



MT3600

ANTENNA MOUNT TRAVELING WAVE TUBE
POWER AMPLIFIER

FOR SATELLITE UPLINK APPLICATIONS

Ka-BAND: 125W
150W
175W
250W



AVAILABLE SYSTEM OPTIONS:

MT3611 1 + 1 Redundant System

MT3612 1 + 2 Redundant System

Other Configurations Available Upon Request

AVAILABLE AMPLIFIER OPTIONS:

Low Gain SSA

L-Band Block Upconverter (Internal to HPA)

Gain Linearizer (Internal to HPA)

Ethernet Interface (Internal to HPA)

Switchover Control

Mounting Configurations

Chassis Color

Remote Controller

FEATURES:

Weather Resistant Antenna Mount TWT Amplifier

Event Log

Software Communications Configuration for both Remote and Computer Interfaces

Attenuator Adjustment in dB

Auto Power Control and Status

Filament Off State

ISO 9001



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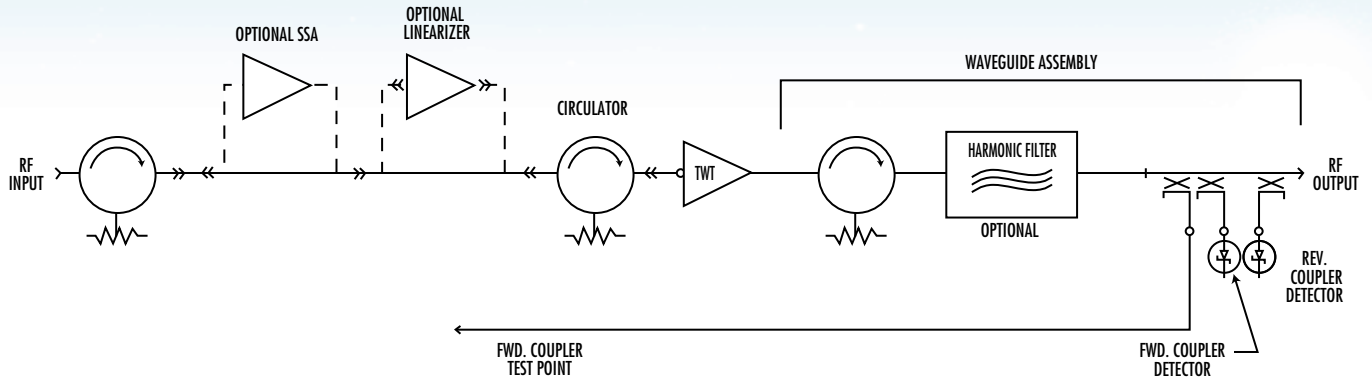
MT3600

TRAVELING WAVE TUBE MEDIUM POWER AMPLIFIER

ELECTRICAL SPECIFICATIONS	Ka-BAND			
	120 W	150 W	175 W	250 W
Frequency Range (F ₀):	27.5 - 30.0 GHz 30.0 - 31.0 GHz			
Output Power (min.):	250 W and 340 W Peak Power Tubes are available. Contact MCL for specification.			
Tube Output Flange (CW):	120 W (50.8 dBm)	150 W (51.8 dBm)	175 W (52.4 dBm)	250 W (54.0 dBm)
HPA Rated Output (CW):	100 W (50.0 dBm)	130 W (51.1 dBm)	150 W (51.8 dBm)	208 W (53.2 dBm)
Gain:				
Large Signal (min.):	37 dB	38 dB	38 dB	35 dB
Small Signal Gain (SSG) (min.):	40 dB	41 dB	41 dB	38 dB
SSG with optional SSA (min.):	73 dB	74 dB	74 dB	71 dB
Attenuation Range with optional SSA (min.):	20 dB	20 dB	20 dB	20 dB
Maximum SSG Variation Over:				
Narrow Band:	0.8 dB/60 MHz			
Full Band:	2.5 dB/1 GHz			
Slope, Max.:	Less than 0.04 dB/MHz			
Gain Stability:				
Constant Temperature:	±0.25 dB			
Stability, Any Freq. -40 to 50°C:	±1.0 dB typ.			
Stability, Any Freq. ±10°C Max.:	±0.75 dB			
Input VSWR:	1.3:1 max.			
Output VSWR:	1.3:1 max.			
Load VSWR:	2.0:1 without damage			
AM/PM Conversion:				
At Rated Power:	6.0°/dB			
6 dB Below Rated Power:	2.5°/dB			
Residual AM Noise, Max.:				
To 10 kHz:	-50 dBc			
10 - 500 kHz:	-20 (1.5 + Log _f kHz) dBc			
Above 500 kHz:	-85 dBc			
Harmonic Output, Max.:	-60 dBc max. (with optional filter)			
Noise & Spurious, Max.:				
Receive Band:	-150 dBW/4 kHz, <21.2 GHz			
Transmit Band (F ₀):	-70 dBW/4 kHz			
Phase Noise:	10 dB below IESS Phase Noise Profile			
AC Fundamental:	-50 dBc			
Sum of All Spurs:	-47 dBc			
Intermodulation (for 2 equal carriers relative to single carrier rated output):				
		(27.5 - 30.0 GHz)	(30.0 - 31.0 GHz)	
	Total P ₀	IM Product	IM Product	
	-4 dB	-18 dBc	-17 dBc	
	-7 dB	-24 dBc	-23 dBc	
Linearizer Option:	-4 dB	-27 dBc	-26 dBc	
Group Delay:	Any 60 MHz Bandwidth			
Linear:	0.01 ns/MHz			
Parabolic:	0.005 ns/MHz ²			
Ripple:	0.5 ns p-p			
Prime Power:				
Voltage:	100 - 264 VAC, 1-phase 2-Wire, 47 - 63 Hz			
Power Consumption:	Specific to tube option. Contact MCL for specification.			
Power Factor:	0.95 min.			
In-Rush:	13A max.			

