



2.4XLC X-L Band EOS-DB Reception System Bundle

Complete EOS-DB antenna and front end solution through level 0 data products

The 2.4XLC is a direct broadcast satellite reception system including all the components necessary to accurately track X and L-Band EOS-DB satellites. The system combines Orbital Systems most popular products, providing access to the highest quality system at the lowest possible cost for science and weather research.

Components

- 2.4AEBP-2.4m antenna system with a 2.4m positioner and 2.4m reflector
- **Optional** 2.4AEBP-3.0m antenna system with a 2.4m positioner and 3.0m reflector
- Concentric X and L-Band feed with built in LNA/LNB and downconverters (FXL-DD-01)
- Low-rate demodulator (LRD-200B)
- High-rate demodulator (HRD-200B)
- Front End Server (EOS-FES), includes server hardware and software license
- Dehydrator (DHR150-W or DHR150-R), wall or rack mount version
- **Optional** half rack case with keyboard, monitor, KVM switch and 5 KVA UPS
- Custom cut to length and terminated system cables up to 100m
- Custom packing crates
- Up to 2 days of on-site installation labor
- Reception components sold with bundle systems only, for unbundled components refer to individual component data sheet



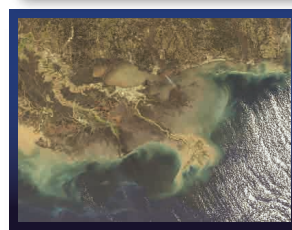
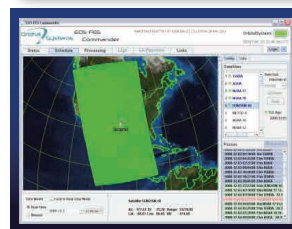
LRD-200B



HRD-200B



EOS-FES



Features

- A complete and fully integrated bundle that receives X and L-Band direct broadcast data and processes it to level 0
- System provides high reliability antenna positioner and straightforward graphical user interface so researchers spend time focusing on the data and not the antenna
- EOS-FES ties together and synchronizes all system components to automate passes, track satellites, receive, ingest and process data to level 0
- Automatic TLE and software updates; remote diagnosis automatically performed
- Remote support and assistance available for integration with customer's application processing software
- Shared installation responsibility between customer and Orbital Systems insures an outstanding installation and keeps total installation costs to a minimum
- Typical time from purchase, installation and fully operational system is 4 months
- 2 year limited warranty



Applications

- Complete EOS-DB reception bundle for all common X and L-Band EOS-DB satellites with ingest to produce level 0 data files.
- Tracking LEO and MEO EOS-DB satellites:
 - TERRA
 - AQUA
 - NPP
 - FY3
 - METOP
 - NOAA POES
 - FY1
 - JPSS1*
 - DMSP**

*when available

**encrypted except when passing over the north and south poles

Antenna:

Positioner 2.4AEBP-2.4m
 Reflector..... 2.4m solid spun aluminum / optional 3.0m available
 F/D..... .360
 Feed..... X-Band prime focus scalar with L-Band on axis feed

X-Band:

X-Band Operating Frequency 7700 MHz thru 8500 MHz
 Reflector 3 dB Beam-width 1.05° - 0.97°
 Reflector Gain..... 43.5 dB - 44.2 dB
 *G/T minimum w/system noise temp <100 K..... 23.5 dB/K - 24.2 dB/K
 *G/T typical performance..... 24.0 dB/K - 24.6 dB/K
 LNC noise temperature..... <50 K
 LNC overall conversion gain X to IF..... 60 dB typical
 Synthesized Downconverter step size..... 1 KHz
 Local oscillator temperature stability + 5 ppm
 IF output..... 720 MHz

L-Band:

L-Band Operating Frequency..... 1682 MHz thru 1710 MHz
 Reflector 3 dB Beam-width 4.9°
 Reflector Gain..... 30.0 dB
 *G/T minimum w/system noise temp <120 K..... 7 dB/K
 *G/T typical performance..... 7.5 dB/K
 LNB noise temperature..... 90 K (preselected)
 LNB conversion gain 60 dB typical
 Local Oscillator Frequency (block downconverter) 1562.5 MHz
 Local oscillator temperature Stability..... + 2.5ppm
 IF output..... 119.5 MHz thru 147.5 MHz

Demodulators:

Mechanical 1 U rack mounted
 Interface USB, LVDS, TTL, RS422 clock and data, Ctrl via Ethernet
 High Data Rate Modes OQPSK, QPSK, BPSK
 Low Data Rate Modes..... QPSK, BPSK, PSK

EOS-FES:

Antenna Control Monitoring and Pass scheduling for antenna
 Automatic update of antenna TLEs
 Data Processing Ingest of demodulator data and processing to level 0
 Optional AAPP processing to level 1A - 1B
 Server..... HP DL 360e G8 w/ 1.8GHz Intel XEON 4-core CPU,
 300GB RAID1, 8GB main memory in a 1U rack case

*G/T values determined at 23°C and elevation > 10° Individual component specifications can be found in product specific data sheets.

Electrical Cabinet and External Controls:

The electrical cabinet is equipped with the following safety devices:

- Emergency stop switch
- Audible warning annunciator
- Visual warning indicator
- Padlocks to lock the left and right sides of the electrical cabinet

2.4AEBP antenna positioners are compliant with CE Machinery Directive IEC 60204-1

