High-Rate Receiver 1200
For remote sensing and Earth observation

The new standard in wideband data reception
› Multi-mission
› License-free
› Reliable and secure
› Innovative

From the world leader in Earth Observation ground systems, the Viasat High-Rate Receiver 1200 provides high-speed demodulation and decoding of wideband transmissions at X- and Ka-band. Supporting current and future optical, SAR, scientific, and meteorological satellites with the latest waveforms, a single receiver can provide multi-channel support up to 2.4 Gbps data rate. With two IF inputs, each with two demodulators, it is particularly suited for high-resolution multi-channel or dual polarization satellites with wideband downlinks such as Worldview or Pleiades.

The receiver is designed to optimize the entire ground station, simplifying station design and maximizing reliability. With user selectable IF frequency bands and multi-channel tuning, legacy station components can be eliminated and overall station design optimized. The high reliability, FPGA/Linux-based design maximizes station reliability, ensuring images are received when it counts.

The receiver interfaces to popular image processors through ECL or 10 GbE connections and is typically used with a companion Viasat data processor to provide further data processing, data storage, and FTP and TCP forwarding.

The true multi-mission design allows it to be used in a variety of applications, from multi-satellite ground stations to satellite test-bench environments.

Supported satellites
› Aqua/Aura/Terra
› Worldview-1/2/3
› Landsat-7/8
› Pleiades-1A/1B
› Spot-6/7
› Kompsat Series
› RadarSat-1/2
› TerraSAR-X/TanDEM-X
› IRS Series
› CartoSat Series
› COSMO-Skymed
› Gokturk-1/2/3
› GeoEye-1
› CBERS Series
› Sentinel Series
› Many Others…

High-Rate Receiver 1200 at-a-glance

HARDWARE ADVANTAGES
› Two IF inputs
› Four demodulators
› Test modulator
› 2.4 Gbps total throughput
› Advanced coding
› Adaptive equalization
› Compact 2U design

OPTIMIZES SYSTEM DESIGN
› User selectable input band
› Tunable IF frequency
› Multi-mission design

USER FRIENDLY
› All web GUI design
› Intuitive JSON interface

SECURITY
› Hardware-based design
› Linux-based M&C

RELIABILITY
› Non-PC based
› Redundant power supplies
› User serviceable fans
› MIL-STD-810 tested

OPTIONS
› VDP processor/storage
› LVDS or CML output
› Customized waveforms
ADDITIONAL FEATURES

**Receive equalization**
- Static tilt compensation
- Digital adaptive equalization

**Built-in test**
- Bit error rate tester
  - Transmit and receive; 2^{1-1}, 2^{1-1}, 2^{1-1}, 2^{1-1} PRBS (ITU-T G.105)
  - and other sequences
- Link reporting
  - Es/N0, offsets, decoder and frame processing statistics
- GUI
  - Constellation, spectrum, digital equalizer display
- IF loopback
  - Internal loopback without cable changes
- TX noise generator
  - AWGN with calibrated Es/N0 (0 to 30 dB)

**Baseband data metadata**
- Time-tagging, frame quality information

INTERFACES

**IF signal**
- Connector
  - SMA female
- 720 MHz band frequency
  - 720 ± 200 MHz; tunable
- 1200 MHz band frequency
  - 1200 ± 400 MHz; tunable
- 2400 MHz band frequency
  - 2400 ± 750 MHz; tunable
- TX signal level
  - –50 to 0 dBm
- RX receive level
  - –50 to –10 dBm

**Baseband data**
- Protocol
  - ECL (SMA)
  - 10G Ethernet (SFP+)
- Optional protocols
  - CML (SMA), LVDS (SMA/RJ45/D-SUB)
- Data format
  - Framed or unframed; with metadata

**Monitor and control**
- Remote connector
  - 10/100/1000 Ethernet (RJ-45)
- Remote protocol
  - JSON-RPC over TCP/IP
- Remote GUI
  - Web browser
- Local interface
  - Front panel display

**External reference input**
- 10 MHz (SMA)

**Mains power**
- 90 to 264 VAC, 47 to 63 Hz; ≤300 W

**Power supply redundancy**
- 1:1; dual inputs

OTHER

**Size**
- 19 × 3.5 × 21 in (EIA rack-mountable)

**Weight**
- ≤15 kg

**Certification**
- CE

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1 Non-standard functionality, consult factory for availability
2 Available in 2 channel mode only
3 Separate optional unit