

2100 TK AND
TC SERIES
C-BAND AND
KU-BAND
TWT POWER
AMPLIFIER
750 WATTS



The Model 2100 TK Series TWT Power Amplifiers are high performance units designed for SATCOM uplink applications in the extended C-Band (5.85 to 6.65 GHz) and Ku-Band, 13.75 to 14.5 GHz. The units are conveniently packaged for single drawer rack mountings.

The amplifier contains an efficient double depressed collector TWT, a modular switched mode power supply, a solid-state driver amplifier, input and output isolation, as well as a harmonic filter. Amplifier control and monitoring is accomplished via a microprocessor controlled front panel using a backlit LCD readout. The control panel provides comprehensive display of key operating parameters, as well as RF level adjustment by means of an integral pin diode attenuator. The control panel also provides for full protection of all critical components, and remote control via standard serial or optional parallel ports using a PC terminal.

Key Features

- SATCOM Uplink Service
- 750 Watts TWT Output Power
- High Reliability MIL-Type Design
- Modular Resonant Switching Supply
- Air Dielectric High Voltage Section
- Microprocessor Monitor and Control
- Backlit LCD Display
- Compact Single Chassis Package
- Standard IPA with Attenuator
- Standard RS-232 or RS-422 Interface
- Optional Integral Linearizer
- Expandable for 1:N Redundancy

750 WATT POWER AMPLIFIER

PARAMETER	C-BAND SPECIFICATIONS	Ku-BAND SPECIFICATIONS	CONTROLS	C-BAND & Ku-BAND
Frequency Range* <i>(*Optional extended frequency ranges available.)</i>	5.85-6.65 GHz	13.75 to 14.5 GHz	Main Power ON/OFF	Local/Remote
Output Power (Amp. Flange)	600 Watts minimum	590 Watts minimum	Standby/Transmit (R)	Unit Selection - Watts/dBm(R)
Bandwidth	800 MHz (Gain 75 dB min. at rated output)	750 MHz (Gain 70 dB min. at rated output)	RF Drive Raise/Lower (R)	Fault Reset (R)
RF Level Adjustment	25 dB, continuously adjustable	25 dB, continuously adjustable	HI/LO RF Power Limit Set (R)	Lamp Test
Gain Stability <i>(at constant drive, temp. & load VSWR)</i>	±0.25 dB/24 hrs	±0.25 dB/24 hrs	INDICATORS	
Gain Variation	1.5 dB max. across an 800 MHz band	2.0 dB max. across a 750 MHz band	Transmit (R)	Filament Over/Under Current
Gain Slope	±0.02 dB/MHz max. over any 40 MHz band	±0.02 dB/MHz max. over any 40 MHz band	Local/Remote (R)	Helix Over Current(R)
Input VSWR	1.20:1 maximum	1.20:1 maximum	HI/LO RF Output Limits	High Voltage Interlock(R)
Output VSWR	1.20:1 maximum	1.30:1 maximum	HI Reflected Power(R)	Power Supply Over Temp. (R)
Load VSWR	1.5:1 max. for full spec compliance 2.0:1 max. continuous operation, self protecting at any level above 2.0:1	1.5:1 max. for full spec compliance 2.0:1 max. continuous operation, self protecting at any level above 2.0:1	Audible Alarm	TWT Over Temp.(R)
Residual AM	Below 4 kHz: -40 dBc/4 kHz max 4 to 500 kHz: -20 (1.4-Log (f)) KHz where f is in kHz Above 500 kHz: -80 dBc/4 kHz	Below 4 kHz: -40 dBc/4 kHz max 4 to 500 kHz: -20 (1.4-Log (f)) KHz where f is in kHz Above 500 kHz: -80 dBc/4 kHz	METERING	
AM/PM Conversion	6°/dB max. at rated power 3°/dB max. at 6 dB below rated output	6°/dB max. at rated power 3°/dB max. at 7 dB below rated output	TWT Drive Power	Helix Voltage/Current (R)
Noise and Spurious	-135 dBW/4 kHz 3.7 - 4.2 GHz -65 dBW/4 kHz 4.2 - 12.0 GHz -65 dBW/4 kHz 6.725 - 18 GHz	11.7 - 12.2 GHz, -120 dBW/4 kHz 12.2 - 18.0 GHz, -65 dBW/4 kHz -105 dBW/kHz 18 - 40 GHz	Output Refl Power (R)	Filament Current (R)
Group Delay, <i>(over any 40 MHz Segment)</i>			Output Fwd Power (R)	Filament Running Time <i>(R) Also available through the remote interface</i>
Linear	0.05 ns/MHz maximum	0.05 ns/MHz maximum	ENVIRONMENTAL CONDITIONS, OPERATING	
Parabolic	0.01 ns/MHz ² maximum	0.01 ns/MHz ² maximum	Ambient Temperature	-10°C to +50°C derating 2°C/1,000 ft above sea level
Ripple	0.5 ns pk-pk maximum	0.5 ns pk-pk maximum	Humidity	95% max. non condensing
Intermodulation	22 dBc with 2 equal carriers at a total output 6 dB below rated single-carrier output	22 dBc with 2 equal carriers at a total output 6 dB below rated single-carrier output	Altitude	10,000 ft (3,000 m) max.
Primary Power	208 V ±10% 3 phase, 47-63 Hz 220-240V ±10% (1 phase optional) <i>Specified at time of order.</i>	220-240V ±10%, Single Phase, 47-63 Hz 3.7 kVA typical, or 208/240 three phase, 4 wire (optional)	Cooling	Forced Air
Power Consumption	<2.2 kVA, typical	<2.5 kVA, typical	INTERFACE	
Inrush Current	2 x normal line current maximum	2 x normal line current maximum	RF Output	(C-BAND, CPR 137F) (Ku-BAND, WR 75)
Warm-Up Time	3 minutes	3 minutes	RF Input	SMA Female
			RF Sample	SMA Female
			Remote Control	DB9 Male RS-232 DB9 Female RS-422
			Power	DB25 Form C Contacts Molex 5 Pin
			MECHANICAL	
			Dimensions (W x H x D)	19 x 10.5 x 26 in. (483x267x661mm)
			Weight	100 lbs (45.5 kg)
			OPTIONS	
			Integral Linearizer	
			1:N Redundancy Switching	

*Specifications subject to change without notice

Ease of servicing and high reliability are made possible by the use of a modular resonant topology switched mode power supply (SMPS). The SMPS is a key factor in the

amplifier's compact size and weight. Conservative MIL-style design practices ensure long life and trouble-free operation.



2120 Old Gatesburg Road • State College, PA 16803
Tel: (814) 238-2700 • Fax: (814) 238-6589
www.tripointglobal.com

© Copyright 2000 VertexRSI, a TriPoint Global Company.
All product specifications subject to change without notice.
The VertexRSI logo is a trademark of TriPoint Global.

EP (DS)131 - 05/02

