Falcon 100Ku

100W Ku-band GaN Airborne Cabin Internal Solid-State Amplifier

**POWERFUL:** 50W linear power (single carrier)

**EFFICIENT:** 420W AC power draw at linear power

**LIGHTWEIGHT:** 14.5 lbs (6.6 kg)

**COMPACT:** 9.0 x 14.0 x 2.95 inch ARINC package

**RELIABLE:** Certified to DO-160 Category A1

Lightweight, efficient reliable Ku-band SSPA and block upconverter that provides 50W of linear power for satcom uplinks.

High efficiency GaN solid-state design enables big power from a box while still handling the toughest environments.

If you need a sleek, powerful BUC to speed up your compact terminal - you need a Falcon™.

Go to xicomtech.com to see our full Falcon product line for solutions across the spectrum.
# Falcon 100Ku

## 100W Ku-band GaN Airborne SSA

### Frequency and Input Levels
- **RF Output Frequency**: 13.75 to 14.5 GHz
- **IF Input Frequency**: 950 to 1700 MHz
- **Input Level, No Damage**: +10 dBm max
- **LO Reference Frequency**: External 10 MHz
- **LO Reference Level**: 0 dBm ± 5 dB
- **IF/REF Input Impedance**: 50 ohms

### Output RF Power and Linearity
- **Eq. Saturated Power, P_{SAT}**: 100W (50 dBm)
- **Maximum CW Power, P_{MAX}**: 70W (48.5 dBm)
- **Linear Power, P_{LIN} (min)**: 50W (47 dBm)
- **Spectral Regrowth @ P_{LIN}**: 26 dBc max @ (QPSK, OQPSK, @ > 1SR offset)
- **Intermodulation Products**: -25 dBc max w/ sum of 2 equal carriers
- **AM to PM Conversion @ P_{LIN}**: 2.0°/dB max

### Phase Noise
- **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: ±0.2 radian
  - over any 36 MHz: ±0.4 radian
  - over any 72 MHz: ±0.5 radian
  - over any 90 MHz: ±0.6 radian
  - over any 120 MHz: ±0.7 radian
- **Input VSWR**: 1.5:1
- **Output VSWR**: 1.3:1

### GAIN
- **Small Signal (typical)**: 70 dB
- **Gain Attenuation Range**: 25 dB in 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**: 2.0 dB p-p max

### Noise and Spurious
- **Noise Power Transmit Band**: -70 dBW/4 kHz
- **Noise Power Receive Band**: -150 dBW/4 kHz
- **AC Line Spurious**:
  - fundamental: -50 dBc
  - sum of all spurs: -45 dBc
- **Harmonics**: -60 dBc
- **Output Spurious @ P_{LIN}** (excludes 1 MHz band):
  - -60 dBc

### Prime Power/Environment/Interfaces
- **100-120 VAC, 400 Hz nominal**: 420W @ P_{LIN}
- **Operating/Non Operating Temp Range**:
  - Per DO-160G Category A
- **Environmental**:
  - Per DO-160G Category A
- **Shock**:
  - Per DO-160G Category A
- **Vibration**:
  - Per DO-160G Category A
- **M&C Interface**:
  - Ethernet SNMP/serial RS-485

### Weight and Dimensions
- **Weight**: 14.5 lb (6.6 kg)
- **Dimensions**: 9.0” x 14.0” x 2.95” (22.9cm x 35.5cm x 7.5cm)

For additional information visit: [www.xicomtech.com](http://www.xicomtech.com)
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