

## Cisco Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway

The Cisco® Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway (DPC3825) is a high-performance home gateway that combines a cable modem, 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 DPC3825 provides a faster connection to the Internet by incorporating eight bonded downstream channels along with four bonded upstream channels. These bonded channels can deliver downstream data rates in excess of 340 Mbps and upstream data rates in excess of 120 Mbps. That's up to eight times faster downloads than conventional single-channel DOCSIS® 2.0 cable modems.<sup>1</sup>

The DPC3825 is designed to meet DOCSIS 3.0 specifications, as well as offering backward compatibility for operation in DOCSIS 2.0, 1.1, and 1.0 networks.

**Figure 1.** Cisco Model DPC3825 8x4 DOCSIS 3.0 Wireless Residential Gateway (image may vary from actual product and specification)



Designed for the active digital home or office, the DPC3825 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 your home or office to the wireless residential gateway.

<sup>1</sup> Channel Bonded cable modems must be used in conjunction with CMTSS that support Channel Bonded bonding per the DOCSIS 3.0 specifications. When used with non-Channel Bonded CMTSS, Channel Bonded cable modems function as conventional DOCSIS 2.0 cable modems.

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

### DOCSIS

- Compliant with DOCSIS 3.0, 2.0, 1.1, and 1.0 standards to deliver high-end performance and reliability

### Connections

- Four 1000/100/10BASE-T Ethernet ports to provide wired connectivity
- High-performance broadband Internet connectivity to energize your online experience
- 802.11n, 2x2 Wireless Access Point (WAP) with four Service Set Identifiers (SSIDs)
- WPS, including a push-button switch to activate WPS for simplified and secure wireless setup
- USB 2.0 Type 1 host port (factory option)

### Design and Function

- User-friendly web GUI with simplified navigation and quick setup feature
- Context-sensitive pop-up Help for each configuration page
- DOCSIS-5 compliant LED labeling and behavior provides a user- and technician-friendly method to check operational status and act as a troubleshooting tool
- Attractive, compact design and versatile orientation to stand vertically, lie flat on the desktop or shelf, or mount easily on a wall
- TR-068 compliant color-coded interface ports and corresponding cables simplify installation and setup

### Management

- Allows automatic software upgrades by your service provider
- Provisionable via DOCSIS config file, SNMP, and/or XML

### Security

- User-configurable Parental Control blocks access to undesirable Internet sites
- Advanced firewall technology deters hackers and protects the home network from unauthorized access

### Software and Documentation

- CD-ROM containing user guide

**Figure 1.** Cisco Model DPC3825 Front Panel (image may vary from actual product and specification)



**Table 1.** Front Panel Features

Feature	Description
Indicators	Power, DS, US, Online, Ethernet, USB, Wireless Link, Wireless Setup
Color	Black, black lens, silver text
Branding	Cisco and model number

**Figure 2.** Cisco Model DPC3825 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)	Power switch provided for product shipping to the EU and, when appropriate, to comply with regulatory requirements
MAC ADDRESS LABEL	Displays the MAC address of the cable modem
USB Color: Blue	USB 2.0 Type 1 port (factory option)
ETHERNET (1 – 4) Connector Color: Yellow	Four RJ-45 Ethernet ports connect to the Ethernet port on your PC or your home network
CABLE Connector Color: White	F-connector connects to an active cable signal from your service provider
RESET	Resets the cable modem
WIRELESS SETUP	Activates WPS, which allows you to add wireless devices to the wireless network of the residential gateway
ANTENNA (internal)	(2) internal antennas provide a communication connection for the built-in 802.11n wireless

