

# ETG2000

2000W ICEFET SOLID STATE FM TRANSMITTERS



**ELENOS**  
broadcast @xperience



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### GENERAL DATA

Output Nominal Power	2000W adjustable
Operating band	87.5 - 108 MHz
RS232/RS485	Yes
Points of measure	RF Sample-MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic OLED
Adjustments	From the frontal panel trough OLED /from PC
Microprocessor controlled	Yes
Power supply redundancy	Yes
Number of MOSFETs in power amplifier stage	8 BLF278
RF power stage technology	ICEFET & ECOSAVING
Protection	The transmitter is provided with automatic switch-on at short interrupting of the main power supply (3 interrupts up to 1 second (in 5 seconds interval).
Number of power supplies	2
Dimensions: Rack units	4U
Dimensions: W - H - D	48,5 - 17,6 - 70 cm
Weight	40kg
Number of cooling fans	5

### PERFORMANCE RF

Output impedance	50 $\Omega$
Automatic power RF control	Stabilizes the output power value on the set value
Overall output power RF stability	+/-0,1 dB
VSWR	2:1 on full power automatic power reduction beyond 1.5:1 transmitter is protected for short and open circuit
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80dBc

### CONNECTORS

RF Output connector	7/8
RF Input connector (in power amplifier mode)	BNC
Input connectors LEFT & RIGHT	XLR female
Input connectors AES/EBU	XLR female
MPX Input connector	BNC female
SCA Connector	BNC female
Remote control connector	DB25 female
RS485/232 Connector	DB9 female

### PERFORMANCE AUDIO/STEREO CODER

AES/EBU Input Resolution	24bits
AES/EBU Input Sample Rate	32,44.1,48,96 KHz Automatically selected
L/R audio input level	+15/-10 dBm for 75KHz standard deviation
L/R level adjustment	Soft adjust 0.1dBm steps from front panel
L/R input impedance	Selectable 10K - 600 $\Omega$ , balanced (for analog) 110 $\Omega$ (for digital)
MPX audio input level	+15/-10 dBm for 75KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dBm steps from front panel
MPX input impedance	5K $\Omega$ selectable
SCA/RDS audio input level	0 dBm for 75KHz standard deviation
AES/EBU input level	-20 dBFS - -0 dBFS
PILOT amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/-1 Hz
19KHz output	Yes
AES/EBU-Analog input automatic changeover	Yes
THD+N	<0.03% @ 1KHz
Pre-emphasis	0/25/50/75 microseconds
Pre-emphasis tolerance	+/- 0.1 us
FM S/N MPX FCC	82 dB 20Hz - 23KHz - 50uS - ref @ 53KHz - RMS
FM S/N STEREO CCIR	> = 72 dB weighted > = 72 dB unweighted @ fmod = 400 Hz, 75 kHz frequency deviation, peak value measurement, L/R/MONO channel
Asynchronous AM S/N unweighted	> 55dB
Synchronous AM S/N	> 50 dB
Modulation frequency range	30Hz to 15kHz
Amplitude-frequency characteristic	+/-0.1 dB (without pre-emphasis) +/-0.1 dB (with pre-emphasis) @ fmod = 400 Hz, 30 Hz to 15 kHz, L/R/MONO channel
Stereo Crosstalk	>60 dB linear >60 dB non-linear @ 30 Hz to 15 kHz, L/R channel (100% modulation)



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Distortion	< 0.05% with 75 kHz frequency deviation < 0.05% with 100 kHz frequency deviation @ 30 Hz to 15 kHz, L/R channel
Intermodulation distortion	< 0.05% @ L/R channel, 60Hz/7kHz, 4:1, +4dBu
Class of emission	F3
Stereo emission	According to ITU-R recommendation 450 (pilot tone)

### PERFORMANCE EXCITER

PLL lock time	<10sec
Intermodulation distortion	<0.05% Measured with two of tones 1KHz & 1.3KHz, ratio 1:1 at 100% modulation
Frequency deviation	+/- 75 KHz 0.1dB steps adjustable
Maximum frequency deviation	+/- 150 kHz
Frequency stability	+/- 200 Hz/year
RF Frequency steps	10 KHz
Phase Response	0.1 degree from linear phase; 53kHz to 100kHz
Modulation Capability	+/-250 KHz

### INSTALLATION REQUIREMENTS

Power supply	230/400 Threephase-Singlephase version 50-60Hz VAC
Power consumption (typical)	3KW
Overall efficiency (typical from -3dB to Pnom)	> = 70%
Power factor	> 0.95
Current Consumption @ 230VAC/single phase(typical)	13 Amp
Magneto-thermic capacity @ 230VAC/single phase	25 Amp
Conductor size @ 230VAC/single phase	6 sqrt.mm
Conductor size @ 230VAC/single phase	9 AWG
Current Consumption @ 230VAC/three phase(typical)	9 Amp
Magneto-thermic capacity @ 230VAC/three phase	16 Amp
Conductor size @ 230VAC/three phase	4 sqrt.mm
Conductor size @ 230VAC/three phase	11 AWG
Current Consumption @ 400VAC/three phase	5 Amp
Magneto-thermic capacity @ 400VAC/three phase	10 Amp
Conductor size @ 400VAC/three phase	2.5 sqrt.mm
Conductor size @ 400VAC/three phase	13 AWG

### COOLING/NOISE/ELECTRICMAGNETIC DATA

Cooling system	Forced air-cooling
Electric field	< 10V/m @ one meter in front of the transmitter cabinets during normal operation

Magnetic field	< 4 A/m @ one meter in front of the transmitter cabinets during normal operation
Acoustic noise	< 65 phones @ transmitter room, 2 m distance of the front of transmitter

### ENVIRONMENT

Temperature range (operating)	-5 - +45 °C
Temperature range (non operating)	-20 - +55 °C
Humidity range (operating)	95% @ 40 °C
Humidity range (non operating)	90% @ 55 °C
Altitude range (operating)	<3000 meters
Altitude range (non operating)	<15000 meters

### TELECONTROL & TELEMETRY

Remote control	Yes
Remote Control at clean contacts	Yes
SNMP option	Yes (external)

