

TX04-303FL
TX04-103FL-D



30 kW TV ANALOGUE TRANSMITTER
10 kW TV (DVB-T/T2) DIGITAL TRANSMITTER
Liquid Cooled

UHF TV TRANSMITTER

General information

This UHF TV transmitter family ranges from the analogue TX04-153A , 15.0 kWpsync (alias the TX04-502D , 5.0 kW rms in DVB-T/T2) down to the Analogue 3.0 kWpsync (or 1.0 kW rms DVB-T/T2) provided by the TX04-302A (alias TX04-102D) , when the same structure is equipped at the minimum level. These equipment belong to the High Power series of TV Transmitters , solid state LDMOS technology, Liquid Cooled.

The transmitter, broadband covering the full UHF Band 4&5 , is designed for operating in a wide range of TV standards , namely the analogue TV (B/G, D/ K, M/N, I, color coding standards SECAM, PAL, NTSC, sound FM mono, IRT dual-sound/stereo and NICAM) and the digital TV standards (DVB-T, DVB-T2, ATSC , ISDBT).



By a compact design and LDMOS technology, a 1.5 kWrms in DTV (4.5 kW psync in Analogue TV) output power is reached for each amplifier module when equipped with 9 pallet amplifiers

UHF	Output Power			
	Analogue		Digital	
Transmitter Model	Vision	Sound	DVB-T/T2/H ; ISDB-T	ATSC
TX04-303	30 kW ps	3,0 kW mono (1500 W ; 300 W dual)		
TX04-153	15 kW ps	1,5 kW mono (750 W ; 150 W dual)		
TX04-103-D			10 kW rms	15 kW rms
TX04-502-D			5,0 kW rms	7,5 kW rms

TX04-xxx Key Features

- **BROADBAND** frequency synthesizer, without any other tuning or alignment.
- **Analog** emission according to the standard.
- **Digital TV standard** available DVB-T, DVB-T2, DVB-H, ISDB-T , ATSC.
- **SFN** capability Suitable for single-frequency networks (SFN) and multi frequency networks (MFN).
- **Digital Adaptive Precorrector** allows high performances and stability without any alignment or manual intervention during maintenance routine.
- **Output Filter** built-in.
- **LD-MOS** technology for reliability and high linearity.
- **Redundancy** , up to 4.5 kW ps RF power amplifier (analogue), 1.5 kW rms (digital).
- **Hot pluggable** RF power amplifiers.
- **Low MTTR**: 10 minutes maximum for any replacement unit.
- **Passive Reserve (1+1); (N+1)** system configuration capability.
- **High Tolerance** to mains voltage fluctuations ($\pm 20\%$) accepted by the transmitter.
- **Remote Operation** compliant to IEC 864-1 rule.
- **Remote monitoring** and control via HTTP interface (Option).
- **Very low acoustic noise** -65 dBA.

Technical Specifications Analogue TV (ATV)

RF

- Frequency range 470 to 862 MHz
- Output power 30 kW peak sync
- Vision/Sound power ratio 10/1 single sound (20/1/0.2 dual sound)
- Vision – Sound amplification Common
- Standards B, G, K, I, M, N
- Modulation class C3F, F3E (Analog)
- Sound transmission FM single-sound; NICAM 728 (option)
- Harmonic emission ≤ 1 mW
- Spurious emission ≤ 1 mW
- Intermodulation products from
- Vision and sound ≤ 60 dB

VISION

- Video input BNC 75 Ω connector
- Nominal input level 1 Vpp \pm 6dB

SOUND

- Nominal input level (\pm 50kHz dev.) -10 to +6 dBm
- Input impedance 600 Ω balanced (or ≥ 5 k Ω)
- Pre-emphasis 50 μ S (75 μ s on request)

TRANSMISSION CHARACTERISTICS

- Sideband spectrum response according to the standard
- Amplitude-frequency response according to the standard

POWER CONSUMPTION

- (cooling system included) ≤ 72 kW, black level (typical)

Technical Specifications Digital TV (DTV)

RF

- Frequency range 470 to 862 MHz
- Output power 10 kW rms
- Modulation COFDM
- Standard DVB-T, DVB-T2, DVB-H
- Carrier Modulation QPSK, 16QAM, 64QAM, 256QAM
- Transmission Mode..... 1k, 2k, 4k, 8k, 8k Extended, 16k, 16k Extended, 32k, 32k Extended
- Harmonic emission ≤ 60 dB without exceed 20 mW
- Spurious emission ≤ 1 mW
- Frequency stability ± 200 Hz / 6 months ; ± 0.2 Hz / day with GPS
- GPS receiver (option)..... 10 MHz, 1V/50 Ω , BNC ; 1 PPS, BNC

INPUT SIGNALS

- Inputs 4 DVB-ASI
- Data format 188 bytes (RS decoder) Packets Mode
- GPS RF signal for receiver (option)

TRANSMISSION CHARACTERISTICS

- Standard coding and modulation according to EN300744, EN 302755, TS102 831, T2MI

DATA QUALITY

- SNR > 37 dB
- MER > 35 dB
- Shoulder attenuation > 38 dB (typ 42dB)
- Out of band emission compliant with spectral mask to ETSI 300744

REMOTE CONTROL

- Parallel interface ≤ IEC standard 864-1
start, stop, standby, alarms, status, interlock
other on request (Full control and management)

POWER CONSUMPTION

- (cooling system included) ≤ 33 kW (typical)

GENERAL (ATV and DTV)

- Voltage power supply 3 x 380 VAC ±15%
3 x 400 VAC ±15%
50 – 60 Hz ± 5%
- Power factor ≥ 0.9
- Cooling liquid cooled
- Acoustic noise ≤ 65 dBa
- Dimensions 602 x 2200 H x 1200 mm ; 300 x 600 x 2200H
cooling rack
- Weight 500 kg approx. TX ; 80 kg cooling rack
- Temperature operating range ≤ 0 to 45°C
- Altitude ≤ up to 2.500 meters (≥ 2.500 m with additional cooling system)

How to Order (others version on request):

UHF TX04-xxx-A – x.x kW Analogue TV (see the Table)

TX04-xxx-D – x.x kWrms Digital TV (see the Table)

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