



Fig. 1.1

Receiver R 8001 shown with units attached to each other.

2. TECHNICAL DATA

The R8001 Marine Main Communications Receiver complies with the CEPT Performance Specification for Maritime Mobile Main Receivers. It fulfils the SOLAS regulations for main and reserve receivers as well as the national requirements of most countries.

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

Frequency Generation: True digital frequency synthesis.

Frequency Selection: Flywheel tuning knob.
Direct keyboard entry.
Recall of 399 user-programmable channels.
Recall of ITU coast station frequencies.
Automatic scanning.
Remote control.

Frequency Resolution: 10 Hz.

Frequency Presentation: Yellow LED display.

Frequency Stability: 1.5 ppm, 0 to +40 deg.C.
0.8 ppm, -20 to +40 deg.C. (optional)
0.4 ppm, 0 to +40 deg.C. (optional)

Operating Modes: USB (upper sideband J3E, R3E, H3E)
LSB (lower sideband J3E, R3E, H3E)
AM (double sideband A3E, H3E)
TELEX (F1B, J2B, with external AFSK demodulator)
CW (A1A)
MCW (A2A, H2A)

Antenna Impedance: 50 ohms.
Optional below 4 MHz: High Impedance, 10 ohm+250 pF (internally selectable).

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

IF selectivity: SSB: 350 Hz to 2700 Hz
Wide: +/- 2700 Hz
Intermediate: +/- 1200 Hz
Narrow: +/- 250 Hz
PBS (Pass Band Shift) facility in USB and LSB modes using the BFO keys.

Sensitivity: Max. antenna input (EMF) for 10 dB SINAD, 50 ohm antenna:

SSB (350-2700 Hz): 0.8 uV
AM (+/- 2700 Hz): 5 uV
CW (+/- 250 Hz): 0.45 uV
When RF-AMP is selected, the sensitivity is increased by approx. 6 dB.

3 or 2 IP = -13dBm + 35 = +22dBm (AGC or operative!)

100mV EMP = 2 x 50mV = 2 x 1/2 13dBm

- Intermodulation: Two 100 dBuV signals 30 kHz/60 kHz off tune produce less output than an equivalent input signal of 30 dBuV. = -83dBm
- Cross Modulation: An unwanted signal 118 dBuV/30%-400 Hz more than 20 kHz off tune produces cross modulation below -30 dB relative to a wanted signal of 60 dBuV (SSB).
- Blocking:
 - With a wanted signal giving 20 dB SINAD, an unwanted signal 20 kHz off tune 80 dB above the wanted signal level will affect the output level by less than 3 dB or cause a reduction in SINAD of less than 6 dB (SSB).
 - With a wanted signal 60 dBuV, an unwanted signal 20 kHz off tune 110 dBuV will affect the output level by less than 3 dB or cause a reduction of SINAD of less than 6 dB (SSB).
- Image Rejection: Greater than 80 dB.
- IF Rejection: Greater than 90 dB.
- Spurious Response Rejection:
 - Greater than 80 dB below 4 MHz.
 - Greater than 70 dB above 4 MHz.
- Internally Generated Spurious Signals: Less than 5 dB SINAD (SSB).
- Spurious Emissions: Less than 25 pW/50 ohm at antenna connector.
- RF Amplifier: 0 dB or 10 dB.
- RF Attenuator: 0 dB or 20 dB.
- Automatic Gain Control: Less than 5 dB change in output for 100 dB input signal variation from 20 dB sensitivity level (SSB).
 - SSB, CW, MCW, TELEX:
 - Attack time: 2 ms.
 - Recovery time, FAST: 0.2 s.
 - SLOW: 2 s.
 - AM:
 - Attack time: 150 ms.
 - Decay time: 300 ms.
- BFO/BPS Range: +/- 3 kHz synthesized in 100 Hz steps.
- Line Output: Internally adjustable up to +10 dBm/600 ohm, balanced.
- Audio Output Power: 0.5 W in internal loudspeaker and/or 4 W in 8 ohm external loudspeaker.

Audio Squelch: Speech Operated.

Power Supply: 110-120/220-240 V AC 50-60 Hz and 24 V DC with automatic changeover to DC in the absence of AC mains supply.

Supply Voltage Variations: DC: -10% to +30%.
AC: +/- 10%. AC Frequency: +/- 5%.

Consumption: 24 V battery: approx. 40 W.
AC mains: approx. 50 VA.

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

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

Environmental Specifications: Complies with CEPT and MPT 1204.

Mechanical Characteristics: Height: 132.5 mm
Width: 432 mm (482 mm incl. brackets for 19" rack mounting)
Depth: 553 mm (incl. handles)
Depth into rack: 506 mm (incl. rear side clearance)
Depth, Control Unit only: 135 mm (incl. handles)
Depth, Receiver Unit only: 418 mm
Weight: approx. 16 kg