

## Cisco Model EPC2320 EuroDOCSIS 2.0 Wireless Residential Gateway

The Cisco® Model EPC2320 EuroDOCSIS® 2.0 Wireless Residential Gateway (EPC2320) is a high-performance home gateway that combines a cable modem, router and 802.11n wireless access point in a single device providing a cost-effective networking solution for both the home and small office.

The EPC2320 is designed to meet EuroDOCSIS 2.0 specifications as well as offering backward compatibility for operation in EuroDOCSIS 1.1 and 1.0 networks.

**Figure 1.** Cisco Model EPC2320 EuroDOCSIS 2.0 Wireless Residential Gateway (image may vary from actual product and specification)



Designed for the active digital home or office, the EPC2320 integrated router features a Dynamic Host Configuration Protocol (DHCP) server, Network Address and Port Translation (NAT/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 within the home network by attaching multiple wired and wireless devices in the user's home or office to the wireless residential gateway.

Cisco Connect® software makes home wireless simple and accessible for everyone by empowering consumers to easily set up and manage all of their wireless devices anywhere in their homes. The simple user interface was designed to transform how families use the Internet in their homes so they can enjoy the freedom of wireless access without the traditional frustration and complexity of setting up a home network.

Consumer-friendly features such as wireless ON/OFF button, 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

### EuroDOCSIS

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

### Connections

- One 10/100 BASE-T Ethernet port to provide wired connectivity
- High-performance broadband Internet connectivity to energize your online experience
- 802.11n Draft-Compliant, Single Band 2.4 GHz Single Stream Wireless Access Point (WAP) with four Service Set Identifiers (SSIDs)
- WPS, including a push-button switch to activate WPS for simplified and secure wireless setup
- Wireless On/Off button (optional) to activate or turn off the wireless feature

### 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
- LEDs provide a user-friendly method to check real-time 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
- Allows automatic software upgrades by your service provider
- Cisco Connect – wireless network setup and management software (optional)

### Software and Documentation

- CD-ROM containing user guide and Cisco Connect (optional)

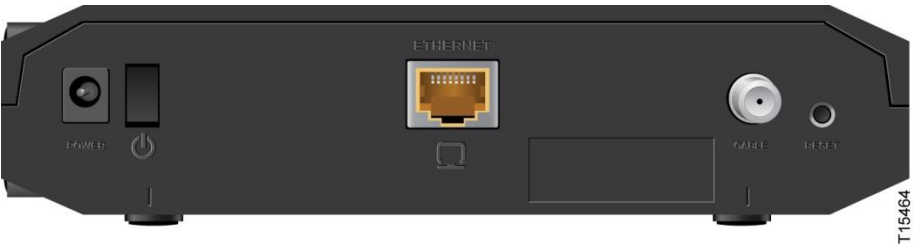
**Figure 2.** Cisco Model EPC2320 Front Panel (image may vary from actual product and specification)



**Table 1.** Front Panel Features

Feature	Description
Indicators and Controls	Power, DS, US, Online, Link, Wireless ON/OFF (option), Wireless ON/OFF button (option), Wireless Setup, Wireless Setup button
Color	Black housing, black lens, silver text
Branding	Cisco logo and model number

**Figure 3.** Cisco Model EPC2320 Back Panel (image may vary from actual product and specification)



**Table 2.** Back Panel Features

Feature	Description
POWER Connector Color: Black	Connects the wireless home gateway to the DC output of the AC power adapter
POWER SWITCH	Turns power ON and OFF to the device
ETHERNET Connector Color: Yellow	One RJ-45 Ethernet port connects to the Ethernet port on your PC or home network
CABLE Connector Color: White	F-connector connects to an active cable signal from the service provider
RESET	Resets the cable modem
ANTENNA (internal, 2)	Two internal antennas provide a communication connection for the built-in 802.11n wireless access point

