

HDRM

High Data Rate Modem

High performance, total flexibility. The High Data Rate Modem is a high-rate multi-mission satellite data receiver, data processing and simulation system that supports CCSDS (for Conventional and Advanced Orbiting Systems), Standard CDL, DVB-S2 and Direct Sequence Spread Spectrum. The HDRM performs data reception, ingest, processing, distribution and archiving functions at rates up to 1.7 Gbps. It is most commonly deployed within a satellite ground station, but is also ideal for applications including satellite integration/test and aircraft data acquisition.

Support for multiple missions is a core design principle of the HDRM, therefore the system's receiver is implemented as a digital software-defined radio. The radio is configurable to accommodate multiple modulation schemes, data rates, coding algorithms and data formats. It provides demodulation match filters which can be tuned to correspond to characteristics of individual transmitters, improving communication performance. The system's linear wideband front end and high dynamic range enable adaptive filtering of the received signal based on symbol rate and Doppler. These characteristics also ensure compatibility with the complex modulation and coding schemes that will be developed for future missions.

Applications

- Reception and processing of high data rate signals from aircraft, LEO or GEO satellites.
- Turnkey reception and demodulation for high data rate scientific, remote sensing and telecommunications applications
- High-precision Doppler measurement
- High-reliability ground station radio
- High data rate full duplex radio
- Common Data Link terminals
- LPI/LPD applications
- Advanced military datalinks



Key Features

- ✓ Fully digital, tunable transmitter and receiver
- ✓ Modulation and demodulation at rates up to 1.7 Gbps
- ✓ Common Data Link (CDL) Support
- ✓ DVB-S2 up to 300 MSymbols/s
- ✓ Direct Ethernet or ECL data output to network (IP, Multicast & network attached storage)
- ✓ Near-theoretical receive performance, fast signal acquisition
- ✓ Digital software receiver for multi-mission versatility
- ✓ IF digital modulator; 650 MHz IF bandwidth
- ✓ Optimized for low signal strength applications at very low Eb/No
- ✓ Signal-source-specific programmable match filters to optimize communication performance
- ✓ Robust built-in test capabilities

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE.