



# INVELCO, S.A.

INVESTIGACIONES ELECTRONICAS Y COMUNICACIONES

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## 1KW MF/HF TRANSMITTER MODEL EM-610-R

*Completely solid state. As it made with modular technology, it is easier to repair.*

*Broadband technology in a coverage from 1.6 to 30MHz with instantaneous change of the working frequency and a resolution of 1Hz.*

*Appropriate for military, civil and maritime communication use; either on boat or coast stations.*

MF / HF

1.6 to  
30 MHz

1KW

Ethernet  
or RS232C

Frequency range from  
1.6 to 30MHz

Local/Remote control  
by Ethernet or RS-232-C

Output power 1000W  $\pm$ 1dB

Memorizes up to  
255 channels with all  
its parameters

Works with single-phased  
or three-phased (opt.)

Switching power supplies for  
high performance working

Transmitter control software

Automatic operation  
with Tuning Unit

VSWR tolerance: Infinite

Exciter design  
completely DIGITAL

Voice over Ip (VoIP) or  
input line 600  $\Omega$

**SDR**  
Technology

**VoIP**



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# 1KW MF/HF TRANSMITTER MODEL EM-610-R

## TECHNICAL CHARACTERISTICS

### GENERAL AND ELECTRIC SPECIFICATIONS

SDR Technology (Software Defined Radio).	
Remote control through Ethernet or bus RS232.	
VSWR Tolerance	Infinite.
Working frequency	1.6 - 30 MHz.
Frequency resolution	1 Hz.
Frequency stability	0.5 ppm. 0,01
Optional	0.01ppm.
Number of channels to memorize	255.
Output power	1000 W ±1dB
Power regulation:	-3 dB; -6 dB; -10 dB.
Wattmeter (incident/reflected)	Incorporated.
Power amplifier	Solid stated.
Protected against antenna short-circuit and open-circuit of antenna.	
Radiated harmonics	-60 dB.
Out-of-band spurious	-60 dB.
Intermodulation (2 tones)	Best than -33B ±1dB.
Output impedance	50Ω.
Output connector RF	N (female).
Broadband designed without frequency tuning.	
Working regime	Continuous.
Transmission modes:	J3E, J2A, J2B, H3E, A1A, F1B.
Frequency response	300 - 3000 Hz.
Ripple band	±0.2 dB.
Out-of-band attenuation	-60dB, 150 Hz, 3200Hz.
Carrier attenuation:	
J3E	-50 dB.
H3E	-6 dB.
TUNE	-10 dB.
Not desired side band attenuation	> 65 dB.
ON/OFF relation (A1A, J2A)	-60 dB.
Microphone inputs	Asymmetric.
Input impedance	600Ω.
Input level	500 mVpp max.
Microphone level compressor	42 dB.
Compressor response time	1 ms.
Compressor minimum threshold	3.90 mVpp.
Micro PTT input	Connected to ground.
Line input	Symmetric/asymmetric.
Line input impedance	600Ω.

Adjustable input level	0 dBm (nominal).
Audio response	250/4000 Hz.
Line compression	-14 dBm to +6 dBm.
Compressor response time	230 ms.
PTT input line	Connected to ground.
Data input through line (modem optional).	
Data PTT through line	Connected to ground.
Line compressor in data	0 dBm. to +6dBm.
Audio input level	0 dBm.
Keyer input	Connected to ground.
Keying modes	J2A, A1A.
PTT retention when keying	1 sec.
Sidetone output 1000Ω	1 Vpp adjustable.
Sidetone output impedance	10000Ω.
Programmable delay in the output of external relays and mutes as for the PTT.	
External relay and mutes as for the PTT adjustable from 1 ms. to 150 ms.	
Voice over Ip (VoIP) or input line 600 Ω.	

### POWER SUPPLY SPECIFICATIONS

Power supply voltage:	
Single-phase:	220 Vac. ±10%
Three-phase (optional)	380 Vac. ±10%
Network power supply frequency	50/60 Hz.
Consumed power in transmission:	Transmission 2.2Kw.

### MECHANICAL SPECIFICATIONS

Mechanical Composition:	
Digital Exciter	EX-630-I.
Linear Amplifier	AL-631-A.
External dimensions	
Width	600mm.
Height	699mm.
Depth	800mm.
Fabrication	Anticorrosive aluminium.
Total weight	80 Kg.

### ENVIRONMENTAL SPECIFICATIONS

Operation temperature	0 to 50°C.
Storage temperature	-30 to 80°C.
Height	2500 mts.