Cisco Residential Wireless Gateway Model DPC3828

The Cisco® Residential Wireless Gateway Model DPC3828 is a high-performance home gateway that combines a cable modem, router, and wireless access point(s) in a single device, providing a cost-effective networking solution for both the home and small office. The Cisco DPC3828 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 400 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.

The Cisco DPC3828 (Figure 1) 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. Example of Cisco Residential Wireless Gateway Model DPC3828

The Cisco DPC3828 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 allow the user to share a single high-speed public Internet connection as well as 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 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 10/100/1000BASE-T Ethernet ports to provide wired connectivity
- High-performance broadband Internet connectivity to energize your online experience
- Optional: two USB 2.0 Type 2 connections

- Dual-band concurrent 802.11n Wireless Access Point (WAP) with eight Service Set Identifiers (SSIDs) compatible with 802.11b/g
- WPS, including a pushbutton switch to activate WPS for simplified and secure wireless setup

Design and Function

- Attractive, compact design and versatile orientation to stand vertically, lie flat 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.

Front Panel Features

Table 1 lists front panel features for the Cisco DPC3828.

Table 1. Front Panel Features

Feature	Description
Indicators and controls	LED: Power, downstream (DS), upstream (US), Online, Link, USB (optional), Wireless On/Off, Wireless Setup Buttons: Wireless On/Off, Wireless Setup
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. Example of Cisco DPC3828 Back Panel

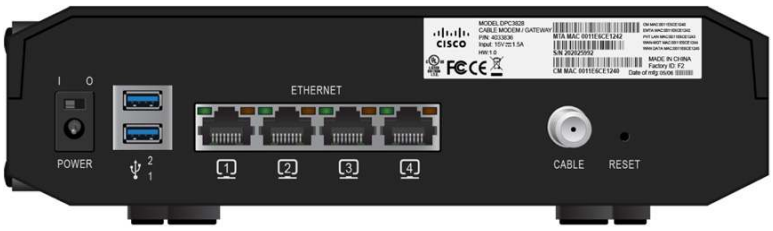

Table 2. Back Panel Features

Feature	Description
Power switch	Switches power to the unit (power switch provided only on products carrying the CE mark)
Power connector **Color: black**	Connects modem to the DC output of the AC power adapter
USB connector **Color: blue**	Optional (1): Each Type 2 USB 2.0 port 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 **Color: white**	F-connector connects to an active cable signal from a service provider
Reset	Power cycles the DPC3828
Antennas (internal)	Internal antennas provide a communication connection for the built-in 802.11n wireless

Product Specifications

Table 3 lists product specifications for the Cisco DPC3828.

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+
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

Specification	Value
	• 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	• Available hardware options for wireless access point: ◦ 2x2 MIMO, 2.4 GHz single band ◦ 2x2 MIMO, 2.4 GHz and 5 GHz dual band concurrent ◦ 3x3 MIMO, 2.4 GHz single band ◦ 3x3 MIMO, 2.4 GHz and 5 GHz dual band concurrent • 2, 4, or 6 internal antennas (antenna configuration depends on the hardware options) • 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)
Applications Support (optional, supported on select hardware)	
Applications	• Supports DLNA 1.5 • Samba server for file sharing (GPLv2) • External NAS drives using USB 2.0 host ports
RF Downstream	
Operating frequency range	108 to 1002 MHz
Tuner frequency range	88 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
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 MHz
Operating level range	-15 to +15 dBmV
Input impedance	75 ohms
RF Upstream	
Operating frequency range	5 to 42 MHz (optional 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	**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

Specification	Value			
	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	QPSK	+61 dBmV	+58 dBmV	+55 dBmV
TDMA	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	15 VDC			
Power consumption (modem module)	Models without application support: 15W nominal Models with application support: 20W nominal			
Data ports	Gigabit Ethernet (Auto-negotiate with Auto-MDIX): RJ-45 Ethernet (4) Optional with some part numbers: USB 2.0, USB Type 2 (2)			
RF	Female F-type			
Output impedance	75 ohms			
Mechanical				
Dimensions (H x D x W)	5.4 cm x 14.5 cm x 19.6 cm (2.13 in. x 5.71 in. x 7.72 in.)			
Weight	0.430 kg (15.17 oz)			
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 802.11n WPA2, WPA and WEP WMM, WPS			
Regulatory Compliance				
Regulatory and safety approvals	As required per country where the DPC3828 will be used			

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Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

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