

dB-3861 TWT Amplifier



400W Peak
32 – 36 GHz

The dB-3861 is a TWT Amplifier (TWTA) operating in the frequency range of 32 to 36 GHz providing 400 Watts minimum peak output power at a duty cycle of up to 25%. A wideband, periodic permanent magnet (PPM)-focused, conduction-cooled TWT is used for power amplification. The power supply topology uses proprietary low-noise, high-efficiency designs to operate the RF signal path. An embedded micro-controller provides the interface, control and protection functions and status indication for the TWT Amplifier. Standard interface protocol for remote operation is RS-485. Other protocols such as RS-232, RS-422, Ethernet, or custom interfaces are available as options. The TWT Amplifier is packaged in a standard 19-inch rack-mount configuration with an integral, forced air cooling system.

Features

- Ka-Band TWTA
- 32 to 36 GHz, 400 W, 25% duty
- Rack-mount configuration
- Excellent reliability

Applications

- Radars
- Test and measurement
- Antenna pattern & radar cross-section measurements
- Electronic warfare (EW) simulation

dB-3861 TWT Amplifier Specifications

Electrical

Frequency Range	32 to 36 GHz
Output Power	400 Watts peak min.
Duty Cycle	25% max.
Pulse Operation	PRF: 300 kHz max. Pulse Width: 0.2 to 50 μ sec max.
Gain at Rated Power	56 dB min.
Harmonics	-20 dBc min.
Spurious	-50 dBc min.
Input VSWR	2:1 max. (50 Ω Impedance)
Output VSWR	2.5:1 max.
Load VSWR	1.3:1 max. for full specification compliance 2.0:1: max., no damage
Prime Power Input	115/200 VAC, \pm 10%, 3-Phase, 50/60 Hz
TWTA Protection	Helix Over-Current, Cathode Over-Voltage, High Reflected RF Power, Over-Temperature, Excessive Duty Cycle, PRF, Pulse Width
Status/Indication	Equipment status, faults, operating hours
Instrument Control	Local (Front Panel) or Remote

Mechanical

Connectors:	
RF Input	WR-28
RF Output	WR-28
RF Output Sample	Type K (F)
Dimensions	24.5" (L) x 19" (W) x 7" (H)
Weight	100 lbs. max.
Cooling	Built-in forced air cooling

Environmental

Operating Temperature	-20° C to +55° C, ambient
Operating Altitude	Up to 10,000 feet
Humidity	Up to 95% RH non-condensing

Options

- Prime power input voltage
- Standard or custom interface protocols
- RF gain control

Specifications subject to change without notice.

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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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