

## 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

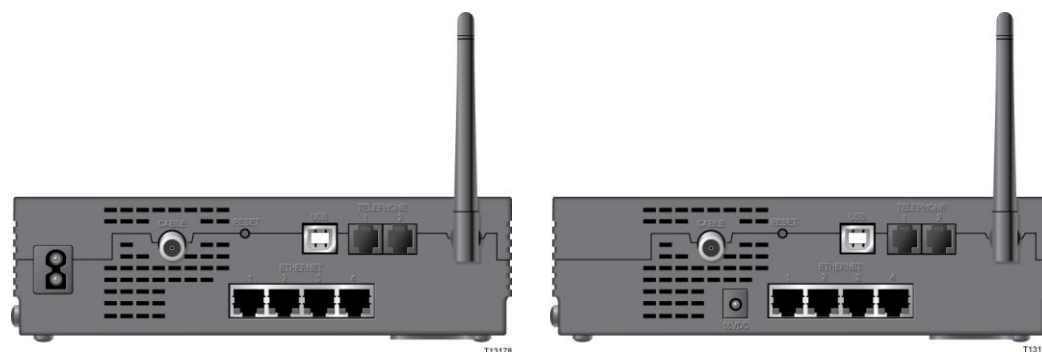
**Figure 2.** DPC2434 Front Panel - antenna not shown (image may vary from actual product and specification)



**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<br>Connector Color: Black            | Connects wireless home gateway to the AC power cord or to the AC power the AC power adapter                                     |
| CABLE<br>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<br>Color: Blue                         | USB 2.0 port connects to a USB port on select devices   |
| ETHERNET (1-4)<br>Connector Color: Yellow  | RJ-45 Ethernet port connects to the Ethernet port on your PC or your home network   |
| TELEPHONE 1 and 2<br>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   |
|-----------------------------------|---|
| <b>Voice Specifications</b>       |   |
| Call Signaling Protocol           | <p>MGCP/NCS including configurable IPsec encryption</p> <p>Configurable to support RFC2833 event signaling</p> <p>Supports Bell103 detection: Improves alarm panel and Point of Sale (POS) interoperability by optimizing DSP for Bell103 protocol</p> <p>Software upgradeable to support Session Initiation Protocol (SIP)</p> <p>The following SIP standards are supported</p> <ul style="list-style-type: none"> <li>• RFC 2617 HTTP Authentication: Basic and Digest Access Authentication</li> <li>• RFC 2976 The SIP INFO Method</li> <li>• RFC 3261 SIP: Session Initiation Protocol</li> <li>• RFC 3262 Reliability of Provisional Responses in Session Initiation Protocol (SIP)</li> <li>• RFC 3263 Session Initiation Protocol (SIP): Locating SIP Servers</li> <li>• RFC 3264 An Offer/Answer Model with Session Description Protocol (SDP)</li> <li>• RFC 3265 Session Initiation Protocol (SIP)-Specific Event Notification</li> <li>• RFC 3420 Internet Media Type message/sipfrag</li> <li>• RFC 3428 Session Initiation Protocol (SIP) Extension for Instant Messaging</li> <li>• RFC 3515 The Session Initiation Protocol (SIP) Refer Method</li> <li>• RFC 3842 A Message Summary and Message Waiting Indication Event</li> <li>• Package for the Session Initiation Protocol (SIP)</li> <li>• RFC 3892 The Session Initiation Protocol (SIP) Referred-By Mechanism</li> <li>• RFC 3903 Session Initiation Protocol (SIP) Extension for Event State Publication</li> <li>• Draft-ietf-mmusic-sdp-new-24 SDP: Session Description Protocol (Replacement for RFC 2327)</li> <li>• Draft-ietf-sipping-cc-transfer-01 Session Initiation Protocol Call Control – Transfer</li> <li>• Draft-ietf-sip-session-timer-08 The SIP Session Timer</li> <li>• Draft-ietf-sipping-realtimefax-01 SIP Support for Real-time Fax: Call Flow Examples And Best Current Practices</li> <li>• Draft-ietf-mmusic-sdescription-09 Session Description Protocol Security</li> <li>• Descriptions for Media Streams</li> <li>• Draft-ietf-sip-replaces-02 The Session Initiation Protocol (SIP) "Replaces" Header</li> </ul> |
| Provisioning Modes                | <p>Full PacketCable secure provisioning</p> <p>Kerberos support with NVRAM ticket caching</p> <p>Configurable PacketCable-lite (MTA config file provisioning without security)</p> <p>Configurable for non-PacketCable (MTA configuration using DOCSIS config file)</p>   |
| CODECs                            | <p>Standard: G.711, T.38 Fax Relay, iLBC and BV16</p> <p>Software upgradeable to support other CODEC combinations including:</p> <ul style="list-style-type: none"> <li>• G.711 and G.728</li> <li>• G.711 and G.729</li> <li>• G.711 and G.729 a/e</li> <li>• G.711 and BV16 and BV32 (High fidelity – near CD quality)</li> <li>• G.711 and G.723</li> <li>• G.711 and G.726</li> </ul>   |
| 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                      | <ul style="list-style-type: none"> <li>• Full PacketCable secure DQOS with GateID including UGS and UGS/AD</li> <li>• DQOS Lite support including UGS and UGS/AD</li> </ul>  |
| Layer 3 Quality of Service                      | Configurable DiffServe/TOS support for Signaling, RTP, and RTCP flows  |
| Payload Header Suppression (PHS)                | <ul style="list-style-type: none"> <li>• Supported for RTP and RTCP packet flows to reduce per-call network bandwidth</li> <li>• Advanced support for Dynamic Payload Header Suppression using Propane Technology</li> </ul>   |
| 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                            | <ul style="list-style-type: none"> <li>• Caller ID</li> <li>• Call Waiting with Caller ID</li> <li>• Cancel Call Waiting</li> <li>• Call Conferencing (3-way calls)</li> <li>• Configurable hook flash support</li> <li>• Distinctive Ringing (Configurable for up to 11 ring patterns per phone line)</li> <li>• Ring Splash</li> <li>• Stutter Dial Tone</li> <li>• Off hook warning tone</li> <li>• Open Switch Interval support to enhance answering machine compatibility</li> <li>• Configurable star codes</li> <li>• Euro/US hook-flash type</li> <li>• Call transfer</li> <li>• Message Waiting Indicator</li> <li>• Warm Line</li> <li>• Call Forwarding Unconditional</li> <li>• Call Forwarding on Busy</li> <li>• Call Forwarding No Answer</li> <li>• Call Return</li> <li>• Redial Call</li> <li>• Automatic redial</li> </ul> <p>Other call features available with compliant CMS or gateway</p> |
| 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   |
| <b>RF Downstream</b>                            |  |
| Frequency Range                                 | 88 to 860 MHz  |
| Demodulation                                    | 64 or 256 QAM  |
| Maximum Data Rate                               | 30 Mbps for 64 QAM<br>43 Mbps for 256 QAM  |
| Bandwidth                                       | 6 MHz  |
| Operating Level Range                           | -15 to +15 dBmV  |
| Input Impedance                                 | 75 ohms  |

