



Falcon Series

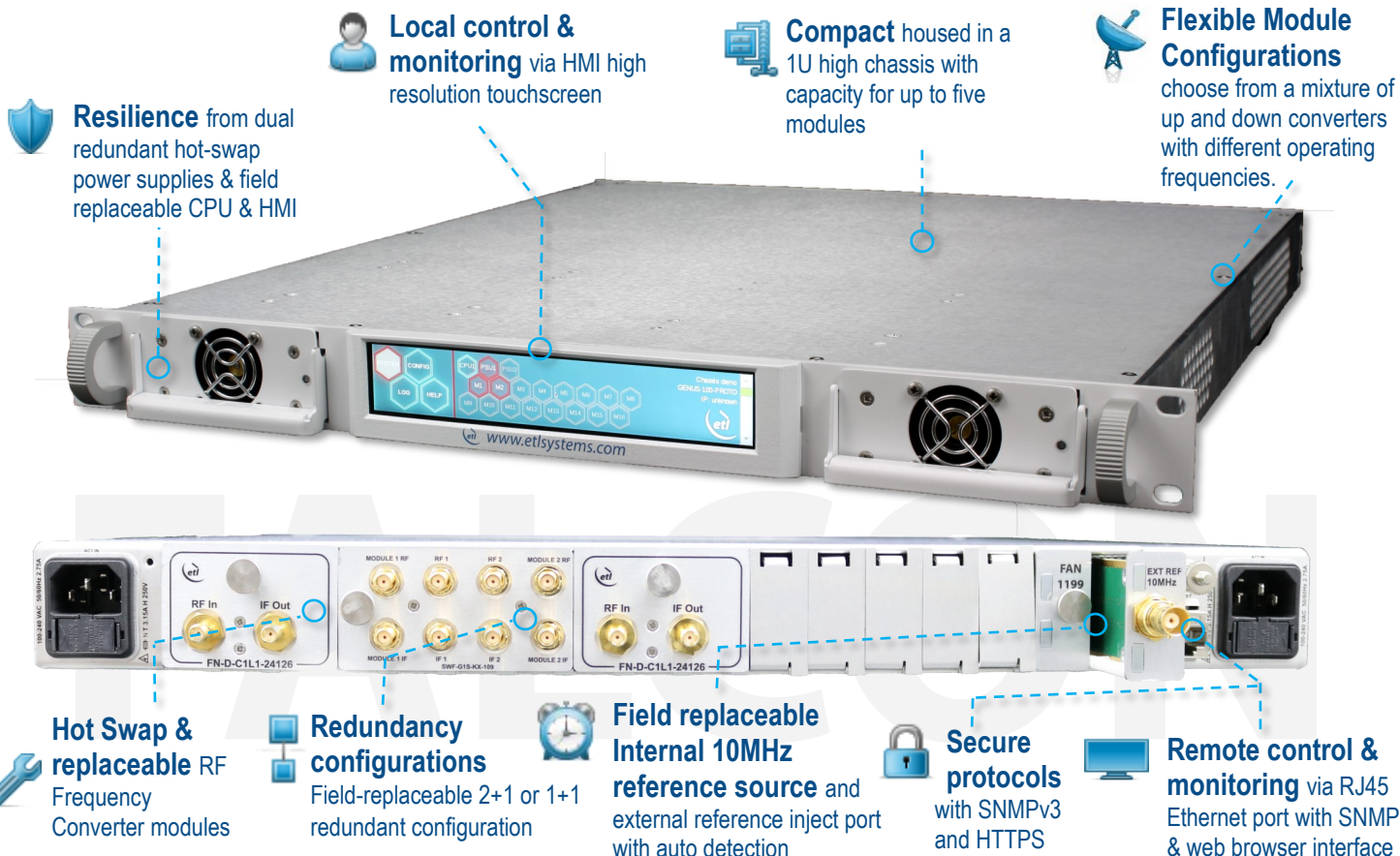
Frequency Converter Module

C-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.



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 will be used for fan (if required) and 1 slot will be 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			Redundancy Module - RF Parameters	
Model Numbers		FN-D-C1L1-24126-S5XX	SWF-G1S-CX-111	SWF-G1S-CX-110
Size		3 slots wide	4 slots wide	6 slots wide
Redundancy		Standalone module	1+1 (Note: This column denotes specs for 24126 in 1+1 configuration)	2+1 (Note: This column denotes specs for 24126 in 2+1 configuration)
Input Frequency Range (user selectable)		Mode 1: 3400 – 4400 MHz Mode 2: 3600 – 4600 MHz Mode 3: 3800 – 4800 MHz		
Output Frequency Range		950—1950 MHz		
Conversion Gain		Max. 35 ± 2 dB / Min. 5 ± 2 dB	Max. 30.5 ± 2 dB / Min. 0.5 ± 2 dB	Max. 29.5 ± 2 dB / Min. -0.5 ± 2 dB
Gain steps		0.5 ± 0.25 dB		
Gain Flatness (50 Ohm)		Full L-Band ±1.5 dB		
Input Return Loss (50 Ohm)		Typ. -16 dB / Min. -12 dB	Typ. -13 dB / Min. -9 dB	Typ. -13 dB / Min. -9 dB
Output Return Loss (50 Ohm)		Typ. -16 dB / Min. -14 dB	Typ. -13 dB / Min. -11 dB	Typ. -13 dB / Min. -11 dB
Noise Figure At max. gain		Typ. 12 dB / Max 14 dB	Typ. 14.5 dB / Max 16.5 dB	Typ. 15 dB / Max 17 dB
Maximum Operational Input level		-30 dBm At max gain		
OP1dB At max. gain		Typ. +15 dBm / Min. +13 dBm	Typ. +12.5 dBm / Min. +10.5 dBm	Typ. +12 dBm / Min. +10 dBm
OIP3 At max. gain		Typ. +25 dBm / Min. +23 dBm	Typ. +23.0 dBm / Min. +21.0 dBm	Typ. +22.5 dBm / Min. +20.5 dBm
Group Delay (max pk-pk)		2 ns		
Internal Reference Stability		± 5 x 10 ⁻⁸ over 0 to 50°C		
Phase Noise (Typical values)	@10Hz offset	-70 dBc / Hz		
	@100Hz offset	-80 dBc / Hz		
	@1KHz offset	-90 dBc / Hz		
	@10KHz offset	-95 dBc / Hz		
	@100KHz offset	-98 dBc / Hz		
	@1MHz offset	-110 dBc / Hz		
Spurs In-band	Non-carrier related	< -70 dBm (At -5dBm Output. Non-Harmonic)		
	Carrier Related (>1MHz Offset)	< -55 dBc (At -5dBm Output. Non-Harmonic)		
Spurs Out-of-band	Carrier related	< -60 dBc (At -5dBm Output)		
	Non-carrier related	< -75 dBm (At -5dBm Output)		
LO Breakthrough		< -70 dBm		
Image Rejection		>60 dB		
Conversion stages		Dual		
External Reference		Input Freq. 10MHz Input Level +3 dBm ± 3dB		
Mute		60 dB		
Spectral Inversion		Non-inverting		
Spec version		1.0	0.1	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.

ETL SYSTEMS LIMITED
Coldwell Radio Station
Madley
Hereford
England HR2 9NE

TELEPHONE
+44 (0)1981 259020

EMAIL
info@etlsystems.com

FACSIMILE
+44 (0)1981 259021

WEB
www.etlsystems.com

