Hughes HT1100 Ka-Band Router

HUGHES®

Next-generation, high-performance satellite router optimized for multi-spot beam, high-throughput satellite systems

High-Performance Satellite System Router

The Hughes HT1100 is the next-generation, high-performance satellite terminal optimized for multi-spot beam, high-throughput satellite systems. The HT1100 features best-in-class throughput performance, delivering more than 100 Mbps of throughput and capable of supporting bandwidth-intensive, simultaneous multimedia applications.

The HT1100 features an integrated Web acceleration client that provides HTTP prefetch (Web objects are locally cached), DNS caching, header and payload compression, and byte level caching to enable a faster, more responsive user experience.

High Efficiency and Availability

Using a wideband forward channel, including Adaptive Coding and Modulation (ACM), the HT1100 adaptively changes modulation and transmission characteristics to achieve the highest possible throughput and service availability under all channel conditions.

In the return channel, the HT1100 employs advanced, low-density parity coding (LDPC) in conjunction with Adaptive Inroute Selection (AIS), where the FEC rate is adaptively set on a burst-by-burst basis based on the real-time satellite link conditions. Additionally, the HT1100 uses variable-sized FEC code block and burst sizes to allocate bandwidth tailored to the size of the user data packets to be transmitted, providing up to a 20 percent improvement in bandwidth efficiency over competing systems.

Ease of Operation

As part of the next-generation JUPITER™ System, each HT1100 operates under a comprehensive Network Management System (NMS) to facilitate terminal configuration, service provisioning, status monitoring, and network diagnostics. Additionally, the terminal incorporates an easy-to-use embedded Web Graphics User Interface (GUI) that provides a local interface for installation, status monitoring, troubleshooting, and diagnostics.

The HT1100 is designed for fast and reliable installation, including small size, single Inter-Facility Link (IFL) cable, and wireless pointing scheme.

JUPITER™ SYSTEM

Key Features

- High user data throughput
- Wideband Forward Channel with ACM
- Return Channel – LDPC TDMA/FDMA featuring Adaptive Inroute Selection (AIS) for strong rain fade mitigation
- Integrated HTTP/TCP Web acceleration client
- Native IPv6 with dual stack IPv4/IPv6 support
- Secure network transmission with bidirectional AES256 (optional; subject to local government approval) encryption implemented in hardware
- User-friendly Web GUI and LED interface for status, troubleshooting, and diagnostics
- Terminal managed by JUPITER NMS including software updates, configuration, and status monitoring
- Outdoor Unit (ODU) with a fully integrated radio and small 74 cm antenna

Technical Specifications

Indoor Unit (IDU)

Forward Channel
- Frequency: Ka-band
- Modulation: QPSK, 8PSK, 16APSK, 32APSK
- Code blocks: Normal and short frames
- Encapsulation: GSE
- Symbol rates: 1 to 60 Msps (optional 60 to 225 Msps)
- Adaptive coding and modulation

Return Channel
- ETSI/IPoS TDMA/FDMA
- LDPC FEC with efficient variable block/burst sizes
- Adaptive Inroute Selection (AIS) featuring:
  - Adaptive coding burst by burst
  - Uplink power control
  - Dynamic symbol rate
- OQPSK modulation
- Symbol rate from 256 ksps to 8 Msps

Network Interface
- 10/100/1000BaseT Ethernet LAN

Local Router Features
- Integrated Performance Enhancement Proxy (PEP) for TCP/IP
- Integrated Hughes Web Acceleration software to accelerate HTTP traffic for fast browser access
- AES256 bidirectional encryption over the satellite (optional; subject to local government approval) (hardware implemented)
- DNS caching
- Static and dynamic addressing
- DHCP server or relay

Power Supply
- External with detachable cord
- 90-260 VAC; 50-60 Hz

Physical Indoor Unit
- Weight: 1.6 lbs (.73 kg)
- Dimensions: 8.0" H x 1.6" W x 9.0" D (20.4 cm H x 3.9 cm W x 22.7 cm D)

Environmental
- Indoor Unit
  - Operating temperature: -0° C to +40° C
  - Relative humidity: 0 to 90% (noncondensing)
- Outdoor Unit
  - Operating temperature: -40° C to +55° C
  - Relative humidity: 100% (condensing)

Regulatory
- Safety: UL/CSA/EN 60950
- EMC: FCC Part 15 class B, ICES-003,
- RoHS compliant

Outdoor Unit (ODU) options
- Ka-band frequency
- Fully integrated 1 and 2 watt radio
- Circular RHCP or LHCP (Ka-band)
- Antennas: 74 cm, 98 cm, 120 cm, and 180 cm

Inter-Facility Link (IFL)
- Cable: Single RG-6, 75 ohms
- Connector: F-type (male)
- Cable Length: up to 300' (100 m) (quad shield with solid copper innerconductor)

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