| Specification                                       | Value   |
|---|---|
| <b>RF Upstream</b>                                  |   |
| Frequency Range                                     | 5 to 42 MHz<br>5 to 55 MHz (Japan)  |
| Modulation  | QPSK<br>8 QAM<br>16 QAM<br>64 QAM<br>128 QAM TCM  |
| Maximum Data Rate                                   | 5.12 Mbps for QPSK<br>10.2 Mbps for 16 QAM<br>30.0 Mbps for A-TDMA and SCDMA  |
| Bandwidth   | 200 kHz to 6.4 MHz  |
| Operating Level Range<br>(all values +/- 0.5 dBμV ) |   |
| TDMA  | QPSK +8 to +58 dBmV<br>8QAM +8 to +55 dBmV<br>16QAM +8 to +55 dBmV<br>32QAM +8 to +54 dBmV<br>64QAM +8 to +54 dBmV                          |
| SCDMA   | QPSK +8 to +53 dBmV<br>8QAM +8 to +53 dBmV<br>16QAM +8 to +53 dBmV<br>32QAM +8 to +53 dBmV<br>64QAM +8 to +53 dBmV<br>128QAM +8 to +53 dBmV |
| Output Impedance                                    | 75 ohms   |
| <b>Wireless Access Point</b>                        |   |
| Frequency Range                                     | 2.412~2.462 GHz, 11 Channels (North America; FCC)<br>2.412~2.472 GHz, 13 Channels (Europe; CE/ETSI)   |
| Modulation  | DSSS<br>OFDM<br>CCK<br>DQPSK<br>DBPSK   |
| Data Rate:<br>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<br>One (1) internal  |
| <b>Other</b>  |   |
| Input Voltage                                       | 100-240 VAC (internal power supply)<br>12 VDC (external power supply)   |
| Power Consumption<br>(Modem Module)                 | 7.5 Watts (battery backup configuration)<br>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   |
|---|---|
| <b>Mechanical</b>                               |   |
| Dimensions (W x D x H)<br>(approximate)         | Not including "F" connector:<br>8.75 in. x 5.19 in. x 2.71 in. (22.2 cm x 13.2 cm x 6.9 cm)<br>Including "F" connector and wireless antenna:<br>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 1.4 lbs (.56 kg)<br>8 hour 1.7 lbs (.76 kg)<br>16 hour 2.04 lbs (.93 kg)   |
| Battery Type and Capacity                       | 8 hour 1 cartridge, Li-Ion, 3 cells, 2200 mAh<br>16 hour 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)   |
| <b>Standards and Approvals</b>                  |   |
| Designed to Comply with the Following Standards | PacketCable 1.5 and 1.0<br>CableHome 1.1<br>DOCSIS 2.0, DOCSIS 1.1, DOCSIS 1.0<br>RFC 3261 SIP<br>IEEE 802.11g,<br>WPA, WPA2, WEP, IEEE 802.11i<br>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 |
|--|-------------|
| <b>North American Tuning Plan – NTSC</b>   |             |
| DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>802.11g wireless access point</li> <li>Internal 100-240 VAC / 50-60 Hz universal power supply</li> <li>Power cord, North America, NEMA 1-15 to C7</li> <li>2200 mAh battery cartridge</li> <li>Ethernet and USB cables</li> <li>CD-ROM containing user guide and USB driver</li> </ul> | 4013345     |
| DPC2434C2-2200 Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>802.11g wireless access point</li> <li>120 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply</li> <li>2200 mAh battery cartridge</li> <li>Ethernet and USB cables</li> <li>CD-ROM containing user guide and USB driver</li> </ul>                                | 4015327     |
| DPC2434 Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>802.11g wireless access point</li> <li>Internal 100-240 VAC / 50-60 Hz universal power supply</li> <li>Power cord, North America</li> <li>No battery provided</li> <li>Ethernet and USB cables</li> <li>CD-ROM containing user guide and USB driver</li> </ul>                              | 4028567     |

