Cisco Model DPC3941T DOCSIS 3.0 24x4 Wireless Residential Voice Gateway

If you're looking for a cost-effective, high performance voice and networking gateway for the home and small office, you've just found it. The Cisco® Model DPC3941T DOCSIS 3.0 24x4 Wireless Residential Voice Gateway is multiple solutions in one product. It combines a cable modem, two-line digital voice adapter, a router, and 802.11n wireless access points in a single device. The gateway delivers a faster connection to the Internet by incorporating 24 bonded downstream channels along with four bonded upstream channels. The bonded channels can deliver downstream data rates that exceed 900 Mbps and upstream data rates that exceed 120 Mbps. Downstream rates are up to 24 times faster than conventional single-channel DOCSIS® 2.0 cable modem rates.

The Cisco Model DPC3941T residential gateway (Figure 1) is designed to meet PacketCable™ 2.0 and DOCSIS 3.0 specifications. It offers backward compatibility for operation in PacketCable 1.0 and DOCSIS 2.0, 1.1, and 1.0 networks.

Figure 1. Cisco Model DPC3941T DOCSIS 3.0 24x4 Wireless Residential Voice Gateway (Images may vary from actual product specifications)

The integrated router features a Dynamic Host Configuration Protocol (DHCP) server, Network Address Translation (NAT), Network Address Port Translation (NAPT), and a stateful packet inspection (SPI) firewall. These features allow the user to share a single high-speed public Internet connection and 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 controls can protect the home network from unwelcome intruders and protect family members from access to undesirable websites.

Features

DOCSIS

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

Connections

- Four 10/100/1000BASE-T Ethernet ports to provide wired connectivity
- High-performance broadband Internet connectivity
- Optional: Two USB 2.0 Type 2 connections
- Dual-band concurrent 802.11ac Wireless Access Point (WAP) with eight Service Set Identifiers (SSIDs) compatible with 802.11b/g/n
- WPS, including a push-button switch to activate WPS for simplified and highly secure wireless setup
- Two-line or single-line RJ-11 telephony ports for connecting to in-home wiring or directly to conventional telephones or fax machines

Design and Function

- Attractive, compact design and versatile orientation to stand vertically
- LED status indicators on the front panel, providing an informative and easy-to-understand display that indicates the operational status
- TR-068-compliant, color-coded interface ports and corresponding cables that simplify installation and setup

Management

- User-configurable parental controls that block access to undesirable Internet sites
- Advanced firewall technology that deters hackers and protects the home network from unauthorized access
- Automatic software upgrades by your service provider allowed

Software and Documentation

- User guide and optional USB driver installation software that can be downloaded from Cisco.com

Table 1. Front-Panel Features

Feature	Description
Indicators and controls	Power, DS/US, Online, WiFi1, WiFi2, Tel1, Tel2, and Battery
Color	Black, black lens, and silver text
Branding	Xfinity and Comcast model name

Figure 2. Cisco Model DPC3941T Residential Gateway Top Panel

Table 2. Top-Panel Features

Feature	Description
Indicators and controls	WPS and page
Color	Black, black lens, and silver text

Figure 3. Cisco Model DPC3941T Residential Gateway Back Panel

Table 3. Back-Panel Features

Feature	Description
RESET	Performs a soft configuration reset of the Cisco Model DPC3941T software.
USB Connector color: blue	Optional (2): Each Type 2 USB 2.0 port connects to a USB port on a printer or another USB device.
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 port on your PC or your home network.
MoCA/CABLE Connector color: white	F-connector connects to an active cable signal from your service provider, provides either combined cable or MoCA service (MoCA filter off), or MoCA service only (MoCA filter on).
POWER Connector color: black	Connection for AC power input 120 VAC.
ANTENNA (internal)	Two Internal antennas provide a communication connection for the built-in 802.11n wireless. Up to 6 external antennas depending upon the product model.

Figure 4. Cisco Model DPC3941T Residential Gateway Bottom Panel

Table 4. Bottom-Panel Features

Feature	Description
Manufacturer label **Color: white with black text**	Label with key manufacturing information, such as the part number, serial number, CM MAC address, MTA MAC address, and WAN MAC address
Battery **Color: black**	Battery compartment for a 10.8V lithium-ion, 2600 mAh rechargeable battery (included)

Product Specifications

Specification	Description
Voice	
Call signaling protocol	PacketCable 2.0
Basic configuration (per line)	• SIP signaling port (local receive and source port) • SIP registrar • SIP proxy • SIP outbound proxy • Username • Password • Authentication name
Provisioning modes	PacketCable 2.0 provisioning modes
Voice codec support	Negotiate codec to use based on ordered list

