

# Technical Specifications



## TRP 1250

The 250 W MF/HF Radiotelephone with Telex, DSC and DSC Watch Receiver for GMDSS MF and MF/HF installations

### TECHNICAL SPECIFICATIONS (typical)

#### GENERAL

Complies with the relevant IMO performance standards, the ITU Radio Regulations, the relevant ITU-R recommendations and meets the performance specifications of ETSI.

**Frequency Range:**  
1.6 to 30 MHz.

**Frequency Stability:**  
0.35 ppm.

**Operating Modes:**  
Simplex and semi-duplex SSB Telephony, AM Telephony, Telex and DSC.

**Supply Voltage:**  
24 V DC  
With built-in AC Power Supply:  
110-120/220-240 V AC (internal switch),  
50/60 Hz. Automatic change-over to DC in the absence of AC supply.

**Supply Voltage Range:**  
DC: 21.6 V to 31.2 V. Power reduction below 26 V.  
AC: +/- 10 %.

**Operating Temperature Range:**  
-20 deg. C to +55 deg. C.

### RECEIVER CHARACTERISTICS

**Frequency Range:**  
100 kHz to 30 MHz.

**Antenna Impedance:**  
50 ohm. Automatically matched by the antenna tuning unit.

**Sensitivity:**  
Antenna input for 10 dB SINAD, 50 ohm antenna.  
SSB Telephony: 0.6 µV,  
AM Telephony: 4 µV,  
Telex: 0.25 µV.

**Audio Output Power:**  
5 W with less than 10% distortion.

### TRANSMITTER CHARACTERISTICS

**Output Power:**  
250 W PEP +/- 1.4 dB into 50 ohm, voice,

DSC or ARQ telex,  
150 W +/- 1.4 dB into 50 ohm FEC telex,  
AC supply or min. 26 V DC.

**Single Tone Max. Power:**  
250 W +/- 1.4 dB into 50 ohm for a duty cycle less than 55% and modulation rate greater than 3 baud. Reduction to 100 W when continuously keyed during 1 minute. Automatic power recovery after 1 minute.

**Power Reduction:**  
Medium: 60 W  
Low: approx. 10 W

**Frequency Range:**  
ITU marine bands / 1605 kHz to 30 MHz.

### DSC-TELEX MODEM CHARACTERISTICS

**Protocols:**  
DSC: ITU-R M.493-7, M.541-6, and M.1082.  
Telex: ITU-R M.625-2 (including M.476-4), M.490, M.491-1, and M.492-5.

**Modes of Operation:**  
Continuous DSC reception in combination with DSC or NBDP telex in ARQ, FEC and SELFEC modes.

**Ship's Identity:**  
DSC: 9-digit identity number.  
Telex: 5- and/or 9-digit identity numbers.

**Interfaces:**  
*Alarm:* DSC distress alarm interface.  
*NMEA:* NMEA 0183 interface for GPS equipment.  
*COM:* PC interface for SCANCOMM telex control. RS-232, baud rate 9600 bps.  
*Line, Key:* Transceiver AF line input/output and external key interface. - 10 to + 10 dBm, 600 ohms.  
*AUX Alarm 2:* Telex and non-distress/urgency DSC alarm output.

### DSC WATCH RECEIVER CHARACTERISTICS

**Frequency Range:**  
Single channel: 2187.5 kHz.  
Scanning: 100 kHz to 30 MHz.

**Antenna Impedance:**  
50 ohm.

**Input Protection:**  
30 V RMS (EMF).

### BATTERY CHARGER (Built-in)

**Charger Type:**  
Automatic, with float charging.  
IE characteristic.

**Nominal Battery Capacity:**  
40 - 200 Ah.

**Nominal Charging Time:**  
Max. 10 hours to 80% capacity (receive condition, 200 Ah battery).

**Float Charge Voltage:**  
Adjustable 26.8 - 28.8 V to voltage specified by battery manufacturer.

**Main Charge Current:**  
Min. 20 A (receive condition).

**Battery Alarm Output:**  
Make/break relay contacts 0.5 A 32 V.  
Alarm in case of  
- Battery voltage too low (<23.4 V).  
- Battery voltage too high (adjustable 27-32 V).

