



# Klystron Power Amplifiers High Efficiency Series DBS-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-1400DBS & XTKH-2000DBS, 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 uninterrupted 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-1400DBS & XTKH-2000DBS 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.

# PERFORMANCE SPECIFICATIONS

Parameter	XTKH-1400DBS	XTKH-2000DBS
FREQUENCY RANGE		
Standard	17.3 - 18.1 GHz	17.3 - 18.1 GHz
Optional	17.3 - 18.4 GHz	17.3 - 18.4 GHz
OUTPUT POWER	1700 W	2400 W
Klystron	1400 W	2000 W
Rated Power @ Amplifier Flange		
PRESET CHANNELS	12	12
BANDWIDTH	50/80 MHz	50/80 MHz
GAIN		
at rated power		75 dB
variation, max (at rated power)		0.40 dB Pk-Pk over $F_o \pm 30$ MHz
slope, maximum (at rated power)		0.04/dB MHz over $F_o \pm 30$ MHz
Stability, 24 Hr maximum		$\pm .25$ dB/24 hrs at constant drive/temperature
Stability, Temperature		$\pm 2.5$ dB at constant drive
GAIN ADJUSTMENT		0 - 30 dB, 0.1 dB Steps
INTERMODULATION w/2 = signals	-26 dBc	-27 dBc
HARMONIC OUTPUT, maximum		-70 dBc
AM TO PM CONVERSION		
maximum	3.0°/dB	4.0°/dB
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		1.3:1
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  
 XTKH-1400DBS: 7 kVA max  
 XTKH-2000DBS: 9 kVA max  
 .95 minimum power factor  
 180% max in rush current



## 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  
 OPERATING TEMPERATURE RANGE  
 ALTITUDE

-50°C to +70°C  
 -10°C to +40°C  
 10,000 feet MSL maximum  
 Derating (2°C/1000 ft)  
 Normal Transportation  
 95% Non-Condensing

