



## XT-80Ku Ku-Band Antenna Mount Amplifier



- 80 Watts Ku-Band
- No Shelter Required
- Short Waveguide Run
- Low Cost Installation
- Power Factor Corrected

The XT-80Ku is a compact, antenna-mountable, traveling wave tube amplifier designed for low-cost installation and long life.

Intended for outdoor operation, the self-contained XT-80Ku eliminates the need for a separate amplifier shelter. In addition, the distance between the amplifier and the antenna feed horn can be short, thus eliminating long waveguide runs and their associated RF losses.

RF filters and cooling systems are all self-contained within the package.

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

A remote external controller is available to operate the XT-80Ku from a user-selected location. Depending upon user requirements, these high power amplifiers can be configured for single-thread, redundant, or phase-combined configurations.

Mounting brackets are supplied to mount the high power amplifier to most popular antennas.

# PERFORMANCE SPECIFICATIONS

Parameter	XT-80Ku, Ku-Band
FREQUENCY RANGE standard extended frequency coverage available	14.0 to 14.5 GHz (13.75 to 14.5 GHz)
OUTPUT POWER Traveling Wave Tube Rated Power @ Amplifier Flange	80 Watts 70 Watts
GAIN Large Signal, minimum Small Signal, minimum Maximum SSG Variation Over: Any Narrow Band Full Band Slope, maximum Stability, 24 Hr maximum Stability, Temperature	46 dB (63 dB with optional IPA) 50 dB (70 dB with optional IPA) 1.3 dB per 80 MHz 2.5 dB $\pm 0.04$ dB/MHz $\pm 0.25$ dB $\pm 1.0$ dB maximum over temperature range at any frequency
INTERMODULATION with two equal signals	- 18 dBc maximum with two equal carriers at 4 dB total output backoff
HARMONIC OUTPUT, maximum	- 60 dBc
AM/PM CONVERSION, maximum	2.5 deg/dB at 6 dB below rated power
NOISE POWER, maximum Transmit Band  Receive Band	- 70 dBW/4 kHz  - 150 dBW/4 kHz 10.95 to 12.75 GHz
GROUP DELAY, maximum Bandwidth Linear Parabolic Ripple	Any 80 MHz 0.01 nS/MHz 0.005 nS/MHz <sup>2</sup> 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 Output, maximum	1.3:1 2.2:1

Note: 1.3:1 Output VSWR available with optional External Isolator

## PRIME POWER

100-260 VAC  
47 to 63 Hz, single phase  
575 VA Typical  
0.95 Minimum Prime Power Factor



## OPTIONS

Detected RF  
Remote External Controller  
Preamplifiers  
Gain Control  
Serial Interface  
Extended Frequency Coverage (13.75-14.5 GHz)  
1:1, 1:2, 1:N Redundancy

## 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

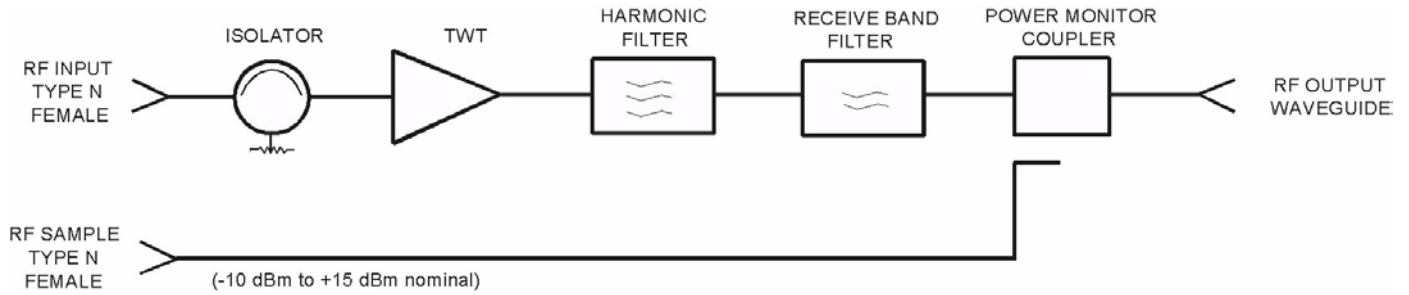
## INTERFACE

TYPE	FUNCTION	
CONTROLS	High Voltage ON/OFF	Heater Standby
	Fault Reset	
<i>Note: Heater Standby reduces the TWT heater voltage for situations where the high voltage is off for extended periods.</i>		
MONITORS — ANALOG	Helix Current (2 mAV)	Cathode Voltage (1000:1 V/V)
	TWT Temperature	RF Output Power (optional)
AUXILIARY VOLTAGES	+15 VDC (100 mA Max)	
	+24 VDC (100 mA Max)	

# XT-80Ku High Power Antenna Mount Amplifiers



# Block Diagram



# Outline Drawing

