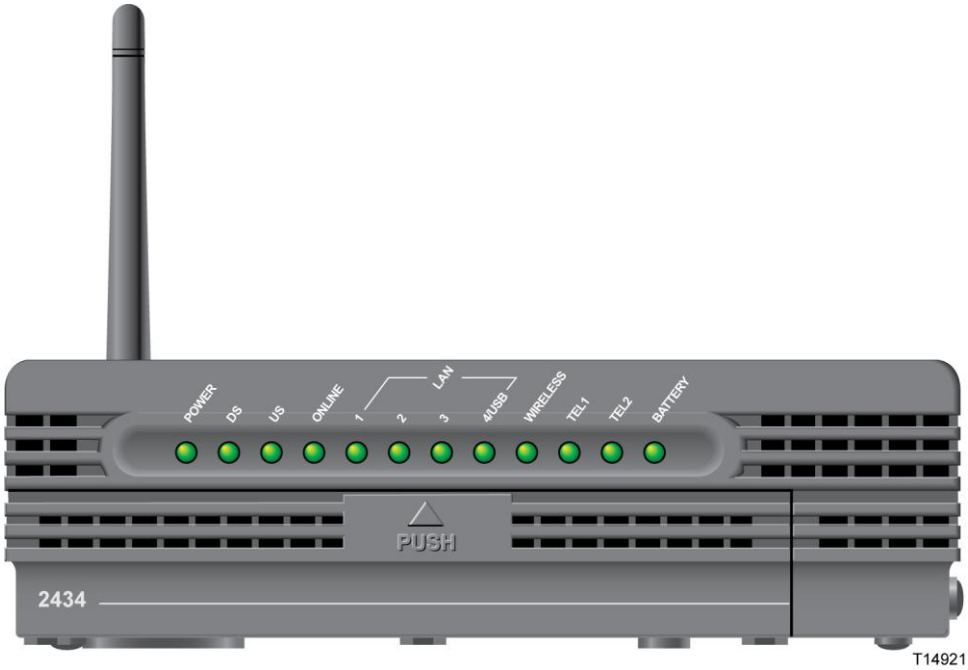
Cisco Model DPC2434 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter

The Cisco® Model DPC2434 DOCSIS 2.0 Wireless Residential Gateway with Two-Line Embedded Media Terminal Adapter (DPC2434) is a high-performance home gateway that combines a cable modem, two-line Voice over Internet Protocol (VoIP) terminal adapter, router, and wireless access point in a single device to provide a cost-effective voice and networking solution for both the home and small office.

The DPC2434 has been designed to meet PacketCable™ 1.5 and 1.0, CableHome® 1.1, and DOCSIS® 2.0 specifications. In addition, the DPC2434 is fully backward compatible for use on both DOCSIS 1.1 and DOCSIS 1.0 networks.

Designed for the active digital home or office, the DPC2434 features an integrated router along with CableHome-ready Network Address Translation (NAT), a Dynamic Host Configuration Protocol (DHCP) server, parental control, and firewall technology.

Figure 1. DPC2434 Wireless Home Gateway with Two-Line EMTA (image may vary from actual product and specification)



Features

DOCSIS

- Compliant with DOCSIS 2.0, 1.1, and 1.0 standards along with PacketCable specifications to deliver high-end performance and reliability
- Enhanced packet processing technology to maximize performance

Connections

- Four 10/100BASE-T auto-sensing/auto-MDIX Ethernet ports
- 802.11g wireless access point (WAP)
- Two RJ-11 telephony ports for connecting to in-home wiring or directly to conventional telephones or fax machines
- USB 2.0 port

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
- LED status indicators on the front-panel provide an informative and easy-to-understand display that indicates the cable modem operational status
- Rugged electronic components for long-term reliability
- Dual antenna design - one internal and one detachable external
- Optional backup battery capability

Management

- Software upgradeable by network download
- Remote manageability through Web interface, config file, or SNMP protocols
- Advanced firewall technology deters hackers and protects the home network from unauthorized access
- User-configurable Parental Control blocks access to undesirable Internet sites

Software and Documentation

- CD-ROM containing user guide and USB drivers

Figure 2. DPC2434 Front Panel - antenna not shown (image may vary from actual product and specification)

