



# XTD-40Ka K-Band Antenna Mount Amplifiers



- **40 Watts**
- **No Shelter Required**
- **Complete RS-232/422/485 Interface**
- **Designed for Uplink & LDMS Applications**

The XTD-40Ka is a compact self contained antenna mount power amplifier designed for low cost installation and long life.

Cooling and monitor & control systems are all self contained within the amplifier. By combining the power supply and the RF components within the same amplifier case, the need for external high voltage cables (required for split-box designs) is eliminated. These highly compact units typically weigh only 48 pounds.

TWTs are available delivering 120 Watts to 250 Watts in the 26.5 to 31.0 GHz band. Alternative frequency coverage is available.

This series of amplifiers provides several methods of tube protection. Due to Xicom's unique power supply design less than 1 joule is stored in the power

supply. A high frequency resonant conversion power supply is used that accepts a wide range of prime power (100 to 260 VAC).

The unit also features power factor correction circuitry that minimizes line current distortion and reduces the required volt-amps input.

The amplifiers are available with multiple options including redundant configurations, preamplifiers with fixed or variable gain, output power monitoring, parallel interface, and redundant configurations.

Remote external controllers are available to operate the HPA from a user selected location. Mounting brackets are supplied to mount the HPA to most popular antennas.

# PERFORMANCE SPECIFICATIONS

Parameter	XTD-40Ka
FREQUENCY RANGE	25.7 - 26.1 GHz Alternate Frequency coverage over 26.5 - 31.0 GHz band available
OUTPUT POWER	
Saturated Power (Typical)	40 W
Rated Power(P1dB) @ Amplifier Flange	32 W
GAIN	
Large Signal, minimum	60 dB
Small Signal, minimum	65 dB
Attenuator range (0.1 dB steps)	0 - 20 dB
Maximum SSG Variation Over:	
Any Narrow Band	0.80 dB maximum per 60 MHz
Any 1 GHz Band	2.5 dB maximum dB
Slope, maximum	±0.05 dB/MHz maximum
Stability, 24 Hr maximum	± 0.25 dB
Stability, Temperature	± 1.0 dB maximum at any frequency
INTERMODULATION with two equal signals at 50 W total output power	-18 dBc max
HARMONIC OUTPUT, maximum	-06 dBc
AM/PM CONVERSION, maximum	2.5 deg/dB at 6 dB below rated power
NOISE POWER, maximum	
Transmit Band (27.5-29.5 GHz)	- 70 dBW/4 kHz
Receive Band (<21.2 GHz)	- 150 dBW/4 kHz
GROUP DELAY, maximum	
Bandwidth	Any 60 MHz
Linear	± 0.01 nS/MHz
Parabolic	± 0.005 nS/MHz <sup>2</sup>
Ripple	0.5 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 dB below IESS phase noise profile AC fundamental -50 dBc    Sum of all spurs -47 dBc
VSWR	
Input, maximum	1.4:1
Output, maximum	1.4:1

