

Falcon Series Frequency Converter Module

L-Band to IF-Band Agile Downconverter

L-Band to IF-Band agile 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

Down conversion from L-Band to IF-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-L1F2-24404AA-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 24404 in 1+1 configuration) 2+1 (Note: This column denotes specs for 24404 in 2+1 configuration)
Input Frequency Range		850-3150 MHz in 1 kHz step size		
Output Frequency Range		70 ± 20 MHz / 140 ± 40 MHz		
Mean Conversion Gain		Max. 35 ± 2 dB / Min. 5 ± 2 dB	Max. 34.4 ± 2.2 dB / Min. 4.4 ± 2.2 dB	Max. 34.4 ± 2.3 dB / Min. 4.4 ± 2.3 dB
Gain Step Size		0.1 ± 0.1 dB		
Gain Flatness (50 Ohm)		±0.3 dB	±0.5 dB	±0.6 dB
Input Return Loss (50 Ohm)		Typ. -20 dB / Min. -16 dB	Typ. -15 dB / Min. -10 dB	Typ. -15 dB / Min. -10 dB
Output Return Loss (50 Ohm)		Typ. -20 dB / Min. -16 dB	Typ. -15 dB / Min. -10 dB	Typ. -15 dB / Min. -10 dB
Maximum Operational Input level		- 30 dBm at max gain		
Noise Figure At max. gain		Typ. 8 dB / Max 10 dB	Typ. 8.7 dB / Max 10.7 dB	Typ. 10.7 dB / Max 12.8 dB
OP1dB At max. gain		Typ. +13 dBm / Min. +10 dBm	Typ. +12.3 dBm / Min. +9.3 dBm	Typ. +10.3 dBm / Min. +7.3 dBm
OIP3 At max. gain		Typ. +25 dBm / Min. +22 dBm	Typ. +24.3 dBm / Min. +21.3 dBm	Typ. +22.3 dBm / Min. +19.3 dBm
Internal Reference Stability		± 5 x 10-8 over 0 to 50°C		
Phase Noise (Typical Values)	@10 Hz offset	-70 dBc / Hz		
	@100 Hz offset	-84 dBc / Hz		
	@1 KHz offset	-98 dBc / Hz		
	@10 KHz offset	-104 dBc / Hz		
	@100 KHz offset	-107 dBc / Hz		
	@1 MHz offset	-112 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		< -75 dBm		
Image Rejection		>60 dB Typical		
External Reference Input Frequency		10MHz or 100MHz (auto detection)		
External Reference Input Level		0dBm ± 10dB		
Mute		60 dB		
Number of conversion stages		Dual		
Spectral Inversion		Non-inverting		
Spec version		0.2	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.