



MT3700

ANTENNA MOUNT TRAVELING WAVE TUBE
MEDIUM POWER AMPLIFIER

THE RUGGED AND ECONOMICAL
SOLUTION FOR UPLINK APPLICATIONS

DUAL C-/KU-BAND: 325W
TRI-BAND AVAILABLE UPON REQUEST



AVAILABLE SYSTEM OPTIONS:

MT3711 1 + 1 Redundant System

MT3712 1 + 2 Redundant System

MT37PC Phase Combined, Single Path
Redundant System

Other Configurations Available Upon Request

AVAILABLE AMPLIFIER OPTIONS:

Low Gain IPA

Block Upconverter

Switchover Control

Linearizer(Selected Bands)

Mounting Configurations

Chassis Color

Remote Controller

Temp Compensation of RF Meters/HPA Gain

Ethernet Interface

RF Output Filters

FEATURES:

Rugged Construction for Extreme Environments

**Downloadable Event Log Screen with Report of
Amplifier Status, Level, Date, and Time**

Diagnostic Port

Sample Port Coupling Factor Screen

**Software Communications Configuration
For Both Remote and Computer Interfaces**

Continuous Attenuator Adjustment Shown in dB

Auto Power Control and Status

**Filament Off State to Conserve Power and Extend
Tube Life**

Remote or Computer Control Modes

ISO 9001



MT3700

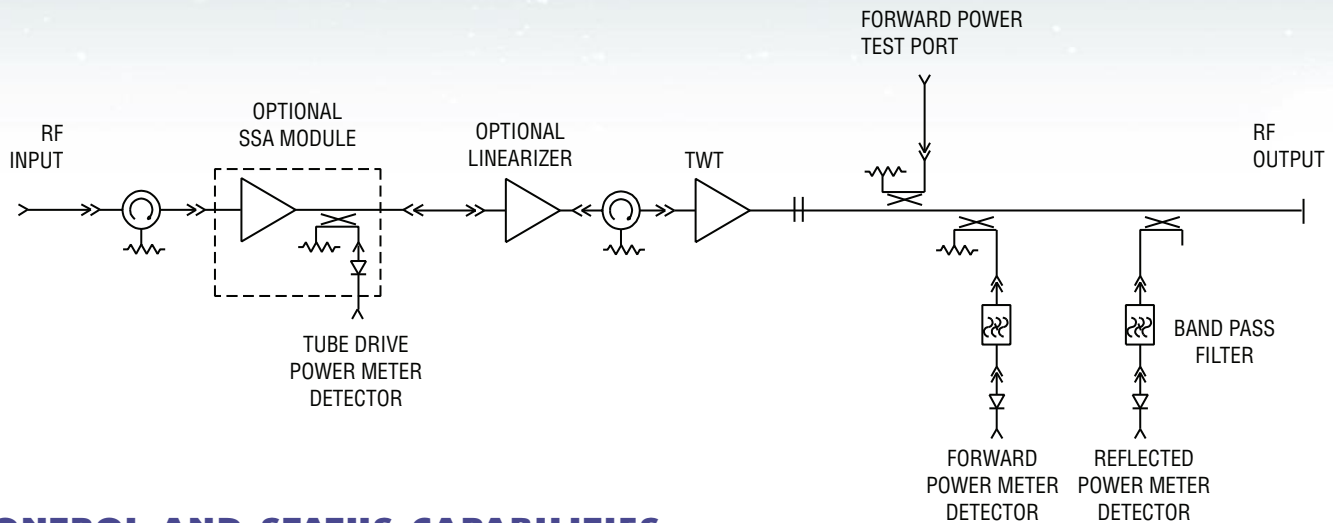
TRAVELING WAVE TUBE MEDIUM POWER AMPLIFIER

ELECTRICAL SPECIFICATIONS	DUAL C-/Ku- BAND	
	C-BAND	Ku-BAND
Frequency Range (F ₀) Standard:	5.850 - 6.425 GHz	13.75 - 14.50 GHz
Output Power (min.):		
Tube Output Flange:		325W (55.1 dBm)
HPA Rated Output:		290W (54.6 dBm)
Gain:		
At Rated Power (min):		65 dB
Small Signal Gain (SSG) (min.):		72 dB
Attenuation Range:		25 dB
Maximum SSG Variation Over:		
Narrow Band:	1.5 dB/40 MHz	
Per 500 MHz:		2.5 dB
Slope, Max.:		±0.04 dB/MHz
Gain Stability:		±0.25 dB/24 hr. max.
Stability, Any Freq. Over Entire Temp:	2.0 dB p-p	
Stability, Any Freq. ±10°C Max.:	1.0 dB p-p	
Input VSWR:		1.5:1 max.
Output VSWR:		2.4:1 max.
Load VSWR:		1.6:1 without damage
AM/PM Conversion:		
At Rated Power:		4.0°/dB
6 dB Below Rated Power:		8.0°/dB
Residual AM Noise, Max.:		
Below 10 kHz:		-50 dBc
10 - 500 kHz:		-20 [1.5 + Log ₁₀ f dBc]
Above 500 kHz:		-85 dBc
Harmonic Output, Max.:	75 Watts max.	-12 dBc
Noise & Spurious, Max.:		
Receive Band:		-63 dBW/4 kHz
Transmit Band (F ₀):		-64 dBW/4 kHz
Phase Noise:		IESS-308-Limit 1 -10 dB (single side band)
AC Fundamental:		-36 dBc
Sum of All Except AC Fundamental:		-42 dBc
Intermodulation, Max.:		
Total Po (2 equal carriers) - 4 dB:	-24 dBc	N/S
Total Po (2 equal carriers) - 7 dB:	N/S	-24 dBc
Group Delay (over 20 MHz):		0.5 ns p-p
Prime Power:		
Voltage:		100 - 264 VAC, 1-phase, 47 - 63 Hz, 2-Wire
Power Consumption:		1.9 KVA
Power Factor:		0.95
In-Rush:		200% of the run current (over 3 half cycles)
Input Transients:		EN61000-4-4, 4-11 (Surge, Fast Transients, Line Dropout)

Notes: All specifications, except gain, are applicable with and without the optional SSA.

