



communications

Electron Devices

M1221 High Band Microwave Power Module

Features

- **60-100 Watts Output Power**
- **20-35% Efficiency**
- **<70 Cubic Inches**



Performance Characteristics

Frequency.....	6.0 to 18.0 GHz
RF Output Power.....	60-100 Watts (min)
RF Input Power.....	0 ± 1 dBm
Small Signal Gain.....	50 dB (min)
PRF.....	50 kHz (max)
Harmonics @ 6 GHz.....	-3 dBc (max)
@ 8 GHz.....	-5 dBc (max)
@10 GHz.....	-11 dBc (max)
AM/PM Conversion.....	6°/dB (max)
Spurious.....	-50 dBc (max)
Spectral Purity.....	-45 dBc (max)

Environment

Temperature.....	-54 to +85°C
Underneath TWT Collector.....	+95°C max
Cooling.....	Conduction
Altitude.....	70,000 feet
Humidity.....	Up to 100%, with condensation
Shock.....	20 g, 11 msec
Acceleration.....	10 g's
Vibration.....	0.04 g ² /Hz from 80 to 350 Hz
.....	-3dB/octave 20 to 80 Hz
.....	-3dB/octave 350 to 2000 Hz

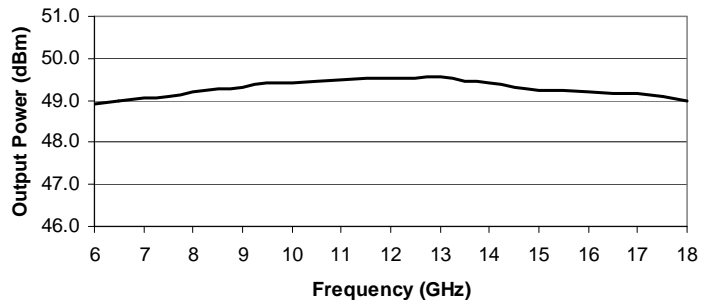
Mechanical Description

Dimensions.....	7.8" x 7.5" x 1.25"
Weight.....	5.5 lbs (max)
RF Input Connector.....	SMA
RF Output Connector.....	TNC
Control Input.....	15 pin D-Sub male
Power Input.....	9 pin D-Sub male
Specifications subject to change without notice	

The M1221 represents the state of the art in low noise, compact, high efficiency, wideband RF amplifiers for airborne, shipboard, and ground military applications. This MPM contains a TWT, an SSA and power supply within a single conduction-cooled package.

