

Falcon Series Frequency Converter Module

L-Band to Ka-Band Block Upconverter

L-Band to Ka-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

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		Redundancy - RF Parameters
Model Numbers	FN-U-K4L1-24499AA-XXK5	SWF-G1S-QX-108A-xxxx
Size	4 slots wide	4 slots wide
Redundancy	Supported (based on chassis configuration)	1+1 (Note. This column denotes specs for 24499 in 1+1 configuration)
Input Frequency Range	950 - 1950 MHz	
Output Frequency Range	30.00—31.00 GHz	
Mean Conversion Gain	Max. 25 ± 3.0 dB / Min. -5 ± 3.0 dB	Max. 21 ± 3.0 dB / Min -9.0 ± 3.0 dB
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness	Full IF-band: ±1.5 dB / Any 40 MHz ±0.3 dB	
Gain Temperature Variation	±2 dB (from 0 to +45°C)	
Gain Stability	±0.25dB/day (at constant temperature, gain and input power level)	
Input Return Loss (L-band)	Typ. -18 dB / Min.-14 dB	
Output Return Loss (Ka-band)	Typ. -18 dB / Min.-14 dB	
Noise Figure (At max. gain)	Max. 20 dB	Max. 22 dB
Input Power Range	-75 to -30 dBm	
OP1dB (At max. gain)	Typ. +20 dBm / Min. 18 dBm	Typ. 17 dBm / Min. 15.0 dBm
OIP3 (At max. gain)	Typ. +28 dBm / Min. +26 dBm	Typ. +25.0 dBm / Min. +23.0 dBm
Internal Reference Stability	± 5 x 10-8 over 0 to 50°C	
Group Delay	1ns pk-pk Typical 2ns pk-pk Maximum	
Phase Noise (Typical Values)	@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 and max gain)	Carrier related	<-50 dBc
	Non-carrier related	<-70 dBm
Spurs Out-of-band (Measured at -5 dBm output and max gain)	Carrier Related	<-50 dBc
	Non-carrier related	<-70 dBm
LO Breakthrough	<-70 dBm Typical <-60 dBm Maximum	
Image Rejection	>80 dB	
External Reference Input Frequency	10 MHz or 100 MHz (Auto-detection)	
External Reference Input Level	0dBm ± 10dB	
Mute	60 dB	
Number of conversion stages	Single	
Spectral Inversion	Non-inverting	
Spec version	0.1	1.0

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.