

Falcon Series Frequency Converter Module

C-Band to L-Band Block Downconverter

C-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.

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
from C-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-C1L1-24426AA-XXXX	SWF-G1S-CX-111A-xxxx	SWF-G1S-CX-117-xxxx	
Size		4 slots wide		4 slots wide	
Redundancy		Standalone module		1+1 (Note: This column denotes specs for 24426 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24426 in 2+1 configuration)
Input Frequency Range (user selectable)		Module 1: 3400 - 4400 MHz / Module 2: 3600 - 4600 MHz / Module 3: 3800 - 4800 MHz			
Output Frequency Range		1150 - 2150 MHz			
Mean Conversion Gain		Max. 35 ± 1.5 dB / Min. 0 ± 1.5 dB	Max. 33.9 ± 2.2 dB / Min. 3.9 ± 2.2 dB	Max. 34 ± 2.5 dB / Min. 4 ± 2.5 dB	
Gain steps		0.25 ± 0.15 dB			
Gain Flatness (50Ohm)		Full L-Band ±1.5 dB Any 40MHz ±0.3 dB	Full L-Band ±1.7 dB	Full L-Band ± 2.0 dB	
Slope Compensation		0-6 dB (pivot point at 2150MHz)			
Slope Control Steps		1 dB			
Input Return Loss (50Ohm)		Typ. -18 dB / Min. -15 dB	Typ. -13 dB / Min. -9 dB	Typ. -13 dB / Min. -9 dB	
Output Return Loss (50Ohm)		Typ. -18 dB / Min. -15 dB	Typ. -13 dB / Min. -10 dB	Typ. -13 dB / Min. -10 dB	
Noise Figure At max. gain		Typ. 12 dB / Max 14 dB	Typ. 14.5 dB / Max 16.5 dB	Typ. 15 dB / Max 17 dB	
Maximum Operational Input level		-30 dBm At max gain			
OP1dB At max. gain		Typ. +18 dBm / Min. +15 dBm	Typ. +15.5 dBm / Min. +12.5 dBm	Typ. +15 dBm / Min. +12 dBm	
OIP3 At max. gain		Typ. +28 dBm / Min. +25 dBm	Typ. +26 dBm / Min. +23 dBm	Typ. +25.5 dBm / Min. +22.5 dBm	
Group Delay pk-pk		Typ. 1 ns / Max. 2 ns (Full instantaneous band)			
Internal Reference Stability		± 5 x 10-8 over 0 to 50°C			
Phase Noise (Typical Values)	@10 Hz offset	-68 dBc / Hz			
	@100 Hz offset	-80 dBc / Hz			
	@1 KHz offset	-90 dBc / Hz			
	@10 KHz offset	-102 dBc / Hz			
	@100 KHz offset	-103 dBc / Hz			
	@1 MHz offset	-112 dBc / Hz			
Spurs In-band	Non-carrier related	< -75 dBm (At -5dBm Output. Non-Harmonic)			
	Harmonic	< -50 dBc			
	Carrier related (>1MHz Offset)	< -60 dBc (At -5dBm Output. Non-Harmonic)			
Spurs Out-of-band	Carrier Related	< -60 dBc (At -5dBm Output)			
	Harmonic	< -50 dBc			
	Non-carrier related	< -75 dBm (At -5dBm Output)			
LO Breakthrough		< -75 dBm			
Image Rejection		Typ. 80 dB			
Conversion stages		Dual			
External Reference Input Frequency		10MHz or 100MHz (auto detection)			
External Reference Input Level		0dBm ± 10dB			
Mute		60 dB			
Spectral Inversion		Non-inverting			
Spec version		1.0	1.0	0.1	

Frequency Downconverter Module - RF Parameters		Redundancy - RF Parameters			
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Size		4 slots wide		4 slots wide	
Redundancy		Standalone module		1+1 (Note: This column denotes specs for 24426 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24426 in 2+1 configuration)
Input Frequency Range		3400 - 4200 MHz			
Output Frequency Range		950 - 1750 MHz			
Mean Conversion Gain		Max. 35 ± 1.5 dB / Min. 0 ± 1.5 dB	Max. 33.9 ± 2.2 dB / Min. 3.9 ± 2.2 dB	Max. 34 ± 2.5 dB / Min. 4 ± 2.5 dB	
Gain steps		0.25 ± 0.15 dB			
Gain Flatness (50Ohm)		Full L-Band ±1.5 dB Any 40MHz ±0.3 dB	Full L-Band ±1.7 dB	Full L-Band ± 2.0 dB	
Slope Compensation		N/A			
Slope Control Steps		N/A			
Input Return Loss (50Ohm)		Typ. -18 dB / Min. -15 dB	Typ. -13 dB / Min. -9 dB	Typ. -13 dB / Min. -9 dB	
Output Return Loss (50Ohm)		Typ. -18 dB / Min. -15 dB	Typ. -13 dB / Min. -10 dB	Typ. -13 dB / Min. -10 dB	
Noise Figure At max. gain		Typ. 12 dB / Max 14 dB	Typ. 14.5 dB / Max 16.5 dB	Typ. 15 dB / Max 17 dB	
Maximum Operational Input level		-30 dBm At max gain			
OP1dB At max. gain		Typ. +18 dBm / Min. +15 dBm	Typ. +15.5 dBm / Min. +12.5 dBm	Typ. +15 dBm / Min. +12 dBm	
OIP3 At max. gain		Typ. +28 dBm / Min. +25 dBm	Typ. +26 dBm / Min. +23 dBm	Typ. +25.5 dBm / Min. +22.5 dBm	
Group Delay pk-pk		Typ. 1 ns / Max. 2 ns (Full instantaneous band)			
Internal Reference Stability		± 5 x 10-8 over 0 to 50°C			
Phase Noise (Typical Values)	@10 Hz offset	-68 dBc / Hz			
	@100 Hz offset	-80 dBc / Hz			
	@1 KHz offset	-90 dBc / Hz			
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Spurs Out-of-band	Carrier Related	< -60 dBc (At -5dBm Output)			
	Harmonic	< -50 dBc			
	Non-carrier related	< -75 dBm (At -5dBm Output)			
LO Breakthrough		< -75 dBm			
Image Rejection		Typ. 80 dB			
Conversion stages		Dual			
External Reference Input Frequency		10MHz or 100MHz (auto detection)			
External Reference Input Level		0dBm ± 10dB			
IF Monitor Port		Yes			
Mute		60 dB			
Spectral Inversion		Non-inverting			
Spec version		1.0	1.0	0.1	