Note: Performance information is subject to change without notification. Contact MCL for the latest specifications.

RF BLOCK DIAGRAM



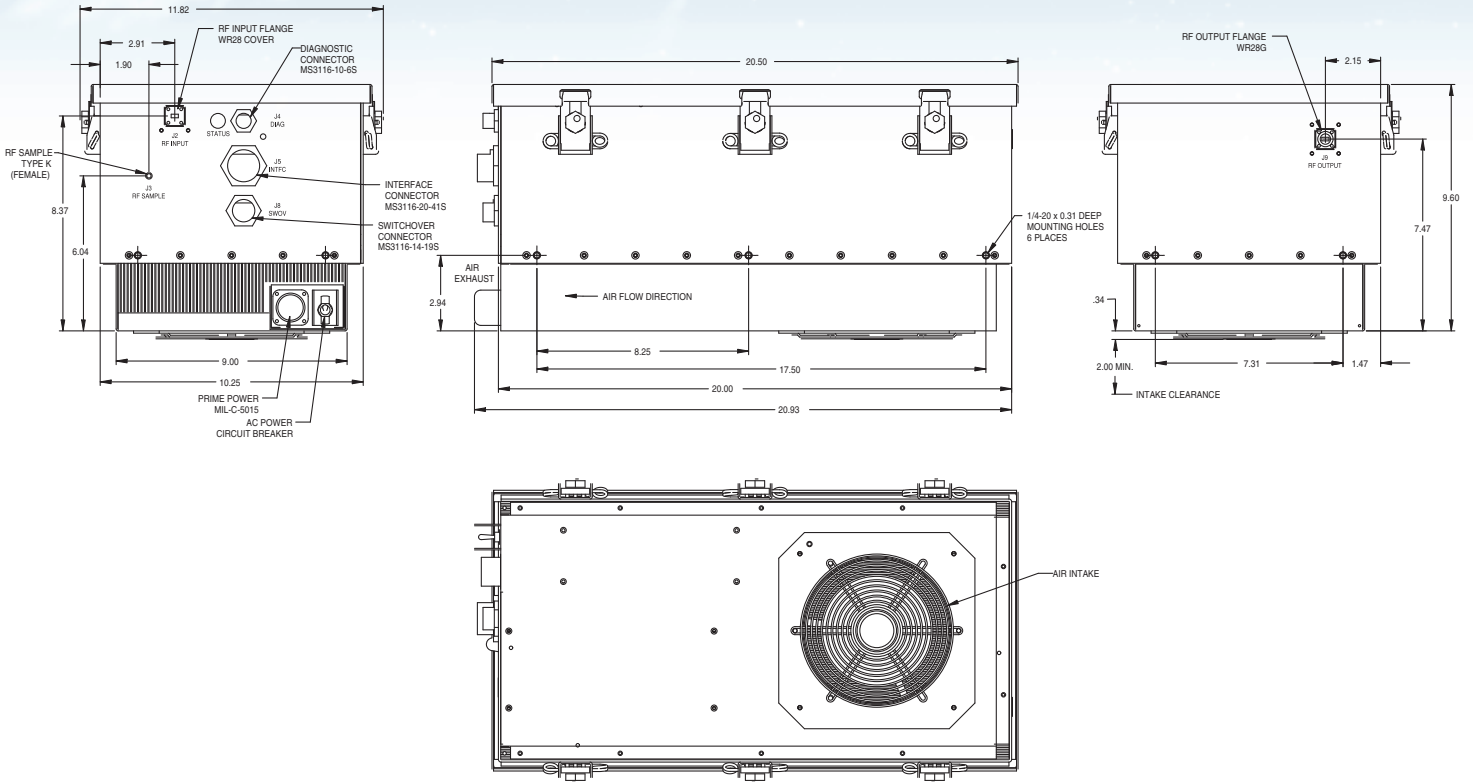
CONTROL AND STATUS CAPABILITIES

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

* Function available with optional SSA.

MT3600

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, Proc. 1, Cat. 1

Shock:

10g, 11ms half sine

MECHANICAL SPECIFICATIONS

RF Connectors:

Input: WR-28
Output: WR-28G

Installed Weight:

46 lbs. nominal/20.9 kg

Cooling:

Forced air, 2.0" clearance required

Acoustic Noise:

<68 dBA max. at 1 meter

PHYSICAL SPECIFICATIONS

Dimensions:

9.60" H (243.84 mm)
10.25" W (260.35 mm)
20.5" L (520.7 mm)

Air Flow:

Specific to tube option

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