

skanti

TECHNICAL MANUAL

TEST p. 4-1

Press 200 + ENTER - Auto

Press 201 + ENTER - manual

~~Control~~
~~electronics~~
~~7-230~~
~~8-4:30~~
~~9-4:30~~
~~10-4:30~~
M-F

Test 27
28
29
30
40
41 } 99
NOT IN
RADIO

mv PARHELION

SSB RADIOTELEPHONE TRP8250S SERIES

Don
622-9019

skanti

**TECHNICAL MANUAL
TRP8250S SERIES**

400 11-85
910 000 32
Version 5A

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NOTICE

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Due to the constant processing of the experience gained during production and operation of our equipment, minor modifications may occur relative to the information given in this Manual. Whenever practicable corrections will be listed on a correction sheet inside the front cover of this Manual.

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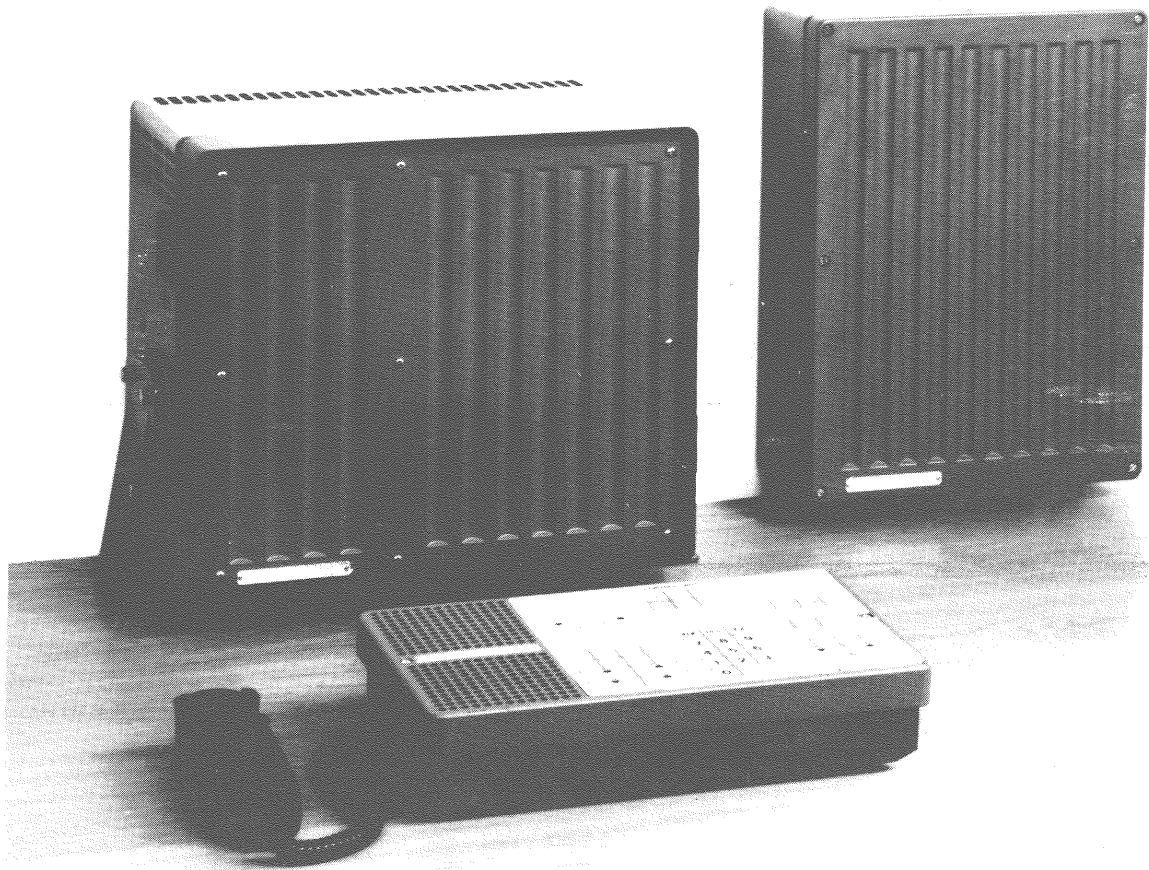
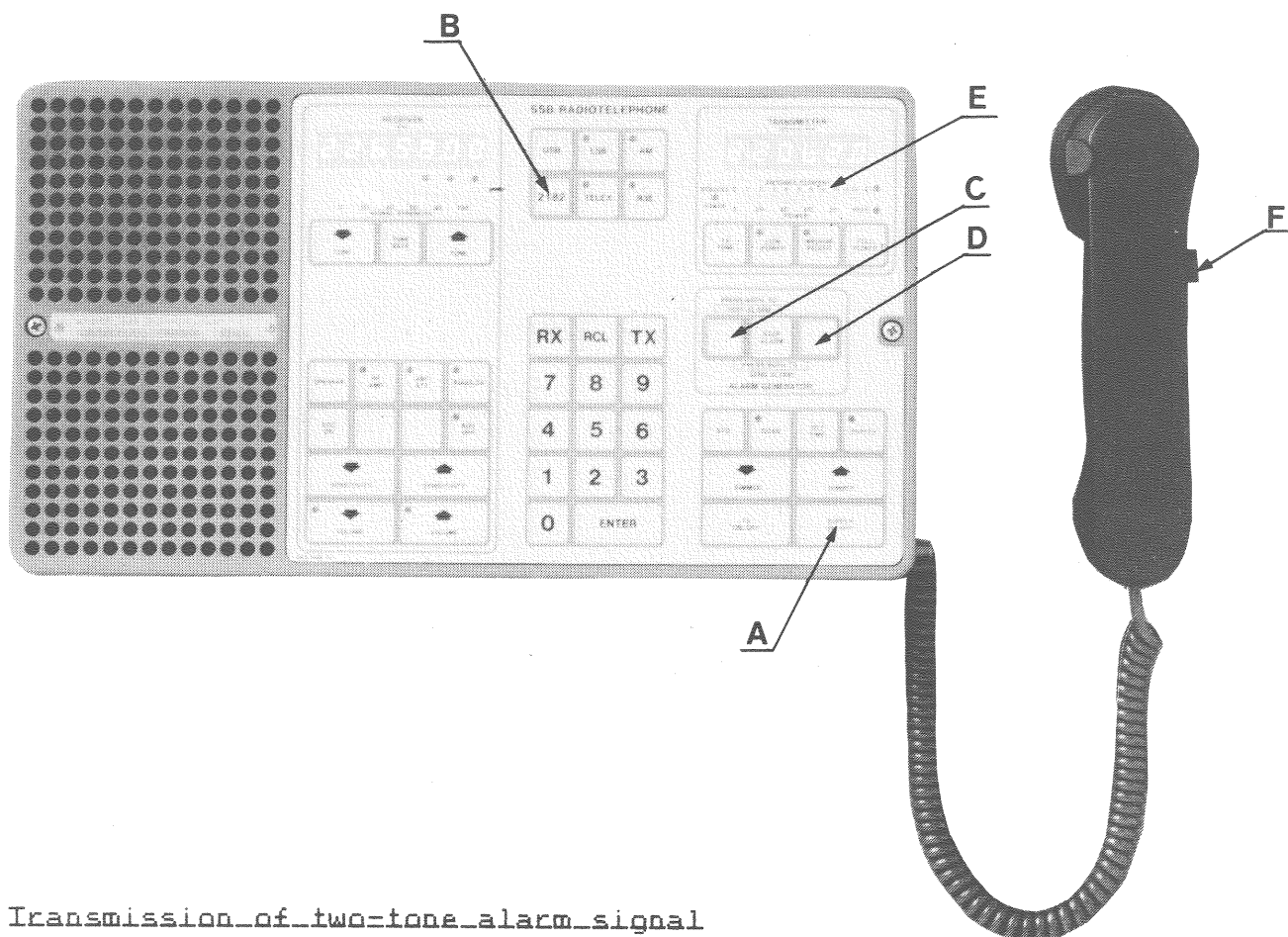