## Product Specifications

**Table 3.** Product Specifications

Specification	Value
<b>Residential Gateway</b>	
ICSA (Independent Computer Security Association) Firewall Compliant	<ul style="list-style-type: none"> <li>• IP Address and Port Number</li> <li>• TCP flags, ICMP types, fragmentation</li> <li>• Connection Creation and Teardown</li> <li>• Timestamps</li> <li>• Payload Modification</li> </ul>
Parental Controls	<ul style="list-style-type: none"> <li>• Content Filtering with Per-User Policies</li> <li>• Domain Block/Deny</li> <li>• Keyword Blocking</li> <li>• Java X Applet Blocking</li> <li>• Per-User MAC Address Filtering</li> </ul>
Advanced Event Logging	<ul style="list-style-type: none"> <li>• Filtering Activity</li> <li>• Session Tracking</li> <li>• User Notification via E-mail Alert and SNMP Traps</li> </ul>
DOS attack protection	<ul style="list-style-type: none"> <li>• Replay Attack Protection</li> <li>• Malformed Packet Protection</li> <li>• SYN Flooding</li> <li>• TCP Hijacking</li> <li>• LAND Attack</li> <li>• WinNuke/OOBnuke (Invalid TCP urgent pointer)</li> <li>• Christmas Tree</li> <li>• SYN/FIN (jackal)</li> <li>• BackOffice (UDP 32337)</li> <li>• NetBus</li> <li>• Smurf</li> <li>• Tear Drop</li> <li>• ICMP Flooding</li> <li>• Ping of Death</li> <li>• TCP Port Probe</li> <li>• UDP Port Probe</li> <li>• New Tear</li> <li>• Nestea</li> <li>• SYNdrop</li> <li>• Jolt</li> <li>• Boink</li> <li>• Bonk</li> </ul>
Routing Features	<ul style="list-style-type: none"> <li>• NAPT, NAT, and Pass-through (layer 2) Operational Modes</li> <li>• RIP v1/v2</li> <li>• Static Routes</li> <li>• Port Forwarding</li> <li>• Port Triggering</li> <li>• UPnP IGD 1.0, QoS 1.0</li> </ul>

Specification	Value
<b>Residential Gateway (continued)</b>	
ALG Support	<ul style="list-style-type: none"> <li>• FTP</li> <li>• Real Audio</li> <li>• H.323</li> <li>• ICQ</li> <li>• IPSec Pass-through</li> <li>• L2TP Pass-through</li> <li>• PPTP Pass-through</li> <li>• TFTP</li> <li>• mIRC</li> <li>• PIRCH</li> <li>• MS NetMeeting</li> <li>• Net2phone</li> <li>• AOL and MSN Messenger</li> <li>• Yahoo Messenger</li> <li>• Go2Call</li> <li>• Hotline Server</li> <li>• Visual IRC</li> <li>• CuSeeme</li> <li>• AT&amp;T Instant Messenger Anywhere</li> <li>• Active Worlds</li> <li>• Buddy Phone Calista IP Phone</li> <li>• Delta Three PC to Phone</li> <li>• Dial Pad</li> <li>• Dwyco Video Conferencing</li> <li>• OrbitRC</li> <li>• Xircon</li> <li>• Netscape Chat</li> </ul>
<b>Wireless Access Point</b>	
802.11n	<ul style="list-style-type: none"> <li>• 2x2 2.4 GHz or 2x2 Dual Band 2.4/5 GHz wireless access point</li> <li>• (2) Internal Antennas</li> <li>• Wi-Fi Compliant</li> <li>• Wi-Fi Security (WPA2, WPA2-PSK, WPA, WPA-PSK, WEP)</li> <li>• WMM-QoS (Wireless Multi Media - Quality of Service)</li> <li>• WMM Power Save</li> <li>• WPS</li> <li>• Wireless Bridging - WDS (Wireless Distribution System) – allows connection to “Range Extender Products”</li> <li>• RADIUS Authentication (Client, EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-MD5)</li> <li>• MBSSID (4 SSIDs with unique NAT scopes)</li> <li>• Wi-Fi "Hot Spot" support (Static DHCP IP Scope over tunnel)</li> </ul>
<b>RF Downstream</b>	
Operating Frequency Range	88 to 1002 MHz
Tuner Frequency Range	88 to 1002 MHz
Tuner	(2) Frequency agile block tuners, 32 MHz bandpass each
Demodulation	8 demodulators, 4 per tuner, each demodulator; 64 QAM or 256 QAM
Maximum Data Rate	8 downstream channels, each 6 MHz channel: 42.88 Mbps for 256 QAM and 30.34 Mbps for 64 QAM
Bandwidth	6 or 8 MHz
Operating Level Range	-15 to +15 dBmV
Input Impedance	75 ohms

