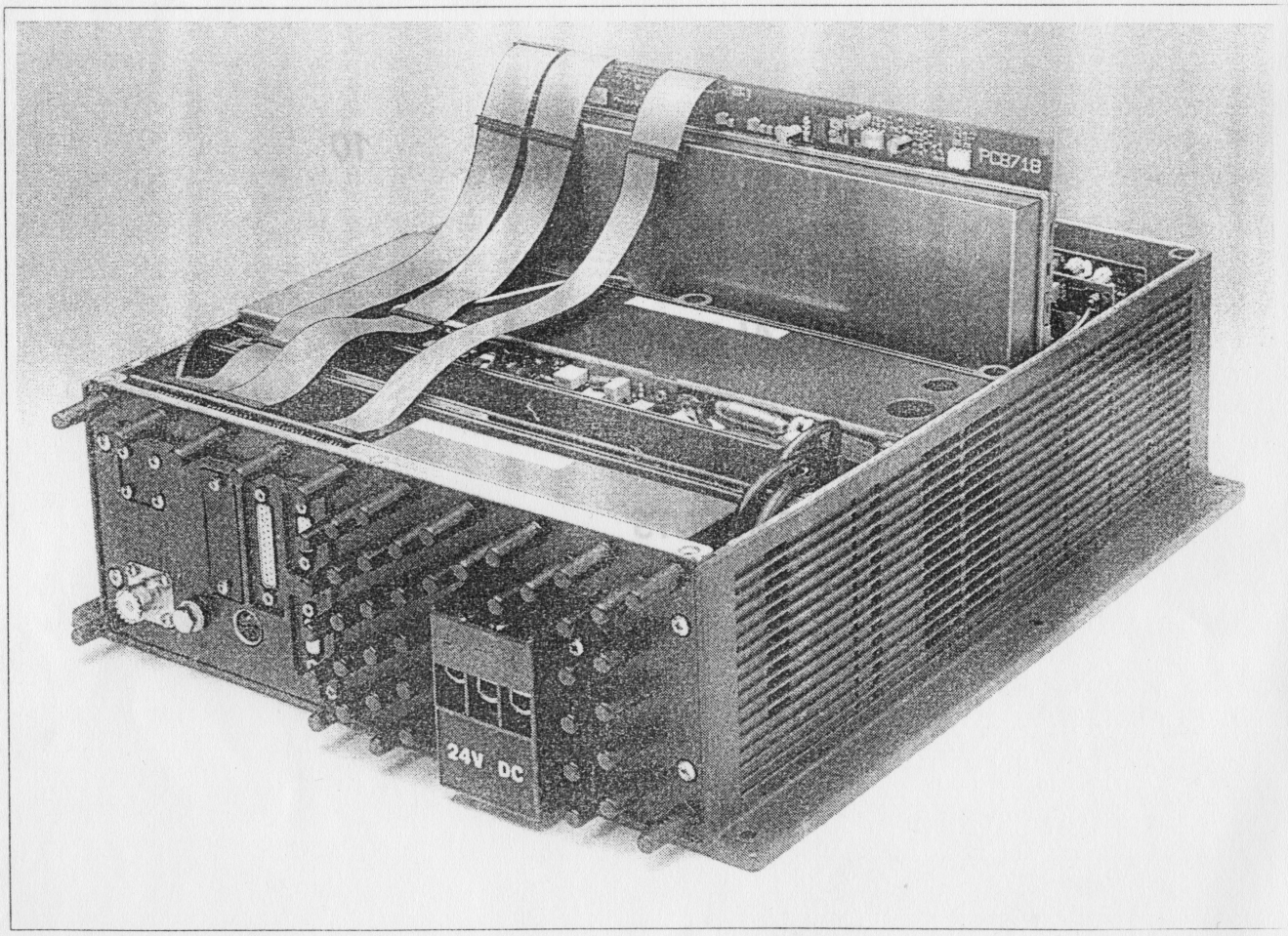



PCB718
24V DC

INTRODUCTION

The TRP 7200 Interface-A 718 is an optional PCB for the TRP 7200 series.

When installed in the Transceiver Unit 7200 the Interface will provide the necessary Input/Output lines to connect an external Telex Modem or DSC Controller.

The Interface-A 718 consists of one PCB with screen covers which simply replaces a dummy PCB in the Transceiver Unit 7200.

The installation is easily performed, following the step by step instruction in this manual.

The parameters to adapt the Interface to various Telex Modems or DSC Controllers are configurated from the TRP 7200 keyboard.

