

# DW7700 Broadband Satellite Router

Scalable, high-performance broadband satellite router for enterprises

**HUGHES**  
NETWORK SYSTEMS

**DiRECWAY**

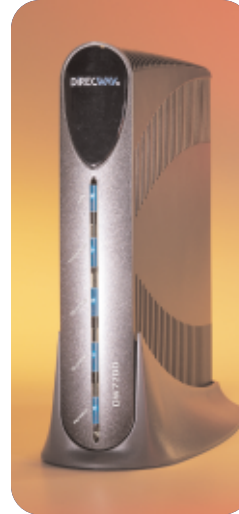
DIRECWAY® is a family of broadband satellite solutions brought to you by Hughes Network Systems (HNS), the global market leader in providing satellite products and services to enterprises, governments, and consumers. DIRECWAY satisfies the global demand for bandwidth by offering a variety of high-speed multimedia hardware, software, and service solutions.

The DW7700, part of HNS' DW7000 family, is a high-performance broadband satellite router designed to provide high-speed access for large enterprise, government, and small/medium enterprise (SME) markets. Recognizing the worldwide demand by enterprises for ever increasing amounts of bandwidth and the ability to support many simultaneous users, the DW7700 has been designed to provide unsurpassed performance for even the most bandwidth-intensive applications. With support for two simultaneous LAN subnets, the DW7700 has the flexibility to handle new enterprise IP networking requirements. Further, the DW7700 supports integrated serial connectivity, thus providing the ideal solution for bridging legacy applications into an IP environment.

The DW7700 enables applications such as:

- High-speed Internet/intranet access
- Video services including remote site security monitoring
- Diverse satellite backup of primary broadband access
- ePayments such as POS/credit and loyalty
- Polling, Enterprise CRM and ERP
- Corporate training and eLearning
- Real-time multimedia streaming and large file content distribution

The DW7700 operates with all DIRECWAY systems and uses the industry standards DVB-S and DVB-S2. As a result, the DW7700 can be easily configured to support a wide range of downstream data rates by selecting different modulation, symbol, and FEC coding rates. The downstream is scalable up to 90 Mbps and the upstream return channel is scalable up to 1.6 Mbps. The DW7700 provides an integrated broadband LAN solution to Windows®, UNIX®, Apple® Macintosh®, and other platforms running IP over Ethernet.



The power of the DW7700 allows the same platform to scale as the need for higher-speed business applications grows, protecting the customer's investment well into the future. The DW7700 also coexists with prior DIRECWAY generations ensuring existing customers' investment is protected.

The DW7700 receives and transmits data over the satellite via the DIRECWAY Network Operations Center (NOC). Security is ensured through DES encryption and an integrated conditional access. The

DW7700 also supports HNS' innovative VPN Accelerator technology to ensure broadband speeds are maintained even when using IPSec VPN clients from market leaders such as Cisco, Nortel, and Check Point.

The DW7700 satellite router passes IP data packets to and from any IP device on the LAN and has much of the functionality of an IP router. The DW7700 incorporates HNS' advanced Performance Enhancing Proxy (PEP) feature, which increases throughput performance and maximizes the user's experience and satisfaction. The DW7700 also supports HNS' TurboPage® feature, providing HTTP acceleration for lightning fast browser performance and advanced Quality of Service features to ensure that applications get the priority and bandwidth they require.

The integrated serial port with protocol processing to support SDLC, X.25, or XPAD (asynchronous data) protocols means the DW7700 can be used to support legacy applications such as Automatic Teller Machines (ATM) or credit card devices.

An integrated V.90 modem provides the ability to use the optional automatic dial backup capability through a public-switched terrestrial network for virtual 100 percent availability.

## Features

- Supports unicast and multicast IP traffic
- Software and configuration updates via download from the NOC
- Implements dynamic, self-tuning Performance Enhancement Proxy (PEP) software to accelerate the throughput performance by optimizing the TCP transmission over the satellite, delivering superior user experience and link efficiency
- Implements TurboPage software to accelerate HTTP traffic for fast browser access
- Quality of Service features include: IQoS (Inbound Quality of Service), bidirectional DSCP, and outbound bandwidth management.
- Supports DIRECWAY VPN Accelerator
- Bi-directional data compression
- Configuration, status monitoring, and commissioning via the NOC
- Embedded Web interface for local status and troubleshooting
- Acts as a local router providing:
  - Static and dynamic addressing
  - DHCP server or relay
  - DNS caching
  - Full RIPV2 routing support
  - Multicasts to the LAN by using IGMP
  - NAT/PAT
  - VLAN tagging
  - Firewall support through integrated access control lists
- Serial protocols supported
  - SDLC end-to-end (PU4 to PU2.0/PU2.1)
  - SDLC remote, LLC NOC (PU4 to PU2.0/PU2.1)
  - X.25
  - XPAD
  - Veriphone 3200 (Visa)
  - Veriphone 3300 (Visa)
- Throughput
  - At least 45 Mbps of multicast/streaming traffic, or
  - At least 4 Mbps of FTP traffic, or
  - At least 2 Mbps of HTTP accelerated traffic, or
  - At least 10 Mbps of UDP traffic, or
  - Any combination of the above with proportional performance
- Remote terminal management via the HNS Vision® Network Management System or Unified Element Manager and SNMP agent
- Universal power supply supports international voltage ranges and frequencies and has a detachable power cord
- User-friendly LED display indicating terminal operational status

## Technical Specifications

### Physical Interfaces

- Two 10/100BaseT Ethernet LAN RJ45 ports
- One RS-232 serial port
- One V.90 modem with RJ-11 interface

### Satellite & Antenna Specifications

- Outbound transmission format: DVB-S, DVB-S2
- Information Rate (Receive or DW Outbound Channel): Up to 90 Mbps (DVB-S2)
- Information Rate (Transmit or DW Inbound Channel): Up to 1.6 Mbps
- Symbol Rate (Receive): 1, 1.25, 2.5, 5–30 Msps (in 1 Msps steps)
- Symbol Rate (Transmit): 128, 256, 512, 1024 Ksps
- Encoding (Receive): DVB-S Convolutional with concatenated Reed Solomon, DVB-S2 LDPC
- Encoding (Transmit): Turbo code FEC  $1/2$ ,  $2/3$ , and  $4/5$
- Frequency Range: Ku- and Ka-band
- Modulation (Receive): QPSK, 8PSK (DVB-S2)
- Modulation (Transmit): OQPSK
- Bit Error Rate (Receive):  $10^{-10}$  or better
- Bit Error Rate (Transmit):  $10^{-7}$  or better
- Antenna: 98 cm and 120 cm
- Radio: 2 watt Ku-band and 1, 2, and  $3\frac{1}{2}$  watt Ka-band

### Mechanical & Environmental

- Weight (IDU): 4.8 lbs (2.18 kg)
- Dimensions (IDU): 11.5"W x 1.8"H x 11"D (29.21cm W x 4.7cm H x 27.94cm D)
- Operating temperature:
  - IDU 0° C – +40° C
  - ODU -30° C – +55° C
- Input power: 90-264 VAC; 50-60 Hz
- DC power supply (optional): 12 to 24 VDC

