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.

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 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-K4L1-24403AB-XXK5
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: 27.00 – 28.00 GHz, Mode 2: 28.00 – 29.00 GHz , Mode 3: 29.00– 30.00 GHz, Mode 4: 30.00 – 31.00 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: ±1.5 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.