



M1270 Microwave Power Module

This newest addition to the 1270 series of MPMs represents the state-of-the-art in low noise, compact, high efficiency pulsed microwave amplifiers. This 1 kW MPM is the ideal choice for miniature, high performance radar systems. The MPM characteristics are detailed below. DS12700811



Performance Characteristics

Frequency.....	X Band
Bandwidth.....	2 GHz (max)
RF Output Power.....	1 kW Peak
RF Input Power.....	5 dBm
Duty Cycle.....	5% (max)
Small Signal Gain.....	55 dB (min)
Pulse Width.....	100 nsec to 80 µsec
PRF.....	50 kHz (max)
Synchronization Frequency.....	400 kHz ± 5%
Harmonics.....	-10 dBc
Spurious.....	-60 dBc (max)
Spectral Purity.....	-70 dBc (max)
Noise Power Density.....	-34 dBm/MHz (max)

Environment

Temperature.....	-40 to +85°C
Underneath TWT Collector.....	+90°C max
Cooling.....	Conduction
Altitude.....	40,000 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

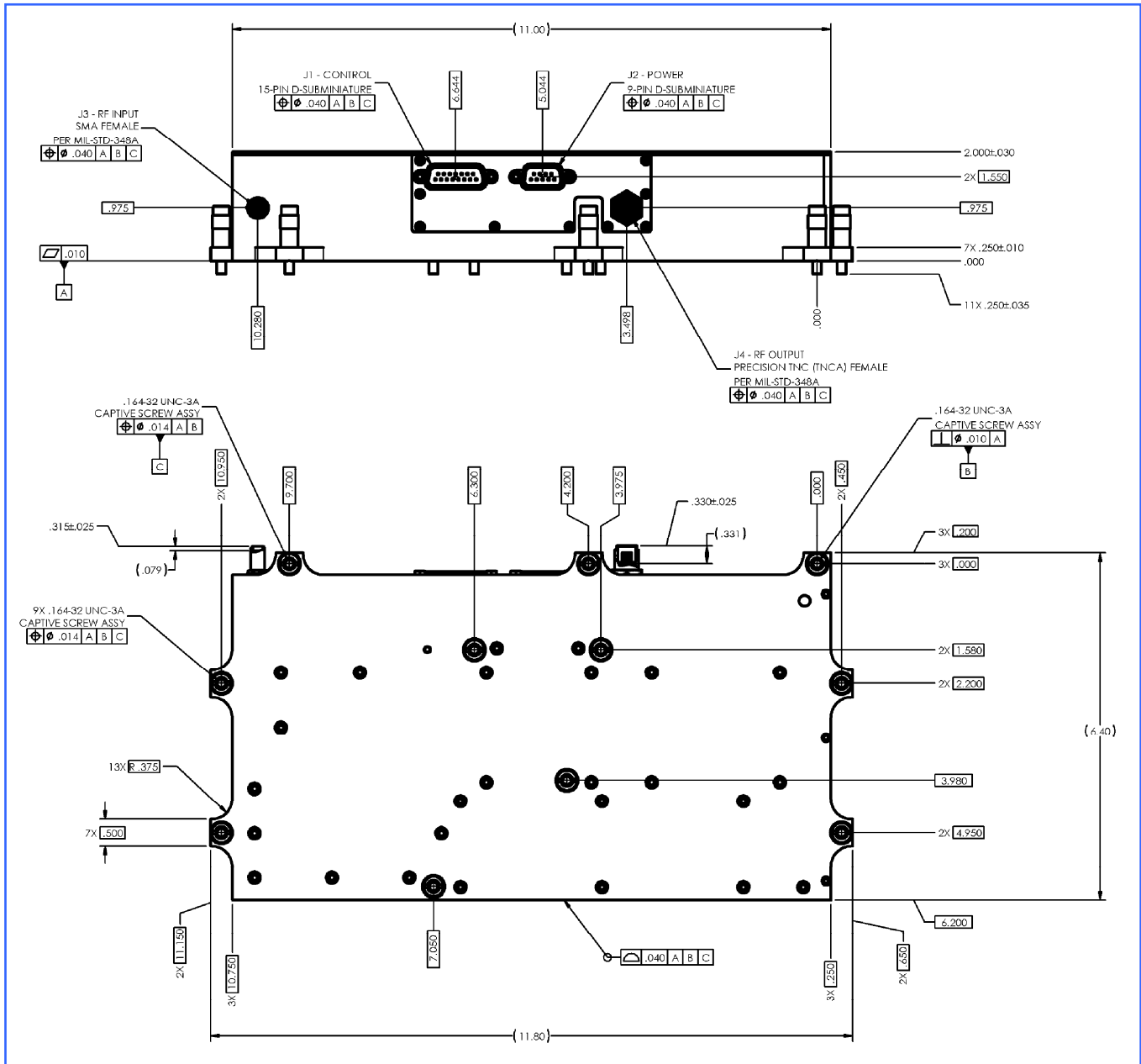
Dimensions.....	11" x 6" x 2.0"
Weight.....	9 lbs (max)
RF Input Connector.....	SMA
RF Output Connector.....	TNC
DC Input.....	9-Pin D-Subminiature

