Cisco Residential Wireless Gateway Model DPC3848/DPC3848V/DPC3848VM

Looking for a multifaceted, high-performance home and small office gateway that combines a cable modem, router, and wireless access points in a single device? You've found it in the Cisco® Residential Wireless Gateway Model DPC3848. This cost-effective networking solution provides a faster connection to the Internet by incorporating 24 bonded downstream channels along with eight bonded upstream channels. Bonded channels can deliver downstream data rates of up to 900 Mbps and upstream data rates up to 170 Mbps. That's up to 24 times faster downloads than conventional single-channel DOCSIS® 2.0 cable modems.

The Cisco Residential Wireless Gateway Model DPC3848 (Figure 1) is designed to meet DOCSIS 3.0 specifications and provide backward compatibility for operation in DOCSIS 2.0, 1.1, and 1.0 networks.

Figure 1. Cisco Residential Wireless Gateway Model DPC3848

This Cisco integrated router features a Dynamic Host Configuration Protocol (DHCP) server, Network Address Translation (NAT) and Network Address and Port Translation (NAPT), and a Stateful Packet Inspection (SPI) firewall. These features provide a single high speed public Internet connection and allow users to share files and folders between devices in the home network by attaching multiple wired and wireless devices in the active 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 web sites.

Features

DOCSIS

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

Connections

- Four 10/100/1000BASE-T Ethernet ports to provide wired connectivity
- High-performance broadband Internet connectivity to enhance your online experience
- One USB 2.0 Type 2 connection
- Dual-band concurrent 802.11ac Wireless Access Point (WAP) with eight Service Set Identifiers (SSIDs) backwards compatible with 802.11b/g/n
- Including a pushbutton switch to activate WPS for simplified and highly secure wireless setup
- Configurations with MoCA 2.0 available for in-home networking using existing coaxial cable

Design and Function

- Attractive, compact design and versatile orientation to stand vertically on the desktop or shelf, or mount easily on a wall
- Dual-color LED status indicators on the front panel provide an informative and easy-to-understand display that indicates the cable modem operational status
- TR-068 compliant color-coded interface ports and corresponding cables simplify installation and setup

Management

- User-configurable Parental Control blocks access to undesirable Internet sites
- Advanced firewall technology deters hackers and protects the home network from unauthorized access
- Residential gateway allows automatic software upgrades by your service provider

Documentation

- User guide can be downloaded from Cisco.com.

Table 1. Front Panel Features

Feature	Description
Indicators and controls	LED: Power, downstream (DS), upstream (US), online, link, WPS, WiFi (2.4 and 5 GHz)
Color	Black, black lens, silver text
Branding	Cisco and model number

Back Panel Features

Figure 2 shows the back panel, and Table 2 lists back panel features.

Figure 2. Cisco Residential Wireless Gateway Model DPC3848 Back Panel

Table 2. Back Panel Features

Feature	Description
Power switch	Switches power to the unit (power switch provided only on products carrying the Conformité Européenne [CE] mark)
Power connector **Color: Black**	Connects modem to the AC power cord
USB connector **Color: Blue**	There is one Type 2 USB 2.0 port that connects to a USB port on a printer or another USB device
Ethernet (1-4) connector **Color: Yellow**	Four RJ-45 Ethernet ports with LED indicators connect to the Ethernet port on a PC or home network
MAC address label	Displays the MAC address of the cable modem
Cable connector	F-connector connects to an active cable signal from a service provider and used for MoCA configured models
Reset	Power cycles the Cisco Residential Wireless Gateway Model DPC3848
Buttons	WPS Button on the top, Wi-Fi reset

Product Specifications

Table 3 lists product specifications for the Cisco Residential Wireless Gateway Model DPC3848.

Table 3. Product Specifications

Specification	Value
Residential Gateway	
Gateway configuration management	• TR-069 and subset of TR-098 data model (optional) • Extensive custom SNMP MIB for the gateway • Provisioning with SNMP • HNAP server 1.2+