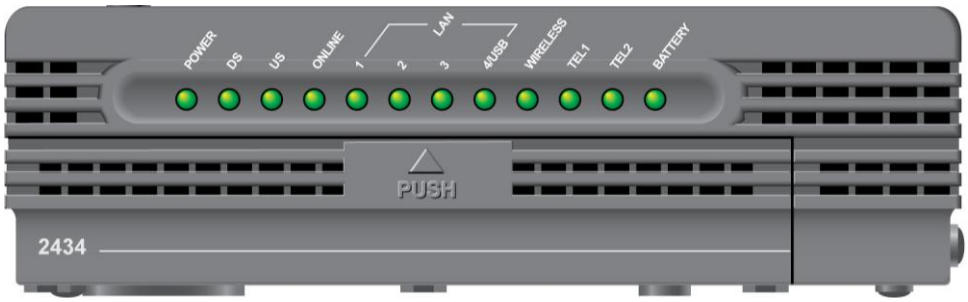
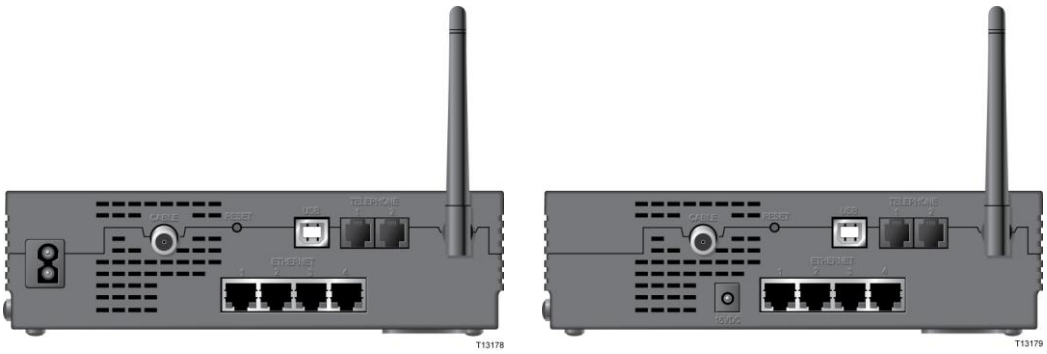


Table 1. Front Panel Features

Feature	Description
Indicators	POWER, DS, US, ONLINE, LINK (1 TO 4), USB, WIRELESS, TEL 1, TEL 2, BATTERY
Color	Black case, gray faceplate, white text, green LEDs
Branding	Model number

Figure 3. DPC2434 Back Panel (images may vary from actual product and specification)



Model with internal power supply

Model with external power supply

Table 2. Back Panel Switch and Connections

Feature	Description
POWER Connector Color: Black	Connects wireless home gateway to the AC power cord or to the AC power the AC power adapter
CABLE Connector Color: White	F-connector connects to an active cable signal from your service provider
RESET	Resets the EMTA. Pressing this switch for more than 10 seconds resets the device to factory default values and resets the EMTA.
USB Color: Blue	USB 2.0 port connects to a USB port on select devices
ETHERNET (1-4) Connector Color: Yellow	RJ-45 Ethernet port connects to the Ethernet port on your PC or your home network
TELEPHONE 1 and 2 Color: Gray	RJ-11 telephone ports connect to home telephone wiring and to conventional telephones or fax machines
ANTENNA (Internal and detachable external)	Provide 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
Audio Gain Levels	Independently configurable Tx and Rx audio gains

Specification	Value
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 860 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 5 to 55 MHz (Japan)
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	100-240 VAC (internal power supply) 12 VDC (external power supply)
Power Consumption (Modem Module)	7.5 Watts (battery backup configuration) 6 Watts(no battery backup capability)
Data Ports	Ethernet 10/100BASE-T (Auto-sensing with Auto-MDIX): RJ-45 Ethernet (4)
USB	Type 2 (1)
RF	Female “F” type

