

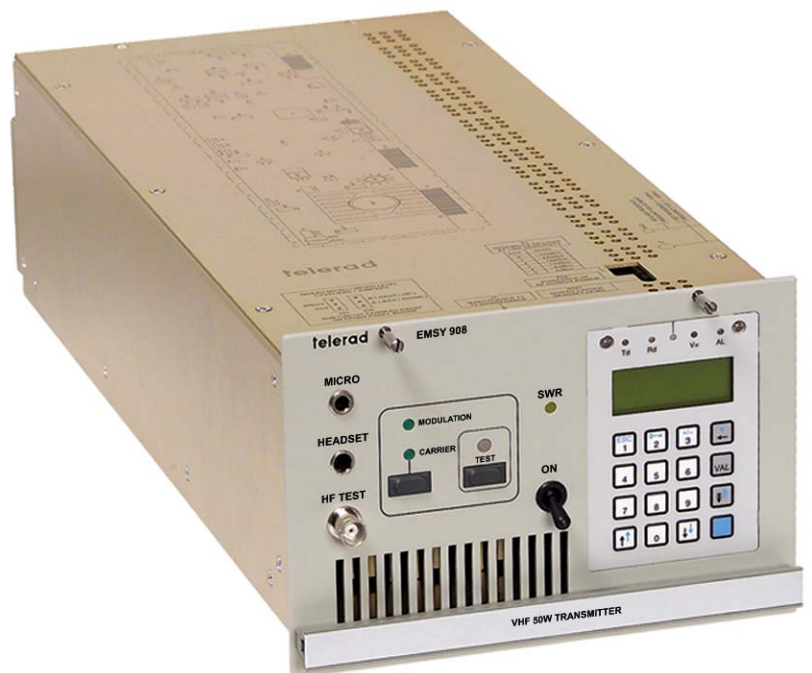
### VHF 50 W TRANSMITTER

The EMSY 908 transmitter, with a nominal carrier power of 50W, is mainly destined to meet the needs of aeronautical radio communications in AM voice mode, in the 118-144 MHz VHF band.

The EMSY 908 transmitter was conceived by fusing the EM900S8 transmitter with the SY908 synthesizer, two very widely distributed sets which in time have proved their excellent reliability.

Entirely synthesized, the EMSY 908 is of a "broadband" conception and operates in the two channel spacing modes of 25 kHz and 8.33 kHz according to annex 10 of the O.C.A.I. It offers the possibility to operate in an offset carrier mode (CLIMAX system with 2,3 or 4 carrier waves).

In addition to the test keys and indicators that are usually encountered on a transmitter, the front panel also consists of a LCD keyboard that constitutes a "man-machine" interface leading to the "menu" for accessing operation, configuration and maintenance functions. Apart from transmission in local use, the transmitter can be operated entirely by a 4 wire remote control with RS485 interface and J-BUS protocol. The remote control operates in the master-slave mode and allows the control/supervision of multiple sets from a same remote control. The operating consoles offer the possibility to operate a radio line having a separate transmitter and receiver.



During transmission, the operator can, at any moment, choose between two power levels: the nominal power or a reduced power preset between 0 and -7 dB of the nominal power.

The user disposes of 99 channels individually programmable in frequency, but also in power level (normal or reduced).

The set, entirely modular, thus allows an easy maintenance by simple replacement of defective module. It can fit into a 3-unit high, standard 19" rack.

In the support frame, the transmitter occupies less than half of the available space, thus allowing the installation of two transmitters in a space that is 3-unit high.

The two-speed, temperature controlled fan of the power amplifier module allows the equipment to work without any major temperature fluctuations thus making it more reliable than ever.