TECHNICAL DATA

LINE INPUT

Input Impedance
600 ohm, balanced with center tap
Galvanic isolated

Input Level
-10 to +10 dBm

LINE OUTPUT

Output Impedance
600 ohm, balanced with center tap
Galvanic isolated

Output Level
0 dBm +/- 10 dB adjustable

DATA INTERFACE

Interface Type
RS-232-C with optical isolation

Interface Protocol
See Technical Description

SCAN START/STOP INPUT

Scan Start
Programmable to negative or positive transition

Scan Stop
Programmable to negative or positive transition

Sweep Start/Stop Input
The scan start/stop input can alternatively be coupled to the sweep programme in the TRP 7200.

Sweep Start
Programmable to negative or positive transition

Sweep Stop
Programmable to negative or positive transition

Dimensions
100 mm x 290 mm x 40 mm

Weight
0.6 kg

OPERATION

When the optional printed circuit board Interface-A 718 is installed in the empty slot in the Transceiver Unit, TRP7000 can be used for DSC and telex.
To adapt Interface-A 718 to various modems, select Configuration Mode by pressing

[Prog] [9] [9] [Enter] and select Function [7] [5] [Enter]

By changing the parameter of Function No. 75 with the "STO" key selection of 7 different modes of operation are possible. Pressing "Enter" will make no change and pressing "Enter" once more will make a return to normal operation.

Function No. 75.: View / change set-up of DSC and Telex Option, Interface-A 718.

Store the wanted value to select one out of seven possible configurations.
Default value = 6.

Parameter	Value
TELEX with local frequency control	0
REMOTE FREQUENCY CONTROL	1
AUTOTELEX	2
AUTOTELEX with telephony option	3
MARITEX	4
MARITEX with telephony option	5
DSC	6

NOTE: If TRP7000 is to be used for reception of DSC or telex messages the RX/EX Signal Path 715 must include a telex filter.

TELEX with local frequency control: Value = 0

When "TELEX with local frequency control" is enabled all control of TRP7000 must be carried out manually. When "TLX" on the keyboard is pressed TRP7000 will enter telex mode and respond to keying signals on the "EXT KEY" input. All RX/TX frequencies are changed via the keyboard.

Controlled scanning of RX frequencies is possible. Programming one of the TRP7000 scanning programs and the external Scan S/S (Scan Start/Stop) input enables remote control of the scanning.
See "Setting up a scan program" in the Technical Manual.
See description of "Scan S/S" input in this manual.

REMOTE FREQUENCY CONTROL: Value = 1

"REMOTE FREQUENCY CONTROL" enables remote set-up of RX and TX frequencies. Sending frequency commands to the "PC RX" input, TRP7000 will change frequency and indicate the remote controlled status by flashing the "Remote" annunciator in the display.

TRP7000 will at all time respond to all manual key entries. The "Remote" annunciator is then switched off indicating that the last entry was made manually.

AUTOTELEX: Value = 2

If "AUTOTELEX" is enabled automatic frequency and scanning control from the ARQ modem is possible. When TRP7000 is in the normal state (last keying sequence terminated) it will respond to commands on the "PC RX" input by selecting telex mode and flashing the "Remote" annunciator in the display indicating remote control. Control is now transferred to the ARQ and only the "Volume Up/Down", "Speaker On/Off", "Back- light key" and "Supply On/Off" keys can be operated.

The "AUTOTELEX" mode can temporarily be terminated by pressing the "TLX" or the "Enter" key. The "Remote" annunciator is switched off in the display and TRP7000 may be operated manually. TRP7000 will reenter "AUTOTELEX" mode immediately when a new ARQ command is received.

When the "2182" key is pressed, TRP7000 will return to manual control from the keyboard and normal operation is possible. All control commands from the ARQ is blocked until the "TLX" key is pressed.

AUTOTELEX with telephony option: Value = 3

If it is desirable to interrupt the ARQ scanning temporarily while making a phone call "AUTOTELEX with telephony option" should be enabled. It has the same features as "AUTOTELEX" but with the following additional facilities.

Pressing the wanted telephony mode-key on TRP7000 the scanning is interrupted and normal operation of the keyboard is possible. To reenter control from the ARQ and hence allow scanning again, press the "TLX" key.

While TRP7000 is controlled by the ARQ the "Remote" annunciator is flashing in the display and only the "Volume Up/Down", "Speaker On/Off", "Back-light key", "Supply On/Off" and mode-keys can be operated.

MARITEX: Value = 4

When "MARITEX" is enabled all the features of "AUTOTELEX" are retained. Additionally, TRP7000 will protect against erroneous continuous keying in more than half a minute by un-keying the transmitter and sounding the beeper. Beeping will continue until a key is pressed.

