

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		Redundancy - RF Parameters	
Model Numbers	FN-D-X3L1-24477AA-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 24477 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24477 in 2+1 configuration)
Input Frequency Range	7250 - 8500 MHz (tuneable in 1 KHz steps)		
Output Frequency Range	950 - 2150 MHz		
Mean Conversion Gain	Max +35 ± 1.5 dB / Min. +5 ± 1.5 dB	Max +33.8 ± 2.3 dB / Min +3.8 ± 2.3 dB	Max +34 ± 2.6 dB / Min +4 ± 2.6 dB
Gain Step Size	0.25 ± 0.15 dB		
Gain Flatness (50 Ohm)	Full band: ±1.0 dB Any 500MHz Band: ±0.6 dB Any 36MHz: ±0.3 dB	Full band: ±1.3 dB	Full band: ±1.6 dB
Input Return Loss (RF-band, 50 Ohm)	Typ. -18 dB / Min.-15 dB	Typ -12 dB / Min.-9 dB	Typ -12 dB / Min.-9 dB
Output Return Loss (IF-band, 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 at max gain		
Noise Figure At max. gain	Typ. 8 dB / Max 10 dB	Typ. 10.5 dB / Max. 12.5 dB	Typ. 10.5 dB / Max. 12.5 dB
OP1dB At max. gain	Typ. +15 dBm / Min.+13 dBm	Typ. +13.5 dBm / Min.+10.5 dBm	Typ. +13.5 dBm / Min.+10.5 dBm
OIP3 At max. gain	Typ. +25 dBm / Min. +22 dBm	Typ. +23.5 dBm / Min.+20.5 dBm	Typ. +23.5 dBm / Min.+20.5 dBm
Internal Reference Stability	± 5 x 10-8 over 0 to 50°C		
Slope Compensation	0-6 dB (pivot point at 2150MHz)		
Slope Control Steps	1 dB		
Phase Noise (Typical values, measured with internal 100MHz reference)	@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 (@-5dBm Output) Non-harmonic	Non-carrier related	<-75 dBm	
	Carrier Related >1MHz Offset	<-60 dBc	
Spurs Out-of-band (@-5dBm 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	0.2	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.