

# Falcon Series Frequency Converter Module

## Ku-Band to L-Band Block Downconverter

Ku-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 Ku-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-K1L1-24400AA-xxxx	SWF-G1S-KX-109A-xxxx	SWF-G1S-KX-115-xxxx
Size	4 slots wide	4 slots wide	4 slots wide
Redundancy	Standalone module	1+1 (Note: This column denotes specs for 24400 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24400 in 2+1 configuration)
Input Frequency Range	Mode 1: 10.7 - 11.75 GHz Mode 2: 11.7 - 12.75 GHz (user selectable)		
Output Frequency Range	1100 - 2150 MHz		
Mean Conversion Gain	Max. 35 ± 1.5 dB / Min. 0 ± 1.5 dB	Max. 33.7 ± 1.8 dB / Min. 3.7 ± 1.8 dB	Max. 33.8 ± 2.1 dB / Min. 3.8 ± 2.1 dB
Gain Steps	0.25 ± 0.15 dB		
Gain Flatness (50 Ohm)	Full band: ±1.5 dB Any 40MHz: ±0.3 dB	Full band: ±1.8 dB Any 40MHz: ±0.6 dB	Full band: ±2.1 dB Any 40MHz: ±0.9 dB
Input Return Loss (50 Ohm)	Typ. -18 dB / Min. -15 dB	Typ. -11 dB / Min. -8 dB	Typ. -11 dB / Min. -8 dB
Output Return Loss (50 Ohm)	Typ. -18 dB / Min. -15 dB	Typ. -15 dB / Min. -11 dB	Typ. -15 dB / Min. -12 dB
Maximum Operational Input Level	-30 dBm		
Noise Figure At max. gain	Typ. 10 dB / Max 12 dB	Typ. 12.5 dB / Max 14.5 dB	Typ. 12.5 dB / Max 14.5 dB
OPI dB At max. gain	Typ. +15 dBm / Min. +13 dBm	Typ. +13.5 dBm / Min. +11.5 dBm	Typ. +13.5 dBm / Min. +11.5 dBm
OIP3 At max. gain	Typ. +27 dBm / Min. +25 dBm	Typ. +25.5 dBm / Min. +23.5 dBm	Typ. +25.5 dBm / Min. +23.5 dBm
Slope Compensation	0 - 6 dB, in 1dB steps		
Internal Reference Stability	±5 x 10 <sup>-8</sup> over 0 to 50°C		
Phase Noise (Typical values, measured with internal 100MHz reference)	@10 Hz offset	-66 dBc / Hz	
	@100 Hz offset	-80 dBc / Hz	
	@1 KHz offset	-92 dBc / Hz	
	@10 KHz offset	-104 dBc / Hz	
	@100 KHz offset	-106 dBc / Hz	
	@1 MHz offset	-115 dBc / Hz	
Spurs In-band (@ -5 dBm output)	Carrier related >1MHz Offset	< -60 dBc	
	Harmonic	< -50 dBc	
	Non-carrier related	< -75 dBm	
Spurs Out-of-band (@ -5 dBm output)	Carrier Related	< -60 dBc	
	Harmonic	< -50 dBc	
	Non-carrier related	< -75 dBm	
LO Breakthrough	< -80 dBm		
Image Rejection	>60 dB		
External Reference Input Frequency / Level	10MHz or 100MHz (auto detection) / 0dBm ± 10dB		
Mute / Number of conversion stages	90 dB / Dual		
Spectral Inversion / IF Monitor	Non-inverting / Yes		
Redundancy	Supported. Based on module configuration		
Spec version	0.3	1.1	1.1

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.