MARITEX with telephony option: Value = 5

If "MARITEX with telephony option" is enabled all the features of "AUTOTELEX with telephony option" and the continuous keying protection of "MARITEX" are combined.

2182:
When Interface-A 718 is used in combination with a telex modem (value = 1 through 5 programmed) the following should be observed. When the "2182" key is pressed, TRP7000 will return to manual control from the keyboard regardless of the telex function enabled. All control from the ARQ is blocked until the "TLX" key is pressed.

DSC: Value = 6

Automatic control of TRP7000 is possible when connected to a DSC9000 controller. TRP7000 will at all time respond to a command on the "PC RX" input by entering "DSC" mode and flashing the "Remote" annunciator in the display. In this state only the "Volume Up/Down", "Speaker On/Off", "Back-light key" and "Supply On/Off" can be operated.
The "DSC" mode can temporarily be terminated by pressing "2182", "TLX" or the "Enter" key. The "Remote" annunciator is switched off in the display and TRP7000 may be operated manually. TRP7000 will reenter "DSC" mode immediately when a new command is received.

2182:
When TRP7000 is used in combination with a DSC9000 controller (value = 6 programmed) and is used for scanning DSC calling frequencies, the handset should be lifted off hook before "2182" is pressed, to stop the scanning.

On-Hook:
When the total installation includes a DSC Controller and the TRP7000 receiver is used for DSC scanning, an On-Hook signal is needed. The On-Hook signal shows the position of the handset and is available in the Com socket (pin 4) on the Transceiver Unit.

Handset hooked on:	**On-Hook = high**
Handset hooked off:	**On-Hook = low**

The On-Hook signal is available in all modes (value = 0 through 6 programmed).

SCAN START/STOP INPUT

Programming:

The Scan S/S (Scan Start/Stop) input can be used to control the scanning of the 10 build-in user-programmable scan programs or the user-programmable sweep program. The Scan S/S input transition must be enabled to one out of four possibilities, and the input coupled to either Scan or Sweep. See table below.
The Scan S/S input can also be used in conjunction with a non-automatic telex modem to control the build-in scan programs.

To view or change the programming of the Scan S/S input enter Configuration Mode by pressing

[Prog] [9] [9] [Enter] . Select Function [7] [7] [Enter]

and store a new value(s) with the "STO" key if a change is wanted. A flashing bar indicates the parameter to be changed. The "STO" key may also be used to store the same value again if no change is wanted. Pressing "Enter" will make no change and pressing "Enter" once more will make a return to normal operation.

Function No. 77.: View / change External Scan S/S input:
Scan S/S Input Transition:

Parameter	Value
Disable	**0**
Start/Stop on positive/negative transition	**1**
Start/Stop on negative/positive transition	**2**
Start/Stop on positive/positive transition	**3**
Start/Stop on negative/negative transition	**4**

If a step function is wanted select value = 1 or 2 and store a Dwell Time = 0 during the programming of the scan or sweep program. See "Setting up a scan program" or "Setting up a sweep program" in the Technical Manual.

Scan S/S Coupling:

Parameter	Value
Coupled to Scan	**0**
Coupled to Sweep	**1**

Store the wanted values to select the required transition and coupling.
Default values:

	Receiver Display	
	Scan S/S	
	Transition	Coupling
Parameter	**0**	**0**

INSTALLATION

To install the optional Interface-A 718 board in TRP 7200 follow the procedure below.

1. Remove the front cover of the Transceiver Unit by loosening the nine screws.

2. Locate the Module Assembly and disconnect all ribbon cables and coaxial cables attached to it.

Note:

A. If the Configuration Prom is going to be changed at the same time, it is necessary to disconnect the Back-up battery on TU Control Board 710 for at least 30 seconds to ensure that the new configuration is loaded correctly.

B. If the Configuration Prom is not going to be changed, it is advisable leave the Back-up Battery connected to TU Control Board 710 during the installation. In this way all the user-programmable memory will not be erased.

