

Falcon Series Frequency Converter Module

IF-Band to L-Band Agile Upconverter

IF-Band to L-Band block upconverter 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



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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 & Slope

For balancing input signals.

Frequency Conversion

Up conversion from IF-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 Upconverter Module - RF Parameters		Redundancy - RF Parameters			
Model Numbers		FN-U-L1F2-24405AA-XXXX	SWF-G1S-CX-111A-xxxx	SWF-G1S-CX-110A-xxxx	
Size		4 slots wide		6 slots wide	
Redundancy		Standalone Module		1+1 (Note: This column denotes specs for 24405 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24405 in 2+1 configuration)
Input Frequency Range		70 ± 20 MHz or 140 ± 40 MHz user selectable			
Output Frequency Range		850-2450 MHz in 1 kHz steps			
Mean Conversion Gain		Max. 25 ± 1.5 dB / Min. -5 ± 1.5 dB	Max. 24.4 ± 1.7 dB / Min. -5.6 ± 1.7 dB	Max. 24.4 ± 1.8 dB / Min. -5.6 ± 1.8 dB	
Gain Step Size		0.1 ± 0.1 dB			
Gain Flatness (Full Instantaneous Band) ± dB		Max. ± 0.5 dB Typ. ± 0.3 dB	70MHz input: Max. ± 0.7 dB 140MHz input: Max. ± 1.4 dB	70MHz input: Max. ± 0.8 dB 140MHz input: Max. ± 1.5 dB	
Input Return Loss (RF-band, 50 Ohm)		Typ. -20 dB / Max. -18 dB	Typ. -15 dB / Max. -13 dB	Typ. -15 dB / Max. -13 dB	
Output Return Loss (IF-band, 50 Ohm)		Typ. -20 dB / Max. -18 dB	Typ. -14 dB / Max. -12 dB	Typ. -14 dB / Max. -12 dB	
Noise Figure At max. gain		Typ. 8 dB / Max 10 dB	Typ. 8.7 dB / Max 10.9 dB	Typ. 10.7 dB / Max 13.7 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	
OIP2 At max. gain		Typ. +35 dBm / Min. +32 dBm	TBD	TBD	
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 @ -5dBm output	Carrier related	<-60 dBm			
	Non-carrier related >1MHz Offset	< -75 dBm			
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			
Spectral Inversion		Non-inverting			
Number of conversion stages		Dual			
IF Power Monitor		Yes			
Number of Modules per Chassis		4 max (Module 4-slots wide, 16-slots per chassis)			
Spec version		0.3	1.0	0.1	

Frequency Upconverter Module - Physical and Environmental Specs	
Model Numbers	FN-U-L1F2-24405AA-XXXX
Control method	Via chassis (Local and remote as provided by chassis)
LNB Power	No
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to +75°C
Location	Indoor use only
Humidity	20 to 90% non-condensing
Altitude	Operational: 10,000ft/3000m AMSL Transport: 30,000ft/10000m AMSL
Weight	0.5 kg typ

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.