

Falcon Series Frequency Converter Module

L-Band to K-Band Block Upconverter

L-Band to K-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 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		Redundancy - RF Parameters	
Model Numbers	FN-U-KXL1-24458AA-S5S5	SWF-G1S-QX-108A-xxxx	SWF-G1S-QX-116-xxxx
Size	4 slots wide	4 slots wide	4 slots wide
Redundancy	Standalone module	1+1 (Note: This column denotes specs for 24458 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24458 in 2+1 configuration)
Input Frequency Range	950-2050 MHz		
Output Frequency Range	17300 – 18400 MHz		
Mean Conversion Gain	Max 35 ± 2 dB, Min 0 ± 2 dB	Max 31 ± 2 dB, Min -4.0 ± 2 dB	Max 28 ± 2 dB, Min -7 ± 2 dB
Gain Step Size	0.25 ± 0.15 dB		
Gain Flatness (50 Ohm)	Full Instantaneous Band: ±1.75 dB Any 40MHz: ±0.3 dB		
Input Return Loss	Typ.-20 dB / Min.-18 dB	Typ. -17dB / -15 Min. dB	Typ. -17dB / Min. -15dB
Output Return Loss	Typ. -18 dB / Min. -14 dB	Typ. -12dB / Min. -9dB	Typ. -12dB / Min. -9dB
Maximum Operational Input Level	-35 dBm		
Noise Figure At max. gain	Typ. 12 dB, Max 14 dB	Typ. 13.5 dB, Max 15.5 dB	Typ. 15 dB, Max 17.5 dB
OP1dB At max. gain	Typ +8 dBm, Min +5 dBm	Typ. +4.5dBm, Min +1.5 dBm	Typ +3 dBm, Min +0 dBm
OIP3 At max. gain	Typ +18 dBm, Min +15 dBm	Typ +14.5 dBm, Min +11.5 dBm	Typ +13 dBm, Min +10 dBm
Internal Reference Stability	±5 x 10 ⁻⁸ over 0 to 50°C		
Phase Noise (Typical values, measured with internal 100MHz reference)	@10 Hz offset	-70 dBc/Hz typ. -60 dBc/Hz max.	
	@100 Hz offset	-80 dBc / Hz typ. -70 dBc/Hz max.	
	@1 KHz offset	-90 dBc / Hz typ. -80 dBc/Hz max.	
	@10 KHz offset	-98 dBc / Hz typ. -88 dBc/Hz max.	
	@100 KHz offset	-101 dBc / Hz typ. -91 dBc/Hz max.	
	@1 MHz offset	-107 dBc / Hz typ. -97 dBc/Hz max.	
	@10 MHz offset	-130 dBc / Hz typ. -120 dBc/Hz max.	
Integrated Phase Jitter	89.6 fs (RMS Typical, between 10kHz-10MHz at 18.4GHz)		
Spurs In-band (@ -15 dBm output)	Non-carrier related	<-70 dBm	
	Carrier related (>1MHz Offset)	<-60 dBc typ. <-55 dBc max.	
Spurs Out-of-band (@ -15 dBm output)	Carrier Related	<-60 dBc typ. <-55 dBc max.	
	Non-carrier related	<-70 dBm	
LO Breakthrough	< -70 dBm		
Image Rejection	>60 dB typical		
External Reference Input Frequency	10MHz or 100MHz (auto detection)		
External Reference Input Level	0dBm ± 10dB		
Mute	60 dB		
IF Monitor	Yes. Internal RF detector monitored		
Spectral Inversion	Non-inverting		
Number of conversion stages	Dual		
Spec version	0.3	1.0	0.2

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.