

Falcon Series Frequency Converter Module

X-Band to L-Band Agile Downconverter

X-Band to L-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 X-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		
Model Numbers	FN-D-X3L1-24477AC-S5S5	
Size	4 slots wide	
Redundancy	Standalone module	
Input Frequency Range	7250—8400 MHz	
Output Frequency Range	900 –2100 MHz	
Mean Conversion Gain	Max +35 ± 1.5 dB / Min +5 ± 1.5 dB	
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness (50 Ohm)	Full band: ±1.0 dB Any 40MHz: ±0.3 dB	
Input Return Loss (RF-Band, 50 Ohm)	Typ. -18 dB / Min.-15 dB	
Output Return Loss (IF-Band, 50 Ohm)	Typ. -18 dB / Min.-15 dB	
Maximum Operational Input level	-30 dBm (At max gain)	
Noise Figure At max. gain	Typ. 8 dB / Max. 10 dB	
OP1dB At max. gain	Typ. +15 dBm / Min.+13 dBm (At max gain)	
OIP3 At max. gain	Typ. +25 dBm / Min.+22 dBm (At max gain) ($\Delta f = 5$ MHz two carriers 0 dBm each)	
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	-110 dBc / Hz
	@100 KHz offset	-115 dBc / Hz
	@1 MHz offset	-120 dBc / Hz
Spurs In-band (@ -5 dBm output) Non-harmonic	Non-carrier related	<-75 dBm
	Carrier Related >1MHz Offset (dBc)	<-60 dBc
Spurs Out-of-band (@ -5 dBm output)	Carrier related	<-60 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	
IF Monitor Port	Yes	
Number of conversion stages	Single	
Spectral Inversion	Non-inverting	
Spec version	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.