

# DW6040 Voice Appliance

Bringing Low-Cost Telephony to a Wide Range of Markets

**HUGHES**  
NETWORK SYSTEMS

**DIRECWAY**

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 to enable 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 enterprise or rural telephony markets where reliable low-cost telephone service is needed. The DW6040 provides up to four toll-quality telephone or Group 3 facsimile channels via satellite to the PSTN.

The DW6040 is a simple add on to the DIRECWAY terminal, which provides the transport for carrying telephony traffic via satellite to the DIRECWAY NOC. 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.

The DW6040 Voice Appliance offers superior telephony quality using the G.729a 8 Kbps voice codec with echo cancellation, voice activity detection, and comfort noise generation. 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.

The DW6040 is optimized for use with the DIRECWAY system. As each call is initiated, the DW6040 automatically reserves bandwidth through the DIRECWAY system and the associated voice stream is prioritized to ensure end-to-end toll-quality transmission of the call. The DIRECWAY system also facilitates short call setup times – typically less than four seconds and low end-to-end delay. Transmission efficiency is improved by compressing the voice packets.

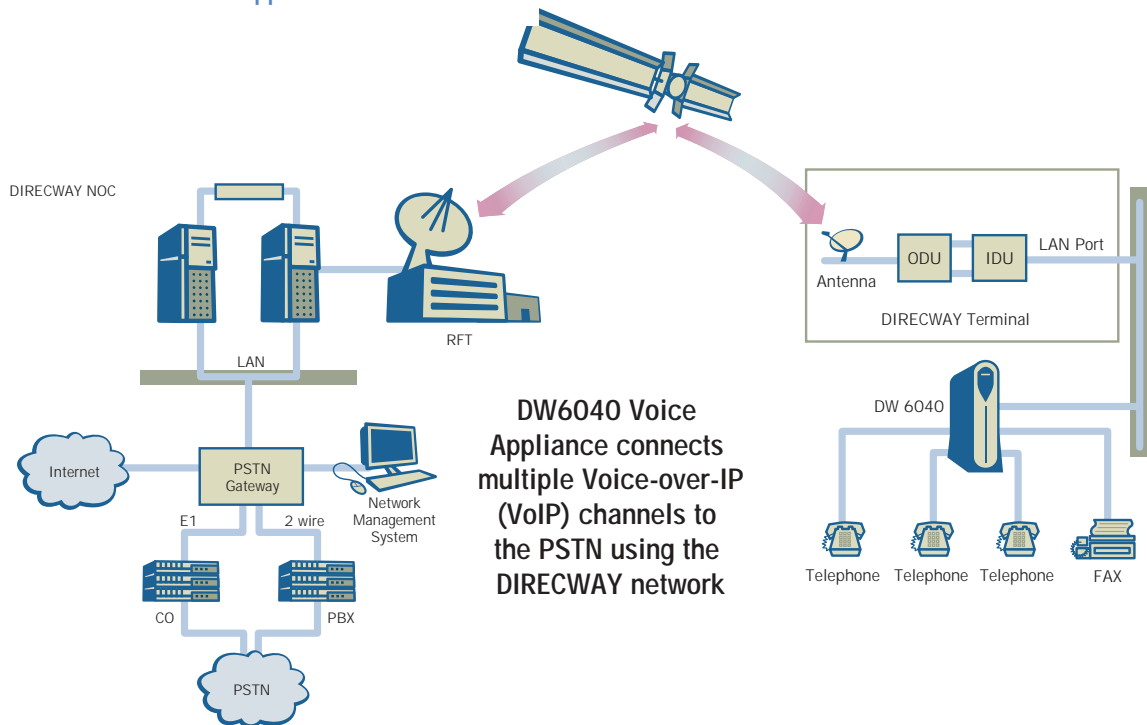
The DIRECWAY NOC equipment routes the voice calls to the PSTN via an H.323 voice gateway. The voice gateway performs the conversion from the H.323 protocol and the PSTN signaling. The voice gateway provides an E1 interface to the PSTN. Multiple voice gateways



*DW6040 Voice Appliance provides telephone access via the DIRECWAY network*

may be configured at the NOC. A gatekeeper provides the address resolution between the DW6040 and multiple voice gateways.

The DW6040 is managed by the HNS Vision® Network Management System (NMS), which 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.



**DW6040 Voice Appliance connects multiple Voice-over-IP (VoIP) channels to the PSTN using the DIRECWAY network**

#### Key System Features

- Toll-quality voice optimized for satellite transmission
- Group 3 facsimile to 9.6 Kbps
- Short call setup time – typically 4 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 call agent optimized for the DIRECWAY system
- Group 3 fax up to 9600 bps
- DTMF, dial-pulse

#### Voice/Fax Features

- Toll-quality 8 kbps CS-ACELP (G.729a)
- G.165/G.168 echo cancellation
- Voice activity detection
- Comfort noise generation
- T.38 fax over IP
- Pay telephone support: loop reversal, 16 kHz metering pulse (optional)

#### Configuration, Status, & Commissioning

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

#### PSTN Gateway

- Implements standard H.323 protocol
- E1 Interface to PSTN
- Digital R2 signaling (other protocols available)
- Flexible call routing

#### Interfaces

- One 10/100 BaseT Ethernet port
- One to four FXS 2-wire telephone ports

#### Input Power

- 90–240 Vac, 47–63 Hz
- 24 Vdc option

#### Mechanical & Environmental

- Shipping Weight: 3.5 lbs (1.6 kg)
- Dimensions: 9.5" w x 1.8" h x 10.5" d (24cm x 4.6cm x 26.7cm)

#### Environmental

- 0°C to +40°C, RH 95% noncondensing