COMTECH™

750W Ka-Band Antenna Mount High Power Amplifiers

- 750-watt Ka-band, peak power
- Frequencies between 27.0 and 31.0 GHz
- Includes linearizer
- Rugged outdoor mountable
- Complete RS-232/422/485 ethernet interface
- -40°C to +60°C ambient

The XTD-750KaL series are compact, self contained antenna mount power amplifiers designed for low cost installation and long life. The XTD-750KaL family features high RF efficiency which enables a smaller, lighter amplifier with the ability to operate at up to 60°C ambient temperatures.

Comtech Xicom has developed proprietary features to improve performance and life including an automatic bias control system which extends TWT life by maintaining constant beam current over time and a precise system for matching linearizer performance to a specific tube over a wide range of operating conditions maximizing useable linear power.

The amplifier is equipped with an internal 1:1 switch control capable of driving an input and output switch for redundancy. Rack mountable controllers are also available.

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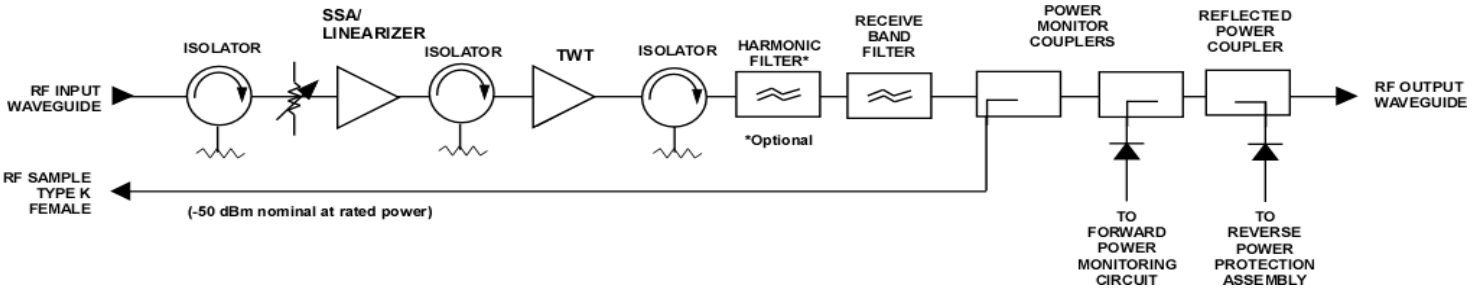
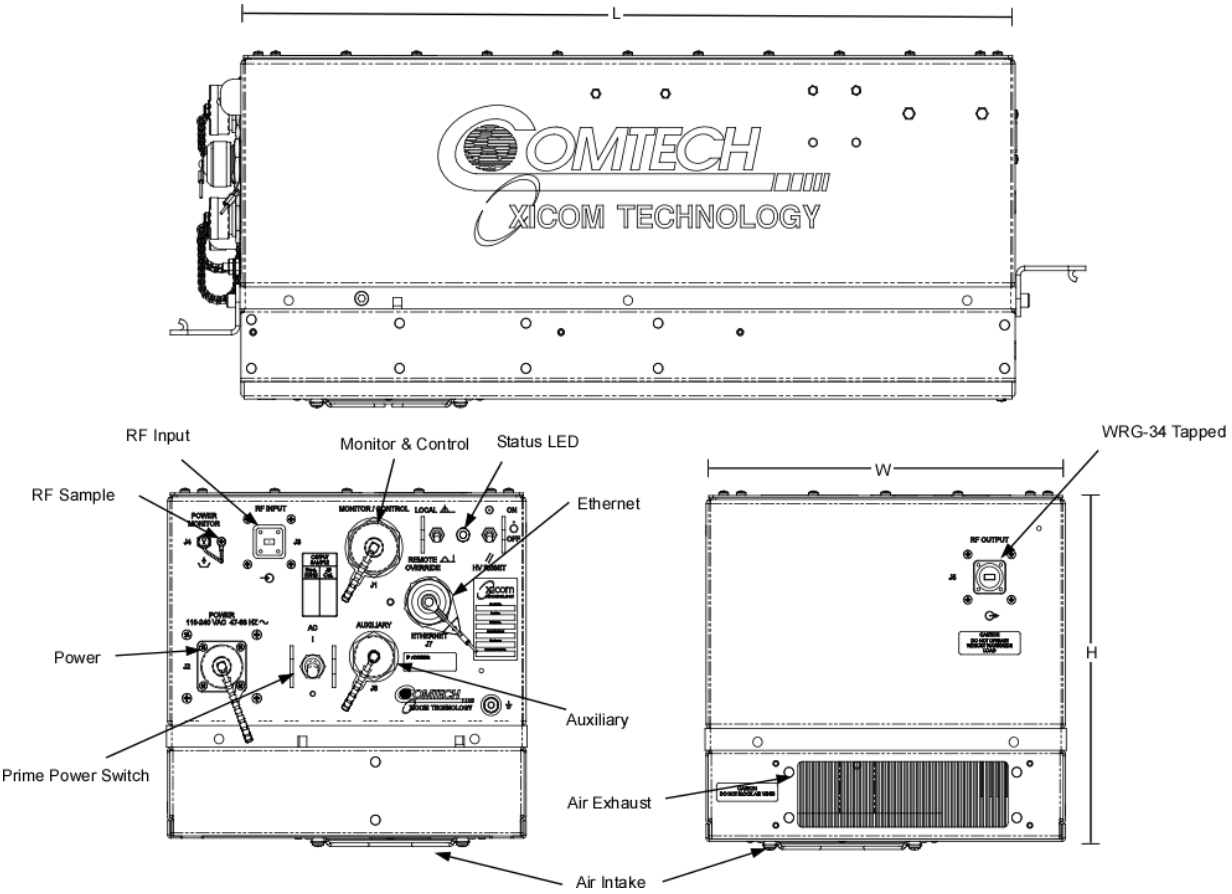
Parameters	Peak Power XTD-750KaL
FREQUENCY RANGE	27.0 to 31 GHz
OUTPUT POWER	
Traveling Wave Tube (Peak Power)	750W (58.175 dBm)
Maximum CW Power @ Amplifier Flange	325W (55.1 dBm) Optional: 380W (55.7 dBm)
Linear Power @ Amplifier Flange: -19 dB NPR	250W (54 dBm)
GAIN	
Large Signal (minimum)	70 dB
Small Signal (minimum)	70 dB
Attenuator range (0.1 dB steps)	30 dB
Maximum SSG Variation Over	
Any Narrow Band	1.2 dB per 250 MHz
Any 1 GHz Band (maximum)	2.5 dB/GHz
Slope (maximum)	± 0.08 dB/MHz
Stability, 24 hr. (maximum)	± 0.25 dB
Stability, Temperature (maximum)	± 1.0 dB at any frequency
INTERMODULATION (maximum) with two equal carriers	-25 dBc at 315 W (55 dBm)
HARMONIC OUTPUT (maximum) with optional harmonic filter	-60 dBc
AM/PM Conversion (maximum)	2.0 deg/dB to maximum linear power
NOISE POWER (maximum)	
Transmit Band	-70 dBW/4 kHz
Receive Band (<21.2 GHz)	-150 dBW/4 kHz
GROUP DELAY (maximum)	
Bandwidth	Any 250 MHz
Linear	0.01 nS/MHz
Parabolic	0.001 nS/MHz^2
Ripple	0.25 nS/Pk-Pk
RESIDUAL AM NOISE (maximum)	-50 dBc to 10 kHz -20 (1.5 + logf) dBc 10 to 500 kHz -85 dBc above 500 kHz
PHASE NOISE (maximum)	10 Hz -80 dBc 100 Hz -85 dBc 1 kHz -92 dBc 10 kHz -102 dBc 100 kHz -115 dBc 1 MHz -125 dBc
VSWR	
Input (maximum)	1.3:1
Output (maximum)	1.3:1

