The Viasat High-Rate Receiver 3200 provides up to 6.4 Gbps transfer rates. These unprecedented data rates offer a substantial increase in data density for next-generation Ka-band Earth Observation satellite applications.

**KA-BAND HIGH-RATE DATA FOR EARTH OBSERVATION**

Viasat, the world leader in remote sensing, ground systems, developed the Viasat High-Rate Receiver 3200 to take maximum advantage of the 1.5 GHz spectrum allocated to Ka-band Earth Observation missions.

The Viasat High-Rate Receiver 3200 provides two independent IF channels, either one demodulator and decoder per IF channel at 1600 Msps per demodulator/decoder or two demodulators and decoders per IF channel at 800 Msps per demodulator/decoder. It achieves data rates of up to 4800 Mbps per IF channel for a total throughput of 9600 Mbps. The receiver provides digital cross-polar cancellation between the IF channels using Viasat’s patented algorithm. The single channel configuration allows two receivers to be utilized for high-rate dual polarized links, achieving up to 9.6 Gbps downlink capability.

The receiver is designed for full remote lights-out operational scenarios. All control capability is provided through web-based GUI and JSON-based management and control. All non-volatile storage is sanitizeable for use in operational data sensitive applications.

**OPTIONAL FRONT END PROCESSOR FOR DATA CAPTURE, PROCESSING AND ARCHIVE**

The Viasat High-Rate Receiver Data Processor extends the features of the Viasat High-Rate Receiver 3200 by providing data capture, processing and archive for up to 4 Gbps transfer rates. The processor can ingest two independent data streams and provides streaming and playback over 10 GbE Ethernet from the Viasat High-Rate Receiver 3200.

The Viasat Data Processor processes and archives data at rates up to 4000 Mbps and performs raw-data and processed-data archiving simultaneously. The processor streams raw or de-framed data out in near-real-time and provides streaming playback of archived raw or de-framed data all over the 10/100/1000 BASE-T or 1000/10 GbE interface. FTP and SAMBA file transfer methods are also provided.
Viasat High-Rate Receiver 3200

SPECIFICATIONS

MODULATIONS AND RATES

Modulations
- QPSK, OQPSK, 8PSK, 16APSK¹,², 32APSK¹,²

Symbol Rates
- 100 to 1600 MBd x 2 channels
- 100 to 800 MBd x 4 channels¹,²
- 7.5 to 200 MBd x 8 channels¹,³

Data Rates
- 200 to 4800 Mbps x 2 channels
- 200 to 2400 Mbps x 4 channels¹,²
- 15 to 600 Mbps x 8 channels¹,³

Pulse Shaping Filters
- Root-raised cosine (0.2 to 1.0)
- Unshaped (sinc spectrum/I&D)

FEC
- Convolutional/Viterbi¹,³
  - CCSDS r=1/2 (131.0-B)
  - 4I+4Q, 8I+8Q (450-SNUG)
- Reed-Solomon¹,³
  - CCSDS (131.0-B); DVB-S (ETSI EN 300 421); Intelsat (IESS-308)
  - 0 to 32
- Reed-Solomon Interleaving¹,³
  - CCSDS; Convolutional
  - Depth
  - 1 to 16
- LDPC
  - CCSDS r=7/8 (131.0-B)

ACM/VCM
- CCSDS SCCC¹,² (131.2-B)
- DVB-S2/S2X¹,² (ETSI EN 302 307-1/-2)

FEC THROUGHPUT

QPSK and OQPSK
- Convolutional/Viterbi: 200 MBd¹,²
- Reed-Solomon: 200 MBd¹,²
- LDPC: 1600 MBd
  - Uncoded: 1600 MBd

8PSK
- 4D-8PSK-TCM: 200 MBd¹,²
- Reed-Solomon: 200 MBd¹,²
  - Uncoded: 1600 MBd

SCCC
- Reed-Solomon: 200 MBd¹,²
- Uncoded: 1600 MBd

DVB-S2/S2X
- Consult factory

Advanced Data Processing, Recording, and TCP/IP
- Available with Viasat Data Processor (VDP)²

ADDITIONAL FEATURES

Receive Equalization
- Static tilt compensation; digital adaptive equalization

Cross-Polarization Interference Cancellation
- Digital adaptive cancellation

Transmit Equalization
- Static tilt compensation

Frame Processing
- CCSDS, RS DVB¹,³
- Asynchronous data layers

Randomization
- Synchronous (CCSDS, DVB-S¹,³)
- Asynchronous (WorldView²)

Built-in Test
- » Bit Error Rate Tester
  - Transmit and receive; 2²³-1, 2¹⁵-1, 2¹¹-1, 2⁹-1 PRBS (ITU-T O.150) and other sequences
- » Link Reporting
  - E_s/N_o, Offsets, Decoder and frame processing statistics
- » GUI
  - Constellation, spectrum, digital equalizer display
- » IF Loopback
  - Internal loopback without cable changes
- » Transmit Noise Generator
  - AWGN with calibrated E_s/N_o (0 dB to 30 dB)

Baseband Data Metadata
- Time-tagging, frame quality information

Power Supply Redundancy
- 1:1; hot-swappable

INTERFACES

IF Signal
- » Connector
  - 720 MHz Band Frequency
    - 720 MHz ± 200 MHz; tunable
    - 1200 MHz Band
      - 1200 MHz ± 400 MHz; tunable
    - 2400 MHz Band
      - 2400 MHz ± 750 MHz; tunable
- » Transmit Signal Level
  - -60 dBm to 0 dBm
- » Receive Signal Level
  - -50 dBm to -10 dBm

Baseband Data
- » Connector
  - 10G Ethernet (SFP+)
- » Protocol
  - Framed or unframed; with metadata

Monitor and Control
- » Remote Connector
  - 10/100/1000 Ethernet (RJ-45)
- » Remote Protocol
  - JSON-RPC 2.0 over TCP/IP
- » Remote GUI
  - Web Browser
- » Local Interface
  - Front Panel Display
- » Ext. Frequency Reference
  - SMA female, 10 MHz
- » Mains Power
  - 90 to 264 VAC, 47 to 63 Hz; ≤ 460 W

OTHER

Size (W x H x D)
- 19 x 5.25 x 21 in (EIA rack-mountable)

Weight
- ≤ 30 lb

Certification
- CE

CONTACT

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NOTES

¹ Consult factory for availability
² Optional functionality
³ Available with VHR-1200