

Falcon Series Frequency Converter Module

K-Band to L-Band Block Downconverter

K-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 K-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-KXL1-24424AA-XXXX	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 24424 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24424 in 2+1 configuration)
Input Frequency Range	Mode 1: 17.3-18.3 GHz, Mode 2: 17.7 – 18.7 GHz, Mode 3: 18.6 – 19.6 GHz, Mode 4: 19.5 – 20.5 GHz, Mode 5: 20.2 – 21.2 GHz (User selectable frequency range via software command)		
Output Frequency Range	1150 - 2150 MHz		
Mean Conversion Gain	Max. 35 ± 1.5 dB / Min. 0 ± 1.5 dB	Max. 31 ± 1.5 dB / Min 1.0 ± 1.5 dB	Max. 27.7 ± 1.5 dB / Min -2.3 ± 1.5 dB
Gain Step Size	0.25 ± 0.15 dB		
Gain Flatness (50 Ohm)	Full IF-band: ±1.5 dB / Any 40 MHz ±0.3 dB		
Input Return Loss (Ka-band, 50 Ohm)	Typ. -18 dB / Min. -15 dB	Typ. -11 dB / Min. -8 dB	Typ. -11 dB / Min. -7 dB
Output Return Loss (L-band, 50 Ohm)	Typ. -18 dB / Min. -15 dB	Typ. -15 dB / Min. -12 dB	Typ. -15 dB / Min. -12 dB
Maximum Operational Input Level	-30 dBm		
Noise Figure At max. gain	Typ. 10 dB / Max 12 dB	Max 15.0 dB	Max 16.6 dB
OP1dB At max. gain	Typ. +15 dBm / Min. +13 dBm	Typ. +14 dBm	Typ. +11.7 dBm
OIP3 At max. gain	Typ. +27 dBm / Min. +25 dBm	Typ. +26 dBm	Typ. +24.2dBm
Slope Compensation	0-6 dB (pivot point at 2150MHz)		
Slope Control Steps	1 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	-68 dBc / Hz	
	@100 Hz offset	-80 dBc / Hz	
	@1 KHz offset	-90 dBc / Hz	
	@10 KHz offset	-105 dBc / Hz	
	@100 KHz offset	-107 dBc / Hz	
	@1 MHz offset	-115 dBc / Hz	
Spurs In-band (@ -5 dBm output)	Non-carrier related	<-70 dBm	
	Carrier related >1MHz Offset	<-60 dBc	
Spurs Out-of-band (@ -5 dBm output)	Carrier Related	<-60 dBc	
	Non-carrier related	<-70 dBm	
LO Breakthrough / Image Rejection	< -75 dBm / >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	0.1	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.