Cisco Model EPC3202 4x4 EuroDOCSIS 3.0 Cable Modem with Embedded Digital Voice Adapter

The Cisco® Model EPC3202 4x4 EuroDOCSIS 3.0 Cable Modem with Embedded Digital Voice Adapter (EPC3202) is a high-speed cable modem with an embedded digital voice adapter. The EPC3202 provides a faster connection to the Internet by incorporating four bonded downstream channels along with four bonded upstream channels. These bonded channels deliver downstream data rates in excess of 200 Mbps and upstream data rates up to 120 Mbps, up to four times faster than conventional single-channel EuroDOCSIS™ 2.0 cable modems.[1] In addition, the EPC3202 features two RJ-11 telephone ports for voice service along with a 10/100/1000BASE-T Ethernet port and a USB 2.0 port for high-speed data connectivity. The EPC3202 has been designed to meet EuroPacketCable™ 1.5 and EuroDOCSIS 3.0 specifications as well as being backward compatible with EuroDOCSIS 2.0, 1.1 and 1.0 networks.

Figure 1. Model EPC3202 4x4 EuroDOCSIS 3.0 Cable Modem with Embedded Digital Voice Adapter (image may vary from actual product and specification)

The EPC3202 fully supports the CODECs specified in EuroPacketCable 1.5. Additional CODECs are available through a software upgrade that includes a high-fidelity CODEC option for toll-quality plus service. Standard VoIP call signaling is compliant with EuroPacketCable (MGCP/NCS) specifications.

[1] Channel Bonded cable modems must be used in conjunction with CMTSs that support Channel Bonded bonding per the EuroDOCSIS 3.0 specifications. When used with non-Channel Bonded CMTSs, Channel Bonded cable modems function as conventional EuroDOCSIS 2.0 cable modems.

Features

EuroDOCSIS

- Four (4) bonded channels with total throughput in excess of 160 Mbps
- Designed to meet EuroDOCSIS 3.0 specifications as well as backward compatibility with existing EuroDOCSIS 2.0, 1.1 and 1.0 networks
- Enhanced packet processing technology to maximize performance

Connections

- Bridged 1000/100/10 Mbps Ethernet port with Auto-negotiate and Auto-MDIX and USB 2.0 data port
- Support for up to 64 users (1 USB port user and up to 63 users on user-supplied Ethernet hubs)
- Two-line embedded digital voice adapter for wired telephony service

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
- Features Plug and Play operation for easy setup and installation
- LED status indicators on the front-panel provide an informative and easy-to-understand display that indicates the cable modem operational status and real-time data transmission activity
- Provides parental control and advanced firewall technology
- Rugged electronic components for long-term reliability

Management

- Software upgradeable by network download
- Remote manageability using SNMP V1/V2 and V3

Software and Documentation

- CD-ROM containing user guide and USB driver installation software for Microsoft Windows Vista, Windows XP, and Windows 2000 operating systems

Figure 2. Cisco Model EPC3202 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 housing, black lens, white text
Branding	Cisco logo and model number

Figure 3. Cisco Model EPC3202 Back Panel (image may vary from actual product and specification)

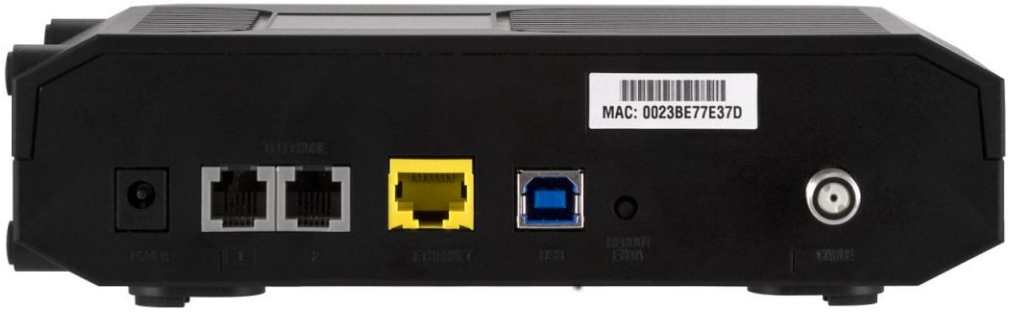

Table 2. Back Panel Features

Feature	Description
Power Connector Color: Black	Connects the EPC3202 to the AC power cord
TELEPHONE 1/2 and 2 Connector 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 the user's PC or the user's home network
USB Connector Color: Blue	USB 2.0 port connects to the USB port on the user's PC
REBOOT EMTA	Power cycles the modem
CABLE Connector Color: White	F-connector connects to an active cable signal from the service provider

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
Provisioning Modes	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)
CODECs	Standard: G.711, T.38 Fax Relay, and iLBC 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 (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
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 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
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

Specification	Value
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	
Operating Frequency Range	108 to 1002 MHz
Tuner Frequency Range	88 to 1002 MHz
Tuner	(1) Frequency agile block tuner, 82 MHz bandpass
Demodulation	4 demodulators, each demodulator; 64 QAM or 256 QAM
Maximum Data Rate	4 downstream channels, each channel: 55.62 Mbps for 256 QAM and 41.71 Mbps for 64 QAM
Bandwidth	6 or 8 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 ATDMA and 128 QAM at SCDMA

Specification	Value
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	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
Other	
Input Voltage	12 VDC
Power Consumption (Modem Module only)	6.75 Watts
Data Ports	Ethernet 10/100BASE-T (Auto-sensing with Auto-MDIX): RJ-45 Ethernet (1) USB 2.0 Type B Client port
RF	Female “F” type
Mechanical	
Dimensions (W x D x H) (approximate)	17.6 cm x 15.6 cm x 49.5 cm (6.94 in. x 6.13 in. x 1.95 in.)
Weight (approximate)	02 kg (8 oz.)
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, EuroDOCSIS 2.0, EuroDOCSIS 1.1, EuroDOCSIS 1.0 EuroPacketCable 1.5, EuroPacketCable 1.0
Regulatory and Safety Approvals	As required per country where the EPC3202 will be used

Ordering Information

Table 4. Ordering Information

Description	Part Number
EPC3202 EuroDOCSIS 3.0 4x4 Cable Modem with Embedded Digital Voice Adapter. Includes: • 230 VAC / 50-60 Hz, 15 VDC /1 A wall-mount linear switching power supply with Euro-style connector • Ethernet and USB data cables • CD-ROM containing user guide	4027675

Replacement Components

Table 5. Replacement Components

Description	Part Number
Power Supplies	
Class 2 Linear Switching	
230 VAC / 50-60 Hz, 15 VDC /1 A wall-mount linear switching power supply with Euro-style connector	4015455
Cables	
Ethernet cable, standard 1.2 meter length	740580
Ethernet cable, 2 meter	4018790
USB cable	740579
CD-ROM	
CD-ROM with User Guide	4023780

Cisco Systems, Inc.
1-800-722-2009 or 678-277-1000
www.cisco.com

Part Number 7016874 Rev A
October 2010