

TX02-103FHR



**10kW VHF FM TRANSMITTER
HIGH REDUNDANCY**
Single driver configuration

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 10kW output power capability with optional dual exciter and 1+1 logic and full remote control capability.

The transmitters have been designed to offer to the customer high performances, high reliability and great simplicity in their operation and maintenance procedures, and at the same time the maximum redundancy in this HR version, using 8x1,5 kW amplifier modules to obtain the nominal power of 10kw.



Compact design technology allows 8 1,5kW output power amplifiers in only 19" rack, with maximum accessibility to the RF part for an easy of site maintenance.

Key Features (referred to 10kW 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 8x1,5kW** RF power amplifier with 2 RF block each
- **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 10kW in one 19" Rack with 8 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	± 500Hz / 6 months ; ±150Hz long term (after aging)
• Output power	≥ 10kW
• Harmonic emission	≤ 70 dBc
• Spurious emission	≤ 90 dBc
• Residual AM noise level	≤ 60 dB
• Synchronous AM	≤ 50 dB
• RF output impedance	50 Ω , 1-5/8" EIA connector
• VSWR max allowed (at full power)	1,2 : 1

ENVIRONMENTAL

• Operating temperature	0°C to +45°C (others on request)
• Relative humidity	20% to 90% non-condensing
• Altitude	up to 3000 m.

PROGRAM INPUT

• Mono/Stereo	L & R program input
• Connector	XLR type
• Impedance	600 Ω 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)
• Digital audio input	AES/EBU facilities XRL balanced (S/PDIF)

TRANSMISSION CHARACTERISTICS

Mono operation ±75 kHz deviation

• Total harmonic distortion + noise	≤ 0.01%
• 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 + noise	≤ 0.01%
• Intermodulation	≤ 60 dB
• Signal to noise unweighted	≥ 78 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: $\leq 14kW$ (cooling system included)
Power factor: ≥ 0.95
Cooling: forced air
Dimensions: 600x1120x 2010h mm
Weight: 380 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):

TX02-103FHR-01 – Single Drive, Analog Exciter
TX02-103FHR-02 – Dual Drive, Analog Exciter
TX02-103FHR-03 – Single Drive, Digital Exciter
TX02-103FHR-04 – Dual Drive, Digital Exciter

Intech S.r.l. : Via B. Pontecorvo 11 (Via Tiburtina Km 18,200) – 00012 Guidonia (RM) – Italy
e-mail: info@intech-srl.com – Tel: +39.0774.379237 / +39.0774.357200 ; Fax: +39.0774.375545