Cisco Model DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Digital Voice Adapter

The Cisco® Model DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Digital Voice Adapter (DPQ2425) is a high-performance residential gateway that combines a cable modem, digital voice adapter, router, and wireless access point in a single device providing a cost-effective voice and networking solution for both the home and small office.

The DPQ2425 has been designed to meet PacketCable™ 1.5 and DOCSIS® 2.0 specifications. In addition, the DPQ2425 is fully backward compatible for use on PacketCable 1.0, DOCSIS 1.1, and DOCSIS 1.0 networks.

Figure 1. Model DPQ2425 DOCSIS 2.0 Wireless Residential Gateway (image may vary from actual product and specification)

Designed for the active digital home or office, the DPQ2425's integrated router features a Dynamic Host Configuration Protocol (DHCP) server, Network Address and Port Translation (NAT/NAPT), and a Stateful Packet Inspection (SPI) firewall. These features allow the user to share a single high-speed public Internet connection as well as share files and folders between devices within the home network by attaching multiple wired and wireless devices in the user's home or office to the wireless residential gateway.

Consumer-friendly features like Wireless Protected Setup (WPS) and user-configured Parental Control can protect the home network from unwelcome intruders and family members from access to undesirable websites.

Features

- Compliant with DOCSIS 2.0, 1.1, and 1.0 standards along with PacketCable 1.5 specifications to deliver high-end performance and reliability
- Integrated AC power supply
- High-performance broadband Internet connectivity to energize the online experience
- Embedded digital voice adapter for wired telephony service
- Four 10/100BASE-T Ethernet ports to provide wired connectivity
- 802.11g Wireless Access Point with 4 service set identifiers (SSIDs)
- Dual antenna design – one internal and one detachable external
- Wi-Fi Protected Setup (WPS), including a push-button switch to activate WPS for simplified and secure wireless setup
- Two RJ-11 telephony ports for connecting to in-home wiring or directly to conventional telephones or fax machines
- User-configurable Parental Control blocks access to undesirable Internet sites
- Advanced firewall technology deters hackers and protects the home network from unauthorized access
- Attractive, compact design that allows for vertical, horizontal, or wall-mounted placement
- TR-068 compliant color-coded interface ports and corresponding cables simplify installation and setup
- DOCSIS-5 compliant LED labeling and behavior provides a user- and technician-friendly method to check operational status and act as a troubleshooting tool
- Allows automatic software upgrades by the user's service provider

Figure 2. Model DPQ2425 Front Panel (image may vary from actual product and specification)

Table 1. Front Panel Features

Feature	Description
Indicators	Power, DS, US, Online, Ethernet, Wireless Link, Wireless Setup, TEL 1, TEL 2, Battery
Color	Black, black lens, silver text
Branding	Cisco logo and model number

Figure 3. Model DPQ2425 Back Panel (image may vary from actual product and specification)

Table 2. Back Panel Features

Feature	Description
TELEPHONE 1 and 2 Connector color: Gray	RJ-11 telephone ports connect to home telephone wiring and to conventional telephones or fax machines
ETHERNET (1 – 4) Connector color: Yellow	Four RJ-45 Ethernet ports connect to the Ethernet port on your PC or to your home network
REBOOT EMTA	Power cycles the EMTA
WIRELESS SETUP	Activates WPS to connect wireless devices to the home network
POWER Connector color: Black	Connects the wireless home gateway to the AC power cord
CABLE Connector color: White	F-connector connects to an active cable signal from your service provider
ANTENNA	Provides an antenna connection for the built-in WAP

