# HT2000 Satellite Router

**Enhanced**
E-technology and
Concurrent
Solutions, Inc.

**HUGHES**

As part of the market-leading Hughes JUPITER™ System, the HT2000 is the powerful, next-generation satellite terminal featuring support for wideband DVB-S2X forward channel, delivering the industry's best efficiency. The return channel uses powerful and advanced Low Density Parity Coding (LDPC) in conjunction with Adaptive Inroute Selection (AIS) for industry-best performance. The HT2000 features best-in-class throughput performance, delivering up to 200 Mbps of throughput and the capability to support the most bandwidth-intensive and demanding applications.

The HT2000 terminal features a small desktop chassis with a single GigE LAN port, and a single cable IFL for interface to the outdoor unit (ODU).



## JUPITER SYSTEM

## Specifications - Indoor Unit (IDU)

### Forward Channel

- DVB-S2X with Adaptive Coding and Modulation (ACM)
- Frequency: Ka-band or Ku-band
- Modulation: QPSK, 8PSK, 16APSK, 32APSK
- Encapsulation: GSE
- Symbol rates: Up to 235 Msps

### Return Channel

- MF-TDMA
- LDPC FEC with efficient variable block/burst sizes
- OQPSK modulation
- Symbol rate from 256 ksps to 8 Msps

### Network Interfaces

- Single GigE LAN port
- USB port

### Power Supply

- External with detachable cord
- AC Input Voltage Range: 90-264 VAC
- Input Frequency Range: 47-63 Hz

### Mechanical and Environmental

- Weight: 1.2 lbs (0.5 kg)
- Size: 7.24" H x 2.64" W x 5.83" D (18.39 cm H x 6.71 cm W x 14.81 cm D)
- Operating temperature: 0º C to +50º C
- Relative humidity: 0 to 90% (noncondensing)

### Other

- Radio specifications:
  - Works with Hughes single IFL cable outdoor unit (ODU)
  - Available in Ka- and Ku-band
- Antennas: 74 cm, 98 cm, or 120 cm
- IFL cable type and Length: Single RG-6, 75 ohms, F-type connector, up to 300' (100m)

### Regulatory

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

### IP Features:

- Dual stack IPv4/IPv6
- Static and Dynamic Addressing
- BGP Routing Support
- Policy Based Routing
- NAT/PAT
- RIPv2, RIPNG
- VLAN tagging
- DHCP-V6 Relay
- VRRP
- Access Control List (ACL)
- DNS Caching
- SIP Call Proxy
- Advanced Web Acceleration

H56163 OCT 16

**HUGHES**
An EchoStar Company

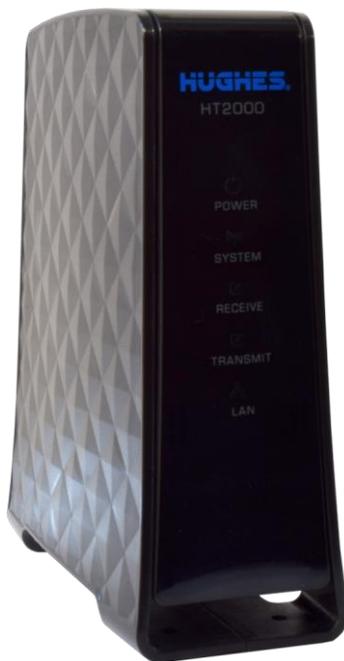11717 Exploration Lane  Germantown, MD  20876 USA

# HT2300 Satellite Router

As part of the market-leading Hughes JUPITER™ System, the HT2300 is the powerful, next-generation satellite terminal featuring support for the wideband DVB-S2X forward channel, delivering the industry's best efficiency. The return channel uses powerful and advanced Low Density Parity Coding (LDPC) in conjunction with Adaptive Inroute Selection (AIS) for industry-best performance. The HT2300 features best-in-class throughput performance, delivering up to 200 Mbps of throughput and the capability to support the most bandwidth-intensive and demanding applications. The terminal incorporates an easy-to-use embedded Web Graphics User Interface (GUI) that provides a local interface for quick and reliable installation, status monitoring, troubleshooting, and diagnostics.

