



Falcon Series Frequency Converter Module

L-Band to Ka-Band Block Upconverter

L-Band to Ka-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

Variable Gain & Slope

For balancing input signals.

Redundancy Configurations

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

Frequency Conversion

Up conversion from L-Band to Ka-Band.

Chassis Options

Local control & monitoring

via HMI high resolution touchscreen

Resilience

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

Compact indoor & outdoor

chassis options, which can be part populated

Secure protocols

with SNMPv3 and HTTPS

Flexible Module Configurations

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

Remote control & monitoring

via RJ45 Ethernet port with SNMP & web browser interface

Field replaceable Internal reference source

and external reference inject port with auto detection



Indoor Chassis



Outdoor Unit



Frequency Upconverter Module - RF Parameters		
Model Numbers	FN-U-K4L1-24403AD-S5K5	
Size	4 slots wide	
Redundancy	Supported (based on chassis configuration)	
Input Frequency Range	Mode 1: 950 - 1950 MHz, Mode 2: 950 - 1450 MHz	
Output Frequency Range (User selectable frequency range via software command)	Mode 1: 27.50 - 28.50 GHz, Mode 2: 30.0 - 30.50 GHz	
Mean Conversion Gain	Max. 22.0 ± 2.0 dB / Min. -3.0 ± 2.0 dB	
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness	Full IF-band: ±2.0 dB / Any 40 MHz ±0.3 dB	
Input Return Loss (L-band)	Typ. -20 dB / Min. -18 dB	
Output Return Loss (Ka-band)	Typ. -18 dB / Min. -14 dB	
Noise Figure At max. gain	Typ. 15 dB / Max 18 dB	
Input Power Range	-75 to -30 dBm	
OP1dB At max. gain	Typ. +5 dBm / Min. 0 dBm	
OIP3 At max. gain	Typ. +13 dBm / Min. +10 dBm	
Group Delay pk-pk	2 ns max	
Slope Control Range / Steps	0-6 dB, pivot point at 2150 MHz / 1 ± 0.5 dB	
Internal Reference Stability	± 5 x 10 ⁻⁸ over 0 to 50°C	
Phase Noise (Typical values, measured with internal 100MHz reference)	@10 Hz offset	-65 dBc / Hz
	@100 Hz offset	-78 dBc / Hz
	@1 KHz offset	-85 dBc / Hz
	@10 KHz offset	-98 dBc / Hz
	@100 KHz offset	-101 dBc / Hz
	@1 MHz offset	-110 dBc / Hz
	@10 MHz offset	-130 dBc / Hz
Spurs In-band (Measured at -15 dBm output and max gain)	Carrier related >1MHz Offset	< -60 dBc
	Harmonic	< -60 dBc
	Non-carrier related	< -75 dBm
Spurs Out-of- band (Measured at -15 dBm output and max gain)	Carrier Related	< -60 dBc
	Harmonic	< -60 dBc
	Non-carrier related	< -70 dBm
LO Breakthrough / Image Rejection	< -75 dBm / >60 dB	
External Reference Input Frequency	10MHz or 100MHz (auto detection)	
External Reference Input Level	0dBm ± 10dB	
Mute	60 dB	
Number of conversion stages	Dual	
Spectral Inversion / IF Monitor	Non-inverting / Yes. Internal RF detector monitored	
Spec version	0.4	

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.