## Product Specifications

**Table 3.** Product Specifications

Specification	Value
<b>Residential Gateway</b>	
Gateway Configuration Management	<ul style="list-style-type: none"> <li>• TR-069 and subset of TR-098 data model (optional)</li> <li>• Extensive custom SNMP MIB for the Gateway</li> <li>• Provisioning with XML and/or with SNMP</li> <li>• HNAP server 1.2+</li> <li>• SNMP v1/v2/v3</li> </ul>
ICSA (Independent Computer Security Association) Firewall Compliant	<ul style="list-style-type: none"> <li>• IP Address, Port Number and MAC address filtering</li> <li>• TCP flags, ICMP types, fragmentation</li> <li>• Connection Creation and Teardown</li> <li>• Timestamps</li> <li>• Payload Modification</li> <li>• Web filtering: Pop-ups, Cookies, Java &amp; ActiveX scripts</li> <li>• Intrusion detection/prevention: WAN ping blocking, IP fragment blocking, Port scan detection, TCP Port Probe, UDP Port Probe</li> <li>• 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</li> </ul>
Parental Controls	<ul style="list-style-type: none"> <li>• Content Filtering with Per-User Policies</li> <li>• Domain Block/Deny</li> <li>• Keyword Blocking</li> <li>• Java X Applet Blocking</li> <li>• Per-User MAC Address Filtering</li> </ul>
Advanced Event Logging	<ul style="list-style-type: none"> <li>• Filtering Activity</li> <li>• Session Tracking</li> <li>• User Notification via E-mail Alert and SNMP Traps</li> </ul>
DOS attack protection	<ul style="list-style-type: none"> <li>• Replay Attack Protection</li> <li>• Malformed Packet Protection</li> <li>• SYN Flooding</li> <li>• TCP Hijacking</li> <li>• LAND Attack</li> <li>• WinNuke/OOBNuke (Invalid TCP urgent pointer)</li> <li>• Christmas Tree</li> <li>• SYN/FIN (jackal)</li> <li>• BackOffice (UDP 32337)</li> <li>• NetBus</li> <li>• Smurf</li> <li>• Tear Drop</li> <li>• ICMP Flooding</li> <li>• Ping of Death</li> <li>• TCP Port Probe</li> <li>• UDP Port Probe</li> <li>• New Tear</li> <li>• Nestea</li> <li>• SYNdrop</li> <li>• Jolt</li> <li>• Boink</li> <li>• Bonk</li> </ul>

Specification	Value
<b>Residential Gateway (continued)</b>	
Routing Features	<ul style="list-style-type: none"> <li>• IPv4 and IPv6 dual stack</li> <li>• NAT, NAT, and Pass-through (layer 2) Operational Modes</li> <li>• RIP v1/v2 with MD5</li> <li>• Static Routes</li> <li>• Port Forwarding</li> <li>• Port Triggering</li> <li>• UPnP IGD 1.0</li> <li>• RFC3489 (STUN) "Port-restricted cone NAT" behavior</li> <li>• IPSec Pass-through</li> <li>• L2TP Pass-through</li> <li>• PPTP Pass-through</li> </ul>
ALG Support	<ul style="list-style-type: none"> <li>• FTP</li> <li>• Real Audio</li> <li>• H.323</li> <li>• ICQ</li> <li>• TFTP</li> <li>• mIRC</li> <li>• PIRCH</li> <li>• MS NetMeeting</li> <li>• Net2phone</li> <li>• AOL and MSN Messenger</li> <li>• Yahoo Messenger</li> <li>• Go2Call</li> <li>• Hotline Server</li> <li>• Visual IRC</li> <li>• CuSeeme</li> <li>• AT&amp;T Instant Messenger Anywhere</li> <li>• Active Worlds</li> <li>• Buddy Phone Calista IP Phone</li> <li>• Delta Three PC to Phone</li> <li>• Dial Pad</li> <li>• Dwyco Video Conferencing</li> <li>• OrbitRC</li> <li>• Xircon</li> <li>• Netscape Chat</li> </ul>
<b>Wireless Access Point</b>	
802.11b/g/n	<ul style="list-style-type: none"> <li>• 2.4 GHz Single Band, Single Stream 1x1 wireless access point</li> <li>• Two (2) internal antennas</li> <li>• Wi-Fi Compliant (WPA2-Enterprise, WPA2-PSK, WPA-Enterprise, WPA-PSK, WEP)</li> <li>• WMM-QoS (Wireless Multi Media - Quality of Service), WMM Power Save</li> <li>• WPS</li> <li>• Wireless ON/OFF button (option)</li> <li>• Wireless Bridging - WDS (Wireless Distribution System) – allows connection to "Range Extender Products"</li> <li>• RADIUS Authentication (Client, EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-MD5)</li> <li>• MBSSID (4 SSIDs with unique NAT scopes)</li> <li>• Wi-Fi "Hot Spot" support (Static DHCP IP Scope over tunnel)</li> </ul>