| Description  | Part Number |
|--|-------------|
| <p>DPC2434 Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• Internal 100-240 VAC / 50-60 Hz universal power supply</li> <li>• Power cord, North America</li> <li>• No battery provided</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB drive</li> </ul> <p><b>North America (Customer specific configuration)</b></p>              | 4027663     |
| <p>DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• Internal 100-240 VAC / 50-60 Hz universal power supply</li> <li>• Power cord, Europe</li> <li>• 2200 mAh battery cartridge</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul>  | 4025715     |
| <p>DPC2434-2200 Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• Internal 100-240 VAC / 50-60 Hz universal power supply</li> <li>• Power cord, North America</li> <li>• 2200 mAh battery cartridge</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <p><b>North America (Customer-specific configuration)</b></p> | 4027679     |
| <p>DPC2434C2 Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 120 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply</li> <li>• No battery provided</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul>   | 4021043     |
| <p>DPC2434X Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 220 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply, Argentina</li> <li>• No battery capability</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <p><b>Argentina</b></p>  | 4028933     |
| <p>DPC2434X Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 120-240 VAC / 50-60 Hz, 15 VDC / 1 A desktop switching-regulated power supply</li> <li>• Power cord, Brazil</li> <li>• No battery capability</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <p><b>Brazil</b></p>                                   | 4028618     |
| <p>DPC2434X Wireless Home Gateway with 2-line EMTA. Includes:</p> <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 120 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply, North America</li> <li>• No battery capability</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <p><b>Brazil</b></p>   | 4028611     |



| Description  | Part Number |
|--|-------------|
| DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 100-120 VAC / 50-60 Hz, 15 VDC / 1 A desktop linear switching power supply</li> <li>• No battery capability</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <b>North America (Customer-specific configuration)</b> | 4021375     |
| <b>International Tuning Plan – PAL/NTSC</b>  |             |
| DPC2434X Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 230 VAC / 50 Hz, 15 VDC / 1 A desk-top linear power supply for Europe</li> <li>• No battery capability</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <b>Europe</b>   | 4014308     |
| DPC2434C2-2200 Wireless Home Gateway with 2-line EMTA. Includes: <ul style="list-style-type: none"> <li>• 802.11g wireless access point</li> <li>• 230 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply</li> <li>• 2200 mAh battery cartridge</li> <li>• Ethernet and USB cables</li> <li>• CD-ROM containing user guide and USB driver</li> </ul> <b>Europe</b>                                | 4016289     |

## Replacement Components

**Table 5.** Replacement Components

| Description   | Part Number |
|---|-------------|
| <b>Power Supply - Class 2 Linear Switching</b>  |             |
| 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     |
| <b>Power Supply - Class 2 Switching Regulated</b>   |             |
| 100-240 VAC / 50-60 Hz, 15 VDC / 1 A desktop-style switching-regulated power supply                     | 4007274     |
| <b>Power Cord</b>   |             |
| 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     |
| <b>Data Cable</b>   |             |
| Ethernet cable, 1.2 meter   | 740580      |
| USB cable, 1.0 meter  | 740579      |
| <b>CD-ROM</b>   |             |
| CD-ROM with user guides and USB driver  | 4001911     |



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800 722-2009 or 678 277-1120  
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