



# Travelling Wave Tube Amplifier

## Type AHPA-300 Series



### Description

This is a communications travelling wave tube amplifier comprising travelling wave tube and matched power supply. The package meets military standard environments and is designed to be lightweight, rugged and compact.

The TWTA which incorporates a helix slow wave structure and a double stage depressed collector for enhanced efficiency produces 300 W minimum output power and operates from a 100 volt DC power source. The power supply provides all of the TWT electrode voltages to the high standards of stability and ripple required and uses a proven high voltage switch mode power supply.

An optional linearizer is available providing significantly enhanced carrier to intermodulation ratio allowing linear operation at higher output power.

Built in features such as monitoring, control and protection circuits ensure safe operation; BITE (built in test equipment) is provided which simplifies fault finding and maintenance.

### Features

- High efficiency TWT
- Modular PSU
- Monitoring, Control and Protection Circuits
- BITE
- Optional Linearizer
- RS422 control interface

### Specification

#### Frequency Variants

Type Number	Frequency Range	Albacom TWT
AHPA-301	5.85 GHz to 6.425 GHz	AHT-301
AHPA-302	5.85 GHz to 7.10 GHz	AHT-302
AHPA-303	7.90 GHz to 8.40 GHz	AHT-303

## Electrical

Output Power	300W (min)
Input Power	0 ± 2 dBm
Gain Flatness	±0.5 dB
Load VSWR	1.3:1 max for full spec. compliance 2.0:1 no damage
Residual AM	-50 dBc max at 60 kHz
Phase Noise	meets IESS 308/309
Noise and Spurious	-60 dBc max excluding harmonics
Harmonic Content	-20 dBc max
Noise Power Density	-20 dBm/MHz max
3rd Order Intermodulation	With Linearizer -26 dBc max at P <sub>sat</sub> -3 dB Without Linearizer -22 dBc max at P <sub>sat</sub> -6 dB

## Electrical Supply

Primary Supply	100V ± 5V DC
Power Consumption	1150W max

## Cooling

Cooling	Conduction
Temperature range	-34 °C to +85 °C

## Connectors

Control + Prime Power	HD-62-M
TWT HV	Reynolds Industries 1407
RF power monitors	SMA female (where fitted)
SSPA/Lineariser	MD-9-F (where fitted)
RF Input Connector	SMA Female
RF Output Connector	N-type Female

## Environment

Operating temperature	Ambient -34 °C to +85 °C
	Mounting Surface -34 °C to +85 °C
Altitude	7500m
Humidity	up to 99%, condensing
Vibration	5g rms random 5 to 2000Hz
Operating Shock	15g, 11ms half sine

## Physical

Approx. Overall Dimensions	Power Supply	300 mm x 180 mm x 110 mm
	TWT	450 mm x 85 mm x 60 mm
Weight		12kg

**Albacom Limited reserve the right to alter any product specifications without prior notice.**