# PRIME POWER OPTIONS

100-260 VAC

47 to 63 Hz, single phase

62750 VA Maximum

0.95 Minimum Prime Power Factor



## ENVIRONMENT

NONOPERATING TEMPERATURE RANGE

-50° C to + 70° C

OPERATING TEMPERATURE RANGE

-40° C to +50° C

HUMIDITY

Up to 100% Condensing

ALTITUDE

10,000 feet MSL maximum

SHOCK AND VIBRATION

Normal Transportation

COOLING

Forced Air

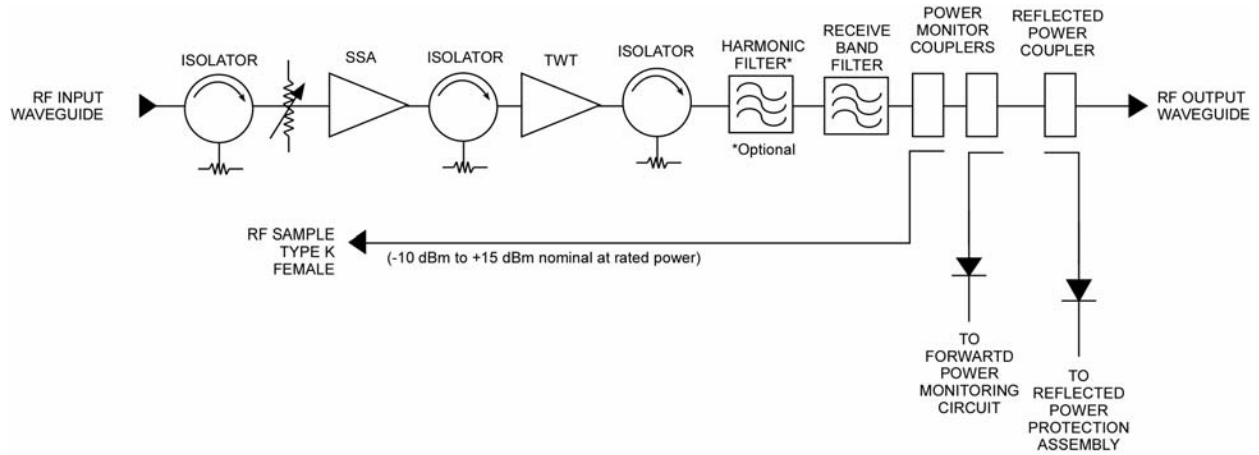
## INTERFACE

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	
	Transmit ON: Green	FTD: Flashing Amber	
REMOTE CONTROL	HV ON/OFF	RF Inhibit (HV OFF)	Heater Standby
	RF Attenuation (w/preamp)	Fault Reset	
REMOTE STATUS	HV ON	Heater/Beam Hours	Filament Time Delay
	RF Output Power	Fault Identification	Helix Current
	Reflected Power	TWT Temperature	Helix Voltage
Form C Dry Contact Closure	Summary Fault		
RF MONITOR PORT	-37 dB Coupling Value (Approx)		

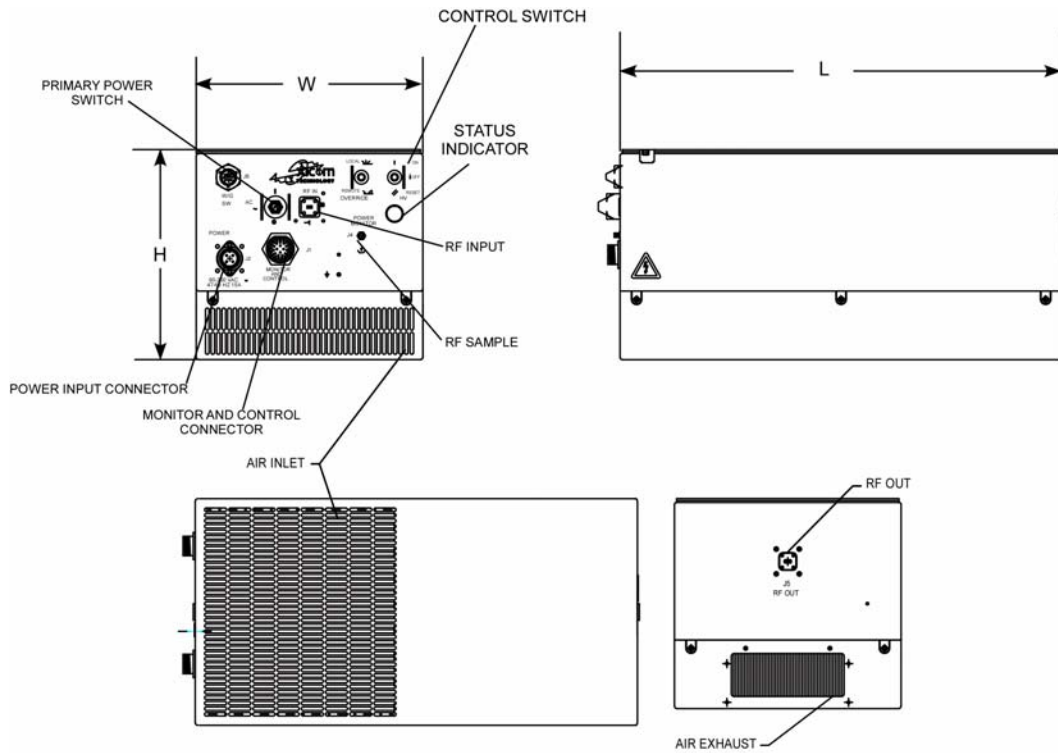
# XTD-40Ka High Power Amplifiers



# Block Diagram



# Outline Drawing



### DIMENSIONS

	INCHES	CENTIMETERS
W	10.25	26.04
L	20.00	50.80
H	9.50	24.13

Nominal Weight = 48 lbs. (21.77 kg)

