

Passion
for **FM & TV**
Broadcasting



**Mozart FM
Transmitters
500 W**

The new MOZART FM Exciter is the latest audio excellence in the FM Broadcasting industry with the revolutionary MSE Technology

MAIN CHARACTERISTICS

- Output power 500W
- Reduced maintenance. Easy accessibility of all parts, external serviceable cooling air filters, very high MTBF for RF and power supply modules, are only some of the characteristics that explain the very high reduction of maintenance costs obtained.
- Switch-mode power supply with power factor control. Highly efficient and widely over-rated power supply modules insure low heating, low AC power consumption and superior reliability. The power factor control circuitry allows to meet all the international requirements for mains network disturbances.
- High efficiency cooling system. The air cooling system limits the heatsink temperature rise to only about 10°C above ambient temperature. This assures the transmitter ability to properly operate even in high ambient temperature sites with hard climate conditions.
- N+1 facility (optional). N+1 facility control available to modify remotely the frequency and power output for redundant systems.
- Very small dimensions and low weight, reduce transport costs and simplifying the logistic.
- High frequency stability, in short and long terms, is assured by Digital Phase Locked Loop circuit with low drift VTCXO
- External reference oscillator available as option: 10 MHz input SMA 0 dBm.
- Frequency Agile Broadband programmability from the front LCD panel with 10 KHz steps without any tuning or adjustment.
- Meets or exceeds all the international standards for safety and electrical specifications.

AUDIO HIGHLIGHTS

- MSE: Magnetic Sound Enhancer a magnetic barrier protects the VCO, the heart of FM modulator, increasing the sound quality.
- STEREO GENERATOR: High performance built-in digital stereo coder provides separation typical >65dB
- Signal/noise ratio >80dB assures the highest audio quality.
- Input sensitivity and output deviation adjustable with high precision of 0,05dB through display interface or remotely by WEB.
- The level and the phase of the Pilot tone adjustable from the front panel and Web interface
- AES/EBU digital stereo audio interface available as option.
- Limiter keeps the maximum frequency deviation within international requirements to avoid over-modulation and adjacent channels invasion, the limiter levels can be set from the front panel.
- Audio Monitor and automatic Change-Over function:
 - The audio inputs are monitored with programmable levels and times thresholds in order to trigger the change-over and generate alarms or warnings.
 - Automatically change over between a main and a reserve audio source to prevent audio blackout.
 - Any of the sources MPX, Left & Right and AES/EBU can be selected as main or reserve.
 - Useful where satellite receivers or other digital audio are combined with an existing radio links connection.
 - Automatically choose better quality signal to put on air.
 - In case of change-over, main input is always monitoring and restore on air if it becomes available again with good quality.
 - Log file with activity of the Audio Monitor and Change-over.
 - Thresholds audio levels and times of confutation set from front panel or remotely.
 - Priorities assigned for each channel.
 - Input source can be selected through hardware inputs with external contacts.
 - Auto or manual function.

HUMAN INTERFACE AND CONNECTIVITY AND WEB REMOTE CONTROL

- All parameters can be displayed and set by front panel or from Web interface.
- All the series shares the same human interface:
 - LCD Display.
 - Four arrows keys, OK key, ESC key, direct function push buttons ON/OFF, Local/Remote, Reset Alarms
 - All the main working parameters are displayed by leds to indicate the transmitter status at the first glance. On/Off, Local Remote, Trip-lock Out Alarm, On Air, Warning, Alarm, Interlock, Audio Alarm, Stereo Mode, Mpx Mode, RDS On/Off, SCA On/Off, Mono Mode, Pre-emphasis On/Off, Limiter On/Off
- Full control of the transmission and modulation parameters
- Latest WEB/SNMP interface:
 - TCP/IP Remote control WEB Server SNMP (v2 and v3), with INFORMS, DHCP, FTP, TELNET for full remote control system.
 - The IP and all the network parameters can be easily read and set on the front panel.
 - Firmware remotely upgradable by TCP/IP, an easy procedure is on the WEB interface without the needing to use proprietary tools; the received software is controlled with a check-sum; after new release has been installed it's possible to return to the previous firmware release; from WEB / SNMP it's possible to select which release (the new or the old one) will run on air.
 - Every alarm event is displayed on the frontal panel, 200 events can be memorized in the transmitter memory and 64000 in the web board.
 - The log can be saved in the PC in common text format.
 - The log keeps track of commands given to the transmitter and of all the alarms happened, to rebuild accurately the all history of the transmitter.
 - Memory and recall of 10.000 working parameters pre-settings. The parameters of each station on the network can be memorized like: name, frequency, audio settings, alarms settings, etc.
- Parallel Remote Control Connector Interface with Dry contact relays outputs and Opto-isolator inputs
- Rs232/485 Interface

