Cisco Model DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter

The Cisco® Model DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter (DPC2425) is a high-performance home gateway that combines a cable modem, two-line 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 DPC2425 has been designed to meet PacketCable™ 1.5 and DOCSIS® 2.0 specifications. In addition, the DPC2425 is fully backward compatible for use on both DOCSIS 1.1 and DOCSIS 1.0 networks.

Figure 1. Model DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter (image may vary from actual product and specification)

Designed for the active digital home or office, the DPC2425 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 Wi-Fi 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

- High-performance broadband Internet connectivity to energize your online experience
- Compliant with DOCSIS 2.0, 1.1, and 1.0 standards along with PacketCable specifications to deliver high-end performance and reliability
- Plug-and-Play operation for easy setup and installation, including color-coded data ports and data cables compliant with the TR-068 specifications
- 802.11g Wireless Access Point with 4 service set identifiers (SSIDs)
- Wireless MultiMedia (WMM) features including Wi-Fi Protected Setup (WPS), including a push button switch to activate WPS for simplified and secure wireless setup
- Allows the user to attach multiple devices to the wireless home gateway for high-speed wired and wireless networking and sharing of files
- Four 10/100BASE-T auto-sensing with auto-MDIX Ethernet ports to provide connectivity for high-speed data services or to other Internet devices
- Two-line embedded digital voice adapter for wired telephony service
- Two RJ-11 telephony ports for connecting to in-home wiring or directly to conventional telephones or fax machines
- Advanced firewall technology deters hackers and protects the home network from unauthorized access
- User-configurable Parental Control blocks access to undesirable Internet sites
- Dual antenna design - one internal and one detachable external
- Attractive, compact design that allows for vertical, horizontal, or wall-mounted placement
- 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 DPC2425 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, TEL1, TEL2
Color	Black housing, black lens, silver text
Branding	Cisco logo and model number

Figure 3. Model DPC2425 Back Panel (image may vary from actual product and specification)

Table 2. Back Panel Features

Feature	Description
POWER Connector Color: Black	Connects the wireless home gateway to the DC output of the AC power adapter
Power Switch (not shown)	Turn on and off device (power switch provided on all products carrying the CE mark)
TELEPHONE 1 and 2 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 ports on the user's PC or home network
REBOOT EMTA	Power cycles the DPC2425
WIRELESS SETUP	Activates WPS to connect wireless devices to the home network
CABLE Connector Color: White	F-connector connects to an active cable signal from the service provider
ANTENNA (not shown)	Provides a communication 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 30 mS
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
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 (40mS) 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, SNMPv1, 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 930 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 8QAM +8 to +55 dBmV 16QAM +8 to +55 dBmV 32QAM +8 to +54 dBmV 64QAM +8 to +54 dBmV
SCDMA	QPSK +8 to +53 dBmV 8QAM +8 to +53 dBmV 16QAM +8 to +53 dBmV 32QAM +8 to +53 dBmV 64QAM +8 to +53 dBmV 128QAM +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 and 64/128-bit WEP
Transmit Power	14 dBm (typical for 802.11g)
Antenna System	One (1) external, detachable One (1) internal
Other	
Input Voltage	12 VDC
Power Consumption (Modem Module)	6 Watts
Data Ports	Ethernet 10/100BASE-T (Auto-sensing with Auto-MDIX): RJ-45 Ethernet (4)
RF	Female “F” type

Specification	Value
Mechanical	
Dimensions (W x D x H) (approximate)	Not including “F” connector: 6 15/16 in. x 5 11/16 in. x 2 15/16 in. (17.7 cm x 14.5 cm x 5 cm) Including “F” connector and wireless antenna: 6 15/16 in. x 6 in. x 2 15/16 in. (17.7 cm x 15.5 cm x 5 cm)
Weight (approximate)	13.7 oz (0.39 kg)
Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Operating Humidity	0% to 90% RH non-condensing
Storage Temperature	-20˚ to 60˚C (-4˚ to 140˚F)
Standards and Approvals	
Designed to Comply with the Following Standards	PacketCable 1.5 DOCSIS 2.0, DOCSIS 1.1, DOCSIS 1.0 IEEE 802.11g WEP, WPA, and WPA2 WMM, WPS
Regulatory and Safety Approvals	As required per country where the DPC2425 will be used

Ordering Information

Table 4. Ordering Information

Model	Description	Part Number
2 Voice Ports, North American Tuning Plan – NTSC		
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 100-120 VAC/60 Hz, 15 VDC/1 A desktop linear switching power supply • Ethernet cable • CD-ROM containing user guide ***North America***	4028654
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • NTSC North American tuning plan • 220 VAC/50-60 Hz, 15VDC/1 A desktop linear switching power supply • Ethernet cable • CD-ROM containing user guide ***Argentina***	4028655
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 120 VAC/50-60 Hz, 15VDC/1 A wall-mount linear switching power supply • Ethernet cable • CD-ROM containing user guide ***Brazil (Customer-specific configuration)***	4028612
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 100-240 VAC/50-60 Hz, 15VDC/1 A desktop switching regulated power supply • Power cord, Brazil • Ethernet cable • CD-ROM containing user guide ***Brazil (Customer-specific configuration)***	4028619
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 100-120 VAC/50-60 Hz, 15VDC/1 A desktop linear switching power supply • Ethernet cable • CD-ROM containing user guide ***Columbia (Customer-specific configuration)***	4039149
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 100-120 VAC/50-60 Hz, 15VDC/1 A desktop linear-switching power supply • Ethernet cable • CD-ROM containing user guide ***North America (Customer-specific configuration)***	4036003
2 Voice Ports, International Tuning Plan – PAL/NTSC		
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 230 VAC/50-60 Hz, 15VDC/1 A wall-mount linear switching power supply for Europe • Ethernet cable • CD-ROM containing user guide ***Europe (Customer-specific Configuration)***	4029063

Model	Description	Part Number
1 Voice Port, North American Tuning Plan – NTSC		
Model DPC2425	DPC2425 DOCSIS 2.0 Wireless Residential Gateway with Embedded Digital Voice Adapter. Includes: • 220 VAC/50-60 Hz, 15VDC/1 A desktop linear switching power supply • Ethernet cable • CD-ROM containing user guide and USB driver ***Argentina(Customer-specific Configuration)***	4029064

Replacement Components

Table 5. Replacement Components

Description	Part Number
Power Supply	
Class 2 Linear Switching	
100-120 VAC / 50-60 Hz, 15 VDC /1 A desktop style linear-switching power supply, North America	4018776
230 VAC / 50-60 Hz, 15 VDC /1 A wall-mount linear-switching power supply, Europe	4015455
220 VAC / 50 Hz, 15 VDC /1 A desktop style linear-switching power supply, Argentina	4023778
Power Cord	
Power cord, 2 conductors, CEE7/16 to C7, INMETRO, non-polarized, Brazil	4009115
Data Cable	
Ethernet cable, 1.2 meters	740580
CD-ROM	
CD-ROM with User Guide	7016771

Cisco Systems, Inc.
800 722-2009 or 678 277-1120
www.cisco.com

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