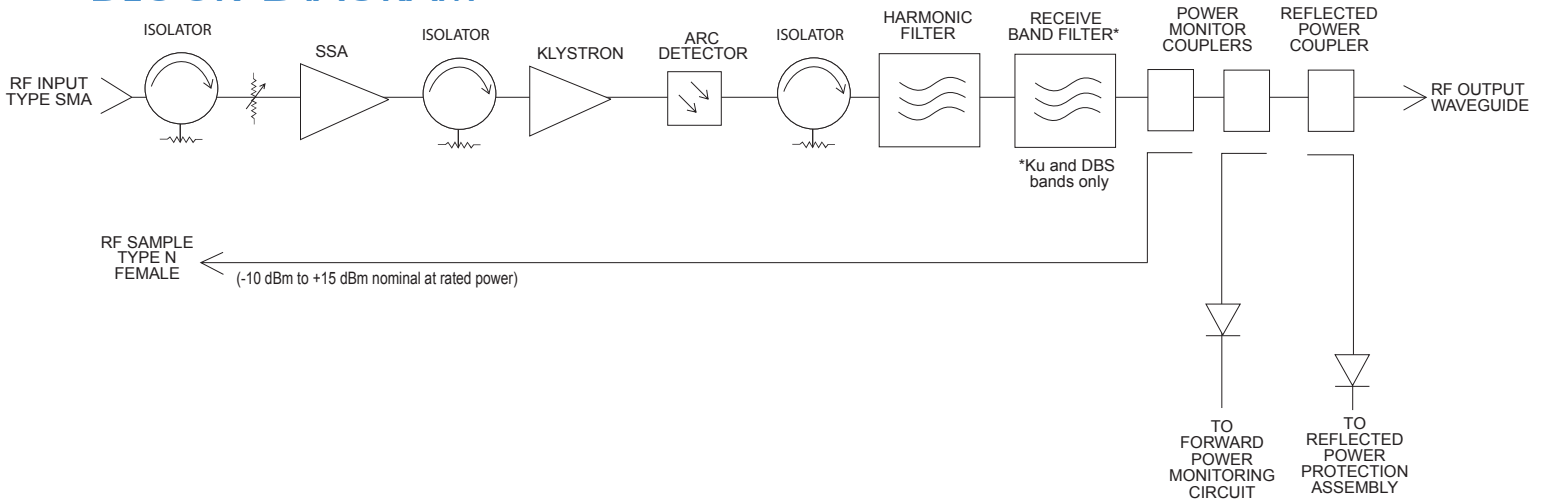
SHOCK AND VIBRATION  
 RELATIVE HUMIDITY

## INTERFACE

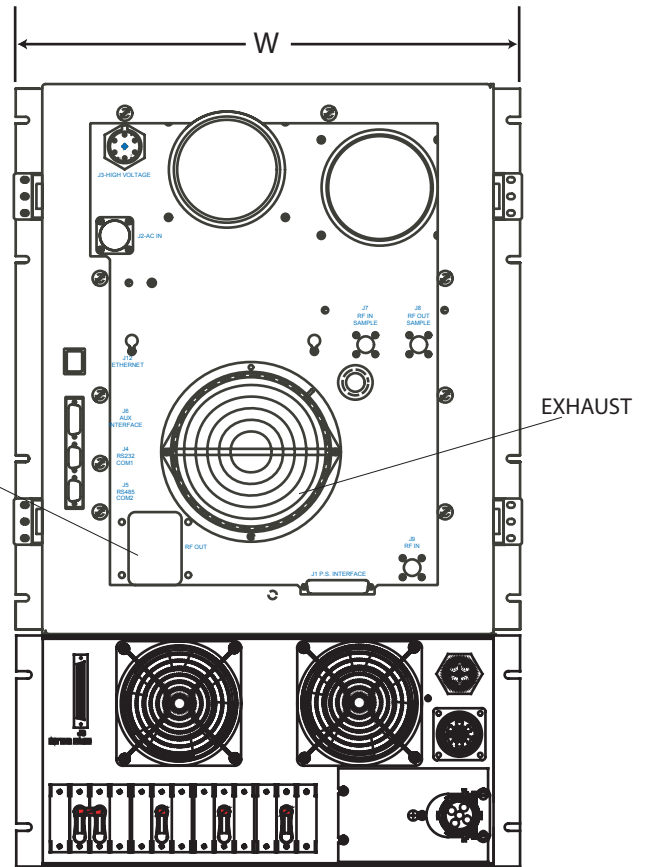
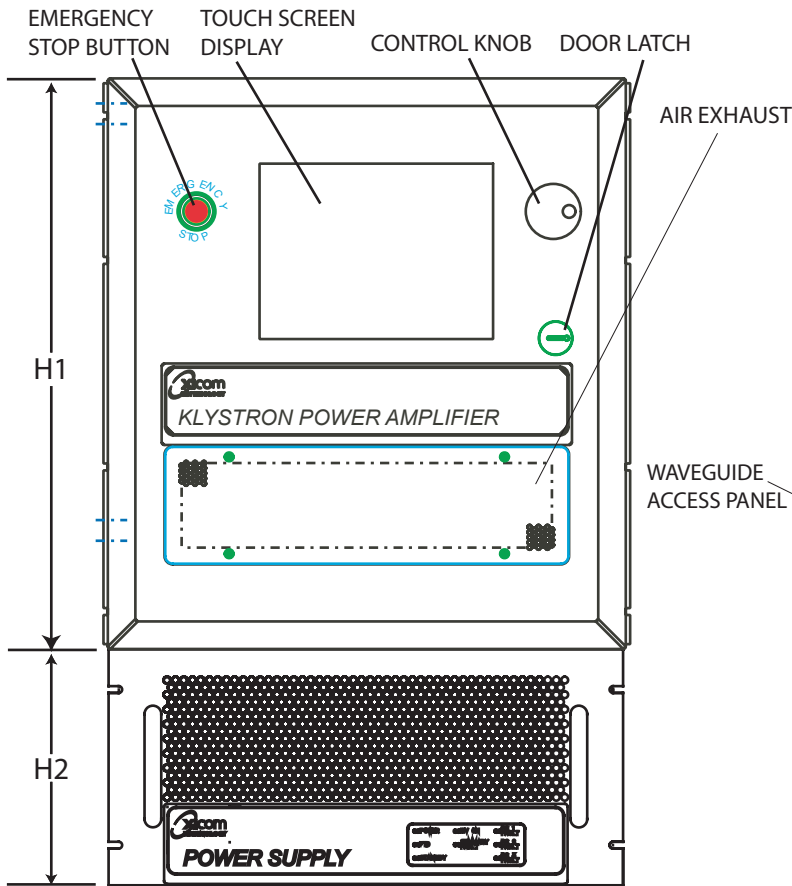
TYPE AND MODE		FUNCTION	
CONTROLS	Local	AC Power ON	Emergency Stop Channel Selector
	Local and Remote	HV ON/OFF Attenuator Setting Units (Watts, dBm, dBw) Beam Voltage Adjust Fault Simulation Test RF Inhibit	Fault Reset Auto Power Save Heater Standby ON/OFF Min/Max Power Audio Alarm ON/OFF Switch Setting * 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 RF SAMPLE PORT	Hardware Interface Xicom Command Set COUPLING	RS-232, RS-422/RS-485, Ethernet ASCII Commands -50 dB Nominal	

\* For 1:1 systems

# 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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