Klystron Power Amplifiers
High Efficiency Series
Ku-Band

- Multi-Stage Depressed Collector Klystron
- Compact 1/2 Cabinet Height
- Large Touch Screen Graphical Display
- Parameter Trend Recording
- Power Save Mode
- Power Supply Redundancy
- RS-232/485 Serial Interfaces
- Ethernet Interface
- Optional Built-In 1:1 Controller

Xicom Technology is proud to introduce our latest KPA product, the XTKH-2000K, a compact Klystron Power Amplifier (KPA) that occupies half the standard rack space and comes loaded with practical solutions and cost saving features.

Xicom's high efficiency series KPA features the latest in klystron technology, a Multi-Stage Depressed Collector (MSDC). The addition of the MSDC significantly reduces the prime power and dissipated thermal power of the amplifier. This not only reduces the annual utility costs, but also reduces the earth station's infrastructure cost for the AC power and uninterupted power source.

A color touch-screen display, with an easy to use graphical interface that allows users to easily monitor all KPA parameters in both real-time and as a trend plot over short or long periods, is a standard feature in Xicom's KPA design. Data is also available via an RS-232/485 interface and via an Ethernet port.

Included in the RF unit are a power save mode and variable speed blower. Xicom MSDC klystrons are available with optional digital fast-tuners that allow <1 second local or remote re-tuning.

Built-in power supply redundancy further optimizes reliability. The XTKH-2000K includes three 5kW-power supplies, any two of which will operate the amplifier normally. Xicom power supplies have been field-proven over hundreds of units.

Also, included is a built-in 1:1 redundant controller. Waveguide switch orientation is both graphically displayed and settable on the color digital panel, thereby eliminating the need for a separate controller. Remote switching is also available.

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PERFORMANCE SPECIFICATIONS

Parameter	XTKH-2000K	XTKH-2000K1	XTKH-2000K2	XTKH-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	12	12	12	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
9.0 kVA 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 +40°C
ALTITUDE	10,000 feet MSL maximum Derating (2°C/1000 ft)
SHOCK AND VIBRATION	Normal Transportation
RELATIVE HUMIDITY	95% Non-Condensing

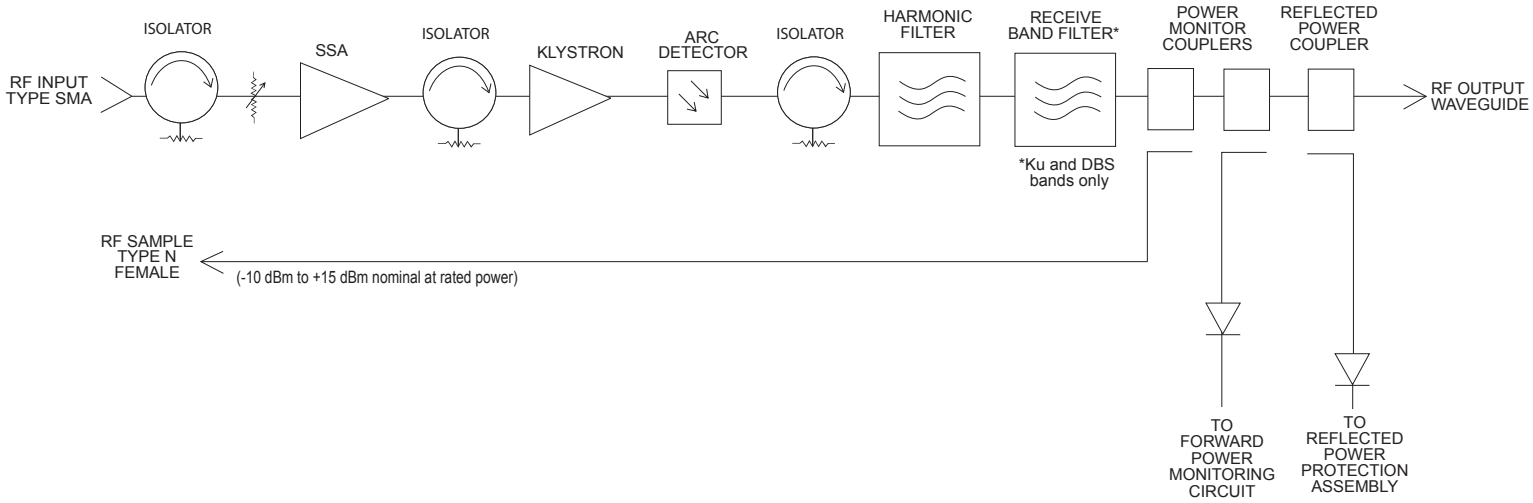
INTERFACE

TYPE AND MODE		FUNCTION	
CONTROLS	Local	AC Power ON	Emergency Stop Channel Selector
	Local and Remote	HV ON/OFF Attenuator Setting Units (Watts, dBm, dBw) Beam Voltage Adjust Fault Simulation Test RF Inhibit	Fault Reset Auto Power Save Heater Standby ON/OFF Min/Max Power Audio Alarm ON/OFF Switch Setting * Channel Selection (Optional)
STATUS		HV ON Standby Heater Standby Power Out Reflected Power Attenuator Setting Body Current Beam Current Heater Voltage Heater Current Heater Hours Beam Hours Blower Pressure Air Exhaust Temp Klystron Temperature Power Supply Temp Switch Setting *	Heater Time Out (FTD) Local/Remote Min/Max Power Beam Voltage Channel Selected (Optional) Faults: Summary High VSWR Body Current High/Low Voltage Air System Fault P.S. Temperature Low Line Waveguide Arc Interlock Power Supply A/B/C
	Dry Form-C Relay Contacts (Two)	Summary Fault	
COMPUTER SERIAL PORT	Hardware Interface Xicom Command Set	RS-232, RS-422/RS-485, Ethernet ASCII Commands	
RF SAMPLE PORT	COUPLING	-50 dB Nominal	

