

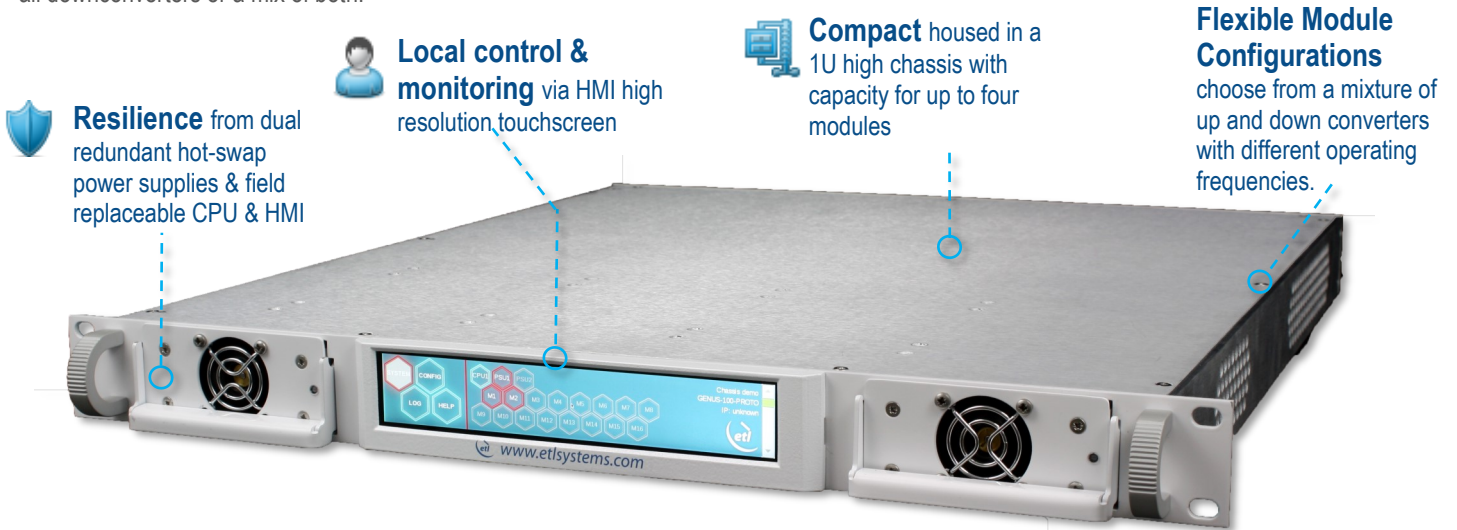


Falcon Series Frequency Converter Module Ka-Band Block Upconverter

Typical applications:

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

Converting L-Band to Ka-Band with dual stage conversion and 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.



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

Local control & monitoring via HMI high resolution touchscreen

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

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



Image for indication purposes only, actual units may differ

Hot Swap & replaceable RF Frequency Converter

Redundancy configurations available

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	Total of 17 module slots. Note that 1 slot may be used for fan (if required) and 1 slot may be used for 10 MHz EXT inject module (if required). Note actual modules may require >1 slot. Refer to required module spec table.
Temperature	Operating: 0°C 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. Each module independently monitored and reported.
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





Frequency Converter Module

Compact form factor allowing multiple modules to be housed in 1U chassis. Each module uses 4 slots in the chassis.

Frequency Upconverter Module - RF Parameters			
Model Numbers	FN-U-K4L1-24203-XXK5	SWF-G1S-QX-108A-xxxx	SWF-G1S-QX-116-xxxx
Size	4 slots wide		4 slots wide
Redundancy	Supported (based on chassis configuration)	1+1 (Note: This column denotes specs for 24203 in 1+1 configuration).	2+1 (Note: This column denotes specs for 24203 in 2+1 configuration).
Input Frequency Range	950 - 1950 MHz		
Output Frequency Range (User selectable frequency range via software command)	Mode 1 : 27.0—28.00, Mode 2 : 27.50—28.50, Mode 3 : 27.70—28.70, Mode 4 : 28.00—29.00, Mode 5 : 28.50—29.50 GHz, Mode 6 : 29.00—30.00 GHz, Mode 7 : 29.50—30.50 GHz Mode 8 : 30.00—31.00 GHz		
Mean Conversion Gain	Max. 22.0 ± 2.0 dB / Min. -3.0 ± 2.0 dB	Max. 18.0 ± 2.0 dB / Min -7.0 ± 2.0 dB	Max. 14.8 ± 2.0 dB / Min -10.2 ± 2.0 dB
Gain Step Size	0.25 ± 0.15 dB		
Gain Flatness	Full IF band: ±1.5 dB Any 40MHz: ±0.3 dB		
Input Return Loss (L-band)	Typ. -15 dB / Min. -13 dB	Typ. -13 dB / Min. -11 dB	Typ. -13 dB / Min. -11 dB
Output Return Loss (Ka-band)	Typ. -11 dB / Min. -8 dB	Typ. -9 dB / Min. -8 dB	Typ. -9 dB / Min. -8 dB
Noise Figure At max. gain	Typ. 20 dB / Max 23 dB	Typ. 21 dB / Max 24 dB	Typ. 22.7 dB / Max 25.8 dB
Input Power Range	-75 to -30 dBm		
OP1dB At max. gain	Typ. +3 dBm / Min. 0 dBm	Typ. 0 dBm / Min. -3.0 dBm	Typ. -1.5 dBm / Min. -4.5 dBm
OIP3 At max. gain	Typ. +13 dBm / Min. +10 dBm	Typ. +10.0 dBm / Min. +7.0 dBm	Typ. +8.5 dBm / Min. +5.5 dBm
Slope Control Range	0-6 dB, pivot point at 1950 MHz		
Slope Control Steps	1 ± 0.5 dB		
Internal Reference Stability	± 5 x 10 ⁻⁸ over 0 to 50°C		
Phase Noise (Typical values)	@10Hz offset	-60 dBc / Hz	
	@100Hz offset	-70 dBc / Hz	
	@1KHz offset	-80 dBc / Hz	
	@10KHz offset	-83 dBc / Hz	
	@100KHz offset	-85 dBc / Hz	
	@1MHz offset	-100 dBc / Hz	
Spurs In-band (Measured at -15 dBm output and max gain)	Carrier related	< -50 dBc	
	Non-carrier related	< -70 dBm	
Spurs Out-of-band (Measured at -15 dBm output and max gain)	Carrier related	< -50 dBc	
	Non-carrier related	< -70 dBm	
LO Breakthrough	< -70 dBm		
Image Rejection	> 60 dB typical		
External Reference	Input Freq. 10MHz Input Level +3 dBm ±3 dB		
Mute	60 dB		
IF Monitor	Yes. Internal RF detector monitored.		
Spectral Inversion	Non-inverting		
Number of conversion stages	Dual		
Spec version	2.0	1.0	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.

