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 800 Mpsps per demodulator/decoder or two demodulators and decoders per IF channel at 400 Mpsps per demodulator/decoder. It achieves data rates of up to 3200 Mbps per IF channel for a total throughput of 6400 Mbps. The receiver provides digital cross-pol cancellation between the IF channels using ViaSat’s patented algorithm. Additionally, the receiver can operate in a single channel mode at 4000 Mbps. This configuration allows two receivers to be utilized for high-rate dual polarized links, achieving up to 8 Gbps downlink capability.

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

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

The ViaSat High-rate Receiver Front End 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 Front End 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.

**HIGH-RATE RECEIVER 3200 AT-A-GLANCE**

**High-rate Receiver 3200**

- Designed for high-rate Ka-band and other high-rate satellite to ground links
- Total throughput of 6400 Mbps in dual channel mode
- Extremely high-rate single channel downlinks
- Single modulator channel to support full loopback testing
- Internal loop-back and BERT capabilities
- Digital cross-polarization cancellation
- Remote lights-out operation

**Optional Data Processor**

- Optional equipment that adds data capture, archiving, sorting and playback capability to the High-rate Receiver 3200
- Data capture, processing and archive for up to 4 Gbps transfer rates
- RAW bitstream archiving
- VCID sorting and storage of TM and AOS framed data
HIGH-RATE RECEIVER 3200

Symbol Rates
- 1 to 400 Msps x 4 channels
- 1 to 800 Msps x 2 channels
- 1 to 1350 Msps x 1 channel

Data Rates
- 1 to 1600 Msps x 4 channels
- 1 to 3200 Mbps x 2 channels
- 1 to 4000 Mbps x 1 channel

Tri-Mode Tunable IF Interface
- Center IF: 720 MHz/1200 MHz/2400 MHz
- Tuning and Bandwidth: 400/800 MHz/1500 MHz

Baseband Interfaces
- 4 channels of 10 GbE

Modulation Formats
- BPSK, QPSK, SQPSK, 8PSK, 16-AQPSK, 16 QAM, 9QPR, 32-AQPSK

FEC FORMATS

Convolutional Coding
- Rate 1/2
- Punctured
- Stacked Viterbi

4D-TCM
- all CCSDS rates

Reed-Solomon
- CCSDS, DVB, IntelSat

LDPC
- CCSDS 7/8, DVB-S2

SCCC
- per CCSDS 131.2-B-1

SIGNAL PROCESSING FEATURES

- Adaptive matched filter
- Quad demodulators for rates up to 400 Msps
- Dual demodulators for rates up to 800 Msps
- Single demodulator mode for rates up to 1350 Msps
- Digital cross-polarization cancellation

DEVICE MANAGEMENT

- Web based GUI, TCP/IP XML based M&C
- Redundant hot swappable power supplies
- Removable NV memory for data sanitization

MODEM DATA PROCESSING

- Frame synchronization including asynchronous codewords
- Bitstream, AOS (CADU/PDU), TM (CADU/PDU) outputs
- Frame metadata tagging with timestamp, data quality, etc.

OPTIONAL FRONT END PROCESSOR

Data Ingest Rates
- Up to 4000 Mbps

BASEBAND INTERFACES

- 10 GbE data interface
- 10/100/1000 BASE-T data interface
- 10/100/1000 BASE-T M&C

BASIC DATA PROCESSING FEATURES

- Frame synchronization including asynchronous codewords
- Bitstream, AOS (CADU/PDU), TM (CADU/PDU) outputs
- Frame metadata tagging with timestamp, data quality, etc.

ADVANCED DATA PROCESSING FEATURES

- Scheduled and manual controlled recording
- Simultaneous raw and processed data archiving
- Programmable VCID sorting/storage
- WAN rate buffering
- Timestamping at start of frame
- NTP time synchronization

STORAGE CAPACITY

- Internal 2 TB RAID5 storage
- Up to 6.3 TB available (priced separate)

RAW AND PROCESSED DATA DISTRIBUTION

- FTP file retrieval
- Samba mount
- Streaming data playback
- WAN rate buffering

HARDWARE FEATURES

- 1U chassis
- Enterprise class server
- Redundant power supplies

DEVICE MANAGEMENT

- Linux Operating System
- Web based GUI
- TCP/IP XML based M&C
- Redundant power supplies

NOTES

1 Consult Factory, NRE charges may apply
2 Requires ViaSat High-rate Receiver 3200 (or 1200)

All available features included without licensing restrictions.

CONTACT

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