

Solid State Power Amplifier (X-Band Radar)

9.2-9.7 GHz, 4000 Watts — Model BHCDP928978-4000

Stellant PST introduces a new Gallium Nitride (GaN) amplifier for Ground and Surface X-Band radar applications. Designed as a TWT replacement, it operates from 9.2 to 9.7 GHz with a 500 MHz instantaneous bandwidth. The amplifier features self-protection for Load VSWR, Duty Factor, Pulse Width, and Temperature, along with graceful degradation in case of RF power module failure. With 10x the MTBF of a TWT, it offers enhanced reliability and lower maintenance costs. Custom configurations and power levels up to 16 kW are available.



KEY FEATURES

- Class AB Gallium Nitride (GaN) Technology
- High Output Power Dynamic Range
- Excellent Efficiency
- RF Input & Output Sample Detectors
- Pulse Width & Duty Factor Protection
- Thermal and Load VSWR Protection
- Remote Status/Control Interface (Ethernet)
- Ruggedized for Harsh Environmental Apps
- Customization Options Available
- Graceful Degradation & Cold Start Capability

SPECIFICATIONS

Frequency Range	9.2-9.7 GHz
Instantaneous Bandwidth	500 MHz
Output Power	4000W Peak
Power Gain	66 dB (nominal)
Pulse Width	40 μ s (Typical)
Duty Cycle	10% (Typical)
PRF	400k Hz (Typical)
Pulse Droop	< 1.0 dB (Typical)
Pulse Rise & Fall Time	< 20ns (Typical)
Input VSWR	< 1.5:1
Load VSWR Protection	∞ VSWR (Circulator)
Output Fwd. & Ref. Sample	-60 dBc
Harmonics	-60 dBc
Phase Noise	-120 dBc/Hz @ 2k Hz




Noise Output (RF Off)	-170 dBm/Hz (Typical)
DC Voltage Input	48V @ 3000W (10% DF, 4kW)
Operating Temperature	0°C to +50°C baseplate
Operating Humidity	0 to 95% Non-Condensing
Operating Shock & Vibration	Per Mil-Std-810F
Operating Altitude	10,000 ft
MTBF	MTBF
Control Interface	
Gate Control (On/Off)	BNC (TTL)
RF Connectors	
RF Input	SMA (F)
RF Output	WR-90
Size	19" x 17" x 7"
Weight	60 lbs

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