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.

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 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		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	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	- 30 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	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 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	Single		
IF Power Monitor	Yes		
Spec version	0.1	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.

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