Specification	Description
Codecs	Standard: G.711 and T.38 fax relay Software upgradeable to support other codec combinations including: ● G.711 ● G 711 and G 722
Line diagnostics	GR-909
Codec packetization levels	10, 20, or 30 mS
Codec synchronization	Codec synchronization to UGS time clock allows slip-free, end-to-end sync to PSTN clock (reduces frame slips that can cause fax and 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 and fax tone detection and support for voice-band data mode with autocodec negotiation and autocontrol of echo canceller, jitter buffer, and voice activated detection (VAD)
Packet loss concealment	ANSI T1.521-1999
Call connection quality monitoring	RTCP, RFC 1889, RFC 1890, and SNMP MIB for last call quality statistics
Dialing modes	DTMF and configurable pulse dial support
Layer 3 quality of service	Configurable DiffServe and TOS support for signaling, RTP, and RTCP flows
Management	SNMPv3, SNMPv2, SNMPv1, Telnet, and SSH with configurable user ID and password, internal log, and external syslog support
Call feature support	● Caller ID ● Call Waiting with Caller ID ● Cancel Call Waiting ● Call Conferencing (3-way calls) ● Configurable Hook-Flash Support ● Stutter Dial Tone ● 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
Networking (non-call) services	● Known good proxy ● Proxy failover ● Registration control ● UDP and TCP ● TLS ● DNS ● Static NAT ● NAT keep alive
Telephone ring loading	Full 5 REN support on each phone line (10 REN total)
Maximum phone line distance	Supports up to 1000 ft of AWG26 wire (0.4mm) on each phone line Supports operation with typical in-home telephone wiring
IPV6	Dual IPV4 and IPV6 CM
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	Description
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, and 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, and OOBNuke (invalid TCP urgent pointer), x1234, Saihyousen, Oshare, ARP flood, TCP hijacking, Christmas Tree, SYN/FIN (jackal), BackOffice (UDP 32337), NetBus, and ICMP flooding • IP address, port number, and MAC address filtering • TCP flags and 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 through 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, and ICQ
Wireless Access Point	
802.11 b/g/n/ac	• 3x3 2.4 and 5 GHz dual-band, concurrent wireless access point • 6 internal antennas • Wi-Fi-compliant security (WPA2-Enterprise, WPA2-PSK, WPA-Enterprise, WPA-PSK, and WEP) • Wireless multimedia quality of service (WMM-QoS) • WMM power save • WPS • Wireless bridging- Wireless Distribution System (WDS)- that allows connection to “range extender products” • RADIUS authentication (client, EAP-TLS, EAP-TTLS, EAP-PEAP, and EAP-MD5) • MBSSID (8 SSIDs with unique NAT scopes per radio) • Wi-Fi "hot spot" support (static DHCP IP scope over tunnel)
MoCA	
Versions	MoCA 1.1 and 2.0
Applications Support	
Applications	N/A
RF Downstream	
Operating frequency range	108 to 1002 MHz
Tuner frequency range	108 to 1002 MHz
Tuner	(1) frequency agile block tuner, full-band capture
Demodulation	8 demodulators, each demodulator: 64 QAM or 256 QAM

Specification	Description			
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 or ATDMA, and 128 QAM or 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			
Maximum operating level	**Modulation**	**One Channel**	**2 Channels**	**3 or 4 Channels**
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
Electrical				
Input voltage	120 VAC			
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 and USB Type 2 (2)			
RF	Female F-Type			
Output impedance	75 ohms			
Mechanical				
Dimensions (H x D x W)	10.59 x 2.17 x 10.55 in.			
Weight	2.646 lb			
Operating temperature	32 to 104˚F (0 to 40˚C)			
Operating humidity	0 to 95% RH noncondensing			
Storage temperature	-4 to 158˚F (-20 to 70˚C)			

Specification	Description
Standards and Approvals	
Designed to meet the following standards	DOCSIS 3.0, PacketCable 2.0 IEEE 802.11n WPA2, WPA, and WEP WMM, WPS
Regulatory Compliance	
Regulatory and safety approvals	As required per country where the Cisco Model DPC3941T will be used.

Ordering Information

To place an order, visit the Cisco Ordering Home Page and refer to Table 5 and Table 6.

Table 5. Ordering Information

Description	Part Number
5-42/88-1002 MHz Diplex Filter **128 MB Flash x 512MB DRAM Memory Configuration (Standard Configuration)**	
Cisco Model DPC3941TT DOCSIS 3.0 8x4 Wireless Residential Gateway. Includes: • 802.11n Wireless Access Point, dual-band concurrent 3x3 • Power cord, North America (nonpolarized) • 2600 mAh Lithium-Ion battery (optional) **North America**	DPC3941-TMC14-K9

Replacement Components

Table 6. Replacement Components

Description	Part Number
Power Cord	
Power cord, 2 conductors, NEMA 1-15 to C7, North America (polarized)	4026134
Battery	
2600 mAh Lithium-Ion battery	4033435

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Cisco Systems, Inc.
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