

# DW6040 Voice Appliance

Bringing Low-Cost Telephony to a Wide Range of Markets

**HUGHES**  
NETWORK SYSTEMS

**DIRECWAY**<sup>®</sup>

DIRECWAY<sup>®</sup> is a family of high-speed broadband solutions via satellite brought to you by Hughes Network Systems, Inc. (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 DW6040 Voice Appliance is a state-of-the-art telephony device that provides efficient telephone and fax connectivity via the DIRECWAY network. The DW6040 is an excellent solution for the enterprise, kiosk, Internet café, or telephony markets where reliable low-cost telephony service is needed. This inexpensive add-on provides telephony services that can generate additional revenues for value-added resellers (VARs) and service providers. The DW6040 provides up to four toll-quality telephone or Group 3 facsimile channels via satellite to the PSTN or, optionally, to a Voice over IP (VoIP) network.

The DW6040, a simple addition to the DIRECWAY terminal, provides the transport for carrying telephony traffic via satellite to the DIRECWAY Network Operations Center (NOC). In a typical configuration, a voice gateway at the NOC provides connectivity to the PSTN. The standard H.323 protocol suite is used between the DW6040 and the gateway for call setup and teardown.

Implementing the G.729AB 8 kbps voice codec with echo cancellation, voice activity detection, and comfort noise generation, the DW6040 offers superior telephony quality. Facsimile calls are supported using the T.38 fax over IP protocol to rates of 9.6 kbps. The DW6040 also supports a flexible dialing plan.

Optimized for use with the DIRECWAY system, the voice appliance automatically reserves bandwidth through the DIRECWAY network when each call is initiated. Additionally, the

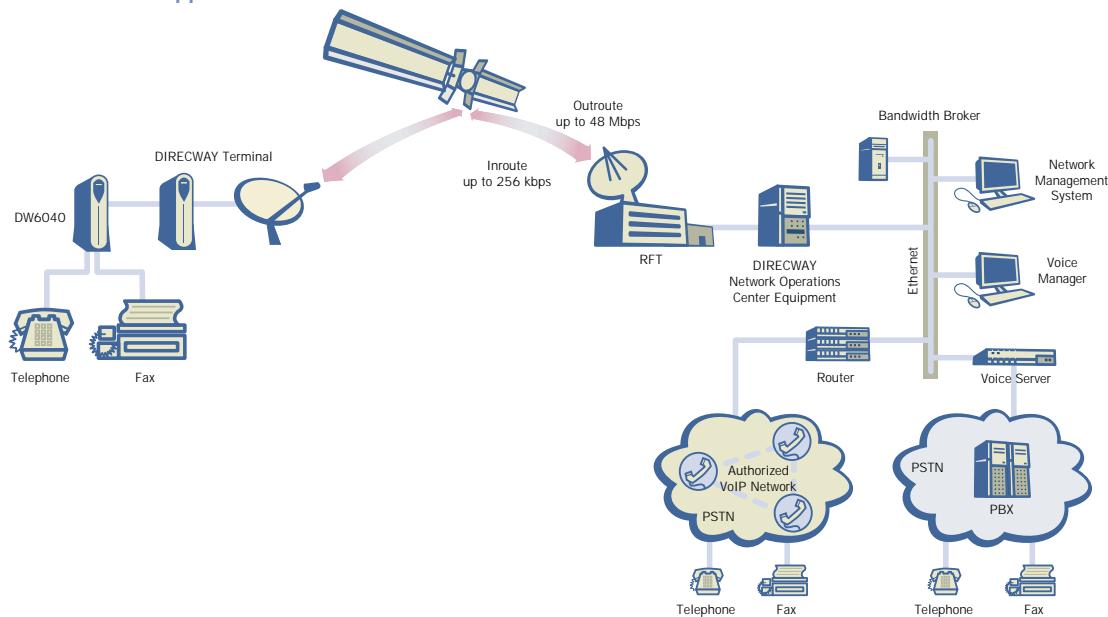


DW6040 Voice Appliance

DW6040 and the NOC components prioritize the associated voice stream to ensure end-to-end toll-quality transmission of the call. The prioritization of voice over data significantly improves the quality of service. The DIRECWAY system also facilitates short call set-up times—typically less than four seconds—and low end-to-end delay inside the DIRECWAY network. Transmission efficiency is further improved by compressing the voice packets.

The DIRECWAY NOC equipment routes the voice calls to the PSTN via an H.323 voice gateway. The voice gateway performs the conversion from the H.323 protocol and the PSTN signaling. The voice gateway provides an E1 interface to the PSTN. Multiple voice gateways may be configured at the NOC. A gatekeeper provides the address resolution between the DW6040 and multiple voice gateways. Alternatively, the voice appliance facilitates international long distance calling to any phone by connecting, via the NOC, directly to a network of multiple Points of Presence (POP) around the world. When integrated with technology from authorized VoIP service providers, the DW6040 supports such advanced features as Interactive Voice Response (IVR) and easy-to-use online account management.

The HNS Vision<sup>®</sup> Network Management System (NMS) provides monitoring and control of the voice appliance, as well as the DIRECWAY terminal. Downloads of software and configuration parameters are also performed by the NMS.



#### Key System Features

- Toll-quality voice optimized for satellite transmission
- Prioritization of voice over data traffic
- Guaranteed Quality of Service using Bandwidth Manager
- Scalability by cascading multiple DW6040s
- Short call set-up time—typically 5 seconds or less
- Low end-to-end voice delay
- Flexible dial plan
- Easy installation and commissioning
- Low power, high reliability

#### Voice Appliance

- One to four telephony ports
- Connects to the DIRECWAY terminal via LAN port
- H.323 and optional authorized VoIP service provider call agent optimized for the DIRECWAY system
- Group 3 fax up to 9600 bps
- DTMF

#### Voice/Fax Features

- Toll-quality 8 kbps CS-ACELP (G.729AB)
- G.165/G.168 echo cancellation
- T.38 fax over IP
- Voice activity detection
- Comfort noise generation
- Pay telephone support via loop reversal

#### Configuration, Status, & Commissioning

- Uses HNS Vision Network Management System
- SNMP management of voice appliance
- Satellite download of VAP configuration and software

#### PSTN Gateway

- Implements standard H.323 protocol
- E1 Interface to PSTN
- Digital R2 signaling
- Flexible call routing

#### Interfaces

- One 10/100 BaseT Ethernet port (not for data traffic)
- One to four FXS 2-wire telephone ports

#### Input Power

- 90–240 Vac, 47–63 Hz
- 24 Vdc (optional)

#### Mechanical

- Shipping Weight: 3.5 lbs (1.6 kg)
- Dimensions: 9.5"W x 1.8"H x 10.5"D (24cm W x 4.6cm H x 26.7cm D)

#### Environmental

- 0°C to +40°C, RH 95% noncondensing

#### Optional Features

- International long distance calling to any phone
- Double-hop VAP-to-VAP calling
- Hunt group assignment
- Interactive Voice Response (IVR) feature for pre-paid calling
- Online or voice-based billing information