

Falcon 50Ka

50W Ka-band GaN Airborne Cabin Internal Solid-State Amplifier

- **Powerful:** 25W linear power (single carrier)
- **Efficient:** Typically, 225W AC power draw at linear power
- **Lightweight:** 15 lbs (6.8 kg) Typical
- **Compact:** 9.0 x 18.0 x 3.25-inch ARINC package
- **Reliable:** DO-160G Certified



Lightweight, efficient reliable Ka-band SSPA and block upconverter that provides 25W of linear power for satcom uplinks. High efficiency GaN solid-state design enables big power from a box while still handling the toughest environments. Powerful BUC to speed up your compact terminal.

Falcon 50W Ka-band GaN SSPA

Frequency and Input Levels

RF Output Frequency	1 GHz selectable in 27.5 to 30.0 GHz (27.5-28.5, 28.25-29.25, 29.0-30.0 GHz)
IF Input Frequency	950 to 1950 MHz
Input Level, No Damage	+10 dBm max
LO Reference Frequency	External 50 MHz
Reference Level	0 dBm \pm 5 dB IF/REF
Input Impedance	50 ohms

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

Output RF Power and Linearity

Eq. Saturated Power, P_{SAT}	50W (47 dBm)
Maximum CW Power, P_{MAX}	32W (45 dBm)
Linear Power, P_{LIN} (min)	25W (44 dBm)
Spectral Regrowth @ P_{LIN} (QPSK, OQPSK, @ > 1SR offset)	26 dBc max @
Intermodulation Products wrt sum of 2 equal carriers	-25 dBc max
AM to PM Conversion @ P_{LIN}	2.0°/dB max

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)	64 dB
Gain Attenuation Range	≥ 20 dB in 0.1 dB steps
Gain Variation (over 120 MHz)	2.2 dB p-p max
Gain Variation (over 1 GHz)	3.4 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

Prime Power/Environment/Interfaces

100-120 VAC, 400 Hz nominal	225W @ P_{LIN} nominal
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

Noise and Spurious

Noise Power Transmit Band	-70 dBW/4 kHz
Noise Power Receive Band	-140 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)	-55 dBc

Weight and Dimensions

Weight (Typical)	15 lb (6.8 kg)
Dimensions	9.0" x 18.0" x 3.25" (23.0cm x 45.7cm x 8.3cm)

About Us

Comtech Telecommunications Corp. is a leading provider of satellite and space communications technologies; terrestrial and wireless network solutions; Next Generation 9-1-1 (NG9-1-1) and emergency services; and cloud native capabilities to commercial and government customers around the world. Through its culture of innovation and employee empowerment, Comtech leverages its global presence and decades of technology leadership and experience to create some of the world's most innovative solutions for mission-critical communications. For more information, please visit: comtech.com.

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