Block Diagram



Outline Drawing



DIMENSIONS		
	INCHES	CENTIMETERS
L	22.25	56.52
H	9.50	24.13
W	10.25	26.04
Typical Weight = 58 lb (26.31 kg)		

Prime Power

100 to 264 Max.
47 to 66 Hz, single phase
1550 VA Typical
0.95 Min. Prime Power Factor

Environment

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-40°C to +60°C
HUMIDITY	Up to 100% Condensing
ALTITUDE	10,000 feet MSL maximum with standard adiabatic derating
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air (self cooled)

Interface

Type	Function	
LOCAL CONTROL	Prime Power ON/OFF	Local/Remote
	Power Supply ON/OFF	HV ON/OFF
LOCAL STATUS	Tri-Color LED:	
	Fault: Red	Standby: Continuous Amber
	HV ON: Green	
REMOTE CONTROL	HV ON/OFF	RF Inhibit (HV OFF)
	RF Attenuation	Fault Reset
	Heater Standby	Constant Power
REMOTE STATUS	HV ON	Heater/Beam Hours
	RF Output Power	Fault Identification
	Reflected Power	TWT Temperature
	Filament Time Delay	Helix Current
	Helix Voltage	
DISCRETE STATUS	Summary Fault (2X Form C Dry Contact Closure)	
RF MONITOR PORT	-50 dB Coupling Value (nominal)	
INTERFACE	Serial 232/422/485 Ethernet	

Options

- Harmonic Filter
- WR-34 Waveguide Output or Input
- Remote External Controller
- 1:1, 1:2, 1:N Redundancy
- Phase Combined
- Unlinearized

About Us

Comtech Telecommunications Corp. delivers trusted mission-critical communications solutions used by military forces, government agencies, public safety organizations, mobile network operators and communities around the world. With nearly 60 years of global communications technology leadership, Comtech provides secure, resilient systems proven to perform in the world's most demanding environments. Through advanced satellite and space communications systems and Allerium's Next Generation 9-1-1 emergency services and location-intelligence platforms, Comtech delivers reliable connectivity across orbit, network and ground to keep essential missions, services and communities connected when it matters most.

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Document XTD-750KaL Rev 1 03/18/2026. Note: Technical specifications are subject to change without notice. Please contact Comtech Xicom before using this information for system design.