Cisco Model EPC3208G EuroDOCSIS 3.0 8x4 Cable Modem with Embedded Digital Voice Adapter

The Cisco® Model EPC3208G EuroDOCSIS™ 3.0 8x4 Cable Modem (EPC 3208G) is a high-speed cable modem with an embedded digital voice adapter and router for use in the home and small office. The EPC3208G 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 440 Mbps and upstream data rates in excess of 120 Mbps. That's up to eight times faster downloads than conventional single-channel EuroDOCSIS 2.0 cable modems.

The EPC3208G is designed to meet EuroPacketCable™ 1.5 and EuroDOCSIS 3.0 specifications, as well as offering backward compatibility for operation in EuroPacketCable 1.0 and EuroDOCSIS 2.0, 1.1, and 1.0 networks.

Figure 1. EPC3208G EuroDOCSIS 3.0 8x4 Cable Modem with Embedded Digital Voice Adapter (image may vary from actual product and specification)

The EPC3208G 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 in the home or small office network by attaching multiple wired devices to the cable modem.

Features

EuroDOCSIS

- Eight (8) bonded downstream channels with data rates in excess of 440 Mbps
- Four (4) bonded upstream channels with data rates in excess of 120 Mbps
- Designed to meet EuroDOCSIS 3.0 specifications as well as backward compatibility with existing EuroDOCSIS 2.0, 1.1 and 1.0 networks
- EuroDOCSIS compliant support for IPv6/IPv4
- Expanded tuning range, 108-1002 MHz

Connections

- One (1) 10/100/1000BASE-T Ethernet port to provide wired connectivity
- Two 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, lie flat on the desktop or shelf, or mount easily on a wall
- Dual color LED status indicators on the front-panel provide 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

- Remote manageability using SNMP V1/V2 and V3
- User-configurable Parental Control blocks access to undesirable Internet sites
- Advanced firewall technology deters hackers and protects the home network from unauthorized access
- Software allows automatic software upgrades by your service provider

Software and Documentation

- CD-ROM containing user guide

Figure 2. Cisco Model EPC3208G Front Panel (image may vary from actual product and specification)

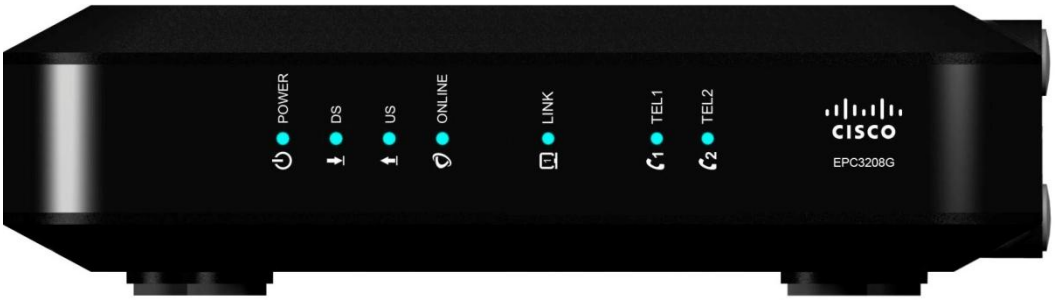

Table 1. Front Panel Features

Feature	Description
Indicators	POWER, DS, US, ONLINE, LINK, TEL1, TEL2
Color	Black, black lens, silver text, green/amber LEDs
Branding	Cisco logo and model number

Figure 3. Cisco Model EPC3208G Back Panel (image may vary from actual product and specification)

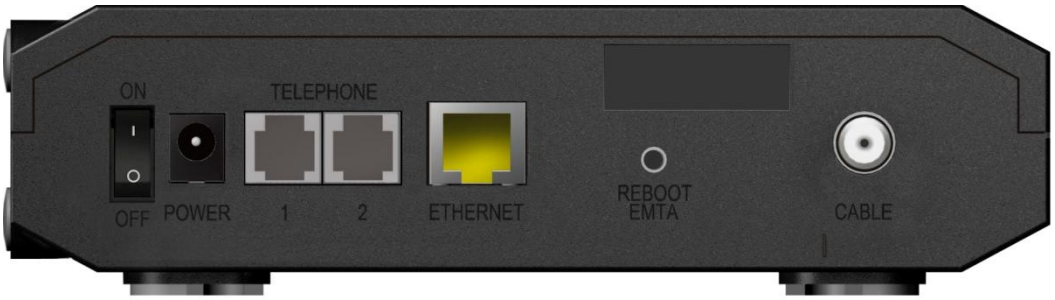

Table 2. Back Panel Features

Feature	Description
Power Switch	Turns power on and off to the device (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
TELEPHONE 1 and 2 Color: Gray	RJ-11 telephone ports connect to home telephone wiring and to conventional telephones or fax machines
ETHERNET Connector Color: Yellow	RJ-45 Ethernet port connects to the Ethernet port on your PC or your home network
REBOOT EMTA	Power cycles the modem
CABLE Connector Color: White	F-connector connects to an active cable signal from your service provider