MECHANICAL CONSTRUCTION HIGHLIGHTS

- AIR FILTER: available as an option on all Mozart transmitters
- HOT-PLUG FANS: Maintenance time 5 Minutes without the need to access inside!
- 2 rack unit.
- Protection against shocks: Mechanically studied to prevents damage to connectors, fans, and all the parts that typically may be damaged during transport or installation.
- AAD Technology prevents the corrosion produced by the air and increase the reliability
 - The construction is totally in aluminum.
 - The air is ducted to reduce the electronic boards'contact.
 - The electronic boards are tropicalized with a special resin to protect the circuits against salt air.

HARDWARE AND SOFTWARE PROTECTIONS

- Soft protections provide uninterrupted service, an intelligent protection circuit reduces the output power without any on-air interruption, keeping the RF devices the cable and the antenna always within the safe operating parameters in the event of:
 - Load mismatching
 - Environmental over-temperature
 - Cooling failure
 - Failure in power supply
- Fast Hardware protections prevents hardware failures in case of very fast events that can damage the transmitter.
- The transmitter has two software levels of VSWR alarms: a Warning and a Failure Level.
- The microprocessor is protected against short main interruption with external Watch Dog and Power Supply Supervisory.

Mozart 500 W FM Exciter / Transmitter



MSE Magnetic Sound Enhancer
A magnetic barrier protects the VCO, the heart of FM modulator, increasing significantly the sound quality.



WEB CONTROLLED
Latest SNMP version 2C for ultimate Web Control.



GREEN RF
Latest generation LD-MOS devices increase the efficiency up to 80%, with a drastic reduction of energy consumption.



ARC
Completely built in light anticorrosion alloy in order to prevent corrosion and to reduce the weight.

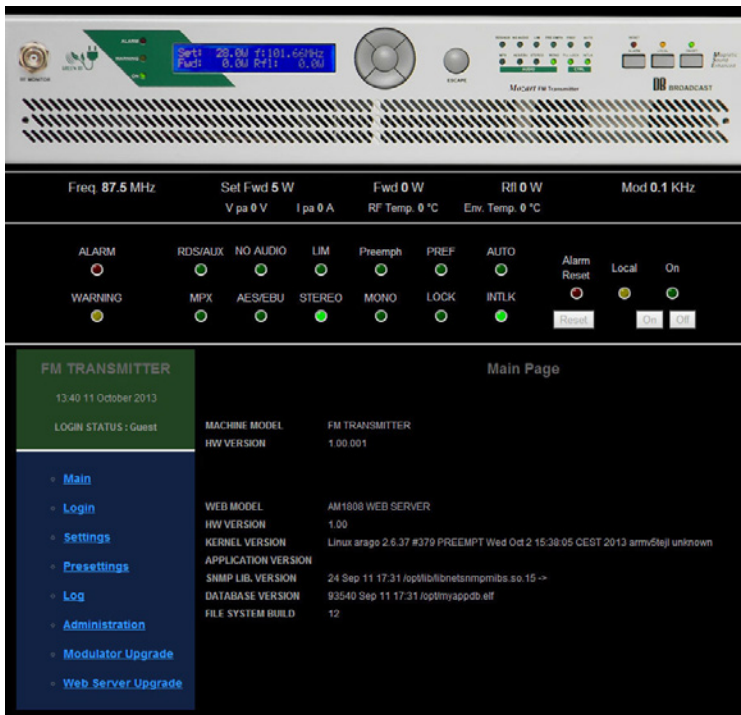


COLD FET
Lower heating + High RF efficiency = Longer device's life.



