



FXSL-DDD-02 X, S and L-Band EOS Feed

Suitable for EOS DB applications requiring simultaneous X, S and L-Band reception

Orbital Systems FXSL-DDD-02 feed is a concentric X, S, and L-Band feed complete with low noise amplifiers and downconverters for all three bands. X-Band downconverter is fully synthesized, L and S-Bands are block downconverted.

Features

- Concentric X, S and L-Band feed on a common axis eliminates loss and pointing issues of off axis multi-band feeds
- X-Band feed operates fixed RHCP
- S and L-Band feed software selectable LHCP or RHCP
- Simultaneous reception of X and S, or L-Band signals
- Heavy duty aluminum enclosure, powder coated and assembled with stainless steel fasteners to eliminate external corrosion
- Complete feed control and monitoring via serial RS-422 data link
- Pressurized feed with temperature and humidity sensors as well as a built in purge valve to ventilate the entire antenna when excess humidity is detected in the electrical cabinet or feed

Performance Specifications

X-Band Feed/Downconverter

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|-------------------------------|--|
| X-Band Operating Frequency | 7750 - 8400 MHz |
| LNA Noise Temperature | 45 K max at 23°C |
| Local Oscillator Frequency | 7.03-7.68 GHz, 100 KHz typical (no spectrum inversion) |
| Local Oscillator Stability | ± 5ppm |
| Oscillator Phase Noise | -100 dBc/ Hz at 10 KHz typical |
| Output Frequency | 720 MHz (3 dB BW - 120 MHz) |
| IF Filter | 4 pole tubular, 120MHz BW |
| Conversion Gain | 65 dB typical |
| Output 1 dB Compression Point | > +10 dBm |

S-Band Feed/Downconverter

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|------------------------------------|--------------------------------|
| S-Band Operating Frequency | 22000 - 2260 MHz |
| S-Band Converter Noise Temperature | 70 K typical |
| Local Oscillator Frequency | Selectable: 2072/2096/2120 MHz |
| Local Oscillator Stability | ± 2.5 ppm |
| Oscillator Phase Noise | -100 dBc/Hz at 10 KHz typical |
| Output Frequency | 126 MHz to 154 MHz |
| Filter | 7 pole cavity pre-LNB filter |
| Conversion Gain | 65 dB typical |
| Output 1 dB Compression Point | > +10 dBm |

L-Band Feed/Downconverter

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|------------------------------------|-------------------------------|
| L-Band Operating Frequency | 1682 MHz to 1710 MHz |
| L-Band Converter Noise Temperature | 70 K typical |
| Local Oscillator Frequency | Selectable: 1550/1556 MHz |
| Local Oscillator Stability | ± 2.5 ppm |
| Oscillator Phase Noise | -100 dBc/Hz at 10 KHz typical |
| Output Frequency | 126 MHz to 154 MHz |
| Filter | 7 pole cavity pre-LNB filter |
| Conversion Gain | 65 dB typical |
| Output 1 dB Compression Point | > +10 dBm |