The HT2300 terminal features a desktop chassis suitable for installation in a range of locations from homes to offices. The terminal supports dual-cable IFL that enables use of an industry-standard L-band interface to the outdoor unit, as well as operating on a wide array of operating frequencies with a variety of high-power BUCs. The HT2300 comes equipped with 4 GigE LAN ports.

## Specifications - Indoor Unit (IDU)

### Forward Channel
- DVB-S2X with Adaptive Coding and Modulation (ACM)
- Frequency:  C-band, Ku-band, and Ka-band
- Modulation:  QPSK, 8PSK, 16APSK, 32APSK
- Encapsulation: GSE
- Symbol rates: Up to 235 Msps

### Return Channel
- MF-TDMA
- LDPC FEC with efficient variable block/burst sizes
- OQPSK or 8PSK modulation
- Symbol rate from 256 ksps to 12 Msps

### Network Interfaces
- 4 GigE LAN ports
- USB

### Power Supply
- External with detachable cord
- AC Input Voltage Range:  90–264 VAC
- Input Frequency Range:  47–63 Hz

### Mechanical and Environmental
- Weight:  1.23 lbs (.56 kg)
- Size: 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)
- Operating temperature: 0º C to +50º C
- Relative humidity:  0 to 90% (noncondensing)

### Other
- Radio specifications:
  - L-band — TX: 950-1825 MHz, RX: 950-2150 MHz
  - Available in C-, Ku-, or Ka-band
- Antennas:  74 cm, 98 cm, 120 cm, or 180 cm
- IFL cable type and length: Dual RG-6, 75 ohm, F-type connector, up to 300' (100m)

### Regulatory
- Safety:  UL/CSA/EN 60950-1
- EMC:  FCC Part 15 class B, ICES-003
- RoHS-2 compliant

### IP Features
- Dual stack IPv4/IPv6
- Static and Dynamic Addressing
- BGP Routing Support
- Policy Based Routing
- NAT/PAT
- RIPv2, RIPNG
- VLAN tagging
- DHCP-V6 Relay
- VRRP
- Access Control List (ACL)
- DNS Caching
- SIP Call Proxy
- Advanced Web Acceleration

www.hughes.com

HUGHES
An EchoStar Company

11717 Exploration Lane  Germantown, MD  20876 USA

# HT2500 Series Satellite Router

As part of the market-leading Hughes JUPITER™ Platform, the HT2500 series of Satellite Routers account for the powerful, next-generation VSAT system delivering the industry-best performance & efficiency for Large Enterprise, Trunking, Mobility and Cellular Backhaul Applications.

The HT2500 Series terminals support wideband DVB-S2X with Adaptive coding & modulation on the forward channels in order to maximize occupied bandwidth. The return channel uses an MF-TDMA waveform with a powerful and advanced Low Density Parity Coding (LDPC) in conjunction with Adaptive Inroute Selection (AIS) for maximum performance. Some variants of the HT2500 series support TDM return channels as well.

The HT2500 is a high-performance satellite router designed to be installed in an industry standard 19" equipment rack suitable for data center environments, most enterprise facilities and carrier facilities. The compact design consumes only one rack space (1U rack mount) and supports a variety of power options. The terminal supports industry standard L-band interface to the outdoor unit, as well as operating on a wide array of operating frequencies with a variety of high-power BUCs. The HT2500 comes equipped with 4 GigE LAN ports.

Although every terminal delivers up to 300 Mbps throughput, different variants of HT2500 series are custom-built for various Applications. The below matrix highlights features of every terminal in the HT2500 Series portfolio.

## Specifications – IDU (Indoor Unit)

### Forward Channel
- DVB-S2X with Adaptive Coding & Modulation (ACM)
- Encapsulation: GSE
- Symbol Rates: Up to 235 Msps

### Return Channel
- MF-TDMA or TDM Return
- LDPC FEC with efficient burst size encapsulation
- QPSK, 8PSK and 16APSK* modulation
- AES 256 link encryption
- Symbol Rates to 256 Ksps to 12 Msps
- TDM Return supports up to 64APSK & 70 Mbps