Product Specifications

Table 3. Product Specifications

Specification	Value
Voice	
Call Signaling Protocol	• MGCP/NCS including configurable IPsec encryption • Configurable to support RFC 2833 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)

Specification	Value
Voice	
	• The following SIP standards are supported: ◦ RFC 2617 HTTP Authentication: Basic and Digest Access Authentication ◦ RFC 2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals ◦ RFC 2976 SIP: INFO Method ◦ RFC 3261 SIP: Session Initiation Protocol ◦ RFC 3262 Reliability of Provisional Responses in SIP ◦ RFC 3263 SIP: Offer / Answer Model with the Session Description Protocol (SDP) ◦ RFC 3264 SIP: Locating SIP Servers ◦ RFC 3265 SIP: Specific Event Notification ◦ RFC 3420 Internet Media Type message/sipfrag ◦ RFC 3428 SIP: Instant Messaging ◦ RFC 3489 STUN - Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NATs) ◦ RFC 3515 SIP: Refer Method ◦ RFC 3842 A Message Summary and Message Waiting Indication Event Package for the SIP ◦ RFC 3892 SIP: Referred-By Mechanism ◦ RFC 3903 SIP: Extension for Event State Publication ◦ Draft-ietf-mmusic-sdescription-09 Session Description Protocol Security Descriptions for Media Streams ◦ Draft-ietf-mmusic-sdp-new-24 SDP: Session Description Protocol Replacement for RFC 2327 ◦ Draft-ietf-sip-replaces-02 The SIP "Replaces" Header ◦ Draft-ietf-sip-session-timer-08 The SIP Session Timer ◦ Draft-ietf-sipping-cc-transfer-01 SIP Call Control – Transfer ◦ Draft-ietf-sipping-realtimefax-01 SIP Support for Real-time Fax: Call Flow Examples and Best Current Practices ◦ Draft-johnston-sipping-rtcp-summary-07 SIP Service Quality Reporting Event ◦ Draft-rosenberg-sipping-acr-code-00 Rejecting Anonymous Requests in the SIP
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	• Basic, Secure, Hybrid provisioning • Full EuroPacketCable secure provisioning • Kerberos support with NVRAM ticket caching • Configurable EuroPacketCable-lite (MTA config file provisioning without security) • Configurable for non-EuroPacketCable (MTA configuration using EuroDOCSIS config file)
Voice CODEC support	Negotiate CODEC to use based on ordered list
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
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 (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

Specification	Value
Voice	
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 voice activated detection (VAD)
Jitter Buffer Support	Adaptive dynamically controlled
Latency Control	Configurable min / max jitter buffer size
Audio Gain Levels	Independently configurable transmit and receive audio gains
Silence Suppression	Configurable VAD with comfort noise generation
Packet Loss Concealment	ANSI T1.521-1999
Call Connection Quality Monitoring	RTCP, RFC 1889, RFC 1890, SNMP MIB for last call quality statistics
Dialing Modes	DTMF and configurable pulse dial support
DTMF Relay	RFC 2833 including fast (40mS) DTMF Relay for alarm system signaling compatibility
Layer 2 Quality of Service	• Full EuroPacketCable 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, Telnet with configurable user ID and password, internal log, and external Syslog support
Echo Cancellation	• G.168 with extended echo tail support • 32 mS max tail length
VAD	Voice activity detection
CNG	Comfort noise generation
Voice band data	Machine tone detection used to auto switch to data optimized CODEC configuration
T.38 Fax	Supports V.29 and V.17 Modem
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