Product Specifications

Table 3. Product Specifications

Specification	Value
Voice Specifications	
Call Signaling Protocol	• MGCP/NCS including configurable IPSec encryption. • Configurable to support RFC2833 event signaling • Supports Bell103 detection: Improves alarm panel and Point of Sale (POS) interoperability by optimizing DSP for Bell103 protocol • Software upgradeable to support Session Initiation Protocol (SIP) The following SIP standards are supported: • RFC 2617 HTTP Authentication: Basic and Digest Access Authentication • RFC 2976 The SIP INFO Method • RFC 3261 SIP: Session Initiation Protocol • RFC 3262 Reliability of Provisional Responses in Session Initiation Protocol (SIP) • RFC 3263 Session Initiation Protocol (SIP): Locating SIP Servers • RFC 3264 An Offer/Answer Model with Session Description Protocol (SDP) • RFC 3265 Session Initiation Protocol (SIP)-Specific Event Notification • RFC 3420 Internet Media Type message/sipfrag • RFC 3428 Session Initiation Protocol (SIP) Extension for Instant Messaging • RFC 3515 The Session Initiation Protocol (SIP) Refer Method • RFC 3842 A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP) • RFC 3892 The Session Initiation Protocol (SIP) Referred-By Mechanism • RFC 3903 Session Initiation Protocol (SIP) Extension for Event State Publication • Draft-ietf-mmusic-sdp-new-24 SDP: Session Description Protocol (Replacement for RFC 2327) • Draft-ietf-sipping-cc-transfer-01 Session Initiation Protocol Call Control – Transfer • Draft-ietf-sip-session-timer-08 The SIP Session Timer • Draft-ietf-sipping-realtimefax-01 SIP Support for Real-time Fax: Call Flow Examples And Best Current Practices • Draft-ietf-mmusic-sdescription-09 Session Description Protocol Security • Descriptions for Media Streams • Draft-ietf-sip-replaces-02 The Session Initiation Protocol (SIP) "Replaces" Header
Provisioning Modes	• Full PacketCable secure provisioning • Kerberos support with NVRAM ticket caching • Configurable PacketCable-lite (MTA config file provisioning without security) • Configurable for non-PacketCable (MTA configuration using DOCSIS config file)
CODECs	Standard: G.711, T.38 Fax Relay, iLBC and BV16 Software upgradeable to support other CODEC combinations including: • G.711 and G.728 • G.711 and G.729 • G.711 and G.729 a/e • G.711 and BV16 and BV32 (High fidelity – near CD quality) • G.711 and G.723 • G.711 and G.726
CODEC Packetization Intervals	10, 20, and 30mS
CODEC Synchronization	CODEC synchronization to UGS time clock allows slip-free end-to-end sync to PSTN clock (minimizes frame slips that can cause Fax/Analog Modem call failures)
CODEC Encryption	Configurable to support AES-128 encryption or no encryption modes
Hearing Impaired Services Support	TDD support including detection of V.18 including Annex A
Fax and Analog Modem Support	DSP based Modem/Fax Tone detection and support for Voice Band Data Mode with auto-CODEC negotiation and auto-control of echo canceller, jitter buffer, and VAD
Jitter Buffer Support	Adaptive dynamically controlled
Latency Control	Configurable min / max jitter buffer size

Specification	Value
Voice Specifications, continued	
Audio Gain Levels	Independently Configurable Tx and Rx audio gains
Silence Suppression	Configurable VAD with comfort noise generation
Packet Loss Concealment	ANSI T1.521-1999
Call Connection Quality Monitoring	RTCP, RFC1889, RFC1890, SNMP MIB for last call quality statistics
Dialing Modes	DTMF and configurable pulse-dial support
DTMF Relay	RFC2833 including fast (40 mS) DTMF Relay for alarm system signaling compatibility
Layer 2 Quality of Service	• Full PacketCable secure DQOS with GateID including UGS and UGS/AD • DQOS Lite support including UGS and UGS/AD
Layer 3 Quality of Service	Configurable DiffServe/TOS support for Signaling, RTP, and RTCP flows
Payload Header Suppression (PHS)	• Supported for RTP and RTCP packet flows to reduce per-call network bandwidth • Advanced support for Dynamic Payload Header Suppression using Propane Technology
Management	SNMPv3, SNMPv2, Telnet with configurable user ID and password, internal log, and external Syslog support
Echo Cancellation	G.168 with extended echo tail support
Call Feature Support	• Caller ID • Call Waiting with Caller ID • Cancel Call Waiting • Call Conferencing (3-way calls) • Configurable hook flash support • Distinctive Ringing (Configurable for up to 11 ring patterns per phone line) • Ring Splash • Stutter Dial Tone • Off hook warning tone • Open Switch Interval support to enhance answering machine compatibility • Configurable star codes • Euro/US hook-flash type • Call transfer • Message Waiting Indicator • Warm Line • Call Forwarding Unconditional • Call Forwarding on Busy • Call Forwarding No Answer • Call return • Redial Call • Automatic redial Other call features available with compliant CMS or gateway
Telephone Ring Loading	Full 5 REN support on each phone line (10 REN total)
Ring Signal	Configurable balanced ring with configurable DC offset
Max Phone Line Distance	Supports up to 1000 ft of AWG26 wire (0.4 mm) on each phone line. Supports operation with typical in-home telephone wiring
Country-Specific Telephone Parameters Supported	United States, Japan, United Kingdom, Germany, France, Belgium, Netherlands, Finland, Italy, Switzerland, Sweden, Denmark, Brazil, ETSI 101 909-18
RF Downstream	
Frequency Range	88 to 1002 MHz
Demodulation	64 or 256 QAM
Maximum Data Rate	• 30 Mbps for 64 QAM • 43 Mbps for 256 QAM
Bandwidth	6 MHz
Operating Level Range	–15 to +15 dBmV
Input Impedance	75 ohms

