

Mozart FM Transmitters 30 W ÷ 50 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 30W 50W
  - 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 eeplain 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.
- 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 selects as main or reserve.
  - Useful where satellite receivers or other digital audio are combined with an exixting 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 trough 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:
    - o 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 Allarm, On Air, Warning, Allarm, Interlock, Audio Allarm, 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!
- 1 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:
  - o Load mismatching
  - o Environmental over-temperature
  - o 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 30-50 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 anticorodal 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**

RE SPECIFICATIONS		Mozart 20	Mozart 50
	Output power	30 W	MOZAIT 50
	Dower Consumption *	50 W	50 W
		60 VA	130 VA
			N Type
	RF Output Impedance	50 <b>Q</b>	
	Operating frequency range	87.5 ÷ 108 MHz (10kHz steps front pannel 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, S	tereo, Multiplex, SCA, RDS, AUX
	Frequency Deviation	$\pm$ /5 kHz =100 %, $\pm$ 200 kHz capability	
	Preemphasis	Flat	/50/75 µs 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	I FM modulation 75KHz@400Hz
	RF Harmonics Attenuation		>80 dBc
	RF Spurious Attenuation		>80 dBc
	Low Pass Filter		Included
	Audio Input Impodence		101-/600 A balances
MUNU SPECIFICATIONS			
			-3 t0 + 18 dBµ
	Audio Fraguanov Poppanao		
	Harmonic Distorsion		± 0.15 ub, 30 HZ to 15 KHZ
			≤ 0.02%, ITOTI 40 HZ TO 15 KHZ
			>82 dB RMS detector
	Type of Modulacion		
STEREO	Audio Input Impedance		$10k/600  \mathbf{o}$ balanced
SPECIFICATIONS	Audio Input Level		-3 to ±18 dBu
(OPTION)			-5 t0 + 10 dDµ
	Audio Frequency Response		+ 0.15 dB 30 Hz to 15 kHz
	Harmonic Distorsion		< 0.02% from 40 Hz to 15 kHz
	S/N ratio	a ab 08 <	MS dotactor 50us Do amphasis
	Storoo congration	> 00 UD N	65 dR (twp 70 dR)
			2 -05 ub (typ.70 ub)
	Medee	Ctor	
	Type of Modulation	5181	EM 75KH7 STEDEO 256KE2E
	Type of modulation		
MULTIPLEX	Composite Input Impedance		$>5$ k $\mathbf{\Omega}$ unbalanced
SPECIFICATION	Composite Input Level		-3 to +18 dBu
MPX INPUT	Input Connector		BNC female
	Composite Amplitude Response		$\pm$ 0.2 dB, 30 Hz to 100 kHz
	S/N ratio	>82 dB R	MS detector 50us De-emphasis
	Type of Modulación	FM 75KHz MO	NO 180KF3E STEREO 256KF3E
SCA, RDS, AUX	Input Impedance		$2 k \boldsymbol{\Omega}$ unbalanced
SPECIFICATIONS	Input Level		-16 to 0 dB u
	Input Connector		BNC female
	Frequency Response		± 0.2 dB 10 Hz to 100 kHz
AES/EBU MODE	Input connector		XLR female
(OPTION)	Data format		AES/EBU
	D/A converter		24 bit
	Sampling frequency		from 32 to 96 kHz
	Input Inpedence		110 $\Omega$ unbalanced, transformer
	Input Level		-15 to 0 dBFs
ELECTRICAL AND	AC input power 88	$\pm$ 132 VAC / 176 $\pm$ 264 VAC SELECTED BY SWITCH - 50/60 Hz single phase	se (europe) o bi-phase America)
OPERATING	Cooling	Fo	rced air with built-in axial fans
CHARACTERISTICS	Operating temperature		- 5°C to +45 °C
	Relative humidity		Up to 90%
WEIGHTS & SIZES	Weight		4.5 kg
	Sizes WxHxD	Standard 19" - 482,5 x44x463.5 mm	

\* At maximum power

