High-Performance Satellite System Router

The Hughes HT1300 is the next-generation, high-performance satellite terminal optimized for multi-spot beam, high-throughput satellite systems and well suited for conventional satellite applications. The HT1300 features best-in-class throughput performance, delivering more than 100 Mbps of throughput and capable of supporting bandwidth-intensive, simultaneous multimedia applications.

The HT1300 supports industry standard L-band outdoor units, thereby enabling the use of high-power BUCs, as well as operation on a wide array of operating frequencies. The HT1300 features an integrated Web acceleration client that provides HTTP prefetch (Web objects are locally cached), DNS caching, header and payload compression, to enable a faster, more responsive user experience.

High Efficiency and Availability

Using a wideband forward channel, including Adaptive Coding and Modulation (ACM), the HT1300 adaptively changes modulation and transmission characteristics to achieve the highest possible throughput and service availability under all channel conditions.

In the return channel, the HT1300 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 HT1300 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 HT1300 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 HT1300 is designed for quick and error-free installations with a simple and automated commissioning process.
**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 256 AES encryption (optional; subject to local government approval) 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
- Variety of BUC sizes available

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**Technical Specifications**

**Indoor Unit (IDU)**

<table>
<thead>
<tr>
<th>Forward Channel</th>
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<tbody>
<tr>
<td>Frequency: C-band, Ku-band, and Ka-band</td>
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<tr>
<td>Modulation: QPSK, BPSK, 16APSK, 32APSK</td>
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<tr>
<td>Code blocks: Normal and short frames</td>
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<td>Encapsulation: GSE</td>
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<td>Symbol rates: 1 to 60 Msps (optional 60 to 225 Msps)</td>
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<tr>
<td>Adaptive coding and modulation</td>
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</tbody>
</table>

**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
  - Dynamic modulation
- QPSK or BPSK modulation
- Symbol rate from 256 kbps to 8 Msps

**Network Interface**

- Two 10/100/1000 BaseT Ethernet LAN ports

**Local Router Features**

- Integrated Performance Enhancement Proxy (PEP) for TCP/IP
- Integrated Hughes Web Acceleration software to accelerate HTTP traffic for fast browser access
- 256 AES 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: -0º C to +40º C
  - Relative humidity: 0 to 90% (noncondensing)
- Outdoor Unit
  - Operating temperature: -40º C to +55º 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**

- Available in C-band, Ku-band, X-band or Ka-band
- Variety of BUC power sizes available
- Antennas: 74 cm, 98 cm, 120 cm, and 180 cm

**Inter-Facility Link (IFL)**

- Cable: Dual RG-6, 75 ohms
- Connector: F-type (male)
- Cable Length: up to 300’ (100 m) (quad shield with solid copper innerconductor)