

# Klystron Power Amplifiers C-Band



## FEATURES

- ½ Cabinet Height of Compatible KPAs
- Digital M&C Interface
- Harmonic & Receive Band Filtering
- Power Save Mode
- Power Supply Redundancy
- RS-232/485 Serial Interface

The **XTK-3000C** and **XTK-3000C2** are compact Klystron Power Amplifiers (KPAs) designed for fixed and mobile uplink applications. Xicom KPAs are ½ 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.

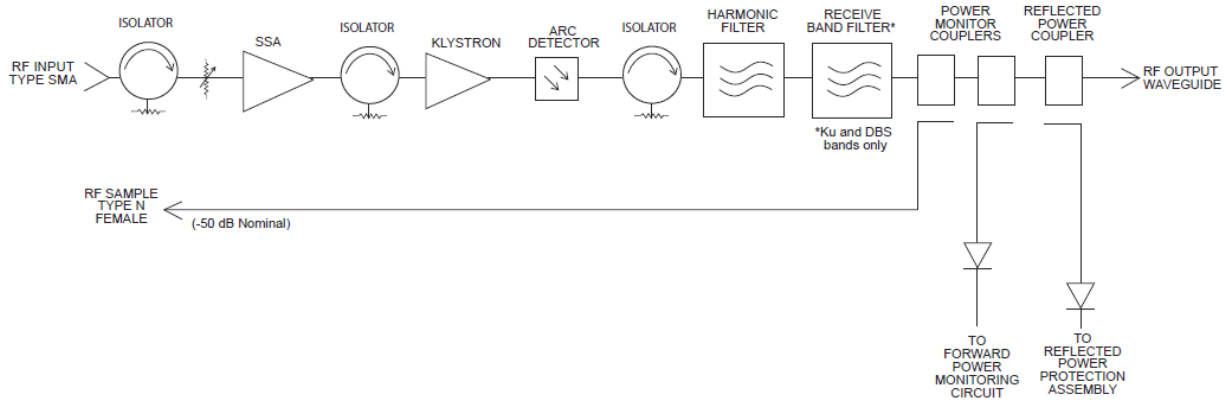
The units can be fully operated locally via the front panel, or remotely via an RS-232 or RS-422/485 serial interface connection. Additionally, users can bypass microprocessor control and operate the unit via the analog controls incorporated into the unit. This design feature allows users complete flexibility in controlling the amplifier. Additional features are: (1) power supply redundancy - within each KPA are three redundant 5 KW 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 blow 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.



