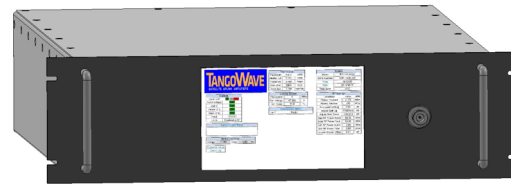


Features

- 400 Watts Linearized TWT
- 180 Watts Linear Power @ Flange
- Ethernet with SNMP
- Web Page
- RS-232 & RS-485
- Beacon receiver interface
- Integrated redundancy, 3 switches
- Data & Event Logger
- Selectable discrete interfaces (3 ea)
Interlock, RF inhibit, Fault
- RF arc protection
- Reflected power protection
- Thermal protection



3 Rack Units Amplifier

The PA3RU-Ku400P power amplifiers provide the best in class Size, Weight and Power performance of any SATCOM power amplifier. These amplifiers include predistortion (linearizes) in order to optimize linear power performance and minimize power consumption, making them the most efficient linear power amplifiers available. The carbon footprint of a PA3RU-Ku400P is driven by the high efficiency power conversion of the traveling wave tube; an unmatched technology for power conversion.

The PA3RU-Ku400P power amplifiers are designed for global use. The reduced size and weight is user friendly for shipping and installation.

Reliability is built-in. Designs are qualified and all products are manufactured in the USA under very stringent standards for quality and workmanship.

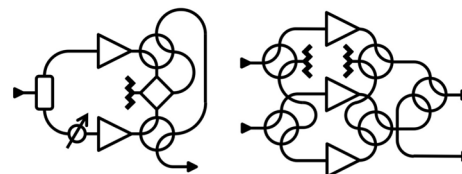
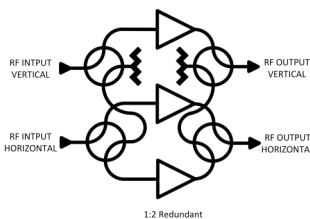
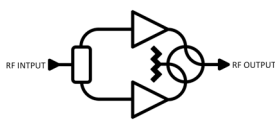
The PA3RU-Ku400P amplifier's internal monitor & control system provides Ethernet connectivity with plug and play web page interface for out of the box use. In addition SNMPv2 is supported.

Additionally, each amplifier includes a detailed system configuration interface for custom integration, as well as, multiple serial interfaces and multiple configurable discrete interfaces.

The PA3RU-Ku400P power amplifiers are equipped with internal redundancy control, eliminating the need for external controllers. Systems can be configured for redundancy, power combining and combinations of these. Custom configurations with up to 3 switches can be managed over addressable Ethernet on a local area network.

PA3RU-Ku400P

1:1 & 1:2 Systems



Redundant & Phase Combined Systems

RF Performance:

Frequency	13.75 – 14.5 GHz
Bandwidth	750 MHz
Output Power	(for load VSWR ≤ 1.5:1)
TWT Power, PEAK (P _{TWT-PK})	56.0 dBm (400 W)
Rated (P _{RATED}) (PA flange)	52.5 dBm (180 W)
Maximum Linear (MLP), P _{MLP}	52.5 dBm (180 W)

Gain

Gain	≥ 70 dB
Variation, 80 MHz, ΔG _{80MHz}	≤ 0.8 dB peak-peak
Variation, 750 MHz, ΔG _{750MHz}	≤ 2.5 dB peak-peak
Slope, ΔG _{SLOPE}	± 0.04 dB/MHz
Gain Stability vs. Time @ constant drive & temp	± 0.25 dB/24 hours
Gain Stability vs. temp @ constant drive & frequency	± 1.0 dB
Adjustment range, G _{ADJ}	30.0 dB typical
Adjustment step size	0.1 dB

Linearity

AM/PM @ P _O ≤ MLP	≤ 2.0°/dB
Inter-modulations (IMD) 2-tone	≤ -28 dBc @ P _O ≤ MLP – 1 dB
Spectral Re-growth (SR)	≤ -30 dBc @ P _O ≤ MLP – 1 dB
Noise Power Ratio (NPR)	≤ -20 dBc @ P _O ≤ MLP – 1.5 dB

Input VSWR (Return Loss)	≤ 1.3:1 (17.7 dB)
Output VSWR (Return Loss)	≤ 1.3:1 (17.7 dB)
Load VSWR (no damage)	≤ 2.0:1 (9.5 dB)
Harmonic 2 nd & 3 rd	≤ -60 dBc

Noise Power

Transmit Band (T _x)	≤ -70 dBW/4KHz
Receive Band (R _x)	≤ -150 dBW/4KHz (10.65 – 12.75 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 ≤ - 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

Prime Power:

AC Input Voltage	100-240~VAC, single phase 90-264~VAC maximum range 50-60 Hz ± 5%
Full Load Current	9 A max @ 100 VAC
Power Consumption	800 VA typical 875 VA maximum
Power Factor	0.99 typical 0.96 minimum

Environmental:

Ambient Temperature	-10°C to +50°C
Relative Humidity	95% non condensing
Altitude	12,000 ft. with standard adiabatic de-rating of 2°C/1000 ft., operating 50,000 ft., non-operating
Shock	5 g peak, 11mSec, 1/2 sine
Vibration	2 g rms, 10-500 Hz
Acoustic Noise	65 dBA @ ≥3 ft. from amplifier

Mechanical:

Dimensions	3 Units 19 inch Rack Mount Outline info: sales@tango-wave.com
Length	24.0 inches (61.0 cm)
Width	17.0 inches (43.2 cm)
Height	5.25 inches (13.3 cm)
Weight	49 pounds (22 kg) typical
Cooling	
Forced Air	165 cfm (280 m ³ /hr) typical
Thermal Load	2100 BTU/hour typical 2400 BTU/hour maximum
Connectors	
RF Input	Type N(F), 50 Ohm (Rear panel)
RF Output	WR-75
RF Output Sample	Type N(F), 50 ohm (Front panel)
AC Input	IEC 60320 C20
Ethernet	RJ 45
RS232	DB-9 (F)
RS485	DB-9 (F)
Auxiliary	DB-25 (F)
Redundancy	DB-37 (F)

Options:

Ku1325	12.75 - 13.25 GHz (R _x 10.65 – 11.75 GHz)
Ku1275	12.75 - 14.50 GHz (R _x 10.65 – 11.75 GHz)
Ku1480	14.50 - 14.80 GHz (R _x 10.65 – 12.75 GHz)
BUC10	Integrated block up-converter with reference
Rx1275	External filter (R _x 10.65 – 12.75 GHz), applies to options Ku1275
RxSW1275	Switch Filter (Rx 10.65-12.75 GHz), applies to option Ku1275.
WR-62-ADPT	RF Output – WR-75-to-WR-62 adapter