

Falcon 40Ka

40W Ka-band GaN Airborne Cabin Internal Solid-State Amplifier

- **Powerful:** 20W linear power (single carrier)
- **Efficient:** 225W AC power draw at linear power
- **Lightweight:** 15 lbs (6.8 kg)
- **Compact:** 9.0 x 18.0 x 3.25 inch ARINC package
- **Reliable:** Certified to DO-160 Category A1



Lightweight, efficient reliable Ka-band SSPA and block upconverter that provides 20W 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 Comtech Falcon™

Falcon Ka

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 10 MHz LO
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}	40W (46 dBm)
Maximum CW Power, P_{MAX}	25W (44 dBm)
Linear Power, P_{LIN} (min)	20W (43 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)	70 dB
Gain Attenuation Range	25 dB in 0.1 dB steps
Gain Variation (over 120 MHz)	0.8 dB p-p max
Gain Variation (over 1 GHz)	2.0 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

Prime Power/Environment/Interfaces

100-120 VAC, 400 Hz nominal	225W @ 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

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	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 global technology company providing terrestrial and wireless network solutions, next-generation 9-1-1 emergency services, satellite and space communications technologies, and cloud native solutions to commercial and government customers around the world. Our unique culture of innovation and employee empowerment unleashes a relentless passion for customer success. With multiple facilities located in technology corridors throughout the United States and the world, Comtech leverages its global presence, technology leadership and decades of experience to create the world's most innovative communications solutions.

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Note: Technical specifications are subject to change without notice.

