

Microwave Power Module

M1291

Stellant's M1291 represents the state of the art in low-noise, compact, high-efficiency, millimeter-wave amplifiers for airborne, shipboard and ground military Ka-Band communications applications. This Microwave Power Module (MPM) contains a TWT, an SSA and a power supply. For applications requiring high linearity, an alternate version is available with 50 W of linear output power.



PERFORMANCE

Frequency	30.0 GHz to 31.0 GHz
RF Output Power	50 W min (30.0 GHz to 31.0 GHz)
RF Input Power	-20 dBm max
Small Signal Gain	50 dB min
Spurious	-45 dBc max (>1 MHz from carrier)
Noise Power Density	
Beam On	-30 dBm/MHz
Beam Off	-90 dBm/MHz
VSWR Input	2.0:1 max
Output	2.0:1 max
Load (no damage)	3.0:1 max

INTERFACE

Prime Power, operating	270 VDC (250 VDC to 280 VDC) 380 W max
Prime Power, standby	50 W max
Controls	HV on/off, RF on/off
Digital Indicators	Warm-up complete indicator Fault indicator High-voltage indicator
Analog Monitor	Helix current

ENVIRONMENT

Temperature	-40 °C to +85 °C
Cooling	Conduction
Altitude	50,000 ft
Humidity	Up to 100%, with condensation
Shock	20 g, 11 ms
Acceleration	8 g
Vibration	+3 dB/octave from 20 Hz to 80 Hz 0.04 g ² /Hz from 80 Hz to 350 Hz -3 dB/octave from 350 Hz to 2,000 Hz

MECHANICAL DESCRIPTION

Dimensions	See outline
Weight	10.8 lb. max
RF Input Connector	2.9 mm (K) female
RF Output Connector	WR-28
Control Input Connector	D38999/24WC35PN
PN Power Input Connector	D38999/20WA35PN

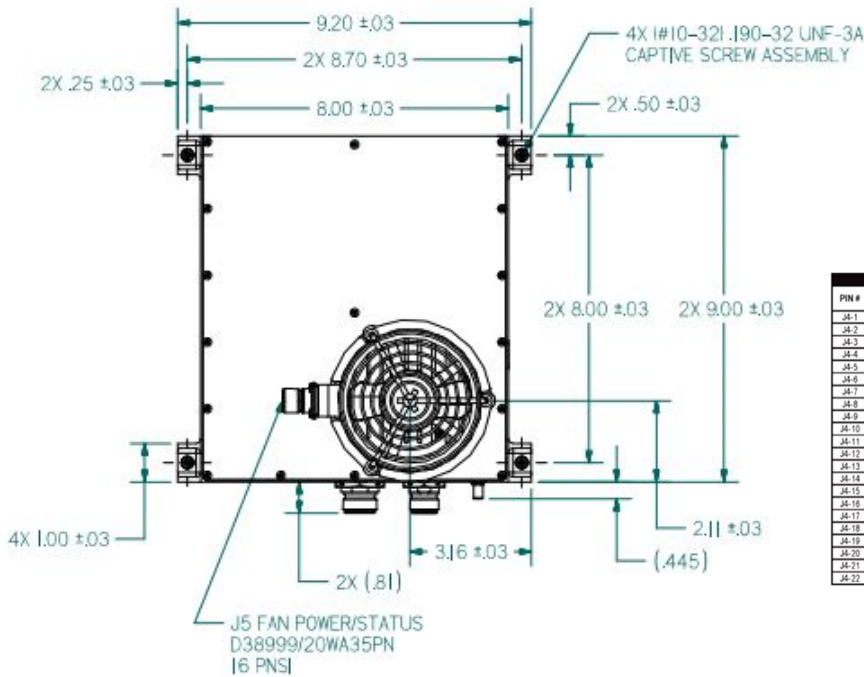
KEY FEATURES

- * 30.0 GHz to 31.0 GHz
- * RF Output Power:
 - * 50 W min (30.0 GHz to 31.0 GHz)

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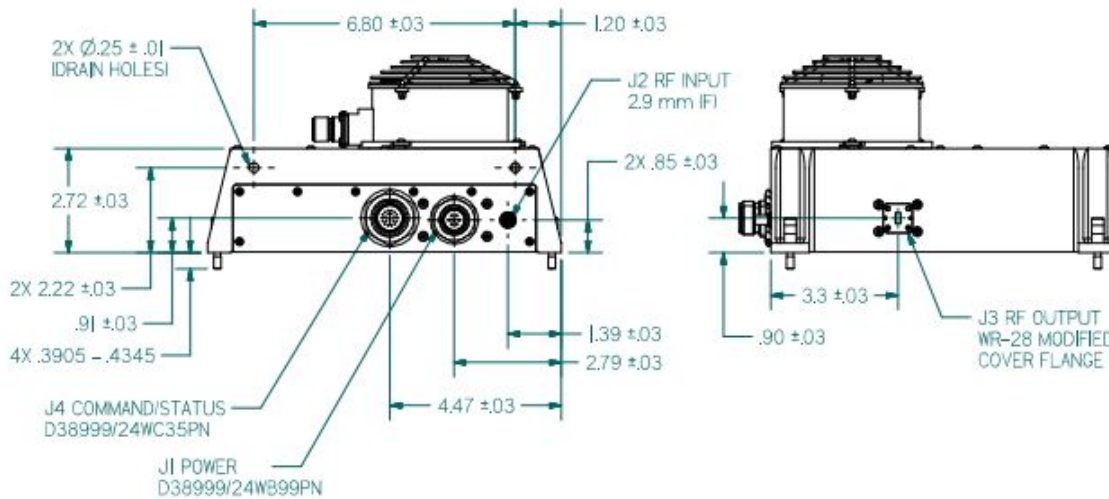
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Outline Drawing- All Dimensions in Inches



CONTROL CONNECTOR PINOUT			
PIN #	FUNCTION	SIGNAL FORMAT	NOTE
J4-1	RESERVED		
J4-2	RESERVED		
J4-3	ANALOG GROUND	GROUND	
J4-4	SPARE		
J4-5	SPARE		
J4-6	SPARE		
J4-7	HELIX CURRENT SENSE OUTPUT	ANALOG	200 mA/V
J4-8	BATTLE OVERRIDE INPUT	TTL	LOGIC 1 = OVERRIDE
J4-9	SPARE		
J4-10	SPARE		
J4-11	SPARE		
J4-12	SPARE		
J4-13	RF CONTROL (BLANKING) INPUT	TTL	LOGIC 1 = BEAM ON
J4-14	SIGNAL RETURN	DIGITAL	
J4-15	SIGNAL RETURN	DIGITAL	
J4-16	HIGH VOLTAGE INDICATOR	TTL	LOGIC 1 = HV OK
J4-17	HIGH VOLTAGE CONTROL INPUT	TTL	LOGIC 1 = HV ON
J4-18	MPM STATUS (FAULT) OUTPUT	TTL	LOGIC 1 = FAULT (HV, RF OFF)
J4-19	WARM-UP INDICATOR	TTL	LOGIC 1 = WARM-UP (HV DISABLED)
J4-20	SPARE		
J4-21	SPARE		
J4-22	SPARE		

POWER CONNECTOR PINOUT		
PIN #	FUNCTION	SIGNAL FORMAT
J1-1	+270 VDC	POWER
J1-2	+270 VDC RETURN	POWER RETURN
J1-3	+270 VDC RETURN	POWER RETURN
J1-4	+270 VDC	POWER
J1-5	SPARE	
J1-6	SPARE	
J1-7	SAFETY GROUND	CHASSIS GROUND



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