Specification	Value					
<b>RF Upstream</b>						
Operating Frequency Range	5 to 42 MHz, 5 to 65 MHz or 5 to 85 MHz					
Transmitter Frequency Range	5 to 42 MHz, 5 to 65 MHz or 5 to 85 MHz					
Upstream Transmission	4 upstream channels					
Modulation	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM / ATDMA, 128 QAM / SCDMA					
Maximum Data Rate per channel	<u>Modulation</u>	<u>Channel Bandwidth (MHz)</u>	<u>Raw Data Rate (Mbps)</u>			
	QPSK	1.6	2.56			
	16 QAM	1.6	5.12			
	QPSK	3.2	5.12			
	16 QAM	3.2	10.2			
	32 QAM	3.2	12.8			
	64 QAM	3.2	15.4			
	16 QAM	6.4	20.5			
	32 QAM	6.4	25.6			
	64 QAM	6.4	30.7			
Bandwidth	200 kHz to 6.4 MHz					
Maximum Operating Level	<u>Modulation</u>	<u>One Channel</u>	<u>2 Channels</u>	<u>3 or 4 Channels</u>		
	TDMA	QPSK	+61 dBmV	+58 dBmV	+55 dBmV	
		8 QAM	+58 dBmV	+55 dBmV	+52 dBmV	
		16 QAM	+58 dBmV	+55 dBmV	+52 dBmV	
		32 QAM	+57 dBmV	+54 dBmV	+51 dBmV	
		64 QAM	+57 dBmV	+54 dBmV	+51 dBmV	
	SCDMA	QPSK	+56 dBmV	+53 dBmV	+53 dBmV	
		8 QAM	+56 dBmV	+53 dBmV	+53 dBmV	
		16 QAM	+56 dBmV	+53 dBmV	+53 dBmV	
		32 QAM	+56 dBmV	+53 dBmV	+53 dBmV	
		64 QAM	+56 dBmV	+53 dBmV	+53 dBmV	
		128 QAM	+56 dBmV	+53 dBmV	+53 dBmV	
		<b>Electrical</b>				
		Input Voltage	15 VDC			
Power Consumption (DC, in modem module)		~12 Watts Online				
Data Ports	1000/100/10BASE-T (Auto-negotiate with Auto-MDIX): RJ-45 Ethernet (4) USB 2.0: USB Type 1 (1)					
RF	Female F-Type					
Output Impedance	75 ohms					
<b>Mechanical</b>						
Dimensions (W x D x H)	F-Type connector included: 5.6 in. x 7.3 in. x 1.9 in. (14.5 cm x 18.6 cm x 5 cm) F-Type connector not included: 5.6 in. x 6.9 in. x 1.9 in. (14.5 cm x 17.6 cm x 5 cm)					
Weight	13.7 oz. (0.390 kg)					
Operating Temperature	32° to 104°F (-0° to 40°C)					
Operating Humidity	0 to 95% RH non-condensing					
Storage Temperature	-4° to 158°F (-20° to 70°C)					

Specification	Value
<b>Standards and Approvals</b>	
Designed to meet with the following standards	DOCSIS 3.0, 2.0, 1.1, and 1.0 IEEE 802.11n WEP, WPA, and WPA2 WMM, WPS
<b>Regulatory Compliance</b>	
Regulatory and Safety Approvals	As required per country where the DPC3825 will be used

**Ordering Information**

**Table 4.** Ordering Information

Description	Part Number
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: <ul style="list-style-type: none"> <li>• 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply</li> <li>• 5-42/88-1002 MHz diplex filter (DOCSIS)</li> <li>• USB 2.0 port</li> <li>• Ethernet cable</li> <li>• CD-ROM containing user guide</li> </ul> <b>North America</b>	4034138
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: <ul style="list-style-type: none"> <li>• 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply</li> <li>• 5-65/88-1002 MHz diplex filter (DOCSIS)</li> <li>• USB 2.0 port</li> <li>• Ethernet cable</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> Customer Specific Configuration <b>Japan</b>	4034139
DPC3825 DOCSIS 3.0 8x4 Wireless Residential Gateway includes: <ul style="list-style-type: none"> <li>• 100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply</li> <li>• 5-65/88-1002 MHz diplex filter (DOCSIS)</li> <li>• USB 2.0 port</li> <li>• Ethernet cable</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> Customer Specific Configuration <b>Japan</b>	4034140

## Replacement Components

**Table 5.** Replacement Components

Description	Part Number
<b>Power Supplies</b>	
Class 2 Switching-Regulated	
100-240 VAC/50-60 Hz, 15 VDC/ 1.5 A desktop switching-regulated power supply, non-polarized	4034524
<b>Power Cords</b>	
Power Cord, North America	1002239
Power Cord, Japan	207586
<b>CD-ROM</b>	
CD-ROM with User Guide	4034136



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Cisco Systems, Inc.  
1-800-722-2009 or 678-277-1120  
[www.cisco.com](http://www.cisco.com)

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