# 750W Ku-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.

The STR2375 is available with a wide range of options and accessories, backed by round-the-clock, worldwide technical support.

## Options

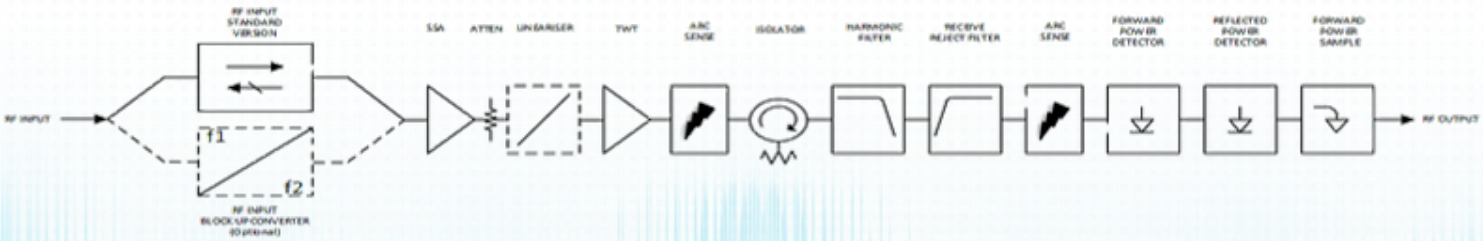
- L-Band Block upconverter
- Auto sense Int/Ext Reference Source



## Features

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

## Block Diagram



| Performance (without Upconverter) | | | |
|---|---|---|---|
| Frequency range | KU1 | 13.75 – 14.50 GHz | |
| | KU2 | 12.75 – 14.50 GHz | |
| | KU3 | 13.75 – 14.80 GHz | |
| | KU4 | 12.75 – 13.25 GHz | |
| Bandwidth | | 500 MHz / 750 MHz | |
| Output Power | TWT Power | 58.8 dBm (750 W) | |
| | Rated (flange) | 58.1 dBm (650 W) typ. | |
| Gain | | ≥ 70 dB | |
| Gain Variation | | Over any 750 MHz band, ≤ 2.5 dB<br>Over any 80 MHz band, ≤ 0.8 dB | |
| Slope | | ± 0.04 dB/MHz | |
| Gain Stability vs Time | | ± 0.25 dB / 24hours | @ constant drive, temperature and load |
| Gain Stability vs Temperature | | ± 1.0 dB | over full operating temperature |
| Adjustment range | | 30 dB typ. | |
| Adjustment step size | | 0.1 dB | |
| AM/PM @ $P_O \leq P_{LIN}$ –1dB | | ≤ 2.0°/dB | |
| Intermodulation (IMD) 2-tone | | no Linearizer: ≤ -18 dBc @ $P_O \leq P_{LIN}$ –1dB<br>with Linearizer: ≤ -26 dBc @ $P_O \leq P_{LIN}$ –1dB | |
| Spectral Re-growth (SR) | | with Linearizer: ≤ -30 dBc @ $P_O \leq P_{LIN}$ –1dB | |
| Noise Power Ratio (NPR) | | with Linearizer: ≤ -19 dBc @ $P_O \leq P_{LIN}$ –1dB | |
| Noise power | | Transmit Band (Tx): ≤ –70 dBW/4 kHz max | |
| | | Receive Band (Rx): ≤ -150 dBW/4 kHz (10.65-11.75/12.75 GHz) | |
| Spurious @ $P_O \leq$ MLP | | ≤ -60 dBc | |
| Residual AM | | ≤ –50 dBc, f < 10KHz<br>≤ -20 (1.5+LOG(frequency KHz)) dBc, f = 10KHz to 500KHz<br>≤ -85 dBc > 500kHz | |
| Harmonic output | | ≤ -60 dBc | |
| Phase Noise | | 10 dB below IESS requirement<br>≤ -50 dBc, AC fundamental<br>≤ -47 dBc, Sum of all spurs | |
| 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 (17.7 dB) | |
| Output VSWR (non-operating) | | ≤ 1.3:1 (17.7 dB) | |
| Load VSWR (no damage) | | ≤ 2.0:1 max (9.5 dB) | |

| Electrical | |
|---|---|
| AC Input Voltage | 200-240 VAC ± 10%, single phase<br>50-60 Hz ± 5% |
| Full Load Current | 13 A max @ 200 VAC |
| Power Consumption | 2200 VA typ., 2450 VA max |
| Power factor | 0.98 typ., 0.96 min |

| Physical | |
|---|---|
| Dimensions (request outline) | 60.96 cm deep x 48.26 cm wide x 17.78 cm height |
| Weight | 32 Kg typ |
| RF Input | Type N(f) 50 ohm |
| RF Output | WR-75 |
| RF Sample | 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 | 100% condensing |
| Altitude | Operating: 12,000 ft. with standard adiabatic derating of 2°C/1000 ft<br>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/$m^2$ |

For operation outside these parameters, refer to ETL Systems for guidance.