Specification	Value
Mechanical	
Dimensions (W x D x H) (approximate)	Not including “F” connector: 8.75 in. x 5.19 in. x 2.71 in. (22.2 cm x 13.2 cm x 6.9 cm) Including “F” connector and wireless antenna: 8.75 in. x 5.75 in. x 2.71 in. (22.2 cm x 14.6 cm x 6.9 cm)
Weight (approximate) No battery 8 hour 16 hour	 1.4 lbs (.56 kg) 1.7 lbs (.76 kg) 2.04 lbs (.93 kg)
Battery Type and Capacity 8 hour 16 hour	 1 cartridge, Li-Ion, 3 cells, 2200 mAh 2 cartridges, Li-Ion, 3 cells each, 2200 mAh per cartridge
Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Operating Humidity	0% to 90% RH non-condensing
Storage Temperature	-4˚ to 140˚F (-20˚ to 60˚C)
Standards and Approvals	
Designed to Comply with the Following Standards	PacketCable 1.5 and 1.0 CableHome 1.1 DOCSIS 2.0, DOCSIS 1.1, DOCSIS 1.0 RFC 3261 SIP IEEE 802.11g, WPA, WPA2, WEP, IEEE 802.11i USB 1.1
Regulatory and Safety Approvals	As required per country where the DPC2434 will be used

Ordering Information

Table 4. Ordering Information

Description	Part Number
North American Tuning Plan – NTSC	
DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • Internal 100-240 VAC / 50-60 Hz universal power supply • Power cord, North America, NEMA 1-15 to C7 • 2200 mAh battery cartridge • Ethernet and USB cables • CD-ROM containing user guide and USB driver	4013345
DPC2434C2-2200 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 120 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply • 2200 mAh battery cartridge • Ethernet and USB cables • CD-ROM containing user guide and USB driver	4015327
DPC2434 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • Internal 100-240 VAC / 50-60 Hz universal power supply • Power cord, North America • No battery provided • Ethernet and USB cables • CD-ROM containing user guide and USB driver	4028567

Description	Part Number
DPC2434 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • Internal 100-240 VAC / 50-60 Hz universal power supply • Power cord, North America • No battery provided • Ethernet and USB cables • CD-ROM containing user guide and USB drive ***North America (Customer specific configuration)***	4027663
DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • Internal 100-240 VAC / 50-60 Hz universal power supply • Power cord, Europe • 2200 mAh battery cartridge • Ethernet and USB cables • CD-ROM containing user guide and USB driver	4025715
DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • Internal 100-240 VAC / 50-60 Hz universal power supply • Power cord, North America • 2200 mAh battery cartridge • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***North America* (Customer-specific configuration)**	4027679
DPC2434C2 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 120 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply • No battery provided • Ethernet and USB cables • CD-ROM containing user guide and USB driver	4021043
DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 220 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply, Argentina • No battery capability • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***Argentina***	4028933
DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 120-240 VAC / 50-60 Hz, 15 VDC / 1 A desktop switching-regulated power supply • Power cord, Brazil • No battery capability • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***Brazil***	4028618
DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 120 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply, North America • No battery capability • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***Brazil***	4028611

Description	Part Number
DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 100-120 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply • No battery capability • Ethernet and USB cables • CD-ROM containing user guide and USB driver **North America (Customer-specific configuration)**	4021375
International Tuning Plan – PAL/NTSC	
DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 230 VAC / 50 Hz, 15 VDC / 1 A desk-top linear power supply for Europe • No battery capability • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***Europe***	4014308
DPC2434C2-2200 Wireless Home Gateway with 2-line EMTA. Includes: • 802.11g wireless access point • 230 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply • 2200 mAh battery cartridge • Ethernet and USB cables • CD-ROM containing user guide and USB driver ***Europe***	4016289

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
220 VAC / 50 Hz, 15 VDC / 1 A desktop-style linear switching power supply, Argentina	4023778
100-120 VAC / 50-60 Hz, 15 VDC /1 A wall-mount linear switching power supply North America and Japan	4015454
230-240 VAC / 50-60 Hz, 15 VDC /1 A wall-mount linear switching power supply with Euro-style connector	4015455
Power Supply - Class 2 Switching Regulated	
100-240 VAC / 50-60 Hz, 15 VDC /1 A desktop-style switching-regulated power supply	4007274
Power Cord	
Power cord, 2 conductor, NEMA 1-15P to C7P, 6 foot, North America (polarized) for internal power supply	186750
Power cord, 2 conductor, CEE7/16 to C7, 6 foot, Europe (non-polarized)	503414
Power cord, 2 conductor, CEE7/16 to C7, INMETRO, Brazil (non-polarized)	4009115
Power cord, 2 conductor, Argentina (non-polarized)	4012938
Data Cable	
Ethernet cable, 1.2 meter	740580
USB cable, 1.0 meter	740579
CD-ROM	
CD-ROM with user guides and USB driver	4001911

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