

Puma 300X

300W X-band GaN Solid-State Amplifier (SSPA) / Block Upconverter (BUC)

- POWERFUL:** 150W linear power
- EFFICIENT:** 875W AC power draw at linear power
- COMPACT:** 32 lbs in 6.8 x 10.5 x 17 inch package
- RUGGED:** -40C to +60C, MIL-STD-810 environment
- SILENT:** Low leakage for multi-carrier low PIM

The most powerful, rugged X-band SSPA/Block Upconverter to provide 150W of linear power for satcom uplinks

High efficiency GaN solid-state design enables big power with high efficiency, while handling the toughest environments.

If you need a sleek, powerful SSPA or BUC to speed up your transportable terminal – you need a Puma™



Puma 300X

300W X-band GaN SSPA / BUC

Frequency and Input Levels

RF Output Frequency	7.9 to 8.4 GHz
Input Level, No Damage	+10 dBm max
IF/Ref Input Impedance	50 ohms

With optional BUC

IF Input Frequency	950 to 1450 MHz
LO Reference Frequency	External 10 MHz
LO Reference Level	0 dBm \pm 5 dB

Output RF Power and Linearity

Eq. Saturated Power, P_{SAT}	300W (54.8 dBm)
Maximum CW Power, P_{MAX}	200W (53 dBm)
Linear Power, P_{LIN} (min)	150W (51.8 dBm)

Linearity @ P_{LIN}

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 40 MHz)	1.0 dB p-p max
Gain Variation (over full band)	3.0 dB p-p max
Gain Slope (max)	0.04 dB/MHz
Gain Stability, over 24 hours	0.5 dB p-p max
Gain Variation over Temp	4.0 dB p-p max

Noise and Spurious

Noise Power Transmit Band	-75 dBW/4 kHz
Noise Power Receive Band	-75 dBW/4 kHz
AC Line Spurious sum of all spurs	-30 dBc
single sideband sum	-36 dBc
Harmonics	-60 dBc
Output Spurious @ P_{LIN} (excludes 1 MHz band)	-60 dBc

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	875 @ 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/serial RS-232 (SNMP with v3 Option)

Weight and Dimensions

Weight	32 lb (14.5 kg)
Dimensions	6.8" x 10.5" x 17" (17.2cm x 26.7cm x 43.2cm)