Specification	Value		
RF Downstream			
Operating Frequency Range	88 to 1002 MHz, 108 to 1002 MHz		
Tuner Frequency Range	88 to 1002 MHz, 108 to 1002 MHz		
Demodulation	64 QAM or 256 QAM		
Maximum Data Rate	1 downstream 6 MHz channel, 42.88 Mbps for 256 QAM and 30.34 Mbps for 64 QAM		
Bandwidth	6 or 8 MHz		
Operating Level Range	-15 to +15 dBmV		
Input Impedance	75 ohms		
RF Upstream			
Operating Frequency Range	5 to 42 MHz, 5 to 85 MHz		
Transmitter Frequency Range	5 to 42 MHz, 5 to 85 MHz		
Upstream Transmission	1 upstream channel		
Modulation	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM / ATDMA, 128 QAM / SCDMA		
Maximum Data Rate per channel	<u>Modulation</u>	<u>Channel Bandwidth (MHz)</u>	<u>Raw Data Rate (Mbps)</u>
	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	<u>Modulation</u>	<u>Power</u>	
		TDMA	
		QPSK	+8 to +58 dBmV
		8 QAM	+8 to +55 dBmV
		16 QAM	+8 to +55 dBmV
		32 QAM	+8 to +54 dBmV
	64 QAM	+8 to +54 dBmV	
	SCDMA	QPSK	+8 to +53 dBmV
		8 QAM	+8 to +53 dBmV
		16 QAM	+8 to +53 dBmV
		32 QAM	+8 to +53 dBmV
		64 QAM	+8 to +53 dBmV
128 QAM		+8 to +53 dBmV	
Electrical			
Input Voltage	12 VDC		
Power Consumption (DC, in modem module)	6.9 Watts		
Data Ports	Auto-negotiate with Auto-MDIX RJ-45 Ethernet (1)		
RF	Female F-Type		
Output Impedance	75 ohms		

Specification	Value
<b>Mechanical</b>	
Dimensions (W x D x H)	With F-Type connector: 5.93 in. x 5.42 in. x 1.38 in. (15.05 cm x 13.77 cm x 3.5 cm) Without F-Type connector: 5.93 in. x 4.8 in. x 1.38 in. (15.05 cm x 12.2 cm x 3.5 cm)
Weight	8.46 oz. (0.24 kg)
Operating Temperature	32° to 104°F (-0° to 40°C)
Operating Humidity	0 to 95% RH non-condensing
Storage Temperature	-4° to 158°F (-20° to 70°C)
<b>Standards and Approvals</b>	
Designed to meet these standards	EuroDOCSIS 2.0, 1.1, 1.0 IEEE 802.11b/g/draft n WEP, WPA, and WPA2 WMM, WPS
<b>Regulatory Compliance</b>	
Regulatory and Safety Approvals	As required per country where the EPC2320 will be used

## Ordering Information

**Table 4.** Ordering Information

Description	Part Number
EPC2320 EuroDOCSIS 2.0 Wireless Residential Gateway <ul style="list-style-type: none"> <li>802.11n 1x1 Wireless Access Point</li> <li>220-230 VAC/50-60 Hz, 12 VDC/1 A wall-mount style linear-switching power supply, Thailand</li> <li>Ethernet cable, 1.2 meters</li> </ul> <b>Thailand (Customer specific configuration)</b>	EPC2320-4043958-K9

## Replacement Components

**Table 5.** Replacement Components

Description	Part Number
<b>Power Supply</b>	
<i>Class 2 Linear Switching</i>	
220-230 VAC/50-60 Hz, 12 VDC/1 A wall-mount style linear-switching power supply, Thailand	PSU-4043719
<b>Power Cord</b>	
Power cord, 2 conductors, North America (polarized)	4026134
Power cord, 2 conductors, Thailand (non-polarized)	1011595
<b>Data Cable</b>	
Ethernet cable, 1.2 meters	740580



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