

**TX02-502F**  
**TX02-402F**  
**TX02-302F**



**5kW VHF FM TRANSMITTER**  
**4kW VHF FM TRANSMITTER**  
**3kW VHF FM TRANSMITTER**  
*Compact Line*

## General information

The series belongs to the Medium Power VHF product family of FM Radio Transmitters fully solid state technology air cooled.

The **TX02** medium power family is operating in the Band II or Band I (OIRT) for FM stereo sound broadcasting, with 3 to 5kW output power capability and built-in exciter.

The equipment is fully compliant with the personnel safety requirements as specified in EC 215.

The transmitters have been designed to offer to the customer high performances, high reliability and great simplicity in their operation and maintenance procedures.



*Compact design technology allows 5kW output power with exciter built-in contained in only 19" drawer four rack units*

## Key Features *(referred to 5kW output)*

- **BROADBAND** frequency synthesizer, without any other tuning or alignment.
- **MONOPHONIC & STEREOHONIC** according to the CCIR rec. 450-2 standard.
- **RDS & SCA** subcarriers input capability
- **HI-FI quality** modulated signal, with low residual noise and distortion.
- **AES-EBU digital interface** (Option)
- **RDS encoder** (Option)
- **RF Signal** free from spurious and harmonic signals
- **LD-MOS** devices in order to have wide band, reliability and high efficiency ( $\geq 73\%$ ).
- **Redundant 6x1,2kW** RF power amplifiers modules
- **Redundant 3x3,5kW** independent AC/DC Power Supplies  
(2,5kW still available with one PS failure and 1kW available with two PS failures)
- **Dual Drive** , **1+1** and **N+1** redundancy configuration capability
- **High Tolerance** mains voltage ( $\pm 15\%$ ) is accepted by the transmitter
- **Mains Protection System** by means of Surge Arrester System (option)
- **Remote Operation** compliant to IEC 864-1 rule (all option are available)
- **Control System** with full micro controlled adjustment, including fault finding
- **Protection and Control System**
  - Block against emission on spurious frequencies
  - Reflected power
  - Modulation limiter
- **High Capacity Air cooling system** fully integrated
- **Ultra Compact design** only 4 Rack Units (19") and 30kg weigh

## Technical Specifications

### GENERAL

• Frequency range .....	87.5 to 108 MHz
• Class of emission .....	F3E (Monophonic) ; F8E (Stereophonic)
• Stereo system .....	According to C.C.I.R. rec.450-2
• Frequency deviation .....	±75 kHz nominal
• Frequency control .....	Built-in Frequency Synthesiser
• Resolution .....	10 kHz step programmable
• Frequency stability .....	± 500 Hz / 6 months
• Output power .....	3 4 or 5 kW (±0.5dB) dependent of version
• Harmonic emission .....	≤ 70 dBc
• Spurious emission .....	≤ 90 dBc
• Residual AM noise level .....	≤ 60 dB
• Synchronous AM .....	≤ 50 dB
• RF output impedance .....	50 Ω (7/8" EIA unflanged connector)

### ENVIRONMENTAL

• Operating temperature .....	0°C to +45°C (others on request)
• Relative humidity .....	20% to 90% non-condensing
• Altitude .....	up to 2500 m.

### PROGRAM INPUT

• Mono/Stereo .....	L & R program input
• Connector .....	XLR type
• Impedance .....	600Ω balanced (others selectable)
• Level .....	-4 to +12dBm
• Preemphasis .....	50 or 75µs selectable
• Audio frequency response .....	40 to 15000 ±0.3dB
• 19 kHz suppression .....	≥ 50 dB
• RDS and AUX .....	Subcarrier program input
• Connector .....	BNC
• Impedance .....	≥ 2 kΩ unbalanced
• Frequency range .....	67 to 100 kHz
• Nominal input level .....	-10dBm (±7.5 kHz deviation)

### TRANSMISSION CHARACTERISTICS

#### Mono operation ±75 kHz deviation

• Total harmonic distortion .....	≤ 0.1%
• Intermodulation .....	≤ 60 dB
• Signal to noise unweighted .....	≥ 80 dB
• Signal to noise weighted (CCIR 468-3) .....	≥ 78 dB

#### Stereo operation ±75 kHz deviation

• Total harmonic distortion .....	≤ 0.1%
• Intermodulation .....	≤ 60 dB
• Signal to noise unweighted .....	≥ 75 dB
• Signal to noise weighted (CCIR 468-3) .....	≥ 72 dB
• Crosstalk L & R (40 to 15000 Hz) .....	≥ 50 dB
• 38 kHz subcarrier suppression .....	≥ 50 dB
• Attenuation above 53 kHz .....	≥ 50 dB

## **METERING**

The following parameters can be read on front display

- Forward power (FWD)
- Reflected power (REF)
- DC Supply voltage
- Frequency (active channel)
- Frequency (stored channels 1 to 6)
- Mono and stereo sensitivity (0,25 dB step)
- Programmed output power
- MPX peak modulation
- L & R peak level
- RDS, SCA, Aux, MPX external modulation
- Programmed audio parameters (+L or -L, +R or -R, L on/off, R on/off, Pre-emphasis lin. 50, 75  $\mu$ sec, Limiter on/off, Input Impedance  $Z=10k\Omega / 600\Omega$ )
- Alarm status
- Memory status
- Internal voltage
- Serial Number

## **REMOTE CONTROL**

Parallel interface: start, stop, standby, alarms, status, interlock, recall memory  
WEB interface: TCP/IP Telemetry (option)

## **GENERAL**

Voltage power supply: 3x380 VAC  $\pm 15\%$  ; 3x220 VAC  $\pm 15\%$  (others on request)  
Frequency: 50-60Hz  $\pm 5\%$   
Power consumption: 7,2kW (cooling system included)  
Power factor:  $\geq 0.9$   
Cooling: forced air  
Dimensions: 483 x 674 x 177H mm  
Weight: 30 kg. (5kW model)

## **OPTION**

Digital audio Input: AES-EBU facilities XLR balanced (S/PDIF)  
RDS: RDS simple coder programmable via PC  
OIRT Version: band of frequency 65.80 to 74.00 MHz

**How to Order** (others version on request):

**TX02-302F** – 3kW Transmitter  
**TX02-402F** – 4kW Transmitter  
**TX02-502F** – 5kW Transmitter  
**-D** – AES/EBU Digital I/O Board  
**-R** – RDS Coder Board  
**-W** – Web GUI Interface Board

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