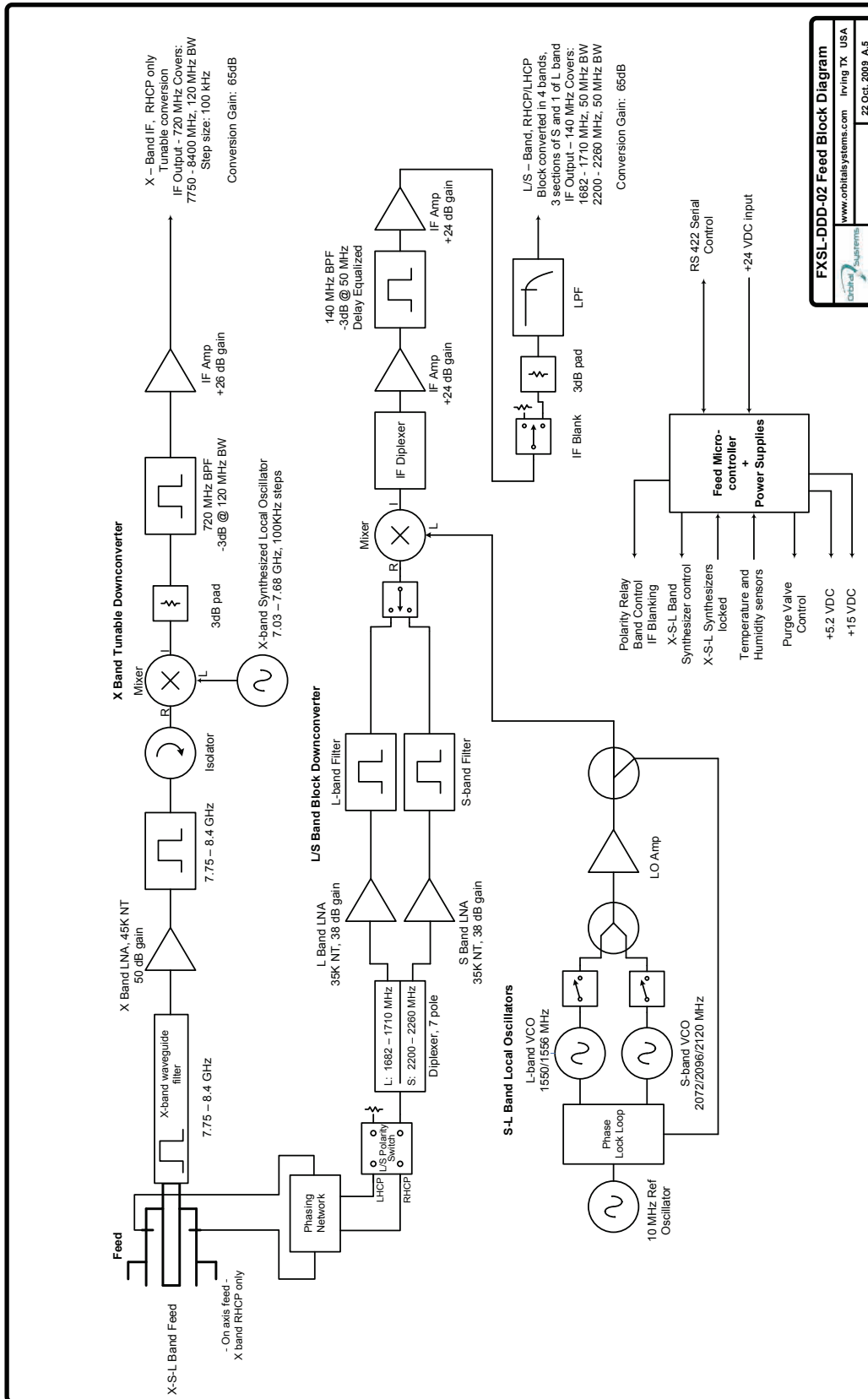
Electrical, Mechanical, and Environmental

| | |
|-------------------------------|---------------------------------------|
| Input Voltage Frequency | 24V DC at 1A |
| Input Power/Data Connector | 8 pin MS style connector |
| Operating Temperature | -40°C to +55°C |
| X, S and L-Band IF Outputs | Female Type N |
| Pressurization Tube Connector | 1/4" compression fitting (supplied) |
| Size | 26cm (10.25") dia x 58.4cm (23") long |
| Weight | 13.2 kg (29 lbs) |



Applications

- Reception of X, S and L-Band EOS satellites, including satellites that downlink simultaneously in X and S Band, or L-Band
- Reception of NOAA and DMSP satellites including reverse polarity NOAA satellites



FXSL-DDD-02 Feed Block Diagram

www.orbitalsystems.com Irving TX, USA

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