

## HIGH EFFICIENCY 6KW FM TRANSMITTER EM 6000 HE DIG PLUS

The 6KW FM transmitter **EM 6000 HE DIG PLUS** has been created by the OMB center of development for high efficiency transmitters. It consists on the FMA 6000 HE power amplifier with >73% efficiency and the EM 100 DIG PLUS transmitter. This high efficiency 6KW amplifier is composed by two 3-3.5KW amplifying units (FMA 3000 HE) and it has an approximate consumption of 8600VA 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%.
- Two amplifying units each composed by four 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.

**GENERAL CHARACTERISTICS**

| <b>AMPLIFIER FMA 6000 HE</b>        |  |
|-------------------------------------|--|
| <b>FREQUENCY RANGE</b>              | 87.5-108MHz  |
| <b>INPUT RETURN LOSS</b>            | -20dB  |
| <b>INPUT POWER</b>                  | 100W   |
| <b>OUTPUT POWER</b>                 | 6KW nominal, manual and automatic adjustable   |
| <b>POWER GAIN</b>                   | 19.2dB minimum   |
| <b>TOTAL AC EFFICIENCY</b>          | >73% typical   |
| <b>RF EFFICIENCY</b>                | 84% 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  |
| <b>CONSUMPTION</b>                  | 8600VA (@6000W output power)   |
| <b>PROTECTIONS</b>                  | Reflected power, forward power, overdrive, and overcurrent in power modules.<br>Smart temperature protection.<br>Ultra-fast protection against reflected and input power.<br>Real time registration of events.<br>Exciter's inhibition |
| <b>TELEMETRY AND REMOTE CONTROL</b> | Analog telemetry (direct and reflected power measurements).<br>Digital telemetry and remote control RS232.<br>Remote control by opened/closed contacts   |
| <b>OPERATION TEMPERATURE</b>        | -5 to +40°C  |
| <b>WEIGHT</b>                       | 115Kg 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"  |

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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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