Specification	Value
RF Upstream	
Frequency Range	5 to 42 MHz
Modulation	• QPSK • 8 QAM • 16 QAM • 64 QAM • 128 QAM TCM
Maximum Data Rate	• 5.12 Mbps for QPSK • 10.2 Mbps for 16 QAM • 30.0 Mbps for A-TDMA and SCDMA
Bandwidth	200 kHz to 6.4 MHz
Operating Level Range (all values +/– 0.5 dBµV)	TDMA • QPSK: +8 to +58 dBmV • 8 QAM: +8 to +55 dBmV • 16 QAM: +8 to +55 dBmV • 32 QAM: +8 to +54 dBmV • 64 QAM: +8 to +54 dBmV SCDMA • QPSK: +8 to +53 dBmV • 8 QAM: +8 to +53 dBmV • 16 QAM: +8 to +53 dBmV • 32 QAM: +8 to +53 dBmV • 64 QAM: +8 to +53 dBmV • 128 QAM: +8 to +53 dBmV
Output Impedance	75 ohms
Wireless Access Point	
Frequency Range	• 2.412~2.462 GHz, 11 channels (North America, FCC) • 2.412~2.472 GHZ, 13 channels (Europe, CE/ETSI)
Modulation	• DSSS • OFDM • CCK • DQPSK • DBPSK
Data Rate: 802.11g	54 Mbps with Auto Fall-Back
Security	WPA2, WPA, 64/128-bit WEP
Transmit Power	14 dBm (typical for 802.11g)
Receiver Sensitivity	• –71 to –74 dBm @ 54Mbps • –87 to –90 dBm @ 11Mbps
Antenna System	• One (1) external, detachable • One (1) internal
Other	
Input Voltage	100-120 or 220-230 VAC
Power Consumption (Modem Module only)	12 Watts
Data Ports	Ethernet 10/100BASE-T (Auto-sensing with Auto-MDIX): RJ-45 Ethernet (4)
RF	Female “F” type

Mechanical	
Dimensions (W x D x H) (approximate)	• Not including “F” connector: 7 in. x 5.875 in. x 2.75 in. (17.8 cm x 14.9 cm x 7 cm) • Including “F” connector and wireless antenna: 7 in. x 6.25 in. x 2.75 in. (17.8 cm x 15.8 cm x 7 cm)
Weight (approximate)	• No battery: 18.6 oz (0.53 kg) • With battery: 24.5 oz (0.7 kg)
Battery Type and Capacity	1 cartridge, Li-Ion, 3 cells, 2200 mAh
Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Operating Humidity	0˚ to 90% RH non-condensing
Storage Temperature	4˚ to 140˚F (20˚ to 60˚C)
Standards and Approvals	
Designed to Comply with the Following Standards	• PacketCable 1.5, PacketCable 1.0 • DOCSIS 2.0, DOCSIS 1.1, DOCSIS 1.0 • IEEE 802.11g • WEP, WPA, and WPA2 • WMM, WPS
Safety and Regulatory Approvals	Certified as required per country where the DPQ2425 will be used

Ordering Information

Table 4. Ordering Information

Model	Description	Part Number
2 Voice Ports, North American Tuning Plan – NTSC		
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-120 VAC Internal power supply • Power cable, North America • Ethernet cable • CD-ROM containing user guide ***North America***	4027661
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-120 VAC Internal power supply • 2200 mAh Lithium-Ion battery cartridge • Power cable, North America • Ethernet cable • CD-ROM containing user guide ***North America***	4027662
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-240 VAC Internal power supply • Power cable, Euro • Ethernet cable • CD-ROM containing user guide ***Chile (Customer-specific configuration)***	4029165
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-240 VAC Internal power supply • Power cable, Euro • 2200 mAh Lithium-Ion battery cartridge • Power cord, Euro • Ethernet cable • CD-ROM containing user guide ***Chile (Customer-specific configuration)***	4029171

Model	Description	Part Number
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-120 VAC Internal power supply • 2200 mAh Lithium-Ion battery cartridge • Power cable, North America • Ethernet cable • CD-ROM containing user guide ***North America (Customer-specific configuration)***	4036004
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-120 VAC Internal power supply • No battery cartridge provided • Power cable, North America • Ethernet cable • CD-ROM containing user guide ***North America (Customer-specific configuration)***	4036005
Model DPQ2425	DPQ2425 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter. Includes: • 100-240 VAC Internal power supply • Power cable, Europe • 2200 mAh Lithium-Ion battery cartridge • Power cord, North America • Ethernet cable • CD-ROM containing user guide ***Latin America***	4038467

Replacement Components

Table 5. Replacement Components

Description	Part Number
Power Cords	
Power cord, 2 conductor, North America, NEMA 1-15 to C7 (non-polarized)	1002239
Power cord, 2 conductor, Argentina	4012938
Power cord, 2 conductor, Australia	4025792
Power cord, 2 conductor, Brazil	4009115
Power cord, 2 conductor, European, Euro plug CEE7/16 to C7	503414
Data Cables	
Ethernet data cable, 1.2 meters	748580
CD-ROM	
CD-ROM with User Guide	4029466

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