Klystron Power Amplifiers
Ku-Band

- 1/2 Cabinet Height of Compatible KPAs
- Digital M&C Interface
- Harmonic & Receive Band Filtering
- Power Save Mode
- Power Supply Redundancy
- RS-232/485 Serial Interfaces

The XTK-2000K, XTK-2000K1, XTK-2000K2, and XTK-2000K3 are compact Klystron Power Amplifiers (KPAs) designed for fixed and mobile uplink applications.

Reduced Size and Weight:

Xicom's KPAs are 1/2 the height of conventional KPAs. Reduced height is complimented by reduced weight. Shipping is greatly simplified as the RF Deck, Klystron Tube, and Power Supply are shipped individually and weigh 100 pounds each.

Microprocessor & Analog Control:

The units can be fully operated locally via the front panel or remotely via a RS-232 or RS-422/485 serial interface connection.

Additionally, users can bypass microprocessor control and operate the unit via the analog controls incorporated into the unit. This design-feature allows users complete flexibility in controlling the amplifier.

Additional Features:

1. Power supply redundancy: within each KPA are three redundant 5KW power supplies. Any two of these power supplies can fully operate the KPA, thereby enhancing operational reliability.
2. Active airflow: automatic sensing and control of blower speed which is independent of line voltage and frequency.
3. Fully power factor corrected for CE compliance.
4. Klystron tube removable through the front panel.
5. Fast-Tune option available.
6. Power Save Mode for Reduced Prime Power.

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PERFORMANCE SPECIFICATIONS

Parameter	XTK-2000K	XTK-2000K1	XTK-2000K2	XTK-2000K3
FREQUENCY RANGE	14.0 - 14.5 GHz	13.75 - 14.5 GHz	14.5 - 14.8 GHz	12.75 - 13.25 GHz
OUTPUT POWER				
Klystron	2450 W	2450 W	2450 W	2200 W
Rated Power @ Amplifier Flange	2000 W	2000 W	2000 W	1850 W
PRESET CHANNELS	8, 12	8, 12	8, 12	8, 12
BANDWIDTH	85 MHz	85 MHz	85 MHz	80 MHz
GAIN				
at rated power	80 dB			
variation, max (at rated power)	0.40 dB Pk-Pk over Fo ± 30 MHz			
slope, maximum (at rated power)	0.04/dB MHz over Fo ± 30 MHz			
Stability, 24 Hr maximum	± .25 dB/24 hrs at constant drive/temperature			
Stability, Temperature	± 2.5 dB at constant drive			
GAIN ADJUSTMENT	0 - 30 dB, 0.1 dB Steps			
INTERMODULATION w/2 = signals	-28 dBc max at 7 db total output backoff			
HARMONIC OUTPUT, maximum	-80 dBc			
AM TO PM CONVERSION				
maximum	4.0º/dB at rated power			
NOISE POWER, maximum				
Transmit Band	-65 dBw/4 KHz			
Receive Band	-150 dBw/4 KHz (10.95 - 12.20 GHz) -110 dBw/4 KHz (16.0 - 40.0 GHz) excludes passband			
GROUP DELAY, maximum				
Bandwidth	Any 80 MHz			
Linear	0.10 nS/MHz			
Parabolic	0.02 nS/MHz squared			
Ripple	2.0 nS/PK-PK			
RESIDUAL AM NOISE, maximum	-50 dBc up to 10 KHz -20 (1.5 + Log f) dBc 10 to 500 KHz -85 dBc above 500 KHz			
PHASE NOISE, maximum	10 dB below IESS-308 phase noise profile			
VSWR				
Input, maximum	1.2:1			
Output, maximum	1.3:1			
Load w/o damage	2.0:1			
Load, shutdown	> 2.0:1			

PRIME POWER

190-260 VAC, L-L, Delta
50-60 Hz, Three Phase, Three Wire, Plus Ground
11500 VA max
.95 minimum power factor
180% max in rush current