**AC Mains Alarm Output:**  
Make/break relay contacts 0.5 A 32 V.  
Alarm in case of AC supply failure.

### ANTENNA UNIT

**Frequency Range:**  
1.6 - 30 MHz.

**Antenna Requirements:**  
7 - 18 m wire and/or whip antenna.

**Antenna Tuning:**  
Fully automatic with no pre-setting.

**Tuning Speed:**  
0.1 - 0.5 s.

**Power Capability:**  
250 W PEP.

## TRP 1500

The 500 W MF/HF Radiotelephone with Telex, DSC and DSC Watch Receiver for GMDSS MF and MF/HF installations

### TECHNICAL SPECIFICATIONS (typical)

**GENERAL**  
Complies with the relevant IMO performance standards, the ITU Radio Regulations, the relevant ITU-R recommendations and meets the performance specifications of ETSI.

**Frequency Range:**  
1.6 to 30 MHz.

**Frequency Stability:**  
0.35 ppm.

**Operating Modes:**  
Simplex and semi-duplex SSB Telephony, AM Telephony, Telex and DSC.

**Supply Voltage:**  
12/24/32 VDC

**Supply Voltage Range:**  
DC: 10.8 V to 41.6 V. Power reduction below 13 V.

**Operating Temperature Range:**  
-20 deg. C to +55 deg. C.

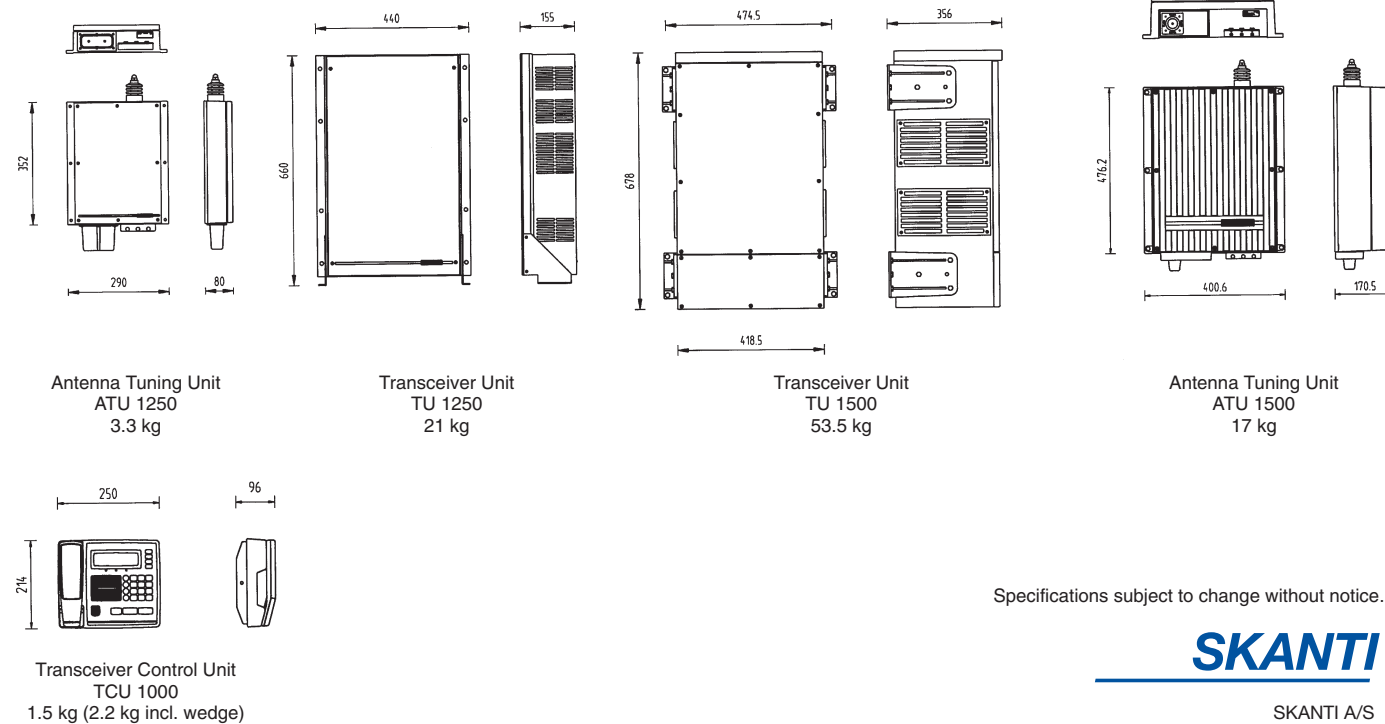
### RECEIVER CHARACTERISTICS

**Frequency Range:**  
100 kHz to 30 MHz.

**Antenna Impedance:**  
50 ohm. Automatically matched by the antenna tuning unit.

**Sensitivity:**  
Antenna input for 10 dB SINAD, 50 ohm antenna.  
SSB Telephony: 0.6 µV,  
AM Telephony: 4 µV,  
Telex: 0.25 µV.

