

SUPERCOOL

500/550 Watt Peak Power Ka-band Liquid Cooled Antenna Mount Amplifier



XTDL-500/550KaL-N1

500 or 550 W peak power with included linearizer
27.0 to 30.0 GHz
Rugged outdoor mountable
Complete RS-232/422/485 Ethernet interface
Liquid Cooled

Key Specifications

Frequency Range	27.0-30.0 GHz
Peak Power at TWT	500 W (57.0 dBm) or 550 W (57.4 dBm)
Intermodulation Distortion	-26 dBc at linear power
Noise Power Ratio	-19 dB at 170 W (52.2 dBm) or 185 W (52.7 dBm)
Size	22.25" x 9.50" x 10.25" (56.52cm x 24.13cm x 26.04cm)
Weight	58 lbs (26.31 kg)
Prime Power	1400 V typical
Operating Temperature	-40° to +60°C

Options:

Harmonic Filter (0.25 dB output power reduction)
WR-34 Waveguide Output or Input
Alternate Frequency Coverage
Remote External Controller
1:N Redundancy/Phase Combined
L-Band Block Upconverter

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- OUTLINE DRAWING
- INTERFACES
- BLOCK DIAGRAM
- REDUNDANCY OPTIONS



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Additional Performance Specifications		XTDL-500/550KaL-N1	
Flange Power	Peak Power	Max CW Power	Linear Power min
	420 W (56.3 dBm) 465 W (56.7 dBm)	250 W (54.0 dBm) 275 W (54.4 dBm)	210 W (53.3 dBm) 230 W (53.7 dBm)
Gain	Large Signal 70 dB min		Small Signal 70 dB min
Gain Small Signal Variation	Any 250 MHz 0.80 dB max		Any 2.5 GHz 2.5 dB max
Gain Slope	±0.08 dB/MHz max		
Gain Stability	24 hr Constant Temp ±0.25 dB max		Constant Drive ±1.0 dB max
Attenuation Range	25 dB min		
AM/PM Conversion	1.9°/dB at 210 (53.3 dBm) or 230 W (53.7 dBm)		
Harmonic Output	-15 dBc (-60 dBc max with optional harmonic filter)		
Tx Band Noise Power Output	-75 dBW/4 KHz max		
Rx Band Noise Power Output	-150 dBW/4 KHz		
Group Delay Any 250 MHz	Linear max	Parabolic max	Ripple max
	0.01 nS/MHz	0.001 nS/MHz ²	0.5 nS/pk-pk
Residual AM Noise	to 10 KHz	10 to 500 KHz	above 500 KHz
	-50 dBc	-20 (1.5*Logf) dBc	-85 dBc
Phase Noise Continuous	12 dB below IESS Profile		
Phase Noise Spurious	AC Fundamental	Sum of All Spurs (less AC)	
	-50 dBc	-45 dBc	
VSWR	Input	Output	
	1.3:1 max	1.3:1 max	
Environmental	Humidity	Altitude	Storage
	100% condensing	10,000 ft MSL	-50°C to +70°C
Shock and Vibration	Normal Transportation		