DSM1221_0310

Typical Saturated Power vs. Frequency

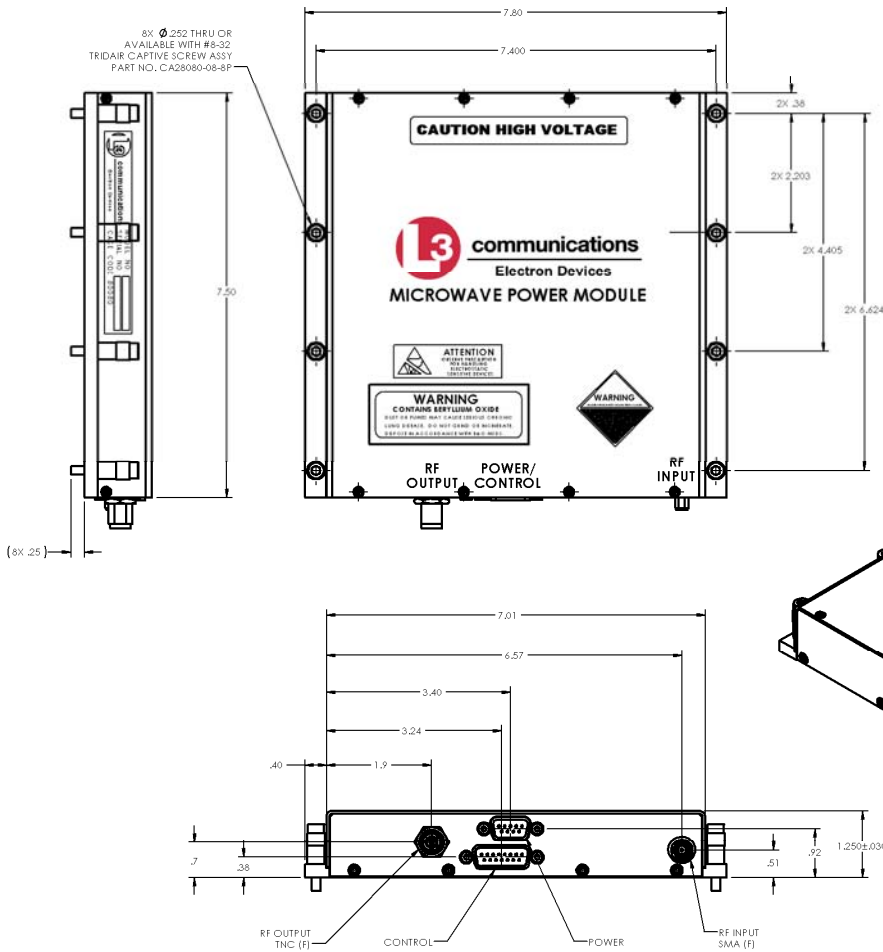


Interface

Prime Power, operating.....	+28 VDC
.....	Per MIL-STD-704E
.....	400 Watts (max)
Prime Power, standby.....	50 Watts (max)
Controls.....	Standby/Operate, Radiate
Digital Indicators.....	Warm-up Complete Indicator
.....	Fault Indicator
.....	High Voltage Indicator
Analog Monitor.....	Helix Current

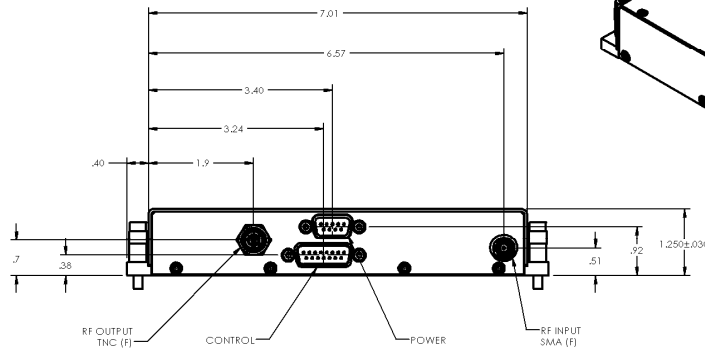
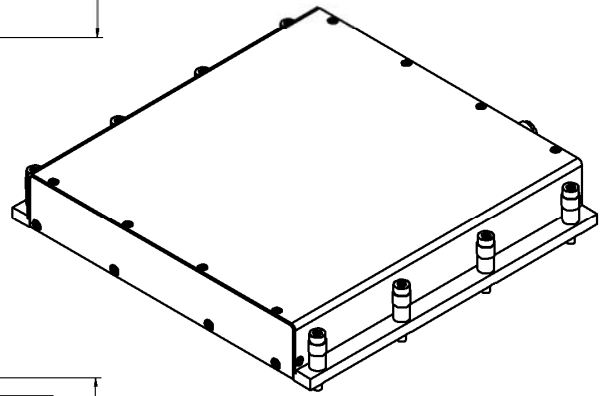
Cleared by DOD/OSR for public release under 09-S-1152 dated 3/10/09

M1221 Outline Drawing



POWER INPUT	
PIN #	DESCRIPTION
J1-1	+28V
J1-2	+28V
J1-3	+28V
J1-4	+28V
J1-5	SPARE
J1-6	+28V RTN
J1-7	+28V RTN
J1-8	+28V RTN
J1-9	+28V RTN

SIGNAL CONTROL		NOTES
PIN #	DESCRIPTION	
J4-1	SPARE	
J4-2	HELIX CURRENT MONITOR RETURN	GROUND
J4-3	SPARE	
J4-4	HIGH VOLTAGE ON/OFF	TTL HIGH = HV ON
J4-5	RF ON/OFF	TTL HIGH = RF ON
J4-6	WARM UP INDICATOR	TTL HIGH = WARM UP (HV DISABLED)
J4-7	HIGH VOLTAGE INDICATOR	TTL HIGH = HV OK
J4-8	SPARE	
J4-9	HELIX CURRENT MONITOR	56 mV/mA
J4-10	SPARE	
J4-11	FAULT INDICATOR	TTL LOW = FAULT (HV, RF OFF)
J4-12	SIGNAL RETURN	GROUND
J4-13	BATTLE OVERRIDE	TTL HIGH = BATTLE OVERRIDE
J4-14	SPARE	
J4-15	SYNCHRONIZATION	TTL HIGH = SYNC



3-D solid models available upon request

Current detailed outline drawings are available on request. Specifications and features are subject to change without notice.



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