750W DBS-Band Rack Mount TWTA

The new generation of STR Series rack mount TWTAs provide an easy to operate, colour touch screen interface with a multi-functional selector wheel. The colour touch screen display provides clear, easy to read status of the amplifier's operation, including: RF output power monitoring, heater, helix monitoring, & TWT temperature.

Set up screens are intuitive and simple to manage and the touch panel allows full local control and monitoring of all amplifier parameters, including automatic level control, system event logging and graphical trend analysis. Remote control operation can be made via RS485 or through an Ethernet interface, and a web page interface is also available. If a redundancy system is required, this can be set up and controlled via the touch screen. Changes to operating parameters can be locked and password protected if required.

The HPA incorporates a high efficiency multi-collector TWT powered by an advanced power supply built on over 30 years of experience in the design and manufacture of satellite amplifiers.

The company's products have an enviable reputation for performance, robust quality and reliable service.

Options

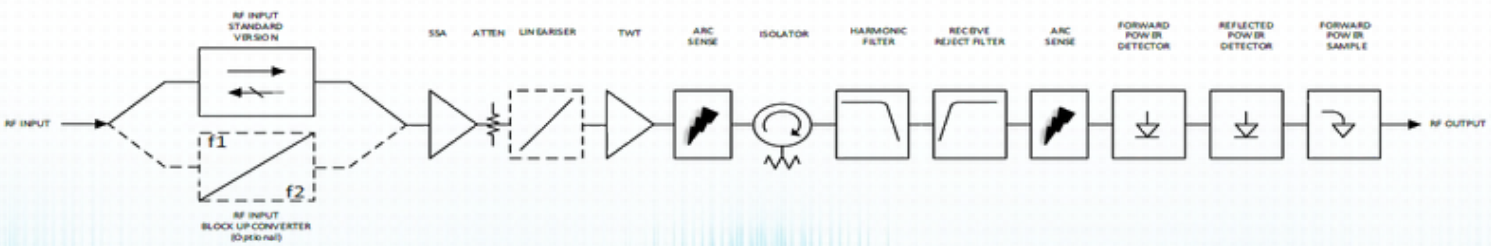
- L-Band Block upconverter
- Auto sense Int/Ext Reference Source

Features



- Compact 4RU enclosure
- Touch screen control
- Ethernet interface
- Remote diagnostics
- Forward and reverse power monitoring
- TWTA performance Event & Data logging
- Constant Power Control
- Uplink Power Control (UPC)
- Redundant Control - contains control and drive circuits for 1:1 or 1:2 Redundancy

Block Diagram



RF Performance			
Frequency range	DB1	17.3 – 18.1 GHz	
	DB2	17.3 – 18.4 GHz	
	DB3	17.3 – 17.8 GHz	
Output Power (for load VSWR 1.5:1)	TWT Power	58.8 dBm (750 W)	
	Rated (flange)	58.1 dBm (650 W) typical	
Gain		≥ 70 dB	
Gain Variation		Over any 80 MHz band, ≤ 0.8 dB peak-peak Over any 750 MHz band, ≤ 2.5 dB peak-peak	
Slope		± 0.04 dB/MHz	
Gain stability vs Time		± 0.25 dB / 24 hours	@ constant drive, temperature and load
Gain stability vs Temperature		± 1.0 dB	@ constant drive & frequency
Adjustment range, G_{ADJ}		30 dB typical	
Adjustment step size		0.1 dB	
Intermodulation (two equal carriers) with total output = P_{rated} –4dB		≤ –18 dBc (No Linearizer) ≤ -26 dBc (with Linearizer)	
Spectral Re-growth		≤ –30 dBc @ 1 symbol rate ≤ Prated – 3 dB (with Linearizer)	
Noise Power Ratio		≤ –19 dBc @ $P_O \leq P_{LIN}$ – 4 dB (with Linearizer)	
AM to PM conversion at P_{rated} –6dB		2.5°/dB	
Noise power		Transmit band: ≤ –70 dBW/4 kHz	
		Receive band (10.95-12.75 GHz): ≤ -150 dBW/4 kHz	
Spurious @ $P_o \leq$ MLP		≤ –60 dBc	
Residual AM		<10kHz ≤ –50 dBc 10kHz< f <500kHz ≤ –20 (1.5+ log f) dBc >500kHz ≤ -85 dBc	
Phase Noise		Continuous 10dB lower than IESS phase noise profile AC fundamental ≤ -50 dBc Sum of all spurs ≤ -47 dBc	
Group Delay	Linear	0.01 nsec/MHz, max	
	Parabolic	0.005 nsec/MHz^2, max	
	Ripple	0.5 nsec/Peak-Peak, max	
Input VSWR (operating)		≤ 1.3:1 max	
Output VSWR (non-operating)		≤ 1.3:1 max	
Load VSWR, no damage		≤ 2.0:1 max	
Harmonic 2nd & 3rd		≤ -60 dBc	

Electrical	
AC Input Voltage	200-240 VAC ± 10%, single phase 50-60 Hz ± 5%
Full Load Current	13 A max @ 200 VAC
Power Consumption	2200 VA typical, 2450 VA maximum
Power factor	0.98 typical, 0.96 minimum

Physical	
Dimensions (outline below)	60.96 cm deep x 48.26 cm wide x 17.78 cm height
Weight	32Kg typ
RF Input	Type N(f) 50 ohm
RF Output	WR-62
RF Sample port	Type N(f) 50 ohm
AC Input	Amphenol C016 20C003 200 12
Ethernet	RJF
Com	9-Way D-Type
Aux Interface	25-Way D-Type
WG Switch	37-Way D-Type

Environmental	
Ambient temperature	-10°C to +60°C
Relative humidity (non-condensing)	95%
Altitude	Operating - 12,000 ft. with standard adiabatic derating of 2°C/1000 ft. Non-operating - 50,000 ft.
Shock	15 g peak, 11mSec, 1/2 sine
Vibration	3.2 g rms, 10-500 Hz
Acoustic Noise	65 dBA @ ≥ 3 ft. from amplifier
Solar Gain	1120 2/m^2

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.