CE COMPLIANT

OPTIONS

330-450 VAC, L-L, Wye
50-60 Hz, Three Phase, Four Wire + Ground
Redundant 1:1 Configuration in One Cabinet
Phase Combined & 1:N Configurations
Fast Tuner (< 1 second)

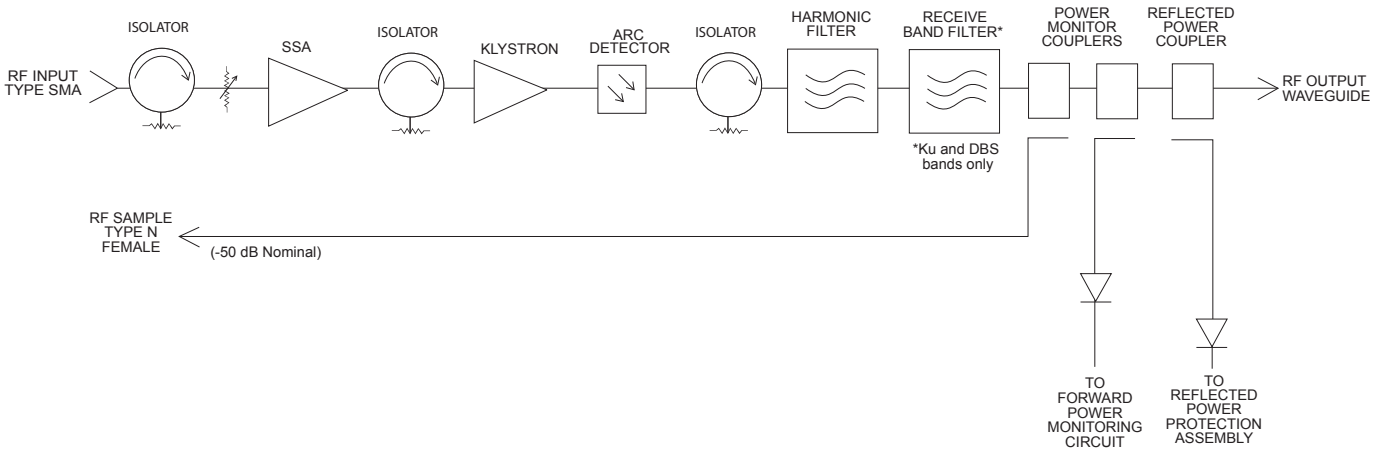
ENVIRONMENT

NON-OPERATING TEMPERATURE RANGE	-50 C to +70 C
OPERATING TEMPERATURE RANGE	-10 C to +50 C
ALTITUDE	10,000 feet MSL maximum
SHOCK AND VIBRATION	Normal Transportation
RELATIVE HUMIDITY	95% Non-Condensing

