



# Falcon Series Frequency Converter Module Ka-Band Block Downconverter

### Typical applications:

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

The 1U chassis has the capacity for up to five hot-swap frequency converter modules. These can be all upconverters, all downconverters or a mix of both.

**Local control & monitoring** via HMI high resolution touchscreen

**Compact** housed in a 1U high chassis with capacity for up to five modules

**Flexible Module Configurations** choose from a mixture of up and down converters with different operating frequencies.

**Resilience** from dual redundant hot-swap power supplies & field replaceable CPU & HMI

**Hot Swap & replaceable** RF Frequency Converter modules

**Redundancy configurations** Field-replaceable 2+1 or 1+1 redundant configuration

**Field replaceable Internal 10MHz reference source** and external reference inject port with auto detection

**Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface

### Chassis - Specification

Dimensions / Weight / Colour	1U high x 550mm deep x 19" wide / <10 kg / RAL9003—White (Semi-matte)
Capacity	17 module slots. 1 slot used for fan (if required) and 1 slot used for 10 MHz EXT inject module.
Temperature	Operating: 0 to 45°C / Storage: -20°C to +75°C
Location / Humidity / Altitude	Indoor use only / 20 to 90% non-condensing / 10,000 feet AMSL (Operational) 30,000 feet AMSL (Storage) Above Mean Sea Level
Control & Monitoring	Local: HMI touch screen Remote: Ethernet via RJ45, 10BaseT/100 BaseTx. TCP/IP, SNMP V3 & HTTPS & Web browser interface HMI and CPU field replaceable.
MTTR	20 minutes (15 minutes to retrieve spare part and 5 mins to replace) Applies to LRUs only and assumed in house stock
AC Input / Consumption	85-264Vac 50/60Hz / 150W
PSU Redundancy	Dual redundant and alarmed Diode OR. Hot swappable
Input & Output ports	Dependant upon module fitted
No. of modules per chassis	5 max. Module 3 slots wide





**Frequency Converter Module**  
Compact form factor allowing multiple modules to be housed in 1U chassis. Each module uses 3 slots in the chassis.

Frequency Downconverter Module - RF Parameters		
Model Numbers	FN-D-K4L1-24101-K5XX	
Input Frequency Range	Mode 1: 29.25 – 30.25, Mode 2: 30.0 – 31.0 GHz	
Output Frequency Range	950 – 1950 MHz	
Conversion Gain	Max Gain setting 35 ± 1.5 dB	
Gain Flatness	Full band: ± 1.5 dB Any 40MHz: ± 0.3 dB	
Input Return Loss	Typ. -14 dB / Min. -10 dB	
Output Return Loss	Typ. -18 dB / Min. -14 dB	
Attenuator Range	0 – 30 dB	
Attenuator Step Size	0.5 ± 0.25 dB	
Noise Figure	Max 10 dB	
Input Power Range	-75 to -30 dBm	
OP1dB	+15 dBm	
OIP3	+27 dBm	
Slope Compensation	0-8 dB	
Group Delay (max pk-pk)	2 ns	
Internal Reference Stability	± 5x10 <sup>-9</sup> over 0 to 50°C	
Phase Noise (Typical values)	@10Hz offset	-64 dBc / Hz
	@100Hz offset	-76 dBc / Hz
	@1KHz offset	-82 dBc / Hz
	@10KHz offset	-82 dBc / Hz
	@100KHz offset	-90 dBc / Hz
	@1MHz offset	-110 dBc / Hz
Spurs In-band	Non-carrier related	< -75 dBm
	Carrier related	< -50 dBc
Spurs Out-of-band	Carrier related	< -50 dBc
	Non-carrier related	< -80 dBm
LO Breakthrough	< -80 dBm	
Image Rejection	Mode 1 : > 60 dB, Mode 2 : > 50 dB	
External Reference	Input Freq. 10 MHz    Input Level +3 dBm ± 3 dB	
Mute	60 dB	
Number of conversion stages	Single	
IF Monitor	Yes. Internal RF detector monitored	
Spectral Inversion	Non-inverting	
Redundancy	Supported, based on chassis configuration	
Spec version	0.3	

Specs are for standalone modules. There may be slight variation when used in redundancy configurations

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.