Falcon Series Frequency Converter Module

X-Band to L-Band Agile Downconverter

X-Band to L-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.

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

Hot Swap & Replaceable
RF Frequency Converter modules

Variable Gain
For balancing input signals.

Frequency Conversion
Down conversion from X-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 Downconverter Module - RF Parameters		
Model Numbers		FN-D-X3L1-24477AC-S5S5
Size		4 slots wide
Redundancy		Standalone module
Input Frequency Range		7250—8400 MHz
Output Frequency Range		900 –2100 MHz
Mean Conversion Gain		Max +35 ± 1.5 dB / Min +5 ± 1.5 dB
Gain Step Size		0.25 ± 0.15 dB
Gain Flatness (50 Ohm)		Full band: ±1.0 dB Any 40MHz: ±0.3 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
Maximum Operational Input level		–30 dBm (At max gain)
Noise Figure At max. gain		Typ. 8 dB / Max. 10 dB
OP1dB At max. gain		Typ. +15 dBm / Min.+13 dBm (At max gain)
OIP3 At max. gain		Typ. +25 dBm / Min.+22 dBm (At max gain) (Δf = 5 MHz two carriers 0 dBm each)
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	-110 dBc / Hz
	@100 KHz offset	-115 dBc / Hz
	@1 MHz offset	-120 dBc / Hz
Spurs In-band (@ -5 dBm output) Non-harmonic	Non-carrier related	<-75 dBm
	Carrier Related >1MHz Offset	<-60 dBc
Spurs Out-of-band (@ -5 dBm 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
IF Monitor Port		Yes
Number of conversion stages		Single
Spectral Inversion		Non-inverting
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.