

Cisco uBR7225VXR Universal Broadband Router

System Overview

Q. What is the Cisco® uBR7225VXR Universal Broadband Router?

A. The Cisco uBR7225VXR Universal Broadband Router is the successor to the Cisco uBR7100 Series cable modem termination system (CMTS). The Cisco uBR7225VXR is the newest low-cost entry to mid-level CMTS in a 2-rack-unit (RU) modular chassis, with two RF cable line card slots. The Cisco uBR7225VXR is based on open standards and brings the power and proven reliability of the industry-leading Cisco uBR7246VXR Universal Broadband Router within reach of all cable operators.

Q. What is the target market for the Cisco uBR7225VXR Universal Broadband Router?

A. The Cisco uBR7225VXR is ideal for any cable operator requiring a higher-capacity platform, without the need for the additional capacity and form factor of the uBR10012 or uBR7246VXR. The Cisco uBR7225VXR is ideal for cable operators from emerging markets, including Tier 2 and Tier 3 cable operators migrating to an IP Next-Generation Network (NGN) infrastructure that supports the deployment of revenue-generating services.

Q. Is this product orderable today?

A. Yes

Q. What is the typical application of the Cisco uBR7225VXR Universal Broadband Router?

A. This router offers cable operators, multiunit businesses, and ISPs a superior and cost-effective platform for the delivery of their high-speed data, voice, and video services. This new CMTS platform requires exceptionally low capital investment and minimal setup time to provide these revenue-generating services.

Q. What is the difference between the Cisco uBR7225VXR, uBR7246VXR and uBR7100 Series?

A. The Cisco uBR7225VXR is an evolutionary, not revolutionary, design. This router is very similar to, and uses much of the same technology as, the award-winning Cisco uBR7246VXR. Unlike the fixed configuration of the Cisco uBR7100 Series, the modularity of the processor and line card slots in the Cisco uBR7225VXR offers four times the upstream port density and four times the downstream port density than the Cisco uBR7100 Series in the same form factor. It also provides 50 percent more upstream and downstream port capacity than the Cisco uBR7246VXR. The Cisco uBR7225VXR offers the lowest entry-level pricing in the industry, while maintaining modularity for capacity growth. Table 1 compares the three routers.

Table 1. Product Comparison

With 6 RU for CMTS Installation:	Maximum Chassis	Maximum Modem Cards	Maximum Downstream/Upstream Ports	Maximum Network Processing Engines (NPEs)
Cisco uBR7100 Series	3	3 (fixed)	3/12	3 (fixed, NPE-225)
Cisco uBR7246VXR	1	4 (modular)	8/32	1 (modular, NPE-G2)
Cisco uBR7225VXR	3	6 (modular)	12/48	3 (modular, NPE-G2)

Q. How many subscribers can the Cisco uBR7225VXR support?

A. The platform supports up to 5000 subscribers.

Q. What is the configuration requirement for the Cisco uBR7225VXR?

A. The Cisco uBR7225VXR supports two RF cable line card slots, and at FCS, is compatible with one Cisco uBR7200-NPE-G2 processor with three GE ports (uBR-NPE-G2). Cisco recommends installing 2 GB of DRAM on the Cisco uBR7200-NPE-G2 to ensure best performance. Cisco IOS® Software—the accepted standard networking software—provides end-to-end Internet connectivity and includes options to help ensure secure communications over the cable and IP network. The Cisco uBR7225VXR is supported start from Cisco IOS Software Release 12.2SB, which includes PacketCable™ Multimedia, admission control, Advanced Mode DSG, and SII features. Cisco uBR7225VXR supports DOCSIS3.0 starting from Cisco IOS Software Release 12.2SCD.

Q. Does the Cisco uBR7225VXR have PA or I/O controller slots? For low-performance applications, can I use a Cisco uBR7200 Series NPE-400 Network Processing Engine, for example?

A. No, the Cisco uBR7225VXR does not support port adapters (PAs), I/O controllers, or an NPE lower than the uBR7200 Series NPE-G1. The Cisco uBR7225VXR offers the superior performance of the Cisco uBR7200 Series NPE-G2 at an attractive price and that NPE includes Gigabit Ethernet (GE) WAN connectivity on the NPE—making a PA slot unnecessary.

Q. What if my application requires backhaul other than GE, such as T1? If Cisco does not support a PA, what are my options?

A. Cisco recommends that you use a small integrated services router such as a Cisco 1800 Series router behind the Cisco uBR7225VXR to provide connectivity in this sort of backhaul scenario.

Q. Does the Cisco uBR7225VXR have redundant power supplies?

A. The Cisco uBR7225VXR configured with the Cisco uBR7200 Series NPE-G2 offers a redundant power supply system. In addition, unlike a fixed-configuration CMTS, the modularity of the processor and line card