

30 W UHF TRANSCEIVER

The EMRY 1410 unit is a UHF ground transceiver derived from the TELERAD 900 series technology which already proved its utmost reliability.

Especially designed for voice communication in control towers, control shelters or ships, the EMRY 1410 is provided with a receiver guard channel scan mode.

The frequency range extends from 225 to 400 MHz UHF in 25 kHz / 12.5 kHz channel spacing.



For transmission, the operator can, at any time, select one of two output levels : nominal power or reduced power (preset in 0 to -7 dB range).

Up to 99 preset channels can be programmed by the operator, including for each channel the output power (high or low) and the squelch threshold level.

A comprehensive front panel allows the equipment to be directly operated at a control position. In addition to microphone and headphones connectors, speaker and radio status indicators, the operator's control interface is composed of a keyboard and a 4-lines / 20-characters-per-line LCD, operated in "menus" oriented mode.

In addition, the transceiver is provided with a serial data link and the required input/output signals for total remote control.

The rear panel has separate RF connectors for transmitter and receiver section, and also a location for a coaxial relay, allowing the use of one common T/R antenna, or separate T and R antennas according the installation.

The transceiver, is 19" wide and 3U high, and can be supplied in rack mounting or desk version.

Two power supplies are available : 24 V DC voltage and 85-265 V AC mains voltage (only for EMRY 1410 A).

GENERAL CHARACTERISTICS

- **Frequency range :**
225-400 MHz
- **Channel spacing :**
25 kHz (12.5 kHz)
- **Preset channels :**
99 preset channels with frequency, offset frequency, bandwidth, power level, squelch threshold level parameters.
- **Frequency accuracy :**
1 ppm
- **Remote control :**
By series link RS 485, under JBUS protocol
3 wires parallel access (channels 1 to 8)
- **Radio Tx inhibit :**
Locking of a loop to the ground to forbid transmission
- **Power supply (EMRY 1410 A) :**
 - a.c. : 85-265 V, 47-63 Hz
 - d.c. : 21-31 V (rated 24 V)
- **Power supply (EMRY 1410 B) :**
 - d.c. : 21-31 V (rated 24 V)

TRANSMITTER SECTION

- **Offset carrier transmission (channels at 25 kHz) :**
According to annex of ICAO, compatible 2, 3 or 4 carriers
- **Output power :**
 - Rated power on 50 Ω : > 30 W
 - Reduced power : adjustable down to 6 W
 - Reduced power on load mismatch : Normal operation up to VSWR = 2. Gradual power reduction for VSWR > 2. No damage on infinite VSWR
- **Modulation :**
 - Modulation type : A3E (voice)
 - Modulation input : 600 Ω balanced line
 - Modulation input sensitivity : adjustable between -30 and 0 dBm for compressor threshold level
 - Modulation rate : > 85 %
 - Variation of the modulation rate : variation < 0.5 dB for a 30 dB step of the input signal above the compression threshold.
 - Modulation limiter : by clipping circuit at about 95%
 - Modulation bandwidth at -3 dB (ref. 1000 Hz): 300-3400 Hz
 - Modulation distortion: < 5 % in 300-3400 Hz frequency range with an input level 10 dB above the compression threshold.
 - Residual modulation : \leq -45 dB (ref. 85% mod. at 1000 Hz)
- **Duty cycle :**
The equipment is designed to operate at rated power up to 50°C with 1/2 transmit/receive ratio (transmit time = 1 mn). For worse operational condition, a reduction of the output power may happen. Two cooling fans allow permanent Tx (2 speeds according temp.).
- **Spurious :**
< -36 dBm for $\Delta F > 100$ kHz
- **Harmonics :**
< -80 dBc
- **Wide band noise :**
< -106 dBm/Hz for $\Delta F > 1$ MHz

RECEIVER SECTION

- **Sensitivity:**
(S+N)/N > 10 dB for a 1.5 μ V signal 30 % modulated at 1000 Hz (CCITT weighting)
- **Selectivity:**
at -6 dB: $\geq \pm 8$ kHz / at -60 dB: $\leq \pm 18.5$ kHz
- **Image rejection:**
 ≥ 80 dB
- **3rd order intermodulation:**
 ≥ 80 dB for 2 signals, 0.5 and 1 MHz apart (ref. 0.5 μ V)
- **Crossmodulation:**
 ≥ 95 dB for an interfering signal 0,5 MHz apart (ref. 1.5 μ V)
- **Intermediate frequency:**
21.4 MHz
- **Local oscillator radiation :**
 ≤ -75 dBm
- **Squelch :**
Adjustable (locally or through remote control) from 1 to 15 μ V
- **Reception AF :**
 - Output line : 600 Ω balanced
 - Line output level : adjustable up to +10 dBm
 - A.G.C. : ≤ 3 dB variation of AF level between 1.5 μ V and 500 mV
 - Audio bandwidth at -4 dB (ref. 1000 Hz) : 300-3400 Hz
 - AF distortion : ≤ 5 % at 1 kHz for 60 % mod.
 - Output power on loudspeaker : 5 W
 - Transmit side tone : Yes. May be disabled.
 - Recorder output : 600 Ω source, 1.55 V emf

CLIMATIC CHARACTERISTICS

- **Operating temperature :**
-20°C to +55°C
- **Humidity :**
95 % at 40°C (without condensation)

MECHANICAL CHARACTERISTICS

- **Dimensions (Length x Height x Depth) :**
483 mm (19") x 132 mm (3 U) x 465 mm

OPTIONS

- Tx/Rx coaxial relay
- Scanning SCAN (10 channels) (ADAP2)
- Accessories : microphone, headset, control unit for remote operation
- Maintenance : measuring panel for maintenance, PCB extension