

Falcon Series Frequency Converter Module

Ka-Band to L-Band Block Downconverter

Ka-Band to L-Band block downconverter 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

For balancing input signals.

Redundancy Configurations

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

Frequency Conversion

Down conversion from Ka-Band to L-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 Downconverter Module - RF Parameters		Redundancy - RF Parameters	
Model Numbers	FN-D-K4L1-24425AB-K5S5	SWF-G1S-QX-108A-xxxx	SWF-G1S-QX-116-xxxx
Size	4 slots wide	4 slots wide	4 slots wide
Redundancy	Supported (based on chassis configuration)	1+1 (Note: This column denotes specs for 24425 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24425 in 2+1 configuration)
Input Frequency Range	Mode 1: 27.0 – 28.00 GHz, Mode 2: 27.50 – 28.50 GHz, Mode 3: 28.50 – 29.50 GHz, Mode 4: 29.50 – 30.50 GHz, Mode 5: 30.00—31.00 GHz (User selectable frequency range via software command).		
Output Frequency Range	950 - 1950 MHz		
Mean Conversion Gain	Max. 35 ± 2.0 dB / Min. 5 ± 2.0 dB	Max. 31 ± 2.0 dB / Min 1.0 ± 2.0 dB	Max. 27.8 ± 2.0 dB / Min -2.2 ± 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		
Slope Compensation	0-6dB		
Slope Control	1dB		
Input Return Loss (Ka-band)	Typ. -18 dB / Min. -14 dB	Typ. -15 dB / Min. -12 dB	Typ. -15 dB / Min. -12 dB
Output Return Loss (Ka-band)	Typ. -20 dB / Min. -18 dB	Typ. -17 dB / Min. -14 dB	Typ. -17 dB / Min. -14 dB
Noise Figure At max. gain	Typ. 14 dB / Max 17 dB	Typ. 17.0 dB / Max 20.0 dB	Typ. 18.5 dB / Max 21.5 dB
Input Power Range	-75 to -30 dBm		
OP1dB At max. gain	Typ. +12 dBm / Min. +9 dBm	Typ. +11 dBm / Min. +8 dBm	Typ. +9.3 dBm / Min. +6.3 dBm
OIP3 At max. gain	Typ. +22 dBm / Min. +19 dBm	Typ. +21 dBm / Min. +18 dBm	Typ. +19.3 dBm / Min. +16.3 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	
	@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	
	@10 MHz offset	-130 dBc / Hz	
Spurs In-band (Characterised at -15 dBm out)	Non-carrier related	-70 dBm	
	Carrier related (>1MHz Offset)	-60 dBc	
Spurs Out-of-band (Characterised at -15 dBm out)	Carrier Related	-60 dBc	
	Non-carrier related	-70 dBm	
LO Breakthrough	-75 dBm		
Image Rejection	60 dB		
External Reference Input Frequency / Level	10MHz or 100MHz (auto detection) / 0dBm ± 10dB		
Mute	60 dB		
Number of conversion stages	Dual		
Spectral Inversion / IF Monitor	Non-inverting / Yes. Internal RF detector monitored		
Spec version	0.3	1.0	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.