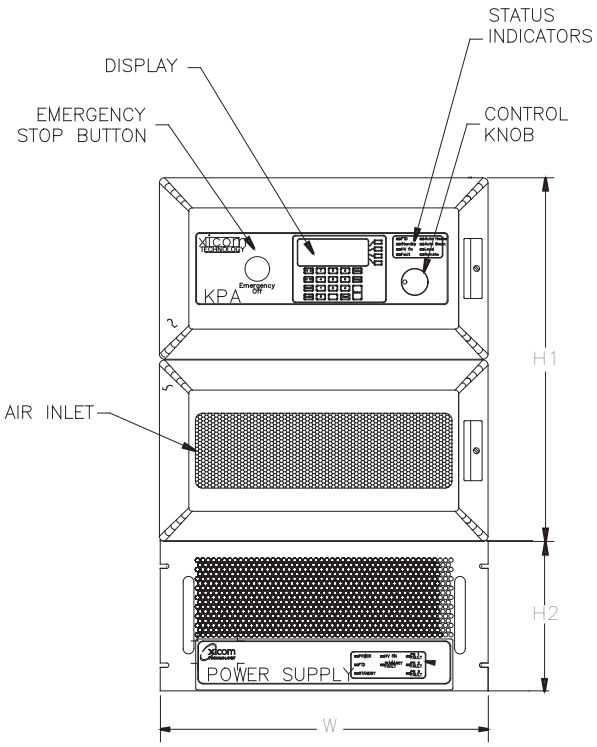
INTERFACE

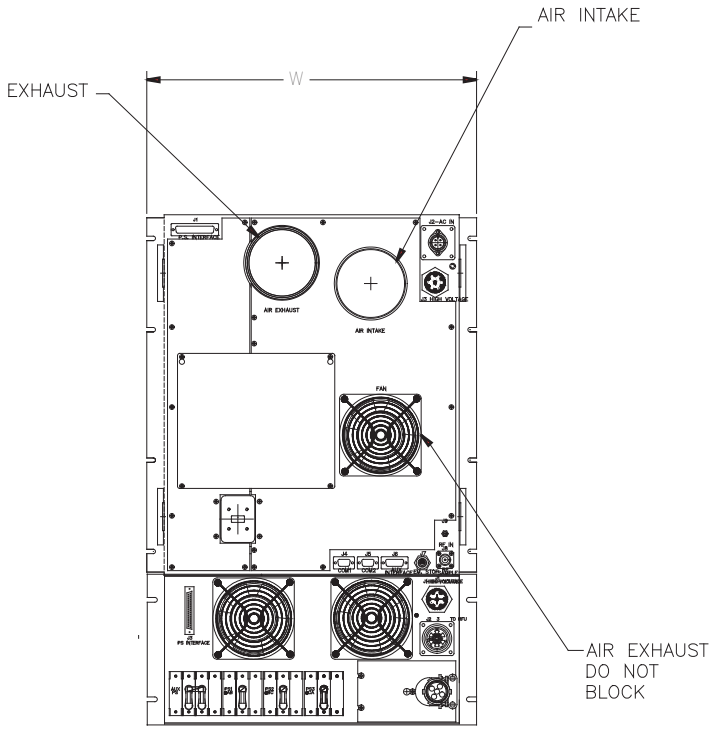
TYPE AND MODE		FUNCTION	
CONTROLS	Local	Local/Remote	AC Power ON
		Lamp Test	Emergency Stop
		Channel Selector	
	Local and Remote	Heater Standby ON/OFF	Channel Selection (Optional)
		Lamp Test	Beam Voltage Adjust
		Fault Simulation Test	HV ON/OFF
		Audio Alarm ON/OFF	Units (Watts, dBm, dBw)
		Fault Reset	RF Inhibit
		Attenuator Setting	Auto Power Save
STATUS	Front Panel LEDs	HV ON	Heater Time Out (FTD)
		Standby	High Voltage Fault
		Heater Standby	Local Mode
		Remote Mode	Body Current Fault
		Summary Fault	
	Front Panel Digital Display	Power Out	Reflected Power
		Attenuator Setting	Klystron Temperature
		Body Current	Beam Voltage
		Beam Current	Channel Selected
		Heater Voltage	Faults:
		Heater Hours	High VSWR
		Beam Hours	Body Current
		Waveguide Arc	High Voltage
		Blower Pressure	Klystron Temperature
		Fan Speed	P.S. Temperature
			Blower
	Dry Form-C Relay Contacts (Two)	Summary Fault	
COMPUTER	Hardware Interface	RS-232	RS-232/RS-422/RS-485
SERIAL PORT	Xicom Command Set	ASCII Commands	
RF SAMPLE PORT	COUPLING	-50 dB Nominal	

Block Diagram



Outline Drawing





DIMENSIONS

	INCHES	CENTIMETERS
W	19.00	48.26
H1	21.00	53.34
H2	8.72	22.15

Nominal Weight = 300 lbs. (136.1 kg)

RF OUTPUT

Ku-band	WR-75

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