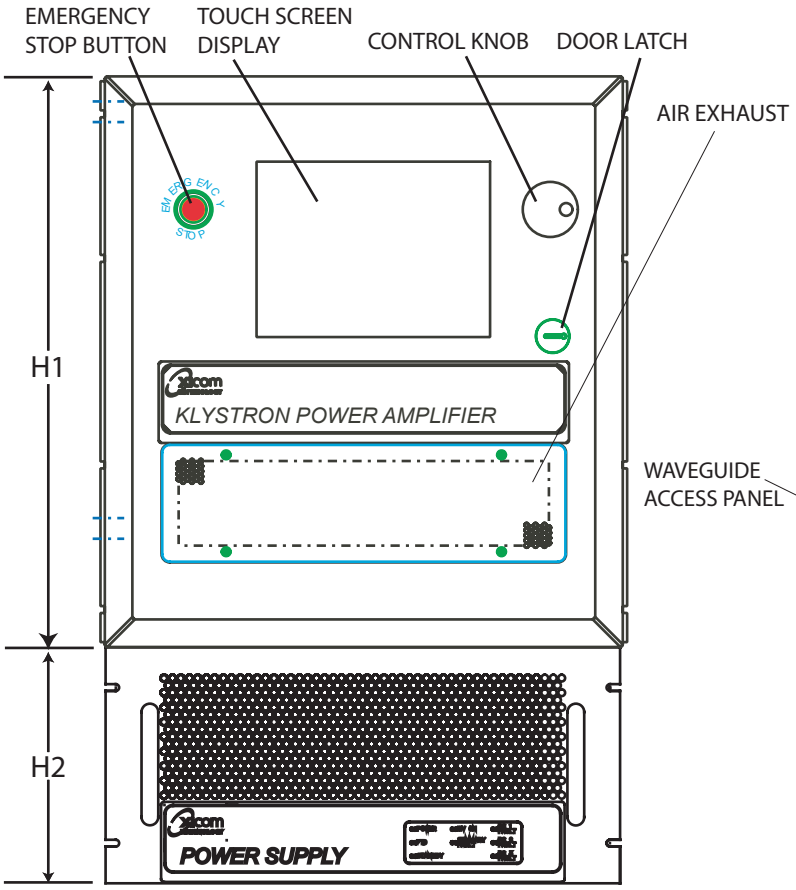
* For 1:1 systems

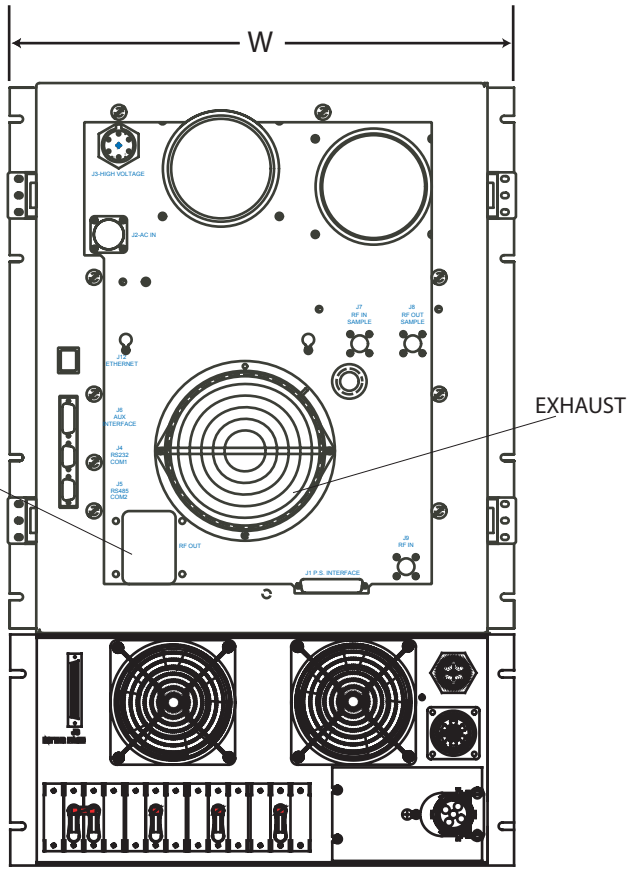
XICOM TECHNOLOGY

Block Diagram



Outline Drawing





DIMENSIONS

	Inches	Centimeters
W	19.0	48.26
H1	21.0	53.34
H2	8.72	22.15
D	29.0	73.66

RF Output: WR-75

Nominal Weight = 300 lbs. (136.1 kg)

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Note: Technical specifications are subject to change without notice. Please contact Xicom Technology before using this information for system design.

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