

## 2000W DIGITAL FM TRANSMITTER EM 2000 HE DDS

The 2000W fully digital FM transmitter **EM 2000 DDS** has been created by the OMB center of development for DDS technology. Thanks to its powerful core, crystal clear sound, accurate filtering procedures, audio processing and usage this device brings your experience to the next level. This 2000W DDS FM transmitter comes with a 4.3" touch screen display, allowing an easy configuration and simple access to functions setting, operating parameters and alarms detections. It also includes a wide mode AES/EBU (192kHz broadband sampling), audio backup and many more advanced features. Its high efficiency 2KW amplifier has an approximate consumption of 2800VA at 230Vac, so it pays for itself in a short period of time due to its low consumption.



### MAIN ADVANTAGES

- Typical AC efficiency >73% and typical RF efficiency of 84%.
- Two amplifying modules of 1.200W with robust LDMOS transistors of the latest technology.
- Two 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 50 DDS 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.
- Suitable for single frequency applications (SFN), audio limiter (ITU).
- Audio rescuer integrated, with programmable established time and all inputs priority (analog, digital and MPX).
- Programmable power reduction.
- Automatic voltage control for efficiency optimization.

## GENERAL CHARACTERISTICS

| AMPLIFIER FMA 2000 HE        |                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FREQUENCY RANGE              | 87.5-108MHz                                                                                                                                                                                                                            |
| INPUT RETURN LOSS            | -20dB                                                                                                                                                                                                                                  |
| INPUT POWER                  | <15W                                                                                                                                                                                                                                   |
| OUTPUT POWER                 | 2000W nominal, manual and automatic adjustable                                                                                                                                                                                         |
| POWER GAIN                   | 19.2dB minimum                                                                                                                                                                                                                         |
| TOTAL AC EFFICIENCY          | >73% typical                                                                                                                                                                                                                           |
| RF EFFICIENCY                | 84% typical                                                                                                                                                                                                                            |
| COOLING                      | Forced air, speed control of fans                                                                                                                                                                                                      |
| HARMONICS LEVEL              | -80dBc                                                                                                                                                                                                                                 |
| INPUT/OUTPUT IMPEDANCE       | 50Ω                                                                                                                                                                                                                                    |
| RF INPUT CONNECTOR           | N(F)                                                                                                                                                                                                                                   |
| RF OUTPUT CONNECTOR          | 7/16" or EIA 7/8"                                                                                                                                                                                                                      |
| RF MONITOR CONNECTOR         | BNC(F)                                                                                                                                                                                                                                 |
| POWER SUPPLY                 | 180-264Vac, 47/63Hz                                                                                                                                                                                                                    |
| CONSUMPTION                  | >2600VA (@2000W output power)                                                                                                                                                                                                          |
| PROTECTIONS                  | 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 |
| TELEMETRY AND REMOTE CONTROL | Analog telemetry (direct and reflected power measurements).<br>Digital telemetry and remote control RS232.<br>Remote control by opened/closed contacts                                                                                 |
| OPERATION TEMPERATURE        | -5 to +40°C                                                                                                                                                                                                                            |
| WEIGHT                       | 20Kg approx. (without rack)                                                                                                                                                                                                            |
| DIMENSIONS                   | 3 standard rack units of 19" (height), 650mm (depth)                                                                                                                                                                                   |

| EXCITER EM 50 DDS             |                                                                                    |
|-------------------------------|------------------------------------------------------------------------------------|
| FREQUENCY RANGE               | 87.5-108MHz                                                                        |
| TRANSMITTER TUNING STEPS      | 100KHz – fine tuning steps: 10Hz                                                   |
| FREQUENCY ERROR               | <50Hz not synchronized, <1Hz synchronized                                          |
| GPS SYNCHRONIZATION           | 10MHz/1PPS<br>Internal/external with digital PLL                                   |
| MODULATION TYPE               | FM DDS, direct digital synthesis 256kF8E                                           |
| AUDIO AND MPX/L/R INPUT LEVEL | From -10 to +10dBu @75KHz deviation, 0.1dB steps                                   |
| AUXILIARY INPUT CHANNEL LEVEL | SCA: from -12 to +6dBu @7.5KHz deviation<br>RDS: from -24 to -3dBu @2KHz deviation |

broadcast your world

|                                         |                                                                                                         |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>DIGITAL AUDIO INPUT</b>              | AES/EBU: from -6 to +12dBfs @75KHz deviation, 0.1dB steps                                               |
| <b>MODULATION DISTORTION</b>            | 75KHz deviation: ≤0.02%                                                                                 |
| <b>AUDIO BACKUP</b>                     | μSD/USB: MP3 320kbps                                                                                    |
| <b>S/N RATIO, MONO</b>                  | 30 to 20000Hz: >76dB, 83dB typical<br>CCIR: >72dB, 76dB typical                                         |
| <b>S/N RATIO, STEREO</b>                | 30 to 80000Hz: >72dB, 77dB typical<br>CCIR: >68dB, 72dB typical                                         |
| <b>AUDIO CHANNELS FQ RESPONSE</b>       | 30 to 15000Hz ±0.1dB                                                                                    |
| <b>MPX INPUT FREQUENCY RESPONSE</b>     | 30 to 100000Hz ±0.1dB                                                                                   |
| <b>PRE-EMPHASIS TIME CONSTANT</b>       | 0μS, 50μS (CCIR), 75μS (FCC)                                                                            |
| <b>DETACHED LF CHANNEL</b>              | MPX, L, R, AES/EBU, aux, SCA (all main plus reserve), SD memory, audio streaming                        |
| <b>MODULATION DELAY</b>                 | Digitally programmable from 0.1μs to >3s                                                                |
| <b>STEREO CODING</b>                    | According to ITU-R BS.450-3, pilot frequency                                                            |
| <b>STEREO SEPARATION</b>                | >55dB                                                                                                   |
| <b>PILOT FREQUENCY</b>                  | 19kHz ±0.1Hz, adjustable level 0-12%                                                                    |
| <b>RDS GENERATOR</b>                    | According EN62106<br>PI, PS, ECC, PTY, TP/TA, AF, MS, DI, CT                                            |
| <b>RATED RF OUTPUT POWER</b>            | 50W                                                                                                     |
| <b>OUTPUT POWER ALC STABILITY</b>       | ±3%                                                                                                     |
| <b>HARMONIC AND SPURIOUS EMISSIONS</b>  | <75dB (harmonic), <80dBc (spurious)                                                                     |
| <b>RF OUTPUT CONNECTOR</b>              | N(F)                                                                                                    |
| <b>MONITOR PORTS AND REMOTE CONTROL</b> | Analog MPX on BNC, parallel control on subD9, RS232, RS485, 10/100T serial ports, GSM, web server, SNMP |
| <b>POWER SUPPLY</b>                     | 100-250Vac                                                                                              |
| <b>CONSUMPTION</b>                      | 95W @50W                                                                                                |
| <b>OPERATING TEMPERATURE RANGE</b>      | Suggested: 0 to +35°C<br>Extreme: -10 to +50°C (55°C max. with derating)                                |
| <b>RELATIVE HUMIDITY</b>                | Up to 95% not condensing                                                                                |
| <b>DIMENSIONS AND WEIGHT</b>            | 2RUs and 5.9kg                                                                                          |
| <b>REFERENCE NORMS</b>                  | ETSI EN 302 018 v2.1.1                                                                                  |

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

broadcast your \_ world