65:1
No more load mismatches failures: all devices are with VSWR 65:1 built-in protection.

WEB PAGE and SNMP



TECHNICAL CHARACTERISTICS

RF SPECIFICATIONS

		Mozart 500
Output power		500 W
Power Consumption *		750 VA
Output connector		N Type
RF Output Impedance		50 Ω
Operating frequency range	87.5 ÷ 108 MHz (10kHz steps front panel programmable)	
VSWR	1.5:1 Maximum with automatic fold-back at higher VSWR	
Frequency stability	± 1 ppm from -5°C to 45°C	
Modulation Mode	Mono, Stereo, Multiplex, SCA, RDS, AUX	
Frequency Deviation	±75 kHz =100 %, ±200 kHz capability	
Preemphasis	Flat/50/75 μ s front panel selectable	
Asynchronous AM S/N Ratio	-68dB below reference carrier with 100%AM modulation @400Hz, without FM modulation	
Synchronous AM S/N Ratio	-65dB below reference carrier with 100%AM modulation @400Hz, with FM modulation 75KHz@400Hz	
RF Harmonics Attenuation		>85 dBc
RF Spurious Attenuation		>85 dBc
Low Pass Filter		Included

MONO SPECIFICATIONS

Audio Input Impedance	10k/600 Ω balanced
Audio Input Level	-3 to +18 dB μ
Input Connector	XLR female
Audio Frequency Response	± 0.15 dB, 30 Hz to 15 kHz
Harmonic Distorsion	≤ 0.02%, from 40 Hz to 15 kHz
S/N ratio	>82 dB RMS detector
Type of Modulation	FM 75KHz MONO 180KF3E

STEREO SPECIFICATIONS (OPTION)

Audio Input Impedance	10k/600 Ω balanced
Audio Input Level	-3 to +18 dB μ
Input Connector	XLR female
Audio Frequency Response	± 0.15 dB, 30 Hz to 15 kHz
Harmonic Distorsion	≤ 0.02%, from 40 Hz to 15 kHz
S/N ratio	> 80 dB RMS detector 50us De-emphasis
Stereo separation	≤ -65 dB (typ.70 dB)
Pilot frequency	19 kHz ± 1 Hz
Modes	Stereo, Mono L+R, Mono L, Mono R
Type of Modulation	FM 75KHz STEREO 256KF3E

MULTIPLEX SPECIFICATION MPX INPUT

Composite Input Impedance	>5 k Ω unbalanced
Composite Input Level	-3 to +18 dB μ
Input Connector	BNC female
Composite Amplitude Response	± 0.2 dB, 30 Hz to 100 kHz
S/N ratio	>82 dB RMS detector 50us De-emphasis
Type of Modulacón	FM 75KHz MONO 180KF3E STEREO 256KF3E

SCA, RDS, AUX SPECIFICATIONS

Input Impedance	2 k Ω unbalanced
Input Level	-16 to 0 dB μ
Input Connector	BNC female
Frequency Response	± 0.2 dB 10 Hz to 100 kHz

AES/EBU MODE (OPTION)

Input connector	XLR female
Data format	AES/EBU
D/A converter	24 bit
Sampling frequency	from 32 to 96 kHz
Input Impedence	110 Ω balanced, transformer insulated
Input Level	-15 to 0 dBFs

ELECTRICAL AND OPERATING CHARACTERISTICS

AC input power	88 ÷ 132 VAC / 176 ÷ 264 VAC SELECTED BY SWITCH - 50/60 Hz single phase (europe) o bi-phase America)
Cooling	Forced air with built-in axial fans
Operating temperature	- 5°C to +45 °C
Relative humidity	Up to 90%

WEIGHTS & SIZES

Weight	8.5 kg
Sizes WxHxD	Standard 19" - 482,5 x88x510 mm

* At maximum power



Digital Broadcast
ITALY

DB Elettronica Telecomunicazioni SpA - Riviera Maestri del Lavoro 20/1 - 35127 Padova - Italy
ph +39 049 8700588 fax +39 049 8700747 - www.dbbroadcast.com - sales@dbbroadcast.com