FN-D-K1L1-24400AC

DATASHEET

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

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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

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-K1L1-24400AC-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		10.70 - 11.70 GHz / 11.70 - 12.75 GHz		
Output Frequency Range		950 - 1950 MHz / 950 - 2000 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 Step Size		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 Input Power Range		–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
OP1dB 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 (pivot point at 2150 MHz)		
Internal Reference Stability		± 5 x 10^{-8} 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		
Conversion stages / Spectral Inversion		Single / Non-inverting		
External Reference Input Frequency / Level		10MHz or 100MHz (auto detection) / 0dBm ± 10dB		
Mute / IF Monitor		90 dB / Supported. Based on module configuration		
Spec version		1.0	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.