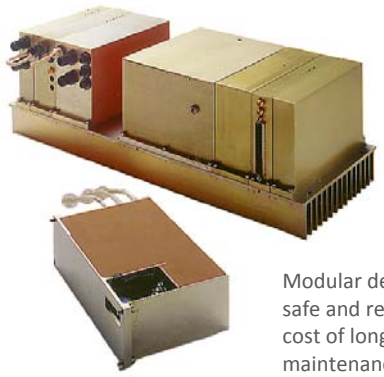
Satellite Communications
Model 400C TWT Amplifier

Built To Last
ETM's C-band satellite uplink amplifiers, packaged in ruggedized three rack-unit enclosures, have been designed specifically for the demands of fly-away, truck and other mobile applications. These amplifiers combine the latest technology, over three decades of ETM's TWT experience, and design features based on in-the-field operation.

Simple, Low-Cost Maintenance
ETM's modular power supply design simplifies maintenance and reduces downtime. Easy-to-access modules considerably improve MTTR and amplifier availability. Each high voltage module is completely encapsulated, safe, and isolated from other electronics.



Modular design is safe and reduces cost of long-term maintenance.

Ease of Operation
Detailed status and monitoring information is provided by a 20-character by 4-line fluorescent display and straightforward four-button control. Complete monitoring includes forward and reverse power, TWT voltages and currents, and operating temperatures.

In-The-Field Reliability
During ETM's rigorous testing program, every amplifier is subjected to an environmental burn-in that includes temperature cycling, multiple cold starts, and shock and vibration testing as required.

Long Term Value
ETM stands behind our amplifiers with a full two-year warranty. After the warranty period, ETM's easy-to-service and low cost modular power supply design reduces service time and helps 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.

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ELECTRICAL

Frequency:	5.85 – 6.65 GHz
Output Power at Flange:	350 watts min.
Amplifier Gain:	60 dB min. at rated power
Small Signal Gain Variation:	4 dB max. (across operating band)
Small Signal Gain Slope:	±0.03 dB / MHz max.
Gain Stability:	± 0.25 dB / 24-hours (after 30 min warm-up, constant drive and temp)
Gain Adjust Range:	0-35 dB (continuously adjustable)
Intermodulation:	-24 dBc max. at 7 dB backoff from total output power with two equal carriers
Spectral Regrowth:	Meets -26 dBc at 140 watts (Single, QPSK Digital Signal)
AM to PM Conversion:	6° / dB at rated power
Harmonic Output:	-60 dBc max.
Residual AM:	
Below 4 kHz:	-50 dBc
4 to 500 kHz:	-20 [1.15+LogF in kHz] dBc max.
Above 500 kHz:	-85 dBc
Phase Noise:	Meets Limits Part 1 & 2 of IESS-308
Noise and Spurious:	-65 dBW / 4 kHz max.
Group Delay (in any 40 MHz band):	
Linear:	0.05 ns / MHz
Parabolic:	0.01 ns / MHz (squared)
Ripple:	0.50 ns / MHz (pk-pk)
VSWR:	
Input:	1.30:1
Output:	2.00:1
Load:	1.50:1 (spec. compliance) 2.00:1 (continuous operation)
Primary Power:	
Voltage:	99-255 VAC, single-phase
Frequency:	50/60 Hz
Consumption:	1.8 kVA

MECHANICAL

Dimensions:	19” W x 8.75” H x 24” L
Weight:	83 Pounds
RF Connectors:	
Input:	Type-N (f), rear panel
Output:	WR-137, rear panel
Sample Port:	Type-N (f), rear panel
Cooling:	Built-in forced air w/ integral fan

ENVIRONMENTAL

Altitude:	Up to 10,000 ft (derate 2°C / 1,000 ft above 3,000 ft)
Temperature:	
Operating:	0° to 50°C
Storage:	-40° to 70°C
Humidity:	
Operating:	Up to 95% non-condensing
Non Operating:	Up to 100% non-condensing
Shock and Vibration:	Normal Transportation

MONITOR & CONTROL

Interface:	RS-422/485
Metering:	Vacuum Fluorescent Display 4-line, 20-character
Monitored Parameters:	Fwd Power (dBm, Watts) Rev Power (dBm, Watts, % fwd power) Cathode Voltage Helix Current Filament Voltage and Current Collector Voltage TWT Baseplate and Cabinet Temp
User-Settable Warnings:	Over / Under Fwd Power Over Rev Power Over Helix Current Over TWT Baseplate and Cabinet Temp

Note: Specifications subject to change without notice.

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