

## HIGH EFFICIENCY 10KW (5KW+5KW) FM TRANSMITTER EM 10000 HE DIG PLUS



The **10KW FM transmitter EM 10000 HE DIG PLUS** has been created for high efficiency transmitters. It consists on the FMA 10000 HE power amplifier with >70% efficiency and the EM 100 DIG PLUS transmitter. This high efficiency 10KW amplifier is composed by two 5KW amplifying units (FMA 5000 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. 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 >70% and typical RF efficiency of 80%.
- Two amplifying units each composed by six amplifying modules of 1.200W with robust LDMOS transistors of the latest 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.

## EM 10000 HE DIG PLUS

<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 AC EFFICIENCY</b>	>70% typical
<b>RF EFFICIENCY</b>	>80% 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>	14.3kVA (@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: 10 standard rack units of 19", Control unit: 3 standard rack units of 19", Switch panel: 3 standard rack units of 19"
<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 $\pm$ 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>	$\pm$ 3%
<b>SPURIOUS AND HARMONIC EMISSIONS</b>	<80dBc
<b>RF OUTPUT IMPEDANCE</b>	50 $\Omega$
<b>RF INPUT POWER CONNECTOR</b>	N
<b>RF SAMPLING CONNECTOR</b>	BNC
<b>POWER SUPPLY</b>	110-230Vac $\pm$ 15% 50-60Hz
<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