

## **HF INTEGRATED COUPLIFIER**

The HF Integrated Couplifier is an innovative equipment made up of an RF Power Amplifier (125W) and an Antenna Tuning Unit operating in the frequency range of 1.6 – 30 MHz. This equipment is part of the company's new family of Antenna Tuning Units (ATUs).

It is based on digital processing techniques (DSP) for evaluating the antenna impedance and implementing the tuning algorithm. The digital signal processing combined with high dynamic range A/D conversion allows a proper antenna matching also in collocated environments (the undesired interfering signals are digitally filtered).

The equipment can operate in frequency hopping mode (FH) in the HF frequency range up to 24 hop/s. The architecture and mechanical design of Couplifier make the equipment particularly suitable for vehicular applications. The system can be installed outside the vehicle near to the antenna in order to improve the irradiation capability. Optionally the Couplifier functionality can be extended to VHF frequency (up to 60MHz), with a nominal RF power of 50W. Fast frequency hopping modes (FFH) can be suppor ted in the VHF up to 400 hop/s. In this case the antenna matching network is bypassed for all frequencies in the hopset.

The Couplifier can be used with several antennas and ensures the antenna matching with a VSWR typically lower than 1.3:1. The antennas are:

- 3m whip antenna (usable between 3 and 60MHz)
- Comrod APX41-LP HF/VHF Whip (5.2 m) (1.6 -59.975MHz)
- 8m whip antenna (1.6 29.99999MHz)
- 10m whip antenna (1.6 29.99999MHz)
- 10 to 15m long wire antenna (1.6 29.99999MHz)

The HF Integrated Couplifier can be associated to the TURMA HF/VHF transceiver or to the Software Defined Radio (SDR) vehicular platform.





Degraded operation between +55°C and +71°C

IAW MIL-STD-810F, method 507.4

IAW MIL-STD-810F metodo 509.4

Insulator to antenna or N adapter

IAW MIL-STD-810F, method 500.4, proc. I

## **TECHNICAL SPECIFICATION**

MAIN REQUIREMENTS IN TRANSMISSION

Nominal RF output power

Duty cycle

Frequency range	HF: 1.6 - 30MHz
	VHF (optional): 30 up to 60MHz
Frequency Hopping	Frequency hopping (FH) operation in HF
	(1.6 - 30MHz), up to 24 hop/s
	Fast Frequency Hopping (FFH) capability in VHF
	up to 400 hop/s (antenna matching network
	bypassed)
Antenna matching capabilty	VSWR<1.3:1 typical
Tuning time	"Learning tune": 1 s (typical), in accordance with
	STANAG-4203, annex B "Stored tune" (frequency
	hopping): better than 7.4 ms
Power Supply	+28Vdc nominal, in accordance with
	MIL-STD-1275D
Power Consumption	< 600W in transmission
	<100W in reception

Immersion	IAW MIL-STD-810F metodo 515.4
Sand and dust	IAW MIL-STD-810F metodo 510.4
Vibrations	IAW MIL-STD-810F metodo 515.5
Shock	IAW MIL-STD-810F metodo 516.5 e 525.4
Fungus	IAW MIL-STD-810F metodo 508.5
EMI/EMC	IAW MIL-STD-461D
EXTERNAL INTERFACES	
Control Interface (for TURMA)	Ethernet 10/100Mbps (SW upgrade and
	maintenance)
	#2 RS-232 serial lines (for debug)
	RS-485 serial line for control
	Discrete lines
CONTROL INTERFACE	
(SDR vehicular platform)	1Gb Ethernet for control
	#2 RS-232 serial lines (for debug)
	Discrete lines
RF Interfaces	Connector to transceiver (TNC)
	PA output port (N)
	Antenna tuning unit input port (N)

-40°C - +55°C

-40ºC - +71ºC

MAIN ENVIRONMENTAL REQUIREMENTS

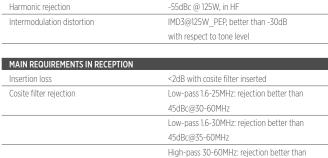
Operating temperature

Storage

Humidity

Altitude

Salt fog



45dBc@1.6 - 25MHz

125W AVG, PEP in HF (1.6 - 30MHz) 50W AVG, PEP in VHF (optional) 100% in SSB voice mode





For more information please email infomarketing@leonardocompany.com

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