



Klystron Power Amplifiers DBS-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-1400DBS and XTK-2000DBS 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 con-

trolling 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.

PERFORMANCE SPECIFICATIONS

Parameter		XTK-1400DBS	XTK-2000DBS
FREQUENCY RANGE	standard optional	17.3 - 18.1 GHz 17.3 - 18.4 GHz *	17.3 - 18.1 GHz
OUTPUT POWER			
Klystron		1700W	2400W
Rated Power @ Amplifier Flange		1400W	2000W
PRESET CHANNELS		8, 12	8, 12
BANDWIDTH		85 MHz	50 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		± 2.5 dB at constant drive	
GAIN ADJUSTMENT		0 - 30dB, 0.1 dB Steps	
INTERMODULATION w/2 = signals maximum, at 7 dB total output backoff		-26dBc	-27dBc
HARMONIC OUTPUT, maximum		-70 dBc	
AM TO PM CONVERSION maximum, at rated power		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, continuous		2.0:1	
Load, shutdown		> 2.0:1	

*Standard Power Over 17.3 - 18.1 Band; Power Derates to 1500W/1250W Over 18.1-18.4



PRIME POWER

190-260 VAC, L-L, Delta
 50-60 Hz, Three Phase, Three Wire, Plus Ground
 .95 minimum power factor
 180% max in rush current
 XTK-2000DBS: 11500 VA max
 XTK-1400DBS: 11300 VA max



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

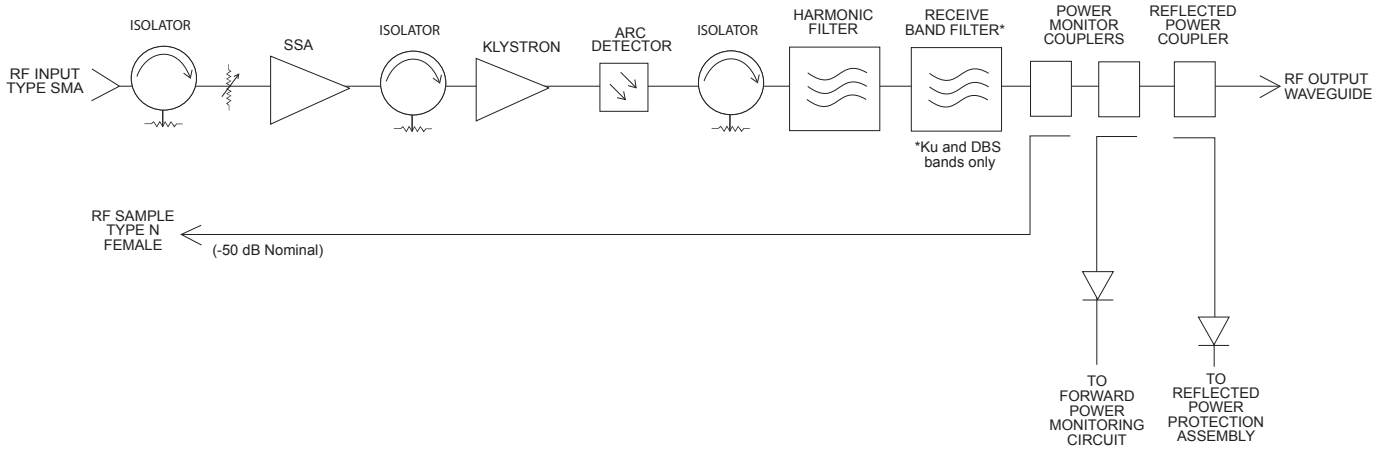
NON-OPERATING TEMPERATURE RANGE
 OPERATING TEMPERATURE RANGE
 ALTITUDE
 SHOCK AND VIBRATION
 RELATIVE HUMIDITY

-50° C to +70° C
 -10° C to +50° C
 10,000 feet MSL maximum
 Normal Transportation
 95% Non-Condensing