### DIMENSIONS AND WEIGHT



Dimensions in mm

**Audio Output Power:**  
5 W with less than 10% distortion.

### TRANSMITTER CHARACTERISTICS

**Output Power:**  
500 W PEP +/- 1.4 dB into 50 ohm

**Single Tone Max. Power:**  
500 W +/- 1.4 dB into 50 ohm for a duty cycle less than 55% and modulation rate greater than 3 baud. Reduction to 400 W after continuously keyed during 1 minute. Automatic power recovery after 1 minute.

**Power Reduction:**  
Medium: 125 W  
Low: approx. 20 W

**Frequency Range:**  
ITU marine bands /  
1605 kHz to 30 MHz.

**DSC-TELEX MODEM CHARACTERISTICS AND DSC WATCH RECEIVER CHARACTERISTICS**  
(The same as for TRP 1250)

### ANTENNA UNIT

**Frequency Range:**  
1.605 MHz - 30 MHz.

**Antenna Requirements:**  
7 - 18 m wire and/or whip antenna.

**Antenna Tuning:**  
Fully automatic with no pre-setting.

**Tuning Speed:**  
0.5 - 2 s.

**Power Handling Capability:**  
500 W PEP, voice or ARQ radiotelex.  
400 W single tone.

Specifications subject to change without notice.

**SKANTI**

SKANTI A/S  
Lautrupvang 4 A  
DK-2750 Ballerup, Denmark  
Phone: +45 44 74 84 00  
Fax: +45 44 74 84 01  
Telex: 37292 skanti dk  
E-mail: skanti@skanti.dk  
http://www.skanti.dk

# SKANTI TRP 1250/1500

## 250/500 Watt MF/HF Radio Communication Systems for GMDSS



Printed in Denmark - DanPost Gørh, Skarpnag  
0-0-34608/034608 98.05 ProMark

**SKANTI**



# SKANTI TRP 1250/1500



The SKANTI TRP 1250 and TRP 1500 belong to a new generation of highly integrated MF/HF radio communication systems for GMDSS. Both systems comply with the latest requirements within maritime MF/HF communication.

## General Description

TRP 1250 and TRP 1500 are general purpose MF/HF SSB transceivers designed for maritime applications covering the frequency range 1.6-30 MHz.

The standard version offers simplex and semiduplex radiotelephone communication with the built-in DSC and Radiotelex fulfilling the GMDSS requirements including the recommendations and specifications of the IMO and ETSI, as well as relevant national specifications including all relevant CE-marking standards.

## 4-Unit Concept

The full GMDSS MF/HF functionality of the TRP 1250 / TRP 1500 is obtained by only four main units:

- The compact Transceiver Control Unit (TCU) with integrated DSC operation
- The 250/500 Watt Transceiver Unit (TU) with integrated Radiotelex and DSC modem and DSC watch receiver
- The ruggedized weather-proof automatic Antenna Tuning Unit (ATU).
- The simple printer/keyboard GMDSS telex system.

## Unique Integration

Integration is the key word of this system which is proven by:

- Integration of the combined DSC and Radiotelex modem in the compact Transceiver Unit
- Integration of the 1-channel or 6-channel DSC watch receiver in the Transceiver Unit
- Combined Transceiver Control Unit for operating of both radio and DSC

## System Overview TRP 1250

- A 250 Watt P.E.P. MF/HF radio transceiver with a frequency range of 1.6-30 MHz with a ruggedized fast-tuning automatic antenna tuner.
- TCU 1000 control unit for MF/HF and DSC operation.
- Integrated DSC/TELEX modem for GMDSS operation in sea areas A2/A3/A4.
- Integrated AC power supply with automatic battery charger.

