



Falcon Series Frequency Converter Module

L-Band to X-Band Agile Upconverter

Typical applications:

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

L-Band to X-Band block upconverter 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.



Hot Swap & replaceable RF

Frequency Converter modules



Redundancy configurations

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



Variable Gain & Slope

For balancing input signals.



Frequency Conversion Up

conversion from L-Band to X-Band.

Chassis Options



Local control & monitoring via HMI high resolution touchscreen



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



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



Compact indoor & outdoor chassis options, which can be part populated



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



Secure protocols with SNMPv3 and HTTPS



Indoor Chassis



Outdoor Unit





| Frequency Downconverter Module - RF Parameters | | Redundancy - RF Parameters | |
|--|--|--|--|
| Model Numbers | FN-U-X3L1-24447AA-XXXX | SWF-G1S-KX-109A-xxxx | SWF-G1S-KX-115-xxxx |
| Size | 4 slots wide | 4 slots wide | 4 slots wide |
| Redundancy | Standalone module | 1+1 (Note: This column denotes specs for 24477 in 1+1 configuration) | 2+1 (Note: This column denotes specs for 24477 in 2+1 configuration) |
| Input Frequency Range | 950 –1450 MHz | | |
| Output Frequency Range | 7900—8400 MHz | | |
| LO | 6950 MHz | | |
| Mean Conversion Gain | Max 30 ± 2.0 dB / Min 0 ± 2.0 dB | Max 28.8 ± 2.3 dB / Min -1.2 ± 2.3 dB | Max 29 ± 2.6 dB / Min -1 ± 2.6 dB |
| Gain Steps | 0.25 ± 0.15 dB | | |
| Gain Flatness (50 Ohm) | Full band: ±1.0 dB Any 36MHz: ±0.3 dB | Full band: ±1.3 dB | Full band: ±1.6 dB |
| Input Return Loss (RF-Band, 50 Ohm) | Typ. -18 dB / Min.-16 dB | Typ -12 dB / Min.-9 dB | Typ -12 dB / Min.-9 dB |
| Output Return Loss (IF-Band, 50 Ohm) | Typ. -18 dB / Min.-15 dB | Typ -15 dB / Min.-11 dB | Typ -15 dB / Min.-12 dB |
| Noise Figure (@ max gain) | Typ. 12 dB / Max. 15 dB | Typ. 14.5 dB / Max. 17.5 dB | Typ. 14.5 dB / Max. 17.5 dB |
| Maximum Operational Input Level | -30 dBm (At max gain) | | |
| OP1dB | Typ. +15 dBm / Min.+12 dBm | Typ. +13.5 dBm / Min.+9.5 dBm | Typ. +13.5 dBm / Min.+9.5 dBm |
| OIP3 | Typ. +27 dBm / Min.+25 dBm | Typ. +25.5 dBm / Min.+23.5 dBm | Typ. +25.5 dBm / Min.+23.5 dBm |
| Internal Reference Stability | ±5x10 ⁻⁸ over 0 to 50°C | | |
| Phase Noise (Typical values) | @10Hz offset | -68 dBc / Hz | |
| | @100Hz offset | -80 dBc / Hz | |
| | @1KHz offset | -90 dBc / Hz | |
| | @10KHz offset | -106 dBc / Hz | |
| | @100KHz offset | -107 dBc / Hz | |
| | @1MHz offset | -115 dBc / Hz | |
| Spurs In-band (@-5dBm Output) | Non-carrier related | <-75 dBm | |
| | Carrier related | <-60 dBc | |
| Spurs Out-of-band (@-5dBm Output) | Carrier related | <-60 dBc | |
| | Non-carrier related | <-75 dBm | |
| LO Breakthrough | <-60 dBm | | |
| Image Rejection | > 60 dB typ | | |
| External Reference Input Frequency | 10 MHz or 100 MHz. Auto detection. | | |
| External Ref. Input Level | 0 dBm ± 10dB | | |
| Mute | 60 dB | | |
| IF Monitor Port | Yes | | |
| Number of conversion stages | Single | | |
| Spectral Inversion | Non-inverting | | |
| Spec version | 0.1 | 1.1 | 1.1 |

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.