

# Falcon Series Frequency Converter Module

## L-Band to X-Band Agile Upconverter

L-Band to X-Band agile upconverter module with variable gain.

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

### Variable Gain & Slope

For balancing input signals.

### Redundancy Configurations

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

### Frequency Conversion

Up conversion from L-Band to X-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		
Model Numbers	FN-U-X3L1-24479AA-XXXX	
Size	4 slots wide	
Redundancy	Standalone module	
Input Frequency Range	950 –2100 MHz	
Output Frequency Range	7145—7235 MHz (tuneable in 1 KHz steps)	
Mean Conversion Gain	Max 30 ± 1.5 dB / Min -30 ± 1.5 dB	
Gain Step Size	0.25 ± 0.15 dB	
Gain Flatness (50 Ohm)	Full band: ±1.0 dB Any 40MHz: ±0.25 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	
Noise Figure At max. gain	Typ. 15 dB / Max. 18 dB	
Maximum Operational Input Level	-35 dBm (At max gain)	
OP1dB At max. gain	Typ. +15 dBm / Min.+12 dBm	
OIP3 At max. gain	Typ. +27 dBm / Min.+25 dBm	
Internal Reference Stability	± 5 x 10 <sup>-8</sup> over 0 to 50°C	
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	-106 dBc / Hz
	@100 KHz offset	-107 dBc / Hz
	@1 MHz offset	-115 dBc / Hz
Spurs In-band (@-5dBm Output)	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	<-60 dBm	
Image Rejection	>60 dB typ.	
External Reference Input Frequency	10MHz or 100MHz (auto detection)	
External Reference Input Level	+0dBm ± 10dB	
Mute	60 dB	
Number of conversion stages	Single	
Spectral Inversion	Non-inverting	
IF Monitor Port	Yes	
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.