

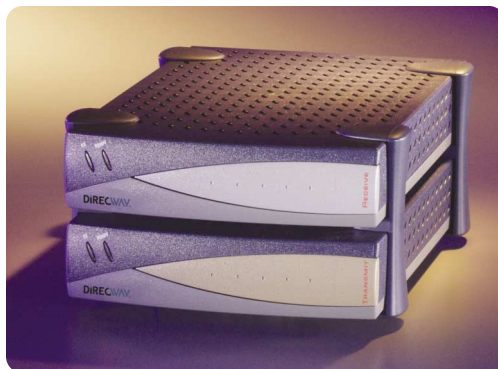
DW3000/DW4000 Series Systems

Satisfying the need for speed for the multimedia Internet

HUGHES
NETWORK SYSTEMS

DiRECCWAY®

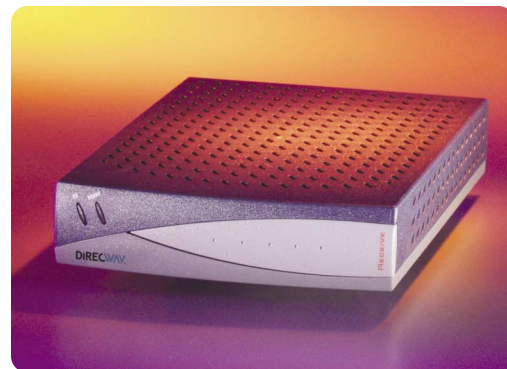
DIRECWAY® is a family of high-speed broadband solutions via satellite brought to you by Hughes Network Systems (HNS), the market leader in providing satellite products and services to enterprises and consumers alike. DIRECWAY satisfies the increasing demand by customers for greater bandwidth enabling a variety of high-speed multimedia applications.



The DW3000/DW4000 series of DIRECWAY systems delivers the speed, security, ubiquity and scalability of broadband by satellite at a surprisingly affordable price. Now there is a faster, better, easier way to link your PC with the rest of the world.

The DW4000 series DIRECWAY system communicates via geostationary satellites; both the receive and transmit data signals operate through the system's antenna, over the satellite and via the DIRECWAY Network Operations Center. No phone line, no dial-up connection. And with the DW4000 your DIRECWAY link is always on.

An entry level hardware package is available with the DW3000 series system. This system uses a dial-up telephone line connection for the transmitted data, yet receives the same, high-speed DIRECWAY downloads and stream-



ing media services over the satellite, just like the DW4000. Since transmit electronics are not included, the DW3000 becomes a very affordable solution for light-to-medium usage Internet users who are comfortable with dial-up outbound access.

And DW3000 users can later opt for an upgrade package to move up to two-way service. This feature makes broadband by satellite even more affordable and gives DIRECWAY users an option for upgrade.

Equipment Details

The DIRECWAY DW3000 and DW4000 series systems consist of an oval satellite antenna, matching integrated outdoor electronics, and the indoor units which connect to a USB-enabled PC (see below for further descriptions). Outdoor equipment for international units varies based on what satellite is used.



Indoor Equipment

The indoor equipment consists of one or two satellite adapters with a single USB connection:

- ITU (Indoor Transmit Unit, DW4000 series only)
- IRU (Indoor Receive Unit, DW3000/DW4000 series).

The IRU is a DVB-S compliant satellite adapter that can be used alone, in the one-way configuration, or together with the ITU for two-way operation. The DIRECWAY ITU is designed to be an add-on capability to a standard receive-only DIRECWAY IRU. When the ITU is installed and configured, the user will have the ability to select the satellite instead of the modem as the outbound route from the site. When this option is selected, the system is essentially "always on". This means you never have to wait for your PC to connect or worry about ISP busy signals. And because the ITU is connected to the IRU through the ITU-IRU interconnection cable, only one USB port on your PC is required to operate the DIRECWAY indoor equipment.

Outdoor Equipment

The DIRECWAY antenna is equipped with the following:

- A single LNB to receive DIRECWAY data from the satellite (DW3000/DW4000 series)
- A radio unit to transmit DIRECWAY data to the satellite (DW4000 series only).

The DW4000 outdoor equipment is connected by two RG-6 coaxial cables to the indoor equipment.

Technical Specifications

User Requirements

The DIRECWAY system connects to your PC (personal computer) which must meet the following minimum requirements:

Processor:	333 MHz Pentium II class or better
Interface:	One available USB port
Operating Systems:	Windows 98 SE, Windows ME, Windows 2000/XP
Memory:	64 MB RAM (Win 98 SE and Win ME) 128 MB RAM (Win 2000/XP)
Free Hard Disk Space:	20 MB
Display:	PCI or AGP video adapter, 800 x 600 minimum
Telco Modem (DW3000):	56 kbps (hardware based)

Compatibility

Browsers:	Internet Explorer 5.0 and higher Netscape Navigator 4.76
Internet Applications:	All common TCP/IP applications
Interface:	USB 1.1

Satellite & Antenna Specifications

Encapsulation:	DVB
Information Rate:	≤ 48 Mbps
Symbol Rate:	≤ 30 Msps
Frequency Range:	Ku-Band
Modulation (Receive):	QPSK
Modulation (Transmit):	OQPSK
Bit Error Rate (Receive):	10 ⁻¹⁰ or better
Bit Error Rate (Transmit):	10 ⁻⁷ or better
Antenna:	74cm oval, 89cm, 98cm and 120cm
Radio:	1 Watt
Encoding:	Receive: FEC at rates 7/8, 5/6, 2/3, 1/2, 188/204 byte Reed-Solomon block format for DVB; DVB-S Transmit: Rate 1/2 Convolutional

Mechanical & Environmental

ITU Weight:	1.3 LBS
IRU Weight:	1.35 LBS
IRU Power Supply Weight:	0.64 LBS
ITU/IRU Dimensions:	6.03"W x 1.50"H x 9.0"D
Operating Temperature:	5° - 40° Celsius