Broadcast

AXON Series

Analog High Efficiency
FM Stereo Transmitter
Output Power Ranges
30W, 50W, 100W ,150W, 300W, 600W, 1200W

AXON Series Exciter/Transmitter is a Family of FM stereo Exciters/Transmitters that guarantees a superior transmission quality and top performances.
Output power from 30 W to 1200W using High Efficiency last LDMOS technology is housed into an ultra-compact cabinet of only 2U heigh.
is available also in JPN and OIRT frequencies.
AXON can be used as ultra-compact stand alone station, as well as driver in complex high power transmitters and N+1 systems.
For any application AXON is the ultimate solution that meets most demanding customer' requirements and guarantees professional features at affordable price.

- HIGH EFFICIENCY LAST GENERATION LDMOS TECHNOLOGY UP TO 80%
- Very LOW SIGNAL TO NOISE MORE THAN 90 DB v
- Very LOW DISTORTION and HIGH STEREO SEPARATION
- TOTAL SPECTRAL PURITY: > -100 DBC SPURIOUS, > - 84 DBC HARMONICS
- SEVEN SELECTABLE COMPLETE SET-UP: READY FOR USE IN 7+1 SYSTEM
- FULL- RANGE POWER SUPPLY: 90-260 VAC MAINS VOLTAGE
- COMPLIANT WITH ALL THE STANDARD: ETSI – CCIR - FCC.
- DIGITAL STEREO CODER: SUPERIOR STEREO QUALITY
- UP TO 75% LDMOS HIGH EFFICIENCY AMPLIFIERS
- EXTERNAL 10MHz and 1PPS SYNCHRONIZATION FOR USE ON SFN APPLICATIONS
- HIGHEST RF SIGNAL QUALITY
- PERFECT AUDIO FIDELITY
- REMOTE CONTROL BY TCP/IP: WEB + SNMP OF ALL SIGNAL PARAMETERS
- CLEAR CRISTAL AUDIO SOUND
- DYNAMIC RDS ENCODER with TMC Function

TECHNICHAL CHARACTERISTICS

AXON EXCITER/TRANSMITTER 30W TO 1200W

Frequency Range: 87.5 ÷ 108.00 MHz, Programmable in 10 KHz steps
On request 66 ÷ 74 MHz (OIRT), 76 ÷ 90 MHz (JPN) Bands.
Frequency Stability: better than ±150Hz from -10 to +50°C
Max deviation: +/-150kHz.
Frequency Control: Synthesizer μprocessor control.
Power Output: 30W, 50W, 100W, 150W, 300W, 600W, 1200W. Adjustable from 0W to maximum power.
Output Impedance: 50 ohm.
Display: forward/reflection power and modulation indicator
Type of Modulation: Direct frequency modulation of carrier frequency, F3E Stereo with Subcarrier and Mono .
Lock in Time: Typ. 4 second.
Off Lock Attenuation: ≥ -80 dBc.
Modulation Capability: ±150 KHz.
Modulation Mode: Mono, Stereo, Multiplex, SCA, RDS, Aux.
Preemphasis: Flat(0)/50/75 μs selectable from front panel.
Asynchronous AM S/N Ratio: -60 dB below reference carrier with 100% AM modulation @ 400 Hz, without FM modulation.
Synchronous AM S/N Ratio: -60 dB below reference carrier with 100% AM modulation@ 400 Hz with FM modulation ±75 KHz @ 400 Hz.
RF Harmonics: Exceeds ETSI/EBU/CCIR/FCC requirements. better than 84 dbc
RF Spurious: Exceeds ETSI/EBU/CCIR/FCC requirements. better than 84 dbc
Output Connectors: 30W to 600W N type connector, 1200W DIN 7/16 type connector
Output power on/off and adjustable from front panel and remotely.
Overall Efficiency up to 80%.
Monitor RF: -60 dBc, BNC connector
VSWR: 1.5:1 Maximum with automatic fold-back at higher VSWR

MONAURAL OPERATION

Audio Input Impedance: 600 ohm balanced, 15 Kohms unbalanced.
Audio Input Level: -6 to +12 dBm. (Other range on request)
Input Connector: XLR female.
Audio Frequency Response: ±0.15 dB, 30 Hz to 15 KHz.
Total Harmonic Distortion + Noise: 0.03% @ 400 Hz
Intermodulation Distortion: 0.03%, 1 KHz/1.3 KHz, 1:1 ratio
Transient Intermodulation Distortion: 0.03%, 2.96KHz square wave and 14 KHz sine wave.
FM S/N Ratio: -89 dB RMS detector, -85 dB below ±75 KHz deviation, 50 μs de-emphasis, weighted.

