



Falcon Series Frequency Converter Module L-Band to Ku-Band Block Upconverter

Typical applications:

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

L-Band to Ku-Band block upconverter module with variable gain and slope.

The 1U chassis has the capacity for up to four hot-swap frequency converter modules. These can be all upconverters, all downconverters or a mix of both.

Frequency Converter Module



Frequency Converter Module

Compact form factor allowing multiple modules to be housed in the Genus chassis. Each module occupies 4 slots in the chassis.



Hot Swap & replaceable

RF Frequency Converter modules



Redundancy configurations

Field-replaceable 2+1 or 1+1 redundant configuration



Variable Gain & Slope

For balancing input signals.



Frequency Conversion Up

conversion from L-Band to Ku-Band.

Chassis Options



Local control & monitoring via HMI high resolution touchscreen



Flexible Module Configurations choose from a mixture of up and down converters with different operating frequencies.



Resilience from dual redundant hot-swap power supplies & field replaceable CPU & HMI



Remote control & monitoring via RJ45 Ethernet port with SNMP & web browser interface



Compact indoor & outdoor chassis options, which can be part populated



Field replaceable Internal reference source and external reference inject port with auto detection



Secure protocols with SNMPv3 and HTTPS



Indoor Chassis



Outdoor Unit





Frequency Upconverter Module - RF Parameters		
Model Numbers	FN-U-K1L1-24407AA-XXXX	
Size	4 slots wide	
Redundancy	Supported (based on chassis configuration)	
Input Frequency Range	1150—2150 MHz	
Output Frequency Range (User selectable frequency range via software command)	Mode 1: 12.75—13.75 GHz or Mode 2: 13.5—14.5 GHz (user selectable)	
Mean Conversion Gain	Max. 35 ± 2.0 dB / Min. 0 ± 2.0 dB	
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness	Full IF band: ±1.5 dB Any 40MHz: ±0.3 dB	
Slope Compensation	0—6 dB (Pivot Point 2150 MHz)	
Slope Control Steps	1 dB	
Input Return Loss (L-band)	Typ. -18 dB / Min. -14 dB	
Output Return Loss (Ku-band)	Typ. -18 dB / Min. -14 dB	
Noise Figure At max. gain	Typ. 10 dB / Max 12 dB	
Input Power Range	-75 to -30 dBm	
OP1dB At max. gain	Typ. +12 dBm / Min. +10 dBm	
OIP3 At max. gain	Typ. +22 dBm / Min. +20 dBm	
Internal Reference Stability	± 5 x 10 ⁻⁸ over 0 to 50°C	
Phase Noise (Typical values)	@10Hz offset	-70 dBc / Hz
	@100Hz offset	-80 dBc / Hz
	@1KHz offset	-90 dBc / Hz
	@10KHz offset	-98 dBc / Hz
	@100KHz offset	-101 dBc / Hz
	@1MHz offset	-110 dBc / Hz
Spurs In-band (Measured at -5 dBm output)	Carrier related (>1MHz offset)	< -60 dBc
	Non-carrier related	< -60 dBm
Spurs Out-of-band (Measured at -5 dBm output)	Carrier related	< -60 dBc
	Non-carrier related	< -80 dBm
LO Breakthrough	< -80 dBm	
Image Rejection	> 60 dB typical	
External Reference Input Frequency	10MHz or 100MHz (auto detection)	
External Ref Input Level	+3 dBm ±3 dB	
Mute	60 dB	
IF Monitor	Yes. Internal RF detector monitored.	
Spectral Inversion	Non-inverting	
Number of conversion stages	Dual	
Spec version	0.1	

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.

Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

Note 3: All specs are for 50 Ohm connectors unless detailed otherwise.