

Falcon Series Frequency Converter Module

L-Band to K-Band Block Upconverter

L-Band to K-Band block upconverter module with variable gain.

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.

Redundancy Configurations

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

Hot Swap & Replaceable

RF Frequency Converter modules

Variable Gain & Slope

For balancing input signals.

Frequency Conversion

Up conversion from L-Band to K-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-K4L1-24474AA-S5K5	
Size	4 slots wide	
Redundancy	Supported (based on chassis configuration)	
Input Frequency Range	900—1500 MHz	
Output Frequency Range (User selectable frequency range via software command)	22550—23150 MHz	
Mean Conversion Gain	Max. 30 ± 1.5 dB / Min. -30 ± 1.5 dB	
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness	Full instantaneous band: ± 1.5 dB Any 40MHz: ± 0.3 dB	
Input Return Loss (L-band)	Typ. - 18 dB / Min. -14 dB	
Output Return Loss (K-band)	Typ. -16 dB / Min. -12 dB	
Noise Figure At max. gain	Typ. 20 dB / Max 23 dB	
Input Power Range	-75 to -30 dBm	
OP1dB At max. gain	Typ. +8 dBm / Min. +5 dBm	
OIP3 At max. gain	Typ. +18 dBm / Min. +15 dBm	
Internal Reference Stability	$\pm 5 \times 10^{-8}$ over 0 to 50°C	
Phase Noise (Typical values, measured with internal 100MHz reference)	@10 Hz offset	-70 dBc / Hz
	@100 Hz offset	-80 dBc / Hz
	@1 KHz offset	-90 dBc / Hz
	@10 KHz offset	-98 dBc / Hz
	@100 KHz offset	-101 dBc / Hz
	@1 MHz offset	-107 dBc / Hz
Spurs In-band (Measured at -5 dBm output)	Carrier related (>1MHz offset)	< -50 dBc
	Non-carrier related	< -70 dBm
Spurs Out-of-band (Measured at -5 dBm output)	Carrier Related	< -50 dBc
	Non-carrier related	<-70 dBm
LO Breakthrough	< -70 dBm	
Image Rejection	60 dB typ.	
External Reference Input Frequency	10MHz or 100MHz (auto detection)	
External Reference Input Level	+0dBm $\pm$ 10dB	
Mute	60 dB	
Number of conversion stages	Dual	
Spectral Inversion	Non-inverting	
IF Monitor	Yes. Internal RF detector monitored	
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.