



# INVELCO, S.A.

INVESTIGACIONES ELECTRONICAS Y COMUNICACIONES

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## 5Kw MF/HF TRANSMITTER MODEL EM-650-R



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

*Broadband technology in the coverage from 2 to 30 MHz with instantaneous change of the working frequency and a resolution of 1 Hz.*

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

*The transmitter can continue to operate even with one module (1250 W) out of service.*

**Frequency range  
2 to 30 MHz**

**Output power  
5000W**

**Telephony and  
data communication**

**Memorizes up to  
255 channels**

**Remote control via  
Ethernet or RS-232-C**

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



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## 5KW MF/HF TRANSMITTER MODEL EM-650-R

### TECHNICAL CHARACTERISTICS

#### GENERAL SPECIFICATIONS

Output	
Power	5000W ±1dB
1 module failure	2700W ±1dB
Completely designed in solid state (4 * 1250 W)	
Possibility of operating in reduced powers	
Remote control through Ethernet or bus RS-232-C	
Number of channels to memorize	255
Supported standards VoIP, 10/100BaseT, SIP/IP, TCP/IP, HTTP	
Operates in all modes:	Telegraphy Voice Data NAVTEX
SWR tolerance	Full power ≤ 2:1 Reduced power ≤ 3:1
Made of aluminium able to work in seacoast areas with extreme temperatures and humidity	
Voice over Ip (VoIP) or input line 600 Ω	

#### ELECTRICAL SPECIFICATIONS

Working frequency	2 - 30 MHz
Frequency resolution	1 Hz
Frequency stability	±0.5ppm
Optional	±0.005ppm
Power regulation:	-3dB -6dB -10dB
Wattmeter (incident/reflected, SWR)	Incorporated
Power amplifiers	Solid state
Radiated harmonics	-60dB
Spurious according to	MIL-STD-188-141B
Intermodulation (2 tones)	-36dB at pep
Output impedance	50 Ω

Output connector RF:	7/16" (female)
Broadband designed without frequency tuning	
Working regime	Continuous
Transmission modes	J3E, J2A, J2B, H3E, A1A, F1B, ISB
Frequency response	300 - 3050 Hz
Ripple band	±0.2dB
Carrier attenuation:	
J3E	-60dB
H3E	-6dB
TUNE	-10dB
Not desired side band attenuation	-60dB
ON/OFF relation (A1A, J2A)	-60dB
Microphone inputs	Asymmetric
Micro PTT input	Connected to ground
Line input	Symmetric/Asymmetric
Line input impedance	600 Ω
Adjustable input level	0dBm (nominal)
Audio response	250/4000 Hz
Line compression	20dBm
PTT input line	Connected to ground
Data PTT through line	Connected to ground
Line compressor in data	6dBm
Keyer input	Connected to ground
Keying modes	J2A, A1A
Bite	Individual by modules General by software
MTBF	10000 hours (estimated)
MTTR	60 minutes
Protection	To elevated SWR

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### TECHNICAL CHARACTERISTICS

#### POWER SUPPLY SPECIFICATIONS

Three phased	Delta	195 - 305 Ac 50/60Hz
	Wye	340 - 530 Ac 50/60Hz

Consumed power in transmission	<19 Kva
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#### ENVIRONMENTAL SPECIFICATIONS

Operation temperature	-20 to 50°C
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Storage temperature	-30 to 80°C
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Humidity	95%
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#### MECHANICAL SPECIFICATIONS

External dimensions:

Width	600mm
Height	2200mm (46u)
Depth	800mm

Fabrication	Anticorrosive aluminium
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Total weight	350Kg
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**NOTE:** Invelco, s.a. is the manufacturer of this equipment and may modify some technical specifications at the request of the buyer.

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