

5. TECHNICAL DATA

Versions complying with the SOLAS 74 convention and the ITU Radio Regulations are available, meeting one or more of the specifications: CEPT, MPT, FCC, DOC and FT2.

GENERAL

Frequency Generation: True digital frequency synthesis.

Frequency Selection: By common keyboard
Single key selection of 2182 kHz
(TRP 8250S/8251S/8252S/8253S)
76 user-programmable frequency pairs.
Scanning facilities (may be disabled)
Remote control (optional)

Frequency Presentation: Separate LED displays for receive and transmit frequencies.

Frequency Stability: 1.5 ppm
0.8 ppm (optional)
0.4 ppm (optional)

Operating modes: Semiduplex and simplex

USB: J3E upper sideband, suppressed carrier
R3E: Upper sideband, reduced carrier
AM: H3E upper sideband, full carrier
LSB: J3E lower sideband, suppressed carrier (optional)
CW: A1A morse telegraphy
(TRP 8252S/8255S)
MCW: H2A modulated morse telegraphy
(TRP 8252S/8255S)
TELEX: F1B with center audio frequency selectable between 1500 and 2500 Hz in 100 Hz steps (optional)

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

Full Performance Temperature Range: 0 deg. C to +40 deg. C

RECEIVER CHARACTERISTICS

Frequency Range: 100 kHz to 30 MHz
(10 kHz to 100 kHz with reduced performance)

Frequency resolution: 100 Hz by numerical frequency keyboard entry. A search/fine tuning facility is provided with selectable increment steps of 10 Hz, 100 Hz or 1 kHz. In addition a user-programmed step size may be selected.

Antenna Impedance: Below 4 MHz: 10 ohm in series with 250 pF or 50 ohm (std.) internally selectable.
4 MHz to 30 MHz: 50 ohm

Input Protection: 30 V EMF for up to 15 min.

IF Selectivity: SSB: 350 Hz to 2.7 kHz

AM: +/- 2.7 kHz or
+/- 4 kHz (optional)

CW/MCW
(TRP 8252S/8255S):

Wide: +/- 2.7 kHz or
+/- 4 kHz (optional)

Inter: +/- 1.2 kHz or
+/- 2.7 kHz (optional)

Narrow: +/- 250 Hz or
+/- 500 Hz (optional)

Very
Narrow: +/- 150 Hz (optional)

TELEX
(optional):

+/- 150 Hz or
+/- 250 Hz or
+/- 400 Hz

Sensitivity: Max. antenna input (EMF) for 10 dB SINAD

SSB
High impedance antenna:
1.6 - 4 MHz: 1.2 uV
50 ohm antenna:
1.6 - 30 MHz: 0.8 uV

AM
High impedance antenna:
100 kHz - 400 kHz: 60 uV
400 kHz - 1.6 MHz: 20 uV
1.6 MHz - 4 MHz: 7 uV

50 ohm antenna:
100 kHz - 400 kHz: 7 uV
400 kHz - 30 MHz: 5 uV

Sensitivity: (continued)	<p>CW (+/- 500 Hz) High impedance antenna: 100 kHz - 400 kHz: 6.5 uV 400 kHz - 4 MHz: 2 uV</p> <p>50 ohm antenna: 100 kHz - 30 MHz: 0.6 uV</p> <p>When RF-AMP is selected, the sensitivity is increased by 5 dB.</p>
Intermodulation: (out-of-band)	<p>94 dBuV per signal more than 30 kHz offset from receiver frequency produces less than equivalent input signal of 30 dBuV. (50 ohm antenna).</p>
Cross modulation:	<p>Unwanted signal of 105 dBuV/30 % - 400 Hz more than 20 kHz offset from receiver frequency, produces cross modulation less than -30 dB relative to a wanted signal of 60 dBuV/SSB (50 ohm antenna).</p>
Blocking:	<p>More than 80 dB to cause a 3 dB change in output power when wanted signal gives 20 dB SINAD, and the unwanted signal is offset by more than 20 kHz from the receiver frequency.</p>
Image Rejection:	<p>Greater than 80 dB</p>
IF Rejection:	<p>Greater than 80 dB</p>
Spurious Response Rejection:	<p>Greater than 80 dB below 4 MHz Greater than 70 dB above 4 MHz</p>
Internally generated spurious signals:	<p>Less than 5 dB SINAD (SSB)</p>
Spurious Emission:	<p>Less than 20 pW/50 ohm at antenna connector.</p>
RF-Amplifier:	<p>0 dB or 10 dB</p>
RF-Attenuator:	<p>0 dB or 20 dB</p>

Automatic Gain Control: Static:
 Less than 5 dB change in output for
 100 dB input signal variation from 20
 dB sensitivity level (SSB)

Dynamic:
 70 dB signal change:
 SSB, CW, MCW, TELEX (fast only):
 Attack time: 150 us
 Debounce time: 10ms
 Hold time: Fast: 100 ms
 Slow: 2.5 s
 Decay time: Fast: 400 ms
 Slow: 1.5 s

AM:
 Attack time: 150 ms
 Decay time: 300 ms

BFO (optional): +/- 3 kHz synthesized in 100 Hz steps

Line output: Internally adjustable up to +10 dBm/
 600 ohm.

In-band
 Intermodulation: Less than -50 dB

Audio Output Power: 5 W in 8 ohm to internal and/or
 external loudspeaker.

TRANSMITTER CHARACTERISTICS

Output Power: 250 W PEP +/-1.4 dB from Transceiver
 Unit into 50 ohms.
 Power Reduction:
 Medium: approx. 60 W PEP
 Low: approx. 10 W PEP
 Single-tone max. Power:
 250 W PEP for keying duty-cycle less
 than 55% and modulation rates greater
 than 3 baud.
 3 dB power reduction when continuous-
 ly keyed during 1 min. Automatic po-
 wer recovery when muted during 2 min.