Performance information is subject to change without notification. Contact MCL for the latest specifications (TN3700-1).

RF BLOCK DIAGRAM



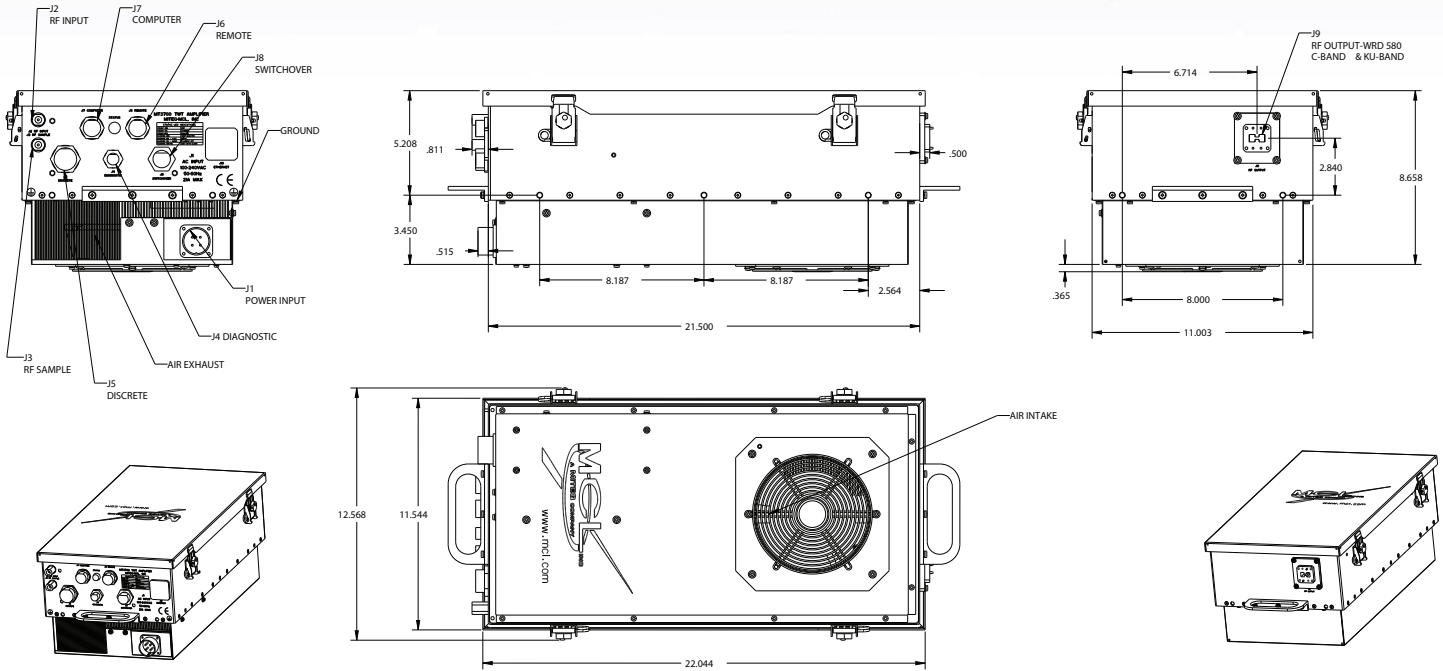
CONTROL AND STATUS CAPABILITIES

TYPE	FUNCTION		
Controls	Power ON Filament OFF Transmit/Standby Reset	Attenuation* Units Select RF Inhibit Clear Event Log	Time and Date Remote/Computer Auto Power*
Adjustable Parameters	Auto Power* Tube Temperature Alarm RF Low Alarm	Tube Overdrive Alarm RF Reflected Power Alarm RF High Alarm	Attenuation PS Temperature Alarm
Displays (Remote and Computer Only)	RF Forward Power Helix Voltage Filament Delay Tube Drive Power	Helix Current Tube Temperature RF Reflected Power RF Inhibit	Filament Current PS Temperature
Faults	Tube Temperature Helix Run Current HV Under Volt User Interlock	WG Pressure Helix Surge Current HV Over Volt Summary	PS Temperature Filament Under Current RF Reflected Power Tube Overdrive
Alarms	RF High RF Reflected Power RF Low	Tube Temperature Summary Tube Overdrive	PS Temperature

*Function available with optional SSA

MT3700

OUTLINE DRAWING



ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:

-40°C to +50°C (derated 1.9°C per 1,000 ft. above sea level)

Non-Operating Temperature:

-50°C to +70°C

Relative Humidity:

100%, condensing

Operating Altitude:

10,000 ft. above sea level (3,048 m)

Non-Operating Altitude:

50,000 ft. above sea level (15,240 m)

Vibration:

MIL-STD-810E, Method 514-4

Shock:

10g, 11ms half sine

MECHANICAL SPECIFICATIONS

RF Connectors:

Input: Type N
Output: (Waveguide Flange)
C-/Ku-Band: WRD580-C2

Installed Weight:

63 lbs. nominal/28.6 kg

Cooling:

Forced air, 2.0" clearance required

Acoustic Noise:

<68 dBA max. at 1 meter

PHYSICAL SPECIFICATIONS

Dimensions:

8.75" H (222 mm)
12.4" W (315 mm)
22.0" L (559 mm)

Air Flow:

150 CFM