Falcon Series Frequency Converter Module

Ka-Band to L-Band Agile Downconverter

Ka-Band to L-Band agile downconverter 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.

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 Ka-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

FN-D-K4L1-24465AA

Preliminary spec - minimum order quantity applies

Frequency Downconverter Module - RF Parameters		
Model Numbers		FN-D-K4L1-24465AA-K5S5
Size		4 slots wide
Redundancy		Supported (based on chassis configuration)
Input Frequency Range		25500 - 27000 MHz (selectable in 1kHz steps)
Output Frequency Range		Mode 1: 900—1500, Mode 2: 1650—3150
Instantaneous Bandwidth (MHz)		Mode 1: 600, Mode 2: 500
Mean Conversion Gain		Max. 20 ± 2.0 dB / Min. –10 ± 2.0 dB
Gain Step Size		0.25 ± 0.15 dB
Gain Flatness		Full instantaneous band: ±1.5 dB / Any 40 MHz ±0.3 dB
Input Return Loss (Ka-band)		Typ. -16 dB / Min.-12 dB
Output Return Loss (Ka-band)		Typ. -18 dB / Min.-14 dB
Noise Figure (At max. gain)		Typ. 14 dB / Max. 17 dB
Input Power Range		-75 to -30 dBm
OP1dB (At max. gain)		Typ. +12 dBm / Min.+9 dBm
OIP3 (At max. gain)		Typ. +22 dBm / Min.+19 dBm
Internal Reference Stability		± 5 x 10-8 over 0 to 50°C
Phase Noise (Typical values, measured with internal 100MHz reference, excluding spurious)	@10 Hz offset	-70 dBc / Hz
	@100 Hz offset	-80 dBc / Hz
	@1 KHz offset	-90 dBc / Hz
	@10 KHz offset	-98 dBc / Hz
	@100 KHz offset	-101 dBc / Hz
	@1 MHz offset	-107 dBc / Hz
Spurs In-band (At -5dBm output, excluding harmonics)	Non-carrier related	<-70 dBm
	Carrier related (>1MHz Offset)	<-50 dBc
Spurs Out-of-band (At -5dBm output, excluding harmonics)	Carrier Related	<-50 dBc
	Non-carrier related	<-70 dBm
Harmonics		<-40 dBc (Maximum at -5dBm output power)
LO Breakthrough		<-80 dBm
Image Rejection		60 dB Typ.
External Reference Input Frequency / Level		10 MHz or 100 MHz (Auto-detection) / 0dBm ± 10dB
Mute		60 dB
Number of conversion stages		Single
Spectral Inversion / IF Monitor		Non-inverting / Yes. Internal RF detector monitored
Spec version		0.5

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.