

# DW7000 Broadband Satellite Router

Satisfying the need for speed for the multimedia Internet

**HUGHES**  
NETWORK SYSTEMS

**DIRECWAY**<sup>®</sup>

DIRECWAY<sup>®</sup> 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, government, and consumers. DIRECWAY satisfies the increasing demand for bandwidth by offering a variety of high-speed multimedia hardware, software, and service solutions.

The DW7000, part of the DW7000 product family, is a high-performance broadband satellite router designed to provide high-speed access for the consumer, small office/home office, and enterprise markets. Designed to provide both versatility and performance, the DW7000 provides unsurpassed performance for even the most bandwidth-intensive applications.

The DW7000 is based on the only global satellite standard, IPoS (IP over Satellite), and operates with all DIRECWAY systems. It uses the industry standard DVB-S. As a result, the DW7000 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 DW7000 provides an integrated broadband LAN solution to Windows<sup>®</sup>, UNIX<sup>®</sup>, Apple<sup>®</sup>, Macintosh<sup>®</sup>, and other platforms running IP over Ethernet. The DW7000 coexists with prior generations of DW terminals thereby ensuring protection of DIRECWAY operators' investments.

The DW7000 receives and transmits data over the satellite via the DIRECWAY Network Operations Center (NOC). TCP connections can be initiated to or from hosts at remote locations. Security is assured through DES encryption and an integrated conditional access. In addition, all user intranet communications can be isolated from other enterprise intranets and from remotes accessing the "public" Internet operating in the same network.



The DW7000 broadband satellite router passes IP data packets to and from any IP device on the LAN and has much of the functionality of a typical IP router. The DW7000 incorporates HNS' advanced Performance Enhancing Proxy (PEP) feature, which increases throughput performance and maximizes the user's experience and satisfaction. The DW7000 also supports HNS' TurboPage<sup>®</sup> feature providing HTTP acceleration for lightning fast browser performance. The DW7000 supports advanced quality of service (QoS) features to ensure that customers get the priority and bandwidth they require.

## Features

- Supports unicast and multicast IP traffic
- Software and configuration updates via download from the NOC
- Implements Performance Enhancement Proxy (PEP) software to accelerate 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
- 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
- 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
- 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

- One 10/100BaseT Ethernet LAN RJ45 ports

### Satellite & Antenna Specifications

- Outbound transmission format: DVB-S
- Information Rate (Receive): Up to 90 Mbps (DVB-S2)
- Information Rate (Transmit): 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
- Encoding (Transmit): Turbocode FEC 1/2, 2/3, and 4/5
- Frequency Range: Ku-, C-, Extended C-, 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: 74 cm, 89 cm, 98 cm, 120 cm, 180 cm
- Radio: 1 and 2 watt Ku-band, 2 watt C-band, 1, 2, and 3 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: 0° C – +40° C
- IDU -30° C – +55° C
- ODU 90-264 VAC; 50-60 Hz
- Input power: 12 to 24 VDC
- DC power supply (optional):