HIGH EFFICIENCY 20KW FM TRANSMITTER
EM 20000 HE DIG PLUS

The 20KW FM transmitter **EM 20000 HE DIG PLUS** has been created by the OMB center of development for high efficiency transmitters. It consists on the FMA 20000 HE power amplifier and the EM 250 DIG PLUS transmitter. This high efficiency 20KW amplifier is composed by four 5KW amplifying units (FMA 5000 HE). This transmitter can be supplied with dual exciter and changeover.

MAIN ADVANTAGES

- Four 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.
- Automatic power reduction at night when used in combination with the EM 250 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.

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OMB BROADCAST
www.omb.com

OMB EUROPA
C/ Paraguay 6, P.I. Centrovía
50198 La Muela
Zaragoza, España
europa@omb.com
comercial@omb.com

OMB AMÉRICA
8221 NW 30th Terrace
Miami, FL 33198
USA
usa@omb.com

GENERAL CHARACTERISTICS

AMPLIFIER FMA 20000 HE	
FREQUENCY RANGE	87.5-108MHz
INPUT RETURN LOSS	-20dB
INPUT POWER	<200W
OUTPUT POWER	20KW nominal, manual and automatic adjustable
POWER GAIN	19.2dB minimum
TYPICAL AC EFFICIENCY	>72%
COOLING	Forced air, speed control of fans
HARMONICS LEVEL	-80dBc
INPUT/OUTPUT IMPEDANCE	50Ω
RF INPUT CONNECTOR	N(F)
RF OUTPUT CONNECTOR	EIA 3+1/8”
RF MONITOR CONNECTOR	BNC(F)
POWER SUPPLY	Three-phase: 230VAC (without N); 380VAC (with N) ±15%, 50/60Hz
CONSUMPTION	27.7kVA (@18000W output power)
PROTECTIONS	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
TELEMETRY AND REMOTE CONTROL	Analog telemetry (direct and reflected power measurements). Digital telemetry and remote control RS232. Remote control by opened/closed contacts
OPERATION TEMPERATURE	-5 to +40°C
WEIGHT	580Kg approx.
DIMENSIONS	35 units of two 19” standard racks

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EXCITER EM 250 DIG PLUS	
FREQUENCY RANGE	87.5-108MHz
FM MODULATION	75KHz (adjustable) peak deviation. Mono 180kF3E and Stereo 256kF3E
AUDIO/MPX INPUT LEVEL	-3.5 @ +12.5dBm @ 75KHz deviation
AUDIO INPUT CONNECTORS	XLR(F)
AUXILIARY CHANNEL (RDS/SCA) INPUT LEVEL	7.5KHz deviation: -12.5 to 3.5dBm and 2KHz deviation: -24 to -8dBm
AUX. CHANNEL INPUT IMPEDANCE	10kOhm
MODULATION DISTORTION	7.5Khz deviation: <0.05%, 0.02% typical; 2KHz deviation: <0.2%, 0.05% typical
S/N MONO RATIO	30 to 20000Hz: >76dB, 86dB typical, CCIR: >75dB, 81dB typical
S/N STEREO RATIO	30 to 20000Hz: >72dB, 77dB typical, CCIR: >68dB, 72dB typical
AUDIO CHANNELS BANDWIDTH	30 to 15000Hz ±0.1dB
PRE-EMPHASIS TIME CONSTANT	Selectable, 25/50/75 microseconds
RF NOMINAL OUTPUT POWER	250W
TUNING STEPS OF TRANSMITTER	10/100KHz
ALC OUTPUT POWER STABILITY	±3%
SPURIOUS AND HARMONIC EMISSIONS	<80dBc
RF OUTPUT IMPEDANCE	50Ω
RF INPUT POWER CONNECTOR	N
RF SAMPLING CONNECTOR	BNC
POWER SUPPLY	110-230Vac ±15% 50-60Hz
CONSUMPTION	460VA (250W)
OPERATION TEMPERATURE RANGE	0 to 40°C recommended, -10 to 55°C max.
RELATIVE HUMIDITY	Up to 95% without condensation
DIMENSIONS	484x300x90mm, 2 standard rack units of 19”
WEIGHT	7Kg

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

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