Transmitter
 Frequencies: TRP 8250S:
 Up to 960 programmable channels,
 freely distributed in the ranges:
 1606.5 to 4800 kHz
 6200 to 8950 kHz
 12230 to 17650 kHz
 18780 to 27100 kHz

TRP 8251S/8252S:
 Free frequency selection in 100 Hz
 steps in above ranges.

TRP 8253S/8254S/8255S:
Free or programmable frequency selection in the range:
1606.5 kHz to 30 MHz.

Spurious Emissions: TRP 8250S/8251S/8252S:
Less than -43 dB/PEP

TRP 8253S/8254S/8255S:
Less than -62 dB/PEP

Alarm Generator: A two-tone alarm generator is incorporated (TRP 8250S/8251S/8252S).

ANTENNA_TUNING_UNIT

Frequency Range: 1.6 - 30 MHz

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

Antenna Tuning: Fully automatic

Tuning time: 0.2 - 1.5 sec

Input Impedance after tuning: 50 ohm. SWR \leq 1.4

Manual setting possible for 2182 kHz

Power Handling Capability: 250 W PEP
125 W Average

POWER_REQUIREMENTS

Supply Voltage: 12-24-32 V DC (-10/+30%)
(no presetting)
Connection will not earth Supply Battery.
110/120/220/240 V AC (optional external Power Supply Unit, type P 8250)

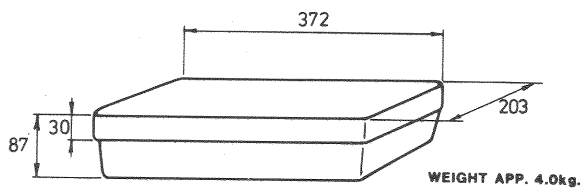
Power Consumption (approx.):

Receive only:	50 W
J3E unmodulated:	100 W
H3E unmodulated:	360 W
H3E alarm:	420 W
CW keyed:	640 W
MCW keyed:	420 W
ARQ-telex:	330 W

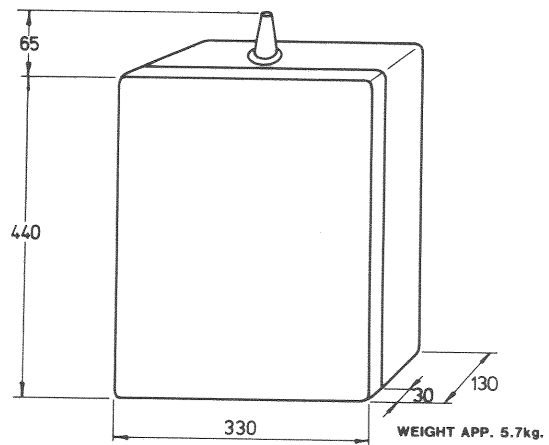
DIMENSIONS AND WEIGHTS

Control Unit:	Width:	372 mm
	Height:	87 mm
	Depth:	203 mm
	Weight:	4 kg, approx.
Transceiver Unit:	Width:	422 mm (500 mm incl mounting brackets)
	Height:	368 mm
	Depth:	280 mm
	Weight:	26 kg, approx.
Antenna Tuning Unit:	Width:	330 mm
	Height:	440 mm (505 mm incl anten- na horn)
	Depth:	130 mm
	Weight:	5.7 kg, approx.
AC Power Supply Unit (optional):	Width:	241 mm
	Height:	367 mm (440 mm incl attachment rails)
	Depth:	101 mm (121 mm incl attachment rails)
	Weight:	17 kg, approx.

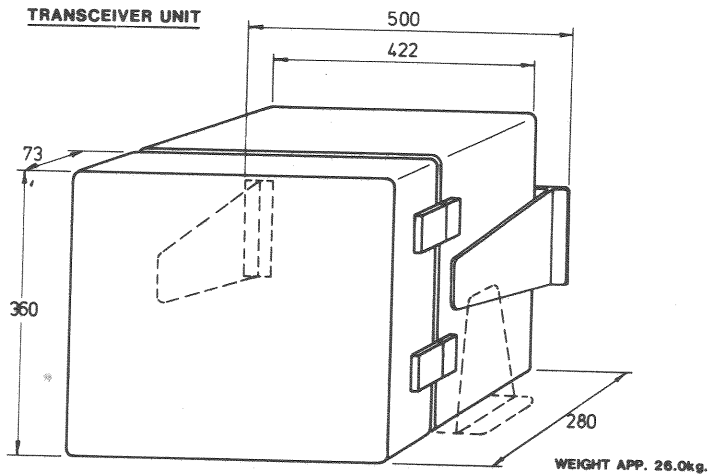
CONTROL UNIT



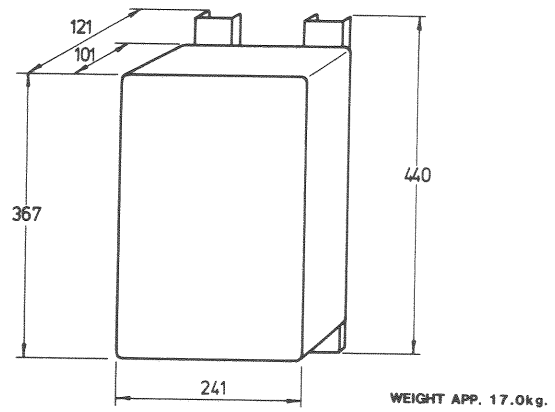
ANTENNA TUNING UNIT



TRANSCEIVER UNIT



AC POWER SUPPLY UNIT



DIMENSIONS IN mm