



# Falcon Series

## Frequency Converter Module

### L-Band to IF-Band Agile Downconverter

**Typical applications:**

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

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.



**Hot Swap & replaceable RF**

Frequency Converter modules



**Redundancy configurations**

Field-replaceable 2+1 or 1+1 redundant configuration



**Variable Gain & Slope**

For balancing input signals.



**Frequency Conversion** Down conversion from L-Band to IF-Band.

#### Chassis Options



**Local control & monitoring** via HMI high resolution touchscreen



**Flexible Module Configurations** choose from a mixture of up and down converters with different operating frequencies.



**Resilience** from dual redundant hot-swap power supplies & field replaceable CPU & HMI



**Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface



**Compact indoor & outdoor** chassis options, which can be part populated



**Field replaceable Internal reference source** and external reference inject port with auto detection



**Secure protocols** with SNMPv3 and HTTPS



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	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 steps	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
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
Maximum Operational Input level	- 30 dBm at max gain		
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 <sup>-8</sup> over 0 to 50°C		
Phase Noise (Typical values)	@10Hz offset	-70 dBc / Hz	
	@100Hz offset	-84 dBc / Hz	
	@1KHz offset	-98 dBc / Hz	
	@10KHz offset	-104 dBc / Hz	
	@100KHz offset	-107 dBc / Hz	
	@1MHz offset	-112 dBc / Hz	
Spurs In-band @ -5dBm output	Carrier Related	< -60 dBc	
	Harmonic	< -50 dBc	
	Non-carrier related	< -75 dBm	
Spurs Out-of-band @ -5dBm 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	10 MHz or 100 MHz (Auto detection)		
External Reference Input Level	0 dBm ± 10 dB		
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.