

Bobcat 40X

40W X-band GaN SATCOM Block Upconverter

- POWERFUL:** 20W linear power (single carrier)
- EFFICIENT:** 120W DC power draw at linear power
- COMPACT:** 5.3 lbs in 116 cu inch package
- RUGGED:** -40C to +60C, MIL-STD-810 environment
- FLEXIBLE:** Interchangeable with Ka- and Ku-band Bobcats

The smallest, most rugged X-band Block Upconverter to provide 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 Bobcat™.



Bobcat 40X

40W X-band GaN SATCOM BUC

Frequency and Input Levels

RF Output Frequency (other options available)	7.9 to 8.4 GHz
IF Input Frequency	950 to 1450 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

Output RF Power and Linearity

Eq. Saturated Power, P_{SAT}	46 dBm (40W)
Maximum CW Power, P_{MAX}	45 dBm (32W)
Linear Power, P_{LIN} (min)	43 dBm (20W)
Spectral Regrowth @ P_{LIN} (QPSK, OQPSK, 5.0 SR, $\alpha=0.2$)	30 dBc max @ >1 SR offset
Intermodulation Products @ P_{LIN} wrt sum of 2 equal carriers	-25 dBc max
AM to PM Conversion @ P_{LIN}	2.0°/dB max

GAIN

Small Signal (typical)	55 dB \pm 5 dB
Gain Attenuation Range	20 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	4.0 dB p-p max

Noise and Spurious

Noise Power Transmit Band	-76 dBW/4 kHz
Noise Power Receive Band	-76 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

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

22-56 VDC Prime Power	120W @ 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 or Serial Rs-232 (SNMP with v3 Option)

Weight and Dimensions

Weight	5.3 lb (2.4 kg)
Dimensions	3.9" x 5.1" x 5.8" (9.91cm x 12.95cm x 14.73cm)