Fig. 1.1

DISTRESS OPERATION ON 2182 kHz



Transmission of two-tone alarm signal

1. Press "SUPPLY ON/OFF" key (A) to turn equipment on.
2. Press "2182" key (B)
3. Press ALARM GENERATOR keys (C) and (D) simultaneously.

Transmission starts immediately after the automatically initiated tuning sequence and the alarm signal is now transmitted for 45 seconds. The antenna current is displayed on the ANTENNA CURRENT meter (E) and the alarm signal is heard in the loudspeaker.

To repeat the alarm signal transmission just press the ALARM GENERATOR keys (C) and (D) again simultaneously.

An alarm signal transmission may be interrupted at any time by pressing the "STOP ALARM" key.

Transmission of distress message

When the alarm signal ceases press handset key (F), and transmit your distress message by speaking into the handset microphone with a clear and calm voice.

Release handset key and wait for reply.

Repeat the distress message at intervals until a reply is received.



1. INTRODUCTION

The TRP 8250S SERIES is general purpose HF SSB transmitting receiving equipment covering the frequency range 1.6 to 30MHz designed for marine as well as point-to-point applications.

The standard version offers simplex and semiduplex radiotelephone communication in the maritime mobile bands and is intended for installation in voluntarily or compulsorily fitted vessels.

A selection of optional facilities permits configuring equipment fulfilling various needs, including transmission and reception of LSB, J3E signals, transmission and reception of radiotelex, transmission and reception of CW and MCW morse telegraphy. The equipment is fully transistorized and extensive use is made of the latest microprocessor technology.