3. Remove the Module Assemble by loosening the four screws.

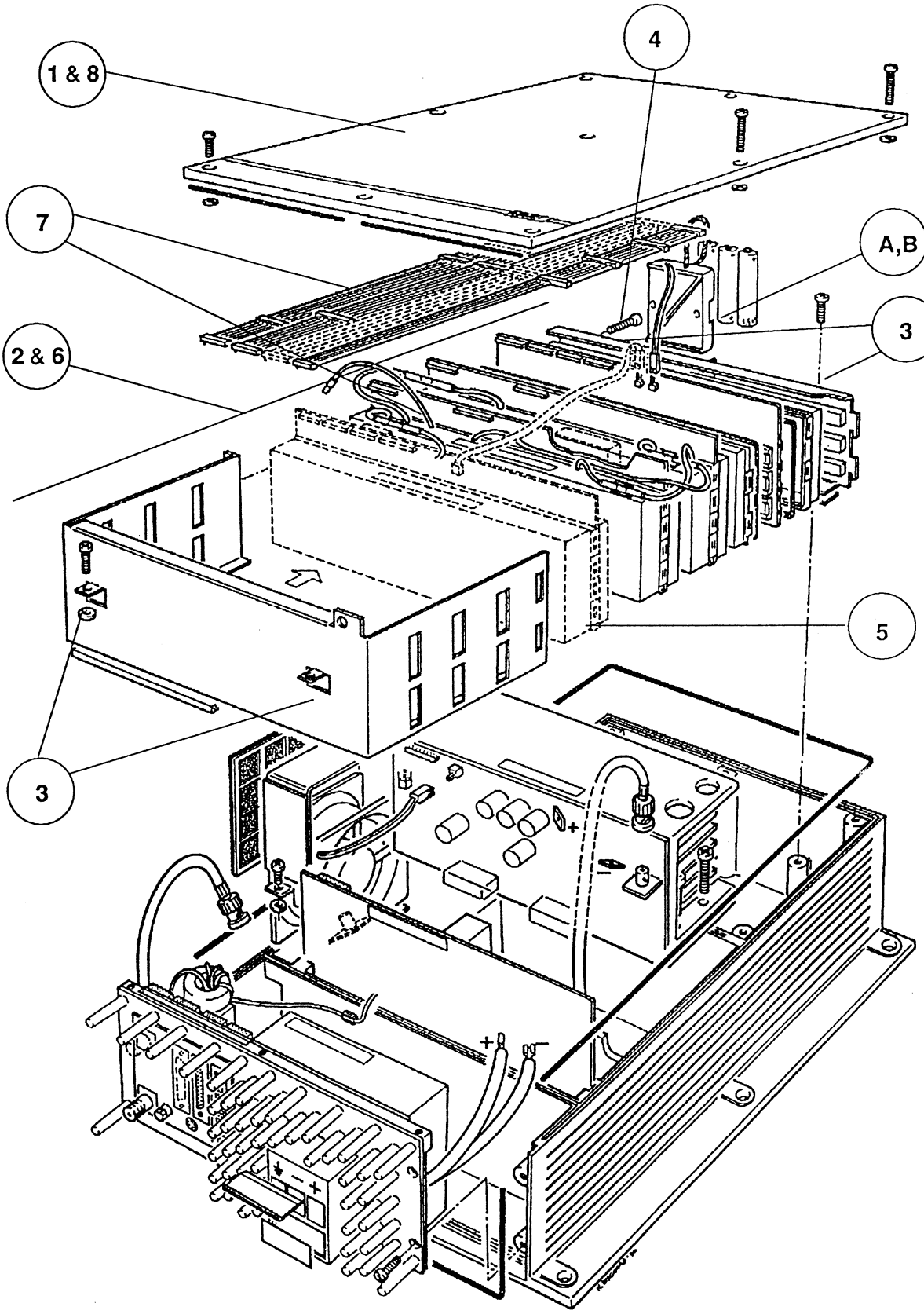
4. Open the assembly by loosening the two screws and remove all the PCB's.

5. Replace the Dummy PCB with PCB 718 and be sure to replace all PCB's in correct order (718, 715, 711, 710).

6. Close the Module Assembly and mount it in the Transceiver Unit.

7. Connect all the coaxial cables and connect the ribbon cables including the extra two ribbon cables inclosed in the option 718 package.