MULTIPLEX OPERATION

Composite Input Impedance: 5 Kohm unbalanced.
Composite Input Level: 3.5Vp-p for ±75KHz deviation.
Input Connector: BNC female.
Composite Amplitude Response: : ≤ ± 0.1dB, from 30Hz to 53kHz
Total Harmonic Distortion + Noise: 0.03% @ 400 Hz
Intermodulation Distortion: 0.03%, 1 KHz/1.3 KHz, 1:1 ratio
Transient Intermodulation Distortion: 0.03%, 2.96 KHz square wave and 14 KHz sine wave.
FM S/N Ratio: -89 dB RMS detector, -85 dB below ±75 KHz deviation, 50 μs de-emphasis, weighted.

STEREO OPERATION

Audio Input Impedance: 600 ohm balanced, 15 Kohm unbalanced.
Audio Input Level: -12 to +12 dBm.
Input Connector: XLR female.
Audio Frequency Response: ±015 dB from 30 Hz to 15 KHz.
Total Harmonic Distortion + Noise: 0,03% @ 400 Hz
Intermodulation Distortion: 0,02%, 60Hz /7kHz 4:1 ratio +4dBu
Transient Intermodulation Distortion: 0.03%, 2.96 KHz square wave and 14 KHz sine wave.
FM S/N Ratio: -85 dB RMS detector, -82 dB below ±75 KHz deviation, 50 μs de-emphasis, weighted.
Stereo Separation: 30÷80 Hz ≥ -53 dB, 80Hz÷15 KHz ≥ -65 dB (Typ. 70 dB).

Crosstalk attenuation: Main to Sub -55 dB 30 Hz to 15 KHz
38 KHz Suppression: ≥ -70 dB (typ. -85 dB).
Pilot Frequency: 19 KHz ± 1 Hz
Phase Pilot: ± 2° adjustable
Output Pilot: 1 Vpp., BNC female
Audio Filter Attenuation: ≥ -55 dB @ 19 KHz, > -45 dB 20 KHz to 100 KHz.
Modes: Stereo, Mono L+R, Mono L, Mono R.

AES/EBU OPERATION

Input Level: -10dBfs to 0dBfs
Input Connector: XLR female, optical TOS-LINK.
Input Impedance: 110 ohm.
Data Format: S/PDF,AES/EBU, IEC958, EIAJCP340/1201.
D/A Converter: 24 bit.
Sampling Frequency: from 32 to 96 KHz with automatic selection
Stereo separation (crosstalk): ≥50dB,100Hz to 5kHz
Amplitude response: ≤ ± 0.1dB, from 30Hz to 15kHz
FM S/N Ratio: -85 dB below ±75 KHz deviation, 50 μs de-emphasis, weighted.

SCA, RDS, AUX OPERATION

Input Connector: BNC female
Input Impedance: 3 Kohm.
Input Level: -3 to +6 dBm.
Frequency Response: ±0.2 dB, 40 KHz to100 KHz.
Input Connector: BNC female. Most SCA, RDS, AUX, performance parameters are determined primarily by the generator used.

AUXILIARY CONNECTIONS

USB: connector Type B female front panel.
N°2 RS485: Serial Interface connector RJ45 back panel.
Telemetry Interface: connector DB25F back panel.
External Clock: connector SMA female (optional).

OPTIONS

External clock: for PLL synchronization purpose 1-2-2.5-5-10 MHz external r eference oscillator with self selection of the incoming frequency.
DOUBLE EXCITER WITH AUTOMATIC CHANGEOVER SYSTEM
SNMP TELEMETRY INTERFACE
GSM AND PSTN TELEMETRY
TCP/IP TELEMETRY INTERFACE
SINCH-MODULE FOR SFN APPLICATION
OIRT & JPN VERSION
DIGITAL AUDIO INPUTS
LPFM CODE STATION:FCC IDENTIFICATION CODE
RDS CODER : EASY PROGRAMMABLE BY PC
SCA Encoder
Digital Composite 192kHz Input

ELECTRICAL (for 10kW to 40kW Transmitter)

AC Input Power: 230/400 VAC ±15%, 50/60 HZ(+/- 3HZ) single phase or 3-phase+N
Power factor > 0.99
Cooling: Forced air
MTBF > 20.000 Hours