Specification	Value
Voice	
Networking (non-call) Services	• Known Good Proxy • Proxy Failover • Registration Control • UDP, TCP • TLS • DNS • DQoS-lite • STUN • Static NAT • NAT Keep Alive
SIP Header Control	• User-Agent Header Control • Server Header Control • Accept Language Header Control • Proxy Require Header Control • FQDN in URI Control • To-tag Matching Control • Escape Star Character in URI Field
Administrative Features	• Call Data Record • Call Statistics Agent • Debug Console Logging • Debug Logger
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 (0.4mm) on each phone line. Supports operation with typical in-home telephone wiring
Country-Specific Telephone Parameters Supported	Australia, United States, Japan, United Kingdom, Germany, France, Belgium, Netherlands, Finland, Italy, Switzerland, Sweden, Denmark, Brazil, Poland, Czech, Hungary, Romania, ETSI 101 909-18
IPV6	dual IPV4/IPV6 CM and EMTA DS-Lite
Residential Gateway	
Gateway Configuration Management	• Extensive custom SNMP MIB for the Gateway • Provisioning with XML and/or with SNMP • DS-lite mode only
ICSA (Independent Computer Security Association) Firewall Compliant	• Web filtering: Pop-ups, Cookies, Java & ActiveX scripts • 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
Routing Features	• NAT: Operation mode - AFTR
RF Downstream	
Operating Frequency Range	108 to 1002 MHz
Tuner Frequency Range	108 to 1002 MHz
Tuner	(1) Frequency agile block tuners, 96 MHz bandpass each
Demodulation	8 demodulators, 64 QAM or 256 QAM

Specification	Value
RF Downstream	
Maximum Data Rate	8 downstream channels, each 8 MHz channel: • 55.62 Mbps for 256 QAM and 41.71 Mbps for 64 QAM
Bandwidth	8 or 6 MHz
Operating Level Range	+43 to +73 dBµV for 64 QAM +47 to +77 dBµV for 256 QAM
Input Impedance	75 ohms
RF Upstream	
Operating Frequency Range	5 to 65 MHz
Transmitter Frequency Range	5 to 65 MHz
Upstream Transmission	4 upstream channels
Modulation	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM at ATDMA mode QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM, 128 QAM at SCDMA mode
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 +121 dBµV +118 dBµV +115 dBµV 8 QAM +118 dBµV +115 dBµV +112 dBµV 16 QAM +118 dBµV +115 dBµV +112 dBµV 32 QAM +117 dBµV +114 dBµV +111 dBµV 64 QAM +117 dBµV +114 dBµV +111 dBµV SCDMA QPSK +116 dBµV +113 dBµV +113 dBµV 8 QAM +116 dBµV +113 dBµV +113 dBµV 16 QAM +116 dBµV +113 dBµV +113 dBµV 32 QAM +116 dBµV +113 dBµV +113 dBµV 64 QAM +116 dBµV +113 dBµV +113 dBµV 128 QAM +116 dBµV +113 dBµV +113 dBµV
Electrical	
Input Voltage	15 VDC
Power Consumption (modem module)	~ 5.8 Watts
Data Ports	One (1) Ethernet 10/100/1000 BASE-T RJ-45 port(Auto-sensing with Auto-MDIX)
RF	Female F-Type
Output Impedance	75 ohms
Mechanical	
Dimensions (W x D x H) (Approximate)	Not including "F" connector: 6.99 in. x 6.15 in. x 1.93 in. (17.75 cm x 15.623 cm x 4.9 cm)
Weight (Approximate)	0.34 kg (11.99 oz)

Specification	Value
Mechanical	
Operating Temperature	-0˚ to 40˚C (32˚ to 104˚F)
Operating Humidity	0 to 90% RH non-condensing
Storage Temperature	-20˚ to 60˚C (-4˚ to 140˚F)
Standards and Approvals	
Designed to meet with the following standards	EuroDOCSIS 3.0, 2.0, 1.1, 1.0 EuroPacketCable 1.5, 1.0
Regulatory Compliance	
Regulatory and Safety Approvals	As required per country where the EPC3208G will be used

Ordering Information

Table 4. Ordering Information

Description	Part Number
5-65/88-1002 MHz Diplex Filter **32 MB Flash x 128 MB DRAM Memory Configuration**	
EPC3208G EuroDOCSIS 3.0 8x4 Cable Modem with Embedded Digital Voice Adapter. Includes: • 230 VAC / 50-60 Hz, 15 VDC / 1.5 A wall-mount linear-switching power supply, Europe • Ethernet cable • CD-ROM containing user guide ***Europe***	EPC3208-4042538-K9

Replacement Components

Table 5. Replacement Components

Description	Part Number
Power Supply	
Class 2 Linear Switching	
230 VAC / 50-60 Hz, 15 VDC / 1 A wall-mount linear switching power supply, Europe	4015455
230 VAC / 50-60 Hz, 15 VDC / 1.5 A wall-mount linear switching power supply, UK	4018795
Data Cable	
Ethernet, 1.2 meters	740580
CD-ROM	
CD-ROM with user guides	4043615

Cisco Systems, Inc.
800 722-2009 or 678 277-1120
www.cisco.com

Part Number OL-26958-01
March 2012