

## HIGH EFFICIENCY 10KW FM TRANSMITTER EM 10000 HE DIG PLUS

The 10KW FM transmitter **EM 10000 HE DIG PLUS** has been created by the OMB center of development for high efficiency transmitters. It consists on the FMA 10000 HE power amplifier with >73% efficiency and the EM 100 DIG PLUS transmitter. This high efficiency 10KW amplifier is composed by three 3-3.5KW amplifying units (FMA 3000 HE) and it has an approximate consumption of 14.2kVA, so it pays for itself in a short period of time due to its low consumption. It is also available in Dual Drive version.



### MAIN ADVANTAGES

- Typical AC efficiency >73% and typical RF efficiency of 76%.
- Three amplifying units, each composed by four amplifying modules of 900W with MOSFET technology.
- Each amplifying unit contains 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 100 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.

## GENERAL CHARACTERISTICS

<b>AMPLIFIER FMA 10000 HE</b>	
<b>FREQUENCY RANGE</b>	87.5-108MHz
<b>INPUT RETURN LOSS</b>	-20dB
<b>INPUT POWER</b>	100W
<b>OUTPUT POWER</b>	10KW nominal, manual and automatic adjustable
<b>POWER GAIN</b>	19.2dB minimum
<b>TOTAL EFFICIENCY</b>	>73% typical
<b>RF EFFICIENCY</b>	76% typical
<b>COOLING</b>	Forced air, speed control of fans
<b>HARMONICS LEVEL</b>	-80dBc
<b>INPUT/OUTPUT IMPEDANCE</b>	50Ω
<b>RF INPUT CONNECTOR</b>	N(F)
<b>RF OUTPUT CONNECTOR</b>	EIA 1+5/8"
<b>RF MONITOR CONNECTOR</b>	BNC(F)
<b>POWER SUPPLY</b>	230VAC ±15% → 195 ÷ 265VAC, 50/60Hz; or 400VAC or 230VAC three phase
<b>CONSUMPTION</b>	14.2kVA (@10000W 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>	165Kg approx. (without rack)
<b>DIMENSIONS</b>	Amplifying units: 15 standard rack units of 19", Control unit: 3 standard rack units of 19", Switch panel: 3 standard rack units of 19"

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<b>EXCITER EM 100 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>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>	100W
<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>	141VA (100W)
<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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