



μBUC X-Band Block Up Converter

Description

Paradise Datacom's μBUC is an X-Band Block Up Converter module designed specifically for highly mobile commercial and military X-Band applications. The μBUC is ideal for use in any Fly-away or Manpack application where miniature form factor and light weight are a requirement.

The converter can automatically detect and phase lock to external reference frequencies of 5, 10, 20, 25 and 50 MHz over a wide range of power levels.

FEATURES

- X-Band Output: 10W or 20W
- Multiple reference frequency operation
- L-Band Input
- Miniature and light weight
- Ideal for fly-away and manpack applications

Specifications

PARAMETER	NOTES	LIMITS	UNITS
Input Frequency		950 - 1450	MHz
Output Frequency		7.9 - 8.4	GHz
LO Frequency		6.95	GHz
Gain		55	dB
Gain Flatness	full band	± 1.25	dB
Gain Slope	per 40 MHz	± 0.25	dB
Gain variation vs. Temperature	-30 to +60 °C baseplate	0 ± 2.0	dB
Output Power	10W 20W	P_{sat} / P_{1dB} 41.0 / 40.0 44.0 / 43.0	dBm dBm
Intermodulation Distortion	3dB back off relative to P_{1dB}	-25	dBc
Spurious	In-Band Signal Related Close to Carrier Spurious (≤ 20 MHz) Local Oscillator Non-Signal Related	-60 -60 -70 -60	dBc dBc dBm dBm
Harmonics	2 nd harmonic measured at P_{1dB}	-40	dBc
Output Spectrum	Low side Local Oscillator	Non Inverted	
Input Return Loss		15	dB
Output Return Loss		20	dB
Noise Figure		15	dB
Group Delay (per 40 MHz segment)	Linear Parabolic Ripple	0.01 0.003 1.0	ns/MHz ns/MHz ² ns p-p
Reference Input Frequency	Diplexed on L-Band Input Connector	5, 10, 20, 25, 50 MHz	MHz
Reference Input Power	Diplexed on L-Band Input Connector	-10 to +5	dBm
Input Voltage		24 or 48	VDC
Input Power	10W 20W	80 160	W W
Monitor & Control Functions	Mute Temperature Monitor Fault		
Alarm Output	Open Collector Output	High = Fault	
Weight Dimensions	L x W x H	5.5 (2.5) 5.75 x 3.5 x 2.25 (146 x 89 x 57)	lb. (kg) in (mm)

¹ Internal reference option units will automatically detect and switch to an applied external reference.

Specifications are subject to change without notice.



Local Oscillator Phase Noise

Offset	Guaranteed Max.	X-Band Typical	Units
10 Hz	-30	-60	dBc/Hz
100 Hz	-60	-75	dBc/Hz
1 KHz	-70	-75	dBc/Hz
10 KHz	-80	-100	dBc/Hz
100 KHz	-90	-110	dBc/Hz
1 MHz	-90	-122	dBc/Hz

Part Number Configuration