Interface

Prime Power, operating.....	+28 VDC
.....	Per MIL-STD-704E
.....	275 Watts (max)
Prime Power, standby.....	40 Watts (max)
Controls.....	Standby/Operate, Radiate, Sync, Pretrigger*
Digital Indicators.....	Warm-up Complete Indicator Fault Indicator High Voltage Indicator
Analog Monitor.....	Helix Current

*To be applied 3.5 ± 0.1 µsec prior to the Radiate (pulse) command

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CONTROL, MONITOR AND INDICATOR SIGNALS			
PIN #	FUNCTION	SIGNAL FORMAT	NOTE
J1-1	SPARE		
J1-2	LOGIC RETURN	GROUND	
J1-3	EXTERNAL INTERTRIGGER SYNCHRONIZATION INPUT	+5V TTL	200 nsec PULSE-POSITIVE EDGE TRIGGER (400KHz*5%)
J1-4	HIGH VOLTAGE CONTROL INPUT	+5V TTL	LOGIC 1 = HV ON
J1-5	MODULATOR CONTROL (BLANKING) INPUT	+5V TTL	LOGIC 1 = MODULATOR ON (TWT BEAM)
J1-6	WARM-UP INDICATOR	+5V TTL	LOGIC 1 = WARMUP MODE (HV DISABLED)
J1-7	HIGH VOLTAGE INDICATOR	+5V TTL	LOGIC 1 = HIGH VOLTAGE OK
J1-8	SPARE		
J1-9	HELIX CURRENT SENSE OUTPUT	ANALOG	1 V/A
J1-10	THERMAL WARNING SWITCH		NORMALLY CLOSED OPENS BETWEEN 85 AND 90°C
J1-11	MPM STATUS OUTPUT	+5V TTL	FAULT = 0 PARAMETERS GOOD = 1
J1-12	LOGIC RETURN	GROUND	
J1-13	SPARE		
J1-14	PRE-TRIGGER	+5V TTL	500 nsec PULSE – POSITIVE EDGE TRIGGER 3.5 ± 0.1 μS BEFORE MODULATOR COMMAND
J1-15	GROUND	GROUND	

POWER INPUT	
PIN #	FUNCTION
J2-1	+28 VDC
J2-2	+28 VDC
J2-3	+28 VDC
J2-4	+28 VDC
J2-5	CHASSIS GROUND
J2-6	+28 VDC RTN
J2-7	+28 VDC RTN
J2-8	+28 VDC RTN
J2-9	+28 VDC RTN

Current detailed outline drawings & 3-D solid models are available on request. Specifications and features are subject to change without notice.



Electron Devices

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