Specification	Value
Independent Computer Security Association (ICSA) firewall compliant	• Web filtering: pop-ups, cookies, Java, and ActiveX scripts • Intrusion detection and prevention: WAN ping blocking, IP fragment blocking, port scan detection, TCP Port Probe, UDP Port Probe • DoS Protection: inbound, outbound, WAN interface, LAN interface, SYN flood, Ping of Death, Smurf, Bonk, Jolt, Land, Nestea, Newtear, Syndrop, Teardrop, WinNuke/OOBNuke (Invalid TCP urgent pointer), x1234, Saihyousen, Oshare, ARP flood, TCP Hijacking, Christmas Tree, SYN/FIN (jackal), BackOffice (UDP 32337), NetBus, ICMP Flooding • IP address, port number, MAC address filtering • TCP flags, ICMP types fragmentation • Connection creation and teardown • Timestamps and payload modification
Parental Controls	• Per-user policies • Keyword blocking • Domain name blocking • Time of day filters • MAC address filtering
Advanced event logging	• Filtering activity • Session tracking • User notification by email alert and SNMP traps
Routing features	• NAPT, NAT, and Pass-through (Layer 2) Operational Modes • RFC3489 (STUN) "Port-restricted cone NAT" behavior • RIP v1/v2, with MD5 • Static Routes • Port Forwarding • Port Triggering • UPnP IGD 1.0 • IPSec Pass-through • L2TP Pass-through • PPTP Pass-through • ALG support: mIRC, PIRCH, MS NetMeeting, Net2phone, AOL and MSN Messenger, Yahoo Messenger, Go2Call, Hotline Server, Visual IRC, CuSeeme, AT&T Instant, Messenger Anywhere, Active Worlds, Buddy Phone Calista IP Phone, Delta Three PC to Phone, Dial Pad, Dwyco Video Conferencing, OrbitRC, Xircon, Netscape Chat, FTP, H.323, ICQ
Wireless Access Point	
802.11 b/g/n/ac	• Available hardware options for wireless access point: ◦ 3x3 MIMO, 2.4 GHz and 5 GHz dual band concurrent • 26 dBm output power for 2.4GHz and 24dBm output power for 5GHz • 6 internal antennas • DFS certified operation for models with 5 GHz option for maximum spectrum utilization and reduced interference • Wi-Fi compliant security (WPA2-Enterprise, WPA2-PSK, WPA-Enterprise, WPA-PSK, WEP) • WMM-QoS (Wireless Multi Media - Quality of Service) • WMM Power Save • WPS • Wireless Bridging - WDS (Wireless Distribution System) - allows connection to “Range Extender Products” • RADIUS Authentication (Client, EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-MD5) • MBSSID (8 SSIDs with unique NAT scopes) • Wi-Fi "Hot Spot" support (Static DHCP IP Scope over tunnel)
MoCA	MoCA2.0 (for specific configurations)
RF Downstream	
Operating frequency range	108 to 1002 MHz
Tuner frequency range	108 to 1002 MHz
Tuner	1 GHz full-band capture tuner that eliminates restrictions on downstream channel frequency plan
Demodulation	8 demodulators, each demodulator: 64 QAM or 256 QAM

Specification	Value			
Maximum data rate	24 downstream channels, each 6 MHz channel: 42.88 Mbps for 256 QAM and 30.34 Mbps for 64 QAM per channel			
Bandwidth	6 MHz			
Operating level range	-15 to +15 dBmV			
Input impedance	75 ohms			
RF Upstream				
Operating frequency range	5 to 42MHz with options for 5 to 85 MHz			
Upstream transmission	Assumes 8 upstream channels			
Modulation	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM/ATDMA, 128 QAM/SCDMA			
Maximum data rate per channel	**Modulation**	**Channel Bandwidth (MHz)**	**Raw Data Rate (Mbps)**	
	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			
DOCSIS 3.0 mode	**Modulation**	**1 Channel**	**2 Channels**	**3 or 4 Channels***
Maximum operating level				
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
	* Up to +3dB power increase in extended upstream power mode with CMTS support.			
Electrical				
Input voltage	110-240VAC			
Power consumption (modem module)	~17W			
Data ports	Gigabit Ethernet (Auto-negotiate with Auto-MDIX): RJ-45 Ethernet (4) Optional with some part numbers: USB 2.0, USB Type 2 (1)			
RF	Female F-type			
Output impedance	75 ohms			

Specification	Value
Mechanical	
Dimension (H x D x W)	Not F-Type connector: Cisco DPC3848 273 x 88 x 208 mm Cisco DPC3848V 273 x 88 x 208 mm Cisco DPC3848VM 281 x 88 x 243 mm
Weight	~2lbs
Operating temperature	0 to 40˚ C (32 to 104˚ F)
Operating humidity	0 to 95% RH noncondensing
Storage temperature	-20 to 70˚ C (-4 to 158˚ F)
Standards	
Standards	DOCSIS 3.0 IEEE 802.11b/g/n IEEE 802.11ac WPA2, WPA and WEP WMM, WPS MoCA 2.0
Regulatory Compliance	
Regulatory and safety approvals	As required per country where the Cisco Residential Wireless Gateway Model DPC3848 will be used

Ordering Information

Table 4. Ordering Information

Description	Part Number (for 5-42/88-1002 MHz Diplex Filter)	Part Number (for 5-85/108-1002 MHz Diplex Filter)
DPC3848 Model		
DOCSIS3.0 24x8 Wireless Residential Gateway includes: • Dual Band Concurrent Wireless Access Point 3x3 802.11n 2.4GHz and 3x3 802.11n 5.0GHz • USB2.0 host port • Power cord, North-America • Ethernet cable • Installation sheet • Safety sheet	DPC3848-A12D-K9	DPC3848-A12-K9
DPC3848V Model		
DOCSIS3.0 24x8 Wireless Residential Gateway includes: • Dual Band Concurrent Wireless Access Point 3x3 802.11n 2.4GHz and 3x3 802.11ac 5GHz • USB2.0 host port • Power cord, North-America • Ethernet cable • Installation sheet • Safety sheet	DPC3848-A14D-K9	DPC3848-A14-K9

Description	Part Number (for 5-42/88-1002 MHz Diplex Filter)	Part Number (for 5-85/108-1002 MHz Diplex Filter)
DPC3848VM		
DOCSIS3.0 24x8 Wireless Residential Gateway includes: • Dual Band Concurrent Wireless Access Point 3x3 802.11n 2.4GHz and 3x3 802.11ac 5GHz • MoCA 2.0 Home Networking Over Coaxial Cable • USB2.0 host port • Power cord, North-America • Ethernet cable • Installation sheet • Safety sheet	DPC3848-AM14D-K9	DPC3848-AM14-K9

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