



Puma 120Ka

120W Ka-band GaN Solid-State Amplifier (SSPA) / Block Upconverter (BUC)

Features

- Powerful: 60W linear power
- Efficient: 800W AC power draw at linear power
- Compact: 38 lbs in 7.8 x 14 x 19 inch package
- Rugged: -40C to +60C, MIL-STD-810 environment
- Flexible: Single or Dual-band internal BUC options, options include 30-31 GHz band

Powerful, rugged Ka-band SSPA/Block Upconverter to provide 60W of linear power for satcom uplinks. High efficiency GaN solid-state design enables big power with high efficiency, while handling the toughest environments. Powerful SSPA or BUC to speed up your transportable terminal.

Specifications

Frequency and Input Levels

RF Output Frequency	27.5 to 30 GHz
Input Level, No Damage	+10 dBm max
IF/Ref Input Impedance	50 ohms

With optional BUC

IF Input Frequency	950 to 3450 MHz LO
LO Reference Frequency	External 10 MHz
LO Reference Level	0 dBm \pm 5 dB

Output RF Power and Linearity

Eq. Saturated Power, P_{SAT}	120W (51 dBm)
Maximum CW Power, P_{MAX}	100W (50 dBm)
Linear Power, P_{LIN} (min)	60W (47.8 dBm)

Linearity @ P_{LIN}

Noise Power Ratio	-19 dBc max
Spectral Regrowth @ P_{LIN} (QPSK, OQPSK @ 1SR offset)	-30 dBc max
Intermodulation Products wrt sum of 2 equal carriers	-25 dBc max
AM to PM Conversion	2.0°/dB max

Gain

Small Signal (typical)	70 dB \pm 5 dB
Gain Attenuation Range	25 dB, 0.1 dB steps
Gain Variation (over any 1 GHz)	3.0 dB p-p max
Gain Variation (over full band)	5.0 dB p-p max
Gain Slope (max)	0.04 dB/MHz
Gain Stability, over 24 hours	1.0 dB p-p max
Gain Variation over Temp	2.0 dB p-p max

Noise and Spurious

Noise Power Transmit Band	-75 dBW/4 kHz
Noise Power Receive Band	-150 dBW/4 kHz AC
Line Spurious	
sum of all spurs	-30 dBc
single sideband sum	-36 dBc
Harmonics	-60 dBc
Output Spurious @ P_{LIN}	-60 dBc

(excludes 1 MHz band)

About Us

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Phase Noise with Optional BUC

Phase Noise (max)	
100 Hz	-63 dBc/Hz
1 kHz	-73 dBc/Hz
10 kHz	-83 dBc/Hz
100 kHz	-93 dBc/Hz
1 MHz	-103 dBc/Hz

Reference Phase Noise (max)

10 Hz	-125 dBc/Hz
100 Hz	-155 dBc/Hz
1 kHz	-165 dBc/Hz

Phase Linearity and VSWR

Transmit Phase Linearity up to P_{LIN}

over any 2 MHz	\pm 0.2 radian
over any 36 MHz	\pm 0.4 radian
over any 72 MHz	\pm 0.5 radian
over any 90 MHz	\pm 0.6 radian
over any 120 MHz	\pm 0.7 radian

Input VSWR	1.5:1
Output VSWR	1.3:1

Prime Power / Environment / Interfaces

90-264 VAC Prime Power	800 @ P_{LIN}
Operating Temp Range	-40° to +60°C
Non-Operating Temp Range	-50° to +70°C
Altitude (max)	12,000 ft. MSL
Humidity	100% condensing
Shock/Vibration	Normal transportation
M&C Interface	Ethernet/RS-422/RS-485 and Serial RS-232 (SNMP with v3 option)

Weight and Dimensions

Weight	37.5 lb (17 kg)
Dimensions	7.8" x 14.0" x 19.0" (19.8cm x 35.6cm x 48.3cm)