- Radiotelex operation by keyboard and printer only - no PC or VDU required
- In the TRP 1250 the battery charger function is included in the built-in AC Power Supply

The integration of all functions into a few units means less interconnection wiring and thus fast and flexible installation.

## Easy Operation

Easy operation is one of the key features of the TRP 1250/1500 system. This has been achieved by making the MF/HF radio and DSC operation similar to that of the associated SKANTI VHF 1000 DSC. Operation of the TRP 1250 / TRP 1500 is very easy with guided station/channel operation and simple radiotelex operation in connection with DSC.

## User-friendly Transceiver Control Unit

The Transceiver Control Unit TCU 1000 contains all receiver and transmitter operating controls as well as full MF/HF DSC operation. It is fully push-button controlled by means of a splash-proof keyboard with tactile feed-back. The LCD-display, which

## System Overview TRP 1500

- A 500 Watt P.E.P. MF/HF radio transceiver with a frequency range of 1.6-30 MHz with a ruggedized fast-tuning automatic antenna tuner.
- TCU 1000 control unit for MF/HF and DSC operation.
- Integrated DSC/TELEX modem for GMDSS operation in sea areas A2/A3/A4.

fulfils the 160 characters requirement, shows several pieces of information including receive and transmit frequencies and the mode of operation. Back-light with dimmer function is included for both LCD-display and keyboard to ease operation in any light condition. A station list with coast station names and their calling frequencies has been pre-programmed in the TCU, securing the optimum user-friendliness.

Two Control Units are easily connected to the same transceiver unit increasing the flexibility of the installation and providing an excellent intercom facility.

## The Transceiver Unit - TU 1250/TU 1500

The Transceiver Unit contains a 250 Watt / 500 Watt MF/HF simplex/semiduplex transceiver for voice, DSC and radiotelex operation. A combined DSC and Radiotelex modem and a DSC watch receiver are included in the Transceiver Unit. The watch receiver may be either a 2187.5 kHz single-channel receiver or a 6-channel scanning receiver dependent on whether the equipment is ment for GMDSS MF or GMDSS MF/HF installation (sea area A2 or A3).



## TRP 1250/TRP 1500 Features

- Integrated communication system ideal for simplified GMDSS installations
- Few interconnection cables and thus flexible and fast installation
- Easy operation of radio and DSC from one control unit
- Simple Radiotelex operation by means of keyboard and printer only
- In the TRP 1250 a battery charger function is included in the built-in AC Power Supply

# SKANTI TRP 1250/1500



ATU 1250



ATU 1500



TU 1250



TU 1500

The Transceiver Unit contains all receiver and transmitter circuitries and all connections for external equipment.

In the standard version the transmitter covers the marine bands between 1.6 and 30 MHz, but an optional PA-filter is available, which gives continuous coverage of the frequency range 1.6 to 30 MHz. The built-in test facilities and easy-to-replace module design of the Transceiver Unit simplifies the service concept.

In the TRP 1250 Transceiver Unit a built-in combined AC power supply and automatic battery charger emphasizes the compact and space-saving design.

## Built-in AC Power Supply/ Charger in the TRP 1250 Transceiver Unit

The built-in AC power supply/charger with a capacity of 690 Watt continuous operation and 24 Amp, respectively, is more than enough to supply the MF/HF radiotelephone with fully integrated DSC and telex functionality, and one VHF with DSC.

## The Antenna Tuning Unit - ATU 1250 / ATU 1500

The ATU 1500 is a ruggedized, heavy-duty and weather-proof Antenna Tuning Unit made of die-cast aluminum constructed for the load of 500 watt P.E.P./400 watt continuous. Furthermore it is constructed to stand up to the harsh outdoor environment in which it has to operate for years without maintenance. The ATU 1250 is a small but very efficient 250 watt automatic tuner, which has been designed for outdoor installation in the rough marine environment. For both types of ATU the white colour secures optimum thermal emission/absorption ratio.

Both antenna tuners are microprocessor controlled, tune automatically to all antennas between 7 and 18 metres and require no pre-setting at the installation. The typical tune time is less than 0.5 second.

## Telex

A new unique simple SKANTI GMDSS telex system has been implemented in the transceiver, which means that only a printer and a keyboard is needed in order to meet the NBDP requirement.

This telex system is operated directly from the keyboard with the printer acting as telex "monitor".