### Network Interfaces
- Four Gigabit Ethernet Ports

### Power Supply
- Available in AC, +24V DC & -48V DC Variants

### Mechanical
- 19" Standard 1 RU rack mountable chassis
- Dimensions – 19 (w) x 10.5 (d) x 1.75 (h) inches
- Operating temperature – 0 °C to 50 °C
- Relative Humidity – 77% Non-Condensing

### Regulatory
- Safety UL/CSA/EN 60950-1
- EMC FCC Part 15 Class B, ICES-003
- RoHS-2 Compliant

*Available with Rel 7.1

| Features/Variants | HT2500-Enterprise | HT2500- Maritime* | HT2524 | HT2550 |
|---|---|---|---|---|
| Enterprise QoS | Yes | | | |
| AC Power Supply | Yes | | | |
| +24V DV Power Supply | Yes | | | |
| -48V DC Power Supply | Yes | | | |
| 4G/LTE Acceleration | No | No | Yes | Yes |
| PTP with GPS Receiver | No | No | No | Yes |
| TDM Return | No | No | No | Yes |
| Mobility | No | Yes | No | No |

www.hughes.com

# HT2600 Series

**Enhanced**
*E-technology and
Concurrent
Solutions, Inc.*

As part of the market-leading Hughes JUPITER™ System, the HT2600 series of satellite terminals are powerful, next-generation VSAT systems featuring support for the wideband DVB-S2X forward channel, thus delivering industry-best performance and efficiency.

In addition to offering exceptional performance, the HT2600 series employs either MF-TDMA inroutes using powerful and advanced Low Density Parity Coding (LDPC) with Adaptive Inroute Selection (AIS), or dynamic TDM inroutes for dedicated links to accommodate integration of a wide variety of applications.

In addition, the HT2600 series delivers high throughputs and is capable of supporting bandwidth-intensive, simultaneous

multimedia applications with the ability to switch from a dynamic TDM inroute to MF-TDMA inroute, thus allowing service providers the flexibility to adapt to varying traffic needs of network operators.

This series of high-performance satellite routers are available in an all-outdoor IP67 enclosure with DC power supply options. In addition to a compact structure, this series of satellite routers support a variety of power options. The terminals support dual-cable IFL that enables use of an industry standard L-band interface to the outdoor unit, as well as operating on a wide array of frequencies with a variety of high-power BUCs. These VSAT terminals also feature an IEEE PTP 1588v2 native GPS receiver to provide timing coordinates to the collocated radio base station.

## Technical Specifications

L-band IFL cable

Available in C-, Ku-, or Ka-band

Antennas: 74 cm, 98 cm, 120 cm, or 180 cm

Dual RG-6 75 Ω F-type connector

Up to 2 GigE LAN ports and 1 USB port

Download throughputs: Up to 200 Mbps

Upload throughputs: Up to 50 Mbps

Power supply options:

- AC
- +24V DC
- -48V DC

**Forward Channel:**

DVB-S2X with Adaptive Coding and Modulation (ACM)

Modulation: OQPSK, 8PSK, 16APSK, 32APSK

Symbol rates: Up to 235 Msps

**Return Channel:**

MF-TDMA or dynamic TDM inroutes

Modulation: OQPSK and 8PSK, 16APSK

Symbol rates: Up to 32 Msps

**IP Routing Features:**

Dual-stack IPv4/IPv6, DHCP-v6 relay

Static and dynamic addressing

IP protocols: RIPv2, RIPNG, BGP

Policy-based routing and QoS

NAT/PAT, DNS caching, and SIP call proxy

End-to-end VLAN tunneling

VRRP, Access Control List (ACL)

Advanced Web acceleration

**Mechanical and Environmental Features:**

AC and DC power supply options

Weight: 9.0 lbs (4.08 kg)

Size: 13.3" (w) x 11.0" (d) x 2.8" (h)

Operating temperature: -40° C to +60° C

Water resistance: IP67

**Regulatory Information:**

Safety: UL/CSA/EN 60950-1

EMC: FCC Part 15 class B, ICES-003

RoHS-2-compliant

**HUGHES.**
An EchoStar Company

11717 Exploration Lane
Germantown, MD 20876 USA

**For more information, please visit www.hughes.com
or email globalsales@hughes.com.**

**www.hughes.com**