

dB-3758 Microwave Power Module



1000W Pulsed
9 – 10 GHz



The dB-3758 is an integrated pulsed Microwave Power Module (MPM) operating in the X Band providing 1000 Watts peak output power at a duty cycle of 6%. The RF signal path consists of a solid PIN diode modulator, solid state driver amplifier and a mini-TWT. 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 is used for TWT grid modulation. Synchronization of power supply switching frequency with a radar system clock and blanking during the pulse are two unique techniques used in this unit to make this suitable for extremely low phase noise radar transmitter applications. The dB-3758 has several additional features such as VSWR protection, remote interface with RS-422 and integrated forced air cooling. This MPM is designed to meet military airborne environments and has been used in military manned and unmanned platforms.

Features

- High output power
- Ultra low phase noise
- Excellent amplitude and phase stability

Applications

- Multi-Mode and Synthetic Aperture Radars
- EW threat simulation
- Electronic countermeasures
- Manned and unmanned platforms

dB-3758 Microwave Power Module Specifications

Reliability by Design®

Electrical

Frequency Range	9 to 10 GHz
Peak Output Power	1000 Watts min.
Duty Cycle	6% max.
Pulse Width	50 µsec, max.
PRF	Up to 40 kHz
Throughput Delay	250 nsec max., (200 nsec typ.)
Gain at Rated Power	60 dB, nominal
Phase Noise	-120 dBc/Hz
Harmonics	-15 dBc
Spurious	-70 dBc
Beam Off Noise Power	-105 dBm/MHz
Input VSWR	2:1
Load VSWR	1.5:1
Modulation Control	Differential or TTL
Prime Power Input	28 VDC
TWTA Protection	Helix Over-Current, Cathode Over-Voltage, Excessive Duty Cycle, PRF, Pulse Width, High VSWR
Status Indication	Helix Current, RF Input Power, RF Output Power, Reflected RF Power (all in digital format)

Mechanical

Connectors:	
RF Input	SMA (F)
RF Output	WR90 Waveguide Flange
RF Forward Sample	SMA (F)
Prime Power	D38999/20FC4PN
Control Interface	D38999/20WE2SN
Remote Control	D38999/20FB5PN
Cooling	Built-In (fans/heatsink assembly included)
Dimensions	12" x 9.65" x 4.9" (excluding connector/mounting flange protrusions)
Weight	17.6 lb max.

Environmental

Operating Temperature	-40 to +63° C, ambient air
Storage Temperature	-55 to +85° C
Operating Altitude	Up to 30000 feet
Humidity	Up to 100% RH Non-Condensing
Vibration	10 to 1000 Hz, 0.02g ² /Hz
Shock	15g, 11 msec Half Saw Tooth

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), data links, and communications 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 52,100-square-foot facilities in Fremont, California. www.dBControl.com

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