

# Puma 125Ka

## 125W Ka-band GaN Solid-State Amplifier (SSPA) / Block Upconverter (BUC)

**POWERFUL:** 65W 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 Multi-band internal BUC options



*The most powerful, rugged Ka-band SSPA/Block  
Upconverter to provide 65W 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™*



Go to [xicomtech.com](http://xicomtech.com)  
to see our full X-, Ku- and Ka-band line of  
Puma products for solutions across the spectrum.

# Puma 125Ka

## 125W Ka-band GaN SSPA / BUC

### 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 (TX) | 1250 to 3750 MHz<br>optional 950 to 3450 MHz |
| LO Reference Frequency  | External 100 MHz                             |
| LO Reference Level      | 0 dBm $\pm$ 5 dB                             |

### Output RF Power and Linearity

|                                      |                |
|--------------------------------------|----------------|
| Eq. Saturated Power, $P_{SAT}$ (typ) | 125W (51 dBm)  |
| Maximum CW Power, $P_{MAX}$          | 100W (50 dBm)  |
| Linear Power, $P_{LIN}$ (min)        | 65W (48.1 dBm) |

### Linearity @ $P_{LIN}$

|                                                             |             |
|-------------------------------------------------------------|-------------|
| Noise Power Ratio                                           | -19 dBc max |
| Spectral Regrowth @ $P_{LIN}$<br>(QPSK, OQPSK @ 1SR offset) | -30 dBc max |
| Intermodulation Products<br>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          | 30 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<br>sum of all spurs                 | -30 dBc        |
| single sideband sum                                  | -36 dBc        |
| Harmonics                                            | -60 dBc        |
| Output Spurious @ $P_{LIN}$<br>(excludes 1 MHz band) | -60 dBc        |

### Phase Noise with Optional BUC

|                             |             |
|-----------------------------|-------------|
| Phase Noise (max)           |             |
| 100 Hz                      | -71 dBc/Hz  |
| 1 kHz                       | -84 dBc/Hz  |
| 10 kHz                      | -93 dBc/Hz  |
| 100 kHz                     | -100 dBc/Hz |
| 1 MHz                       | -117 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   | 800W @ $P_{LIN}$                                      |
| 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<br>and Serial RS-232<br>(SNMP) |

### Weight and Dimensions

|            |                                                    |
|------------|----------------------------------------------------|
| Weight     | 37.5 lb (17 kg)                                    |
| Dimensions | 7.8" x 14.0" x 19.0"<br>(19.8cm x 35.6cm x 48.3cm) |

For additional information visit: [www.xicomtech.com](http://www.xicomtech.com)  
email: [sales@xicomtech.com](mailto:sales@xicomtech.com) • Phone: +1.408.213.3000