

dB-3756HE Microwave Power Module



1kW Pulsed
9 – 10 GHz

The dB-3756HE (High Efficiency) pulsed microwave power module (MPM) operates in the 9 to 10 GHz frequency range and provides 1 kW peak power at 20% maximum duty cycle. A periodic permanent magnet (PPM)-focused, conduction-cooled mini traveling wave tube (TWT) is used for power amplification, and a solid state driver amplifier provides the required RF gain. The high-voltage power supply (HVPS) section uses modular architecture and low-noise power supply topology, utilizing high-efficiency, solid state power conversion circuits. A highly stable, solid state modulator pulses the TWT grid. The conduction-cooled dB-3756HE MPM operates with +28 VDC prime power.

Features

- 9 to 10 GHz, 1 kW pulsed, 20% max. duty cycle
- Very low phase noise and spurious
- Excellent amplitude and phase stability
- High efficiency

Applications

- High-performance radar
- High-resolution synthetic aperture radar (SAR) systems
- Manned and unmanned platforms

dB-3756HE Microwave Power Module Specifications

Reliability by Design®

Electrical

Frequency Range	9-10 GHz
Output Power Peak	1000 W, min.; 1250 typ.
Duty Cycle	20%, max.
PRF	40 kHz, max. (10 kHz with pretrigger)
Pulse Width	0.2 to 100 µsec.
RF Pulse Power Ripple	0.1 dB
RF Pulse Jitter	1 ns RMS (with RF gating)
Gain at Rated Power	60 dB
RF Drive for Rated Power	0 dBm to +5 dBm max.
Harmonics	-12 dBc, max.
Spurious	-50 dBc typical (-60 with pretrigger)
RF Rise and Fall Times	20 ns
Input VSWR	2.0:1 (50 Ω Impedance)
Load VSWR	1.5:1
Input Pretrigger	TTL (optional)
Input Pulse (PRF)	TTL
Control	Discreet, RS-442; RS-485 optional;
Delay, PRF to RF Pulse	300 ns max. (leading edges, 50% points)
Prime Power	28 VDC +3/-6
Protection	Helix Over-Current, Cathode Over-Current Over-Voltage, Over-Temperature, Excessive PRF and Pulse Width or Duty Cycle

Mechanical

Connectors:	
RF Input	SMA (F)
RF Output	TNC (F)
Pulse Input	Differential TTL
Prime Power	DB-15
Control	DB-9
Size	11.8" (W) x 2" (H) x 6.5" (D)
Weight	10 lbs

Environmental

Vibration	10 to 1000 Hz, 0.02g ² /Hz
Operating Temperature	-40° C to +70° C (Base Plate)
Operating Altitude	Up to 50,000 ft
Humidity	Up to 95% RH, no condensation

Options

- Custom Frequency Bands
- Different prime power
- Integrated package with various options

Specifications subject to change without notice.



About dB Control

Established in 1990, dB Control Corp., a subsidiary of the Electronic Technologies Group (ETG) of HEICO Corp., supplies mission-critical, often sole-source, products worldwide to military organizations, as well as to major defense contractors and commercial manufacturers. dB Control designs and manufactures reliable high-power TWT Amplifiers (TWTAs), microwave power modules (MPMs), transmitters and power supplies with modulators for radar, electronic countermeasures (ECM) and data link applications. The company's high-power amplifiers use solid state, as well as vacuum electron devices and cover the 1 to 50 GHz frequency range. The modularity of dB Control's designs enables rapid configuration of custom products for a variety of platforms, including ground-based and high-altitude military manned and unmanned aircraft. dB Control has an outstanding record of successfully repairing, refurbishing and replacing tightly packaged high-voltage transformers, assemblies and power supplies. The company offers specialized contract manufacturing, transformer winding and testing, full vacuum encapsulation, pressure cure, conformal coating and repair depot services from its modern 40,000-square-foot facilities in Fremont, California. www.dBControl.com

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