

# TX02-203FC



**20kW VHF FM TRANSMITTER**  
*Single driver configuration*  
*Front Door Air Intake System*

## General information

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

The **TX02** high power family is operating in the Band II or Band I (OIRT) for FM stereo sound broadcasting, with 20kW output power capability with optional dual exciter and 1+1 logic and with advanced control unit , with full remote control capability.

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 amplifier in only 19" drawer four units high with 3 AC/DC switching power supplies and 6 RF block of 1,2kW each*

## Key Features (referred to 20kW 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** last generation in order to have wide band, reliability, and high efficiency.
- **Redundant 4 x 5kW** RF amplifiers modules
- **Dual Drive ; 1+1 ; N+1** Redundancy configuration capability
- **High Tolerance** mains voltage ( $\pm 20 \%$ ) 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 SYSTEMS**
  - Block against emission on spurious frequencies
  - Reflected power
  - Modulation limiter
- **High Capacity Air cooling system** fully integrated
- **Ultra Compact design** up to 20kW in one 19" 42U Rack with 4 Amplifier modules

## 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 .....	20kW
• Harmonic emission .....	≤ 70 dBc
• Spurious emission .....	≤ 90 dBc
• Residual AM noise level .....	≤ 60 dB
• Synchronous AM .....	≤ 50 dB
• RF output impedance .....	50 Ω ( 3-1/8" )

### 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 .....	600 Ohm 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 / -L ; +R / -R ; L / R on/off ; 50 / 75µsec Pre-emphasis ; 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: 30kW (cooling system included)  
Power factor:  $\geq 0.9$   
Cooling: forced air  
Dimensions: 600 x 1100 x 2010h mm  
Weight: 330 kg

## 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):

**TX02-203F-01** – Single Drive, Analog Exciter  
**TX02-203F-02** – Dual Drive, Analog Exciter  
**TX02-203F-03** – Single Drive, Digital Exciter  
**TX02-203F-04** – Dual Drive, Digital Exciter

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