

Falcon Series Frequency Converter Module

L-Band to X-Band Block Upconverter

L-Band to X-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



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.

Frequency Conversion

Up conversion from L-Band to X-Band.

Redundancy Configurations

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

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-X3L1-24447AA-XXXX	SWF-G1S-KX-109A-xxxx	SWF-G1S-KX-115-xxxx	
Size		4 slots wide		4 slots wide	
Redundancy		Standalone Module		1+1 (Note: This column denotes specs for 24447 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24447 in 2+1 configuration)
Input Frequency Range		950 –1450 MHz			
Output Frequency Range		7900—8400 MHz			
Mean Conversion Gain		Max 30 ± 2.0 dB / Min 0 ± 2.0 dB	Max 28.8 ± 2.3 dB / Min -1.2 ± 2.3 dB	Max 29 ± 2.6 dB / Min -1 ± 2.6 dB	
Gain Step Size		0.25 ± 0.15 dB			
Gain Flatness		Full band: ±1.0 dB Any 40MHz: ±0.25 dB	Full band: ±1.3 dB	Full band: ±1.6 dB	
Input Return Loss (RF-band, 50 Ohm)		Typ. -18 dB / Min.-16 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	
Noise Figure At max. gain		Typ. 12 dB / Max. 15 dB	Typ. 14.5 dB / Max. 17.5 dB	Typ. 14.5 dB / Max. 17.5 dB	
Maximum Operational Input level		- 35 dBm at max gain			
OP1dB At max. gain		Typ. +15 dBm / Min.+12 dBm	Typ. +13.5 dBm / Min.+9.5 dBm	Typ. +13.5 dBm / Min.+9.5 dBm	
OIP3 At max. gain		Typ. +27 dBm / Min.+25 dBm	Typ. +25.5 dBm / Min.+23.5 dBm	Typ. +25.5 dBm / Min.+23.5 dBm	
Internal Reference Stability		±5 x 10 ⁻⁸ 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	Carrier related >1MHz Offset	<-60 dBc			
	Non-carrier related	<-75 dBm			
Spurs Out of band @ -5dBm output	Carrier Related	<-60 dBc			
	Non-carrier related	<-75 dBm			
LO Breakthrough / Image Rejection		<-60 dBm / >60 dB typical			
External Reference Input Frequency		10MHz or 100MHz (auto detection)			
External Reference Input Level		0dBm ± 10dB			
Mute		60 dB			
Spectral Inversion / IF Power Monitor		Non-inverting / Yes			
Number of conversion stages		Single			
Number of Modules per Chassis		4 max.			
Spec version		1.0	1.1	1.1	



System Control	
Control Method	Via chassis; local and remote as provided by chassis
LNB Power	No
Physical & Environmental	
Dimensions	4 x Genus 1U slots
Weight	<0.5 kg
Temperature	Operating: 0 to 50°C / Storage: -20°C to +75°C
Location/Humidity	Indoor use only — 20 to 90% non-condensing
Altitude	10,000 feet AMSL (Operational) 30,000 feet AMSL (Transport) Above Mean Sea Level
Spec. Version	1.0

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.