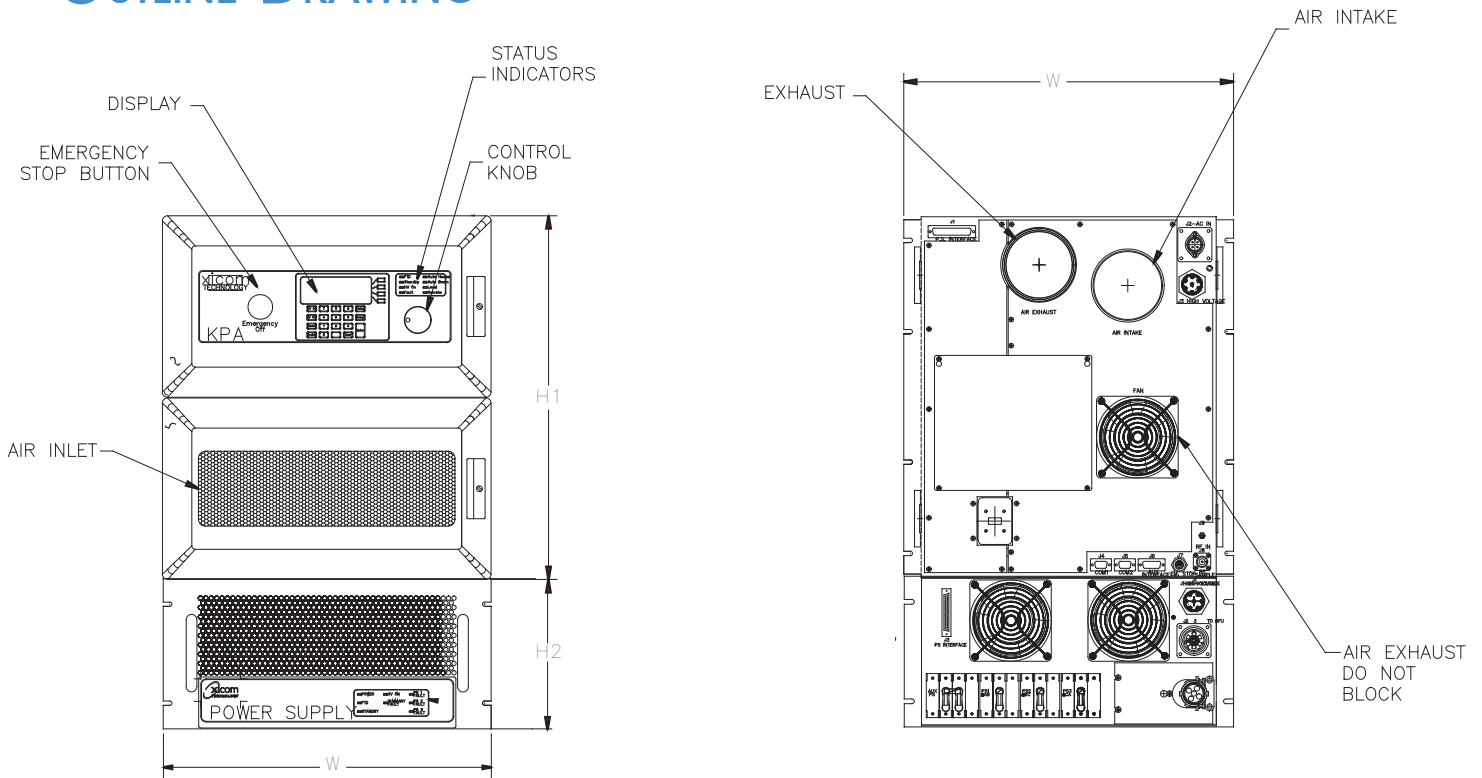
INTERFACE

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

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

DBS-band WR-62



805-0111-001 03/01/02
 (C) Copyright 2002
 Note: Technical specifications are subject to change without notice. Please contact Xicom Technology before using this information for system design.

3550 Bassett Street • Santa Clara, CA • 95054
 Tel: (408) 213-3000 • Fax: (408) 213-3001
www.xicomtech.com