## MAIN CHARACTERISTICS

- A3E amplitude modulation
- Broadband operation without adjustment (118-144MHz)
- Adjustable power between 50 W and 10 W
- Slaving of output power in carrier and/in modulation
- Operation in 25 or 8.33 kHz spacing
- Possible operation in LOCAL or DISTANCE mode
- Integrated test (control of the operation in carrier and modulation)
- Internal protections (voltage, temperature, SWR, regulation and locking of the feedback control)
- Reduced size and totally modular conception
- Integrated ventilation
- Easy maintenance

## ELECTRICAL CHARACTERISTICS

- **Power supply:**
  - Direct voltage: 24 V nominal (21 V to 31 V)
  - Consumption in standby: < 1 A
  - Consumption in transmission (50W-50ohms): < 12 A
  - Typical consumption depending on the output power (SWR = 1 without ventilation):  
5.4 A at 12 W / 6.7 A at 20 W / 8.1 A at 30 W  
9.4 A at 40 W / 10.4 A at 50 W

**NOTE :** The consumption is not dependent on the power supply voltage.

  - Additional consumption during ventilation:  
Approximately 200 mA at 24 V
- **Broadband operation:**  
Without frequency adjustment in the range
- **Frequency range:**  
118-144 MHz
- **Modulation type:**  
A3E (voice mode)
- **Output power (under 24 V=):**  
50 W in nominal value, can be reduced down to 10 W by the user
- **Changeover control from nominal power to reduced power**
- **Power variation in the band:**  
± 0.5 dB
- **Frequency stability from -20°C to +55°C:**  
± 1 ppm
- **Channel spacing:**  
25 or 8.33 kHz
- **CLIMAX mode:**  
2/3/4 carriers according to 10 of the O.A.C.I. annex
- **Modulation:**
  - Modulation ratio: > 85%
  - Distortion: < 5% at 1 kHz (1,5% typical)
  - AF bandpass (channels 25 kHz spaced):  
-3 dB > 300-3400 Hz
  - AF bandpass (channels 8.33 kHz spaced):  
≥ -3 dB at 2500 Hz ; ≤ -40 dB at 3200 Hz
  - Input level on 600 ohms: -30 at +10 dBm
  - Regulation of the modulation level: < 1 dB for an input variation of 30 dB level above compression threshold (Typ. 0.3 dB)
- **Residual modulation:**  
< -45 dB (ref. 80% of modulation at 1000 Hz)
- **Spectrum purity:**
  - Harmonic: < -36 dBc
  - Parasites: < -46 dBc
  - Noise at ± 1% of Fo: < -150 dBc/Hz

EMSY 908

- **Protections, progressive reduction in operating power:**
  - of the SWR > 2 (operation without damage on the infinite SWR),
  - of the temperature above 70°C,
  - of the supply power < 23.5 V (at nominal power).
- **Operation relative to the temperature of the RF amplifier's radiator:**  
Permanent operation (without damage) with a progressive reduction of the power in case of an important increase in temperature
  - at 42°C: ventilation at reduced speed
  - at 60°C: ventilation at normal speed
  - at 70°C: progressive reduction of the power
  - at 85°C: malfunctioning of the equipment
- **Operation relative to the supply voltage:**
  - Overvoltage (> 32.5 V): malfunctioning of the equipment
  - Voltage (< 23.5 V): progressive reduction of the power
  - Undervoltage (< 17.5 V):malfunctioning of the equipment

## CLIMATIC CHARACTERISTICS

- **Climatic conditions:**  
Guaranteed operation between -20°C and +55°C  
95% of relative humidity at 40°C (without condensation)
- **Storage:**  
-40°C to +80°C

## MECHANICAL CHARACTERISTICS

The EMSY 908 transmitter can fit into a bare support frame, type BS 108, with the same dimensions as a standard 19" rack, 3-unit high, "0" side and approximately 430 mm deep.

- **Dimensions of the front panel:**  
192 mm x 129.5 mm
- **Weight:**  
Approximately 5.4 kg

## OPTIONS AND ACCESSORIES

- **Accessories:**  
Support frame for 19" rack, microphone, headset, control unit for remote operation
- **Maintenance:**  
Measuring panel for maintenance, PCB extension