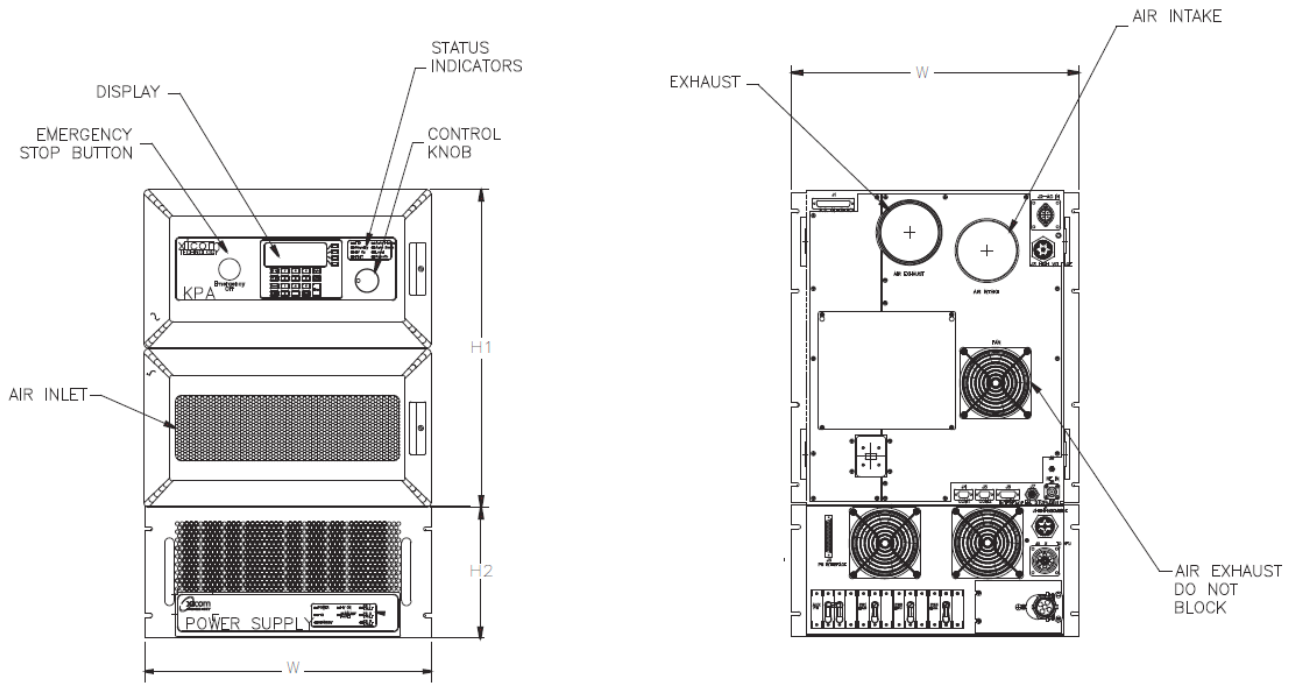
# PERFORMANCE SPECIFICATION

Parameters	XTK-3000C	XTK-3000C2
FREQUENCY RANGE	5.85 to 6.425 GHz	6.70 to 7.05 GHz
OUTPUT POWER		
Klystron	3350 W	3000 W
Rated Power @ Amplifier Flange	3000 W	2600 W
PRESET CHANNELS	6, 12, 24	12
BANDWIDTH	45 MHz	40 MHz
GAIN		
At Rated Power	77 dB	
Variation, at rated power (maximum)	0.40 dB Pk-Pk over Fo ± 30 MHz	
Slope, at rated power (maximum)	± 0.04 dB/MHz over Fo ± 30 MHz	
Stability, 24 hr. (maximum)	± 0.25 dB/24 hrs at constant drive/temperature	
Stability, Temperature (maximum)	± 2.5 dB at constant drive	
GAIN ADJUSTMENT	0 to 30 dB, 0.1 dB steps	
INTERMODULATION (maximum) with two equal carriers	-29 dBc @ 7 dB total output power backoff from rated power	
HARMONIC OUTPUT (maximum)	-80 dBc	
AM/PM CONVERSION (maximum)	4.0 deg/dB at rated power	
NOISE POWER (maximum)		
Transmit Band	-70 dBW/4 kHz	
Receive Band	-150 dBW/4 kHz (3.7 to 4.2 GHz) -110 dBW/4 kHz (4.2 to 40.0 GHz) excludes passband	
GROUP DELAY (maximum)		
Bandwidth	Any 36 MHz	
Linear	± 0.25 nS/MHz	
Parabolic	± 0.05 nS/MHz <sup>2</sup>	
Ripple	2.0 nS/Pk-Pk	
RESIDUAL AM NOISE (maximum)	-50 dBc up 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	
VSWR		
Input (maximum)	1.2:1	
Output (maximum)	1.25:1	
Load w/o damage	2.0:1	
Load, shutdown	> 2.0:1	

# 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

C-band CPR-137G

## PRIME POWER

190 to 260 VAC, L-L, Delta  
 50 to 60 Hz, Three Phase, Three Wire, Plus Ground  
 11500 VA (maximum)  
 0.95 Minimum Prime Power Factor  
 180% in-rush current (maximum)



## ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-10°C to +50°C (2°C/1000 Feet Derating)
HUMIDITY	Up to 95% Noncondensing
ALTITUDE	10,000 Feet MSL (maximum)
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

## INTERFACE

	Type	Function	
CONTROLS	LOCAL	Local/Remote	AC Power On/OFF
		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 (2)	Summary Fault	
COMPUTER SERIAL PORT	HARDWARE INTERFACE	Two Ports: RS-232 & RS-422/RS-485	
	XICOM COMMAND SET	ASCII Commands	
	RF SAMPLE PORT COUPLING	-50 dB Nominal	

## OPTIONS

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

## Headquarters

Comtech Xicom Technology, Inc.  
 3550 Bassett Street  
 Santa Clara, CA 95054  
 USA

Phone: +1-408-213-3000

Fax: +1-408-213-3001

email: [sales@xicomtech.com](mailto:sales@xicomtech.com)

Web: [www.xicomtech.com](http://www.xicomtech.com)

## Europe Sales Office

Comtech Xicom Technology Europe, LTD  
 4 Portland Business Center  
 Manor House Lane  
 Datchet  
 Berkshire SL3 9EG  
 United Kingdom

Phone: +011 44 (0) 1753 549 999

Fax: +011 44 (0) 1753 549 997

email: [sales@xicomeurope.com](mailto:sales@xicomeurope.com)

Web: [www.xicomtech.com](http://www.xicomtech.com)

## Asia Sales Office

Comtech Xicom Technology  
 150 Cecil Street  
 #08-02  
 Singapore 069543

Phone: +011 65 6325 1953

Fax: +011 65 6325 1950

email: [asiasales@xicomtech.com](mailto:asiasales@xicomtech.com)

Web: [www.xicomtech.com](http://www.xicomtech.com)