8. Finish the installation by mounting the front cover of the Transceiver Unit.


4
1 & 8
7
A,B
3
2 & 6
5
3

CONNECTOR X25 WITH INTERFACE-A 718 INSTALLED

Connector X25 - com Terminal no.	Designaltion	Direction	Remarks
16	Line In +	Input	Galvanical isolated 600 ohms Balanced Line Input Input level: 0 dBm ± 10 dB
1	Line In C	Input	-//-
15	Line In -	Input	-//-
21	Line Out +	Output	Galvanical isolated 600 ohms Balanced Line Output Output level: 0 dBm, adjustable ± 10 dB
22	Line Out C	Output	-//-
8	Line Out -	I/O	-//-
2	PC RX	Input	Galvanical isolated V.28 (RS-232-C) When "PC TX" is used "PC DTR" must be connected.
3	PC TX	Output	-//-
20	PC DTR	Input	-//-
7	PC GND	I/O	-//-
4	On-Hook	Output	Sink 50 mA @ 2 V Source 3 mA @ 5 V Low ~ 0 V @ 0 mA High ~ 11 V @ 0 mA
14	Scan S/S	Input	High 5.1 V →1 5 V Low 0 V → 1.2 V
17	Gen I/O 3	I/O	Output: Sink 50 mA @ 2 V Source 3 mA @ 5 V Low ~ 0 V @ 0 mA High ~ 11 V @ 0 mA Input: High 5.1 V → 15 V Low 0 V → 0.5 V
18	Gen I/O 4	I/O	-//-
19	Gen I/O 0	I/O	-//-
5	Gen I/O 2	I/O	-//-
6	Gen I/O 1	I/O	-//-

Connector X25 - com Terminal no.	Designaltion	Direction	Remarks
9	$\overline{\text{2182 KEYED}}$	Output	Open collector Max. current 250mA Max. voltage 40V. Is low when TX is keyed on 2182 kHz.
10	$\overline{\text{TX INHIBIT}}$	Input	TX inhibited when connected to GND. Internally pulled up to 15V through 2.2kohm.
11	$\overline{\text{RX MUTE}}$	Input	RX muted when connected to GND. Internally pulled up to 15V through 2.2kohm.
12	$\overline{\text{EXT KEY}}$	Input	TX is keyed in telex and other datatransmission modes, when EXT KEY is low. Internally pulled up to 15V through 2.2kohm
13	GND		
23	$\overline{\text{TX KEYED}}$	Output	Open collector. Max. i current 250mA Max. voltage 40V. Is low when TX is keyed.
24	$\overline{\text{2182 SEL}}$	Output	Open collector. Max. i current 250mA. Max. voltage 40V. Is low when 2182 kHz is selected.
25	+24V	Output	+24V available when equipment is on. Max. current 200mA Internally fused.
Shield	Cable screen		

TECHNICAL DESCRIPTION

PCB 718 consists of Drivers and Receivers, General Purpose Input/Output circuits and supply voltage filtering and regulation circuits.

The Drivers and Receivers includes optical isolated data drivers/receivers for control of the Transceiver via a DSC9000 controller or an external modem. Galvanic isolated balanced 600 ohms input and output lines are available for transfer of the AF signals with a +/- 10 dB adjustment possibility of the AF output.

The General Purpose Input/Output circuits are for use in combination with special software versions for different control tasks.

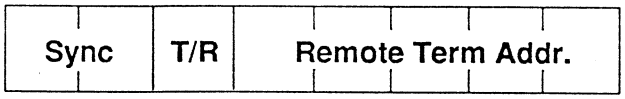
Interface Protocol

Physical characteristics:

8 data bits,
1 start bit,
1 stop bit,
1 parity bit,
odd parity,
2400 bit/second.

Word formats:

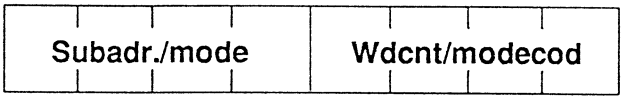
Address word



Reserved addresses:

C2h : Receiver
C3h : Transmitter
FFh : Broadcast

Command word



Reserved commands:

00h : Reset
14h : Telex mode & frequency input
*) 24h : USB mode & frequency input
*) 34h : AM mode & frequency input
*) 44h : CW mode & frequency input
*) 85h : Set scan table entry & radiomode/entry nr. & frequency input
*) 90h : Step to next entry
*) A0h : Empty table
*) B1h : Go to table entry & entry nr.

*) Commands concerning DSC.

Data words

Frequency input:

10 MHz	**1 MHz**
100 kHz	**10 kHz**
1 kHz	**100 Hz**
10 Hz	**1 Hz**

Radio mode + entry nr. :

Radio mode	**Entry nr.**

1h : Telex mode Entry nr. = { 0h .. Fh }
2h : USB mode
3h : AM mode
4h : CW mode

Entry nr. :

Not used	**Entry nr.**

Entry nr. = { 0h .. Fh }

Status word

Err			**Remote Term Addr.**

Err : Error return status.

Message Format:
A message consists of an Address word followed by a Command word and possible corresponding Data words.

Example: TX 19.1201 MHz in Telex mode.

C3h
14h
19h
12h
01h
00h