SpacePath 750W C-Band Touchscreen Indoor 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.

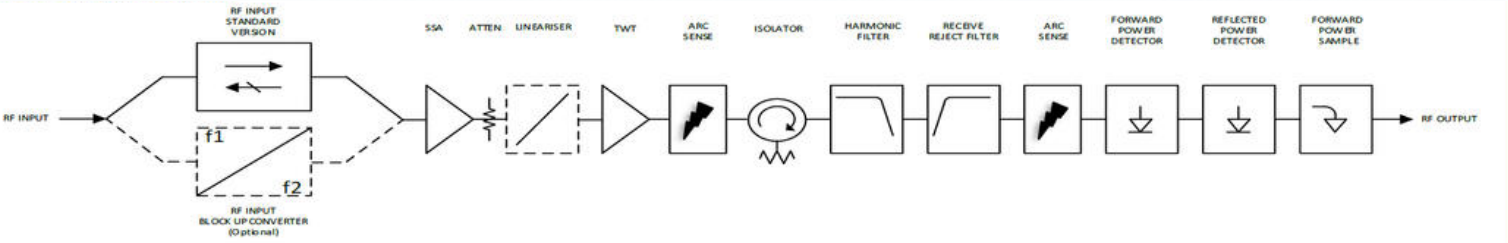
Features

- 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

Options

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

Block Diagram



RF Performance			
Frequency	CC1	5.850 – 6.425 GHz	
	CC2	5.850 – 6.650 GHz	
	CC3	5.850 – 6.725 GHz	
	CC4	5.850 – 7.025 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	
Variation, 80 MHz, G80MHz		≤ 0.8 dB peak-peak	
Variation, 750 MHz, G750MHz		≤ 2.5 dB peak-peak[1]	≤ 4.0 dB peak-peak[2]
Slope, GSLOPE		± 0.04 dB/MHz	
Gain Stability vs. Time		0.25 dB/24 hours	@ constant drive & temp
Gain Stability vs. Temperature		± 1.0 dB	@ constant drive & frequency
Adjustment range, GADJ		30.0 dB typical	
Adjustment step size		0.1 dB	
AM/PM		≤ 2.5°/dB at Prated – 6 dB	
Inter-modulations (IMD) 2-tone		≤ -18 dBc @ $P_O \leq P_{LIN} - 1$ dB[1] ≤ -26 dBc @ $P_O \leq P_{LIN} - 1$ dB[2]	
Spectral Re-growth (SR)		≤ -30 dBc @ $P_O \leq P_{LIN} - 1$ dB[2]	
Input VSWR (Return Loss)		≤ 1.3:1 (17.7 dB)[3] ≤ 1.6:1 (12.7 dB)[4]	
Output VSWR (Return Loss)		≤ 1.3:1 (17.7 dB)	
Load VSWR (no damage)		≤ 2.0:1 (9.5 dB)	
Harmonic 2nd & 3rd		≤ -60 dBc	
Transmit Band (T_X)		≤ -70 dBW/4KHz	
Receive Band (R_X)		≤ -150 dBW/4KHz (3.4 – 4.2 GHz)	
Spurious @ P_o ≤ MLP		≤ -60 dBc	
Residual AM		≤ -50 dBc, f < 10KHz ≤ -20(1.5+LOG(frequency KHz))dBc, f = 10KHz to 500KHz ≤ -85 dBc > 500KHz	
Phase Noise		10 dB below IESS requirement[3] 3 dB below IESS requirement[4] ≤ - 50 dBc, AC fundamental ≤ - 47 dBc, Sum of all spurs	
Group Delay (any 80 MHz)	Linear	0.01 nsec/MHz, max	
	Parabolic	0.005 nsec/MHz^2, max	
	Ripple	0.5 nsec/Peak-Peak, max	
Gain Stability vs. Time @ constant drive & temp		0.25 dB/24 hours	

Prime Power	
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

Environmental	
Ambient Temperature	-10˚C to +60˚C
Relative Humidity	100% condensing
Altitude	12,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating 50,000 ft., non-operating
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

[1] No Linearizer
[2] With Linearizer
[3] No Internal BUC
[4] With Internal BUC

Physical	
Dimensions (request outline)	60.96 cm deep x 48.26 cm wide x 17.78 cm height
Weight	32 kg typical
RF Input	Type N(f) 50 ohm
RF Output	CPRG-137
RF Sample	Type N(f) 50 ohm
AC Input	Amphenol C016 20C003 200 12
Ethernet	RJF
RF Input	Type N(f) 50 ohm
Com	9-Way D-Type
Aux Interface	25-Way D-Type
WG Switch	37-Way D-Type