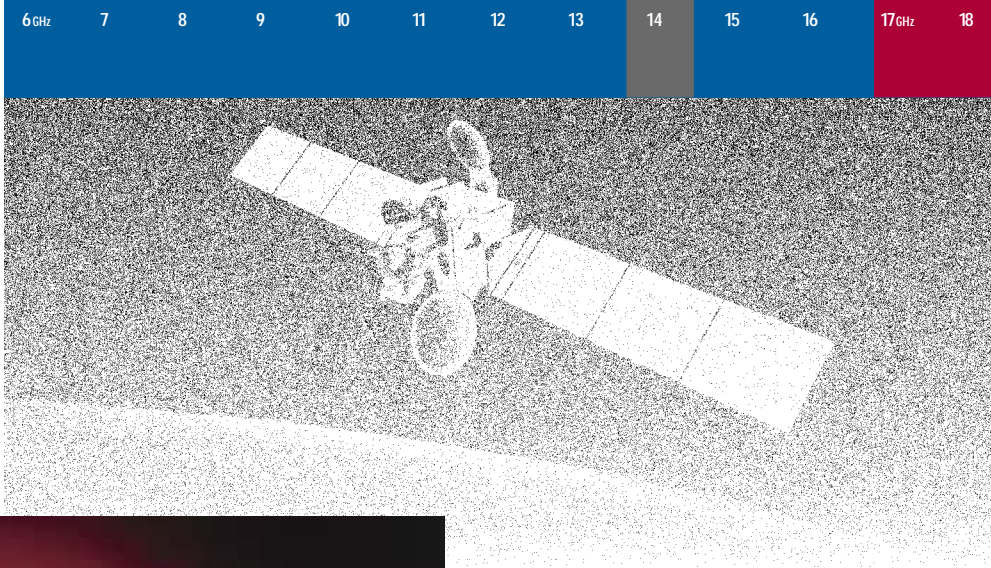


## Model 400 Ku/K Dual-Band TWT Amplifier



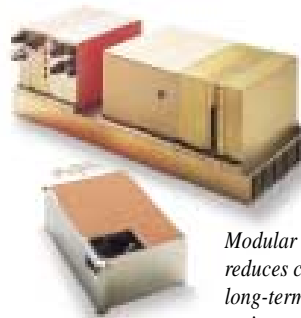
Ku-band and K-band power from a single amplifier provides worldwide satellite uplinking flexibility. The efficient power supply, wide-band TWT and easy to use controls — housed in a compact, ruggedized rack-mounted enclosure — make this system ideally suited for fly-away and other mobile applications.

### ■ Dual-Band Power

This wideband amplifier provides a minimum of 325 watts of output flange power at Ku-band (13.75 – 14.5 GHz), plus 300 watts at K-band (17.3 – 18.3 GHz) and 200 watts from 18.3 – 18.5 GHz uplink frequencies.

### ■ Universal Power Input

is achieved through the use of a wide input (99 to 255 vac, 50/60 Hz) power factor correction circuit. This circuit also reduces the power consumption of the Dual-Band to 1800 volt-amperes and has enabled ETM to certify the unit to the European standards for earth stations described in ETS 300-327.



*Modular design reduces cost of long-term maintenance.*

### ■ Ease of Operation

is provided by a 20-character by 4-line fluorescent display and straight-forward four button control. Complete monitoring is provided, including forward and reverse power, TWT voltages and currents, and operating temperatures.

### ■ In-The-Field Reliability

is ensured by ETM's rigorous testing program. Every ETM amplifier is subject to an environmental burn-in that includes temperature cycling, multiple cold starts from -20°C, and, as required, shock and vibration testing.

### ■ Long Term Value

ETM backs this amplifier with a full 2 year/9000 hour warranty designed specifically to benefit the satellite newsgathering professional. After the warranty period, ETM's easy to service modular power supply design and module trade-in program keep your maintenance costs low.

### ■ Service, Service, Service

Every ETM product is backed by worldwide service provided 24 hours a day, 7 days a week. (800) 883-4ETM or outside North America: (510) 797-1100.

# Model 400 Ku/K Dual-Band TWT Amplifier

## Specifications

<b>Frequency Range</b>	13.75 – 14.50 GHz, Ku-Band 17.3 – 18.5 GHz, K-Band (DBS)	<b>RF Connectors</b>	Input: N-type; rear panel (SMA optional) Output: WR-62; rear panel Sample Port: N-type; rear panel (SMA optional)
<b>Output Power at the Amplifier Flange</b>	325 watts min., 13.75 – 14.5 GHz 300 watts min., 17.3 – 18.3 GHz 200 watts min., 18.3 – 18.5 GHz	<b>Metering</b>	Vacuum Fluorescent Display, 4-line, 20-character
<b>Amplifier Gain</b>	60 dB min., Ku-Band 50 dB min., K-Band	<b>Monitored Parameters</b>	Forward Power (dBm, watts, graph), Reverse Power (dBm, watts, graph), Cathode Voltage, Helix Current, Filament Voltage, Filament Current, Collector Voltage, Grid Voltage, Cabinet Temperature (°C or °F), TWT Baseplate Temperature (°C or °F)
<b>Gain Variation</b>	2 dB max. in Ku-Band 9 dB max. in K-Band	<b>User-Settable Warnings</b>	Over Forward Power, Under Forward Power, Over Reverse Power, Over Helix Current, Over Cabinet Temperature, Over Baseplate Temperature
<b>Gain Slope</b>	.03 dB max. – over any 40 MHz	<b>Altitude</b>	Up to 10,000 ft (derate 2°C/1,000 ft. above 3,000 ft.)
<b>Gain Stability</b>	.25 dB/24-hours – any frequency with constant drive	<b>Temperature</b>	Operating Temperature: 0° to 50°C Storage Temperature: -40° to 70°C
<b>Gain Adjustment</b>	0 – 35 dB – continuously adjustable	<b>Shock and Vibration</b>	Equal to Mobile Van or Antenna Pedestal
<b>Intermodulation Products</b>	Ku-Band: -24 dBc at 7 dB backoff K-Band: -24 dBc at 9 dB backoff	<b>Cooling</b>	Built-in forced air, rear intake and rear exhaust
<b>AM-to-PM Conversion</b>	6 – 8°/dB at rated power	<b>A-C Power</b>	99 – 255 vac, single-phase, 50/60 Hz, 1800 VA
<b>Harmonic Output</b>	Harmonic Filter dependent. Output filters are provided external to TWTA	<b>Mechanical</b>	19" wide x 5.25" high x 24" deep, 69 lbs
<b>Residual AM</b>	-50dBc to 4kHz max. 4kHz to 500kHz -20(1.15 + logF) (F in kHz) max. -85dBc above 500kHz	<b>Interface</b>	RS-422/RS-485
<b>Phase Noise</b>	meets limits 1 & 2 of IESS-308	<b>Certification</b>	Meets requirements of ETS 300-327
<b>Noise and Spurious Outputs</b>	-65 dBW/4 kHz max.		
<b>Phase Linearity</b>	±0.1 radian over any 500 MHz ±0.05 radians over any 40 MHz		
<b>Input VSWR</b>	1.20:1 max.		
<b>Output VSWR</b>	1.50:1 max.		
<b>Load VSWR</b>	1.50:1 max. – for spec. compliance 2.00:1 max. – continuous operation		



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