The TRP 8250S consists of a CONTROL UNIT, a fully remote controlled TRANSCEIVER UNIT and an automatic ANTENNA TUNING UNIT. The units can be placed up to 100 m apart using standard 16 x 0.5 mm sq. screened cable. An AC POWER SUPPLY UNIT is used when the equipment is supplied from AC MAINS.

The CONTROL UNIT contains all receiver and transmitter operating controls. It is fully push-button controlled by means of a rugged membrane keyboard, insensitive to dust and water. Separate LED-displays show receive and transmit frequencies, and two bar-graph displays show receiver signal strength and transmitter output power respectively. When the transmitter is switched-off, time of day is displayed from a built-in real-time clock, which can also be used to switch-on the equipment at a predetermined time.

The keyboard permits the operator to program up to 76 receive and transmit frequency pairs and to recall or scan the frequencies with a few key operations.

When the equipment is switched-off the real-time clock and the memory are supplied from a built-in lithium primary cell having a lifetime of several years. The non-volatile memory also stores the current setting of the equipment when switching-off and restores it when switching-on again.

Where required by the authorities transmitter frequencies can be preprogrammed into a PROM having a capacity of 960 frequencies. Transmitter keying can then only take place on the authorized frequencies. The keyboard permits recall of all the preprogrammed frequencies. The receiver can be tuned in 10 Hz, 100 Hz or 1 kHz steps at the choice of the operator. 5 W audio output is available to the built-in loudspeaker or to external speakers. A squelch circuit is optionally available.

The standard equipment contains the two-tone radiotelephone alarm signal generator and single key selection of 2182 kHz.

The CONTROL UNIT provides connection facilities for handset, headphones, extension speaker, morse-key and telex-equipment. 600 ohms AF input and output terminals are provided with Line Transformers as optional extras.

The CONTROL UNIT is housed in a Noryl (PPO) cabinet suitable for tabletop or bulkhead mounting. The front panel can be tilted for convenient operation when the unit is mounted vertically as well as horizontally.

The TRANSCEIVER UNIT contains all receiver and transmitter RF circuitry. The receiver and exciter signal paths are integrated on a common printed circuit board and shares a fast switching synthesizer. All frequencies are fully synthesized and derived from a Master Oscillator. The Master Oscillator is available in different stability versions. These boards are contained in screened compartments of the door of the unit. The door itself is made in moulded Noryl (PPO).

The fully protected solid state 250 W power amplifier is cooled by natural convection. It matches a 50 ohms antenna system but is normally used in connection with the Antenna Tuning Unit matching the transmitter to wire or whip antennas.

In the standard version the transmitter covers the marine bands between 1.6 and 30 MHz but PA-filters are available which in addition give coverage of the 500 kHz marine band or give continuous coverage of the frequency range 1.6 to 30 MHz.

A high efficiency switched mode power supply ensures optimum output power at low power consumption and covers a supply voltage range from 10.8 to 41.6 Volts. The nylon-coated steel cabinet can be tabletop or bulkhead mounted by means of rugged nylon-coated cast brackets.

The fast tuning, microprocessor controlled ANTENNA TUNING UNIT is based on high voltage, high current HF reed-relays. It tunes automatically to all antennas between 7 and 18 meters length and requires no presetting at the installation. Tuning is performed in 0.2 to 1.5 sec.

An optionally available Antenna Relay Board contains a simplex relay system, a dummy load and a grounding relay connecting the antenna to ground when the equipment is switched-off. The simplex antenna relay system is fast enough to permit ARQ-telex on one antenna.

The ATU cabinet is made in Lexan (Polycarbonat).

The AC POWER SUPPLY UNIT accepts nominal input voltages of 110/120/220/240 V, 50-60 Hz. A built-in switch permits manual switch-over to battery operation.

BASIC VERSIONS

- In common : 250 Watt P.E.P. Power Amplifier.
Simplex/Semi-duplex operation 1.6-30 MHz.
- TRP 8250S : Marine SSB Radiotelephone.
960 preprogrammable frequencies in Marine Bands.
- TRP 8251S : Marine SSB Radiotelephone.
Free frequency selection Marine Bands.
- TRP 8252S : Marine SSB Radiotelephone.
Free frequency selection Marine Bands.
CW and MCW facilities.
- TRP 8253S : Marine SSB Radiotelephone.
Free frequency selection all bands.
- TRP 8254S : General Purpose SSB Radiotelephone.
Free frequency selection all bands.
- TRP 8255S : General Purpose SSB Radiotelephone.
Free frequency selection all bands.
CW and MCW facilities.
- TRP 8256S : General Purpose SSB Radiotelephone.
Free frequency selection all bands.
As type TRP 8254S, but simplified keyboard.
- TRP 8257S : Marine SSB Radiotelephone.
Free frequency selection all bands.
CW and MCW facilities.
- TRP 8258S : Marine SSB Radiotelephone.
Free frequency selection all bands.
Automatic reduction of power below
4 MHz FCC version.