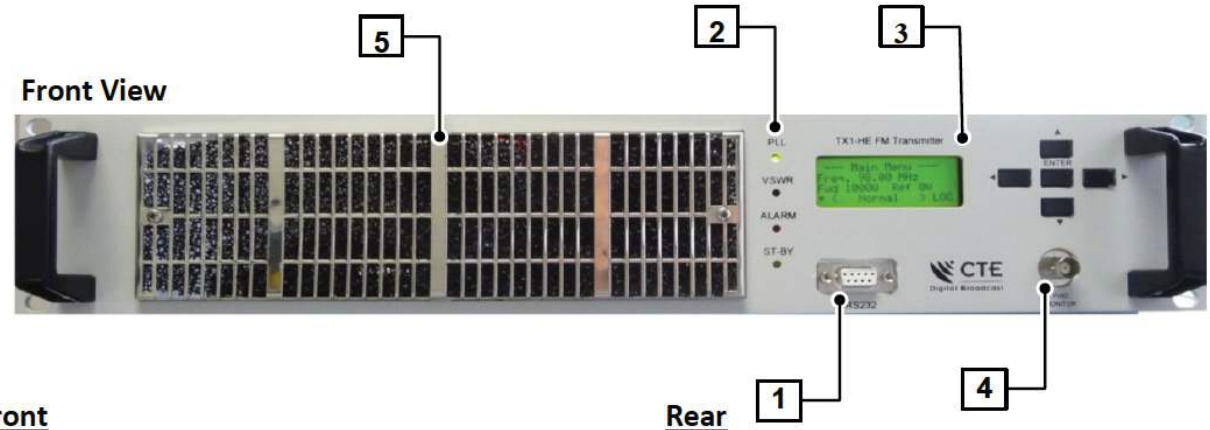
ENVIRONMENTAL

Operating temperature: -10°C to +50°C.
Max Operating Altitude: 4000 mt.
Relative Humidity Range: 0 to 95% non condensing.
Protection against Lightening, Dust and Corrosion

PHYSICAL DIMENSIONS (For typocal 10kW Transmitter)

Mounting: 2 unit cabinet
Size: 88mm. (H) x 484mm. (W) x 478mm. (D)
Weight: ~ 11 Kg.

Front View



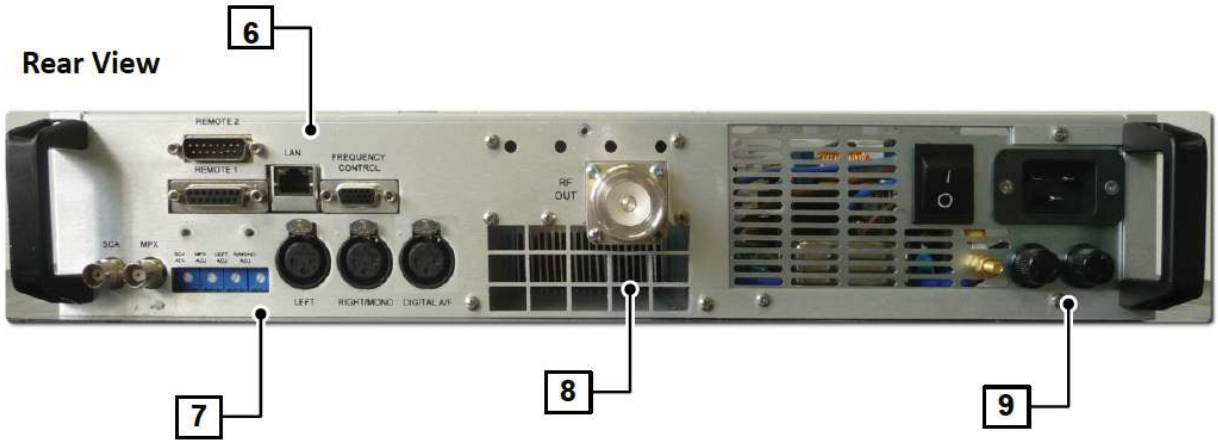
Front

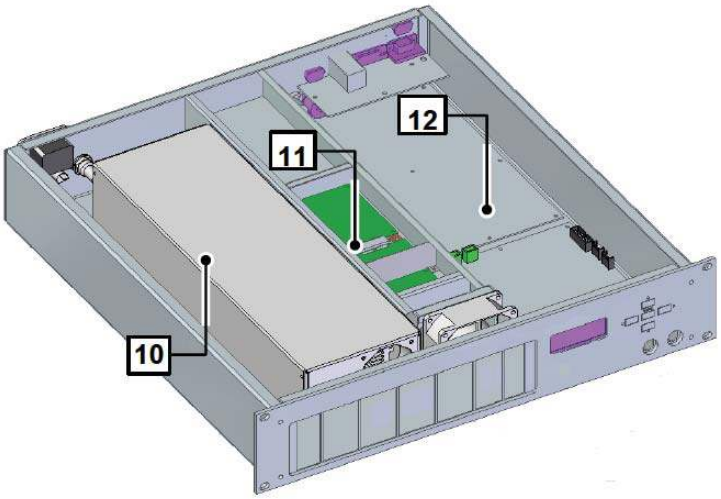
1. *RS232:* PC CONNECTION
2. *STATUS LEDs:* PLL, VSWR, ALARM, STAND-BY
3. *CONTROL PANEL*
4. *FWD MONITOR*
5. *FRONT VENTILATION AIR GRID*

Rear

6. *REMOTE CONTROL:* WEB/SNMP, PARALLEL AI/O
7. *AUDIO INPUT:* L&R, MPX, Mono, AES/EBU
8. *OUTPUT CONNECTOR:* 7/16 FEMALE
9. *INPUT a.c. :* FUSE, GND

Rear View



Internal View

10. *POWER SUPPLY*
11. *RF POWER MODULE*
12. *MOTHER BOARD*