

dB-3860 TWT Amplifier



700W Peak
34.5 – 35.5 GHz



The dB-3860 is a TWT Amplifier (TWTA) operating in the frequency range of 34.5 to 35.5 GHz providing 700 Watts minimum peak output power at a duty cycle of up to 10%. 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
- 34.5 to 35.5 GHz, 700 W, 10% duty
- Rack-mount configuration
- Excellent reliability

Applications

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

dB-3860 TWT Amplifier Specifications

Reliability by Design®

Electrical

| | |
|---------------------|---|
| Frequency Range | 34.5 to 35.5 GHz |
| Output Power | 700 Watts peak min. |
| Duty Cycle | 10% max. |
| Pulse Operation | PRF: 25 kHz max. Pulse Width: 0.2 to 20 µsec max. |
| Gain at Rated Power | 60 dB min. |
| Harmonics | -30 dBc min. |
| Spurious | -50 dBc min. |
| Input VSWR | 2:1 max. (50 Ω Impedance) |
| Load VSWR | 1.3:1 max. for full specification compliance 2.0:1: max., no damage |
| Prime Power Input | 115/200 VAC, ±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.



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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