

## HIGH EFFICIENCY 5KW FM TRANSMITTER EM 5000 HE DIG PLUS

The 5KW FM transmitter **EM 5000 HE DIG PLUS** has been created by the OMB center of development for high efficiency transmitters. It consists on the FMA 5000 HE power amplifier with >73% efficiency and the EM 25 DIG PLUS transmitter. This high efficiency 5KW amplifier has an approximate consumption of 6600VA at 230Vac, so it pays for itself in a short period of time due to its low consumption. This transmitter can be supplied with the following options:

- Stereo generator
- RDS
- Web server/SNMP telemetry
- AES/EBU digital audio input



### MAIN ADVANTAGES

- Typical AC efficiency >73% and typical RF efficiency of 84%.
- Six amplifying modules of 1.200W with robust LDMOS transistors of the latest technology.
- Three independent switching power supplies connected in parallel to maintain the equipment working in case any of them fails.
- TFT screen and touch keyboard to control and to visualize operation parameters.
- Memory recording of events.
- Speed control of cooling fans according to temperature of power modules so as to optimize consumption and to decrease acoustic contamination.
- Advanced protection against load mismatches without transmission cuts and fast protection in case of excessive reflected power and/or excessive input power.
- Analog telemetry, digital remote control and telemetry RS232, remote control by opened/closed contacts.
- Low pass filter, Mains EMI filter and internal single-phase transient suppressor.
- Automatic power reduction at night when used in combination with the EM 25 DIG PLUS transmitter.
- Automatic power reduction in case of high temperature, the equipment returns automatically to its rated power value when the temperature reaches back an average value.
- Automatic power reduction in case of excessive reflected power.
- Automatic voltage control for efficiency optimization.

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**GENERAL CHARACTERISTICS**

<b>AMPLIFIER FMA 5000 HE</b>	
<b>FREQUENCY RANGE</b>	87.5-108MHz
<b>INPUT RETURN LOSS</b>	-20dB
<b>INPUT POWER</b>	<25W
<b>OUTPUT POWER</b>	5KW nominal, manual and automatic adjustable
<b>POWER GAIN</b>	>21.3dB minimum
<b>TOTAL AC EFFICIENCY</b>	>73% typical
<b>RF LOAD VSWR</b>	≤1.5:1
<b>RF EFFICIENCY</b>	84% typical
<b>COOLING</b>	Forced air, speed control of fans
<b>HARMONICS LEVEL</b>	<-82dBc
<b>INPUT/OUTPUT IMPEDANCE</b>	50Ω
<b>RF INPUT CONNECTOR</b>	N(F)
<b>RF OUTPUT CONNECTOR</b>	EIA 7/8" or EIA 1+5/8" (under request)
<b>RF MONITOR CONNECTOR</b>	BNC(F)
<b>POWER SUPPLY</b>	220VAC single-phase, 220-380VAC three-phase
<b>CONSUMPTION</b>	6600VA (@5000W output power)
<b>PROTECTIONS</b>	Reflected power, forward power, overdrive, and overcurrent in power modules. Smart temperature protection. Ultra-fast protection against reflected and input power. Real time registration of events. Exciter's inhibition
<b>TELEMETRY AND REMOTE CONTROL</b>	Analog telemetry (direct and reflected power measurements). Digital telemetry and remote control RS232. Remote control by opened/closed contacts
<b>OPERATION TEMPERATURE</b>	-5 to +40°C
<b>WEIGHT</b>	55Kg approx. (without rack)
<b>DIMENSIONS</b>	5 standard rack units of 19" (height), 850mm (depth)

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<b>EXCITER EM 25 DIG PLUS</b>	
<b>FREQUENCY RANGE</b>	87.5-108MHz
<b>FM MODULATION</b>	75KHz (adjustable) peak deviation. Mono 180kF3E and Stereo 256kF3E
<b>AUDIO/MPX INPUT LEVEL</b>	-3.5 @ +12.5dBm @ 75KHz deviation
<b>AUDIO INPUT CONNECTORS</b>	XLR(F)
<b>INPUT LEVEL (ANALOG)</b>	-12.5 to +12.5dBu
<b>INPUT LEVEL (DIGITAL)</b>	-20 to 0dBfs
<b>ASYNCHRONOUS AM S/N RATIO</b>	≥60dB
<b>SYNCHRONOUS AM S/N RATIO</b>	≥55dB
<b>TOTAL HARMONIC DISTORTION MONO</b>	≥0.13%
<b>TOTAL HARMONIC DISTORTION MPX</b>	≥0.5%
<b>MONO S/N RATIO</b>	≥70dB
<b>COMPOSITE MONO S/N RATIO</b>	≥80dB
<b>FREQUENCY STABILITY</b>	±2ppm
<b>MODULATION CAPABILITY</b>	≤200KHz
<b>AUXILIARY CHANNEL (RDS/SCA) INPUT LEVEL</b>	7.5KHz deviation: -12.5 to 3.5dBm and 2KHz deviation: -24 to -8dBm
<b>AUX. CHANNEL INPUT IMPEDANCE</b>	10kOhm
<b>MODULATION DISTORTION</b>	7.5KHz deviation: <0.05%, 0.02% typical; 2KHz deviation: <0.2%, 0.05% typical
<b>S/N MONO RATIO</b>	30 to 20000Hz: >76dB, 86dB typical, CCIR: >75dB, 81dB typical
<b>S/N STEREO RATIO</b>	30 to 20000Hz: >72dB, 77dB typical, CCIR: >68dB, 72dB typical
<b>AUDIO CHANNELS BANDWIDTH</b>	30 to 15000Hz ±0.1dB
<b>PRE-EMPHASIS TIME CONSTANT</b>	Selectable, 25/50/75 microseconds
<b>RF NOMINAL OUTPUT POWER</b>	25W
<b>TUNING STEPS OF TRANSMITTER</b>	10/100KHz
<b>ALC OUTPUT POWER STABILITY</b>	±3%
<b>SPURIOUS AND HARMONIC EMISSIONS</b>	<80dBc
<b>RF OUTPUT IMPEDANCE</b>	50Ω
<b>RF INPUT POWER CONNECTOR</b>	N
<b>RF SAMPLING CONNECTOR</b>	BNC
<b>POWER SUPPLY</b>	110-230Vac ±15% 50-60Hz
<b>CONSUMPTION</b>	96VA (25W)
<b>OPERATION TEMPERATURE RANGE</b>	0 to 40°C recommended, -10 to 55°C max.
<b>RELATIVE HUMIDITY</b>	Up to 95% without condensation
<b>DIMENSIONS</b>	484x300x90mm, 2 standard rack units of 19"
<b>WEIGHT</b>	7Kg

*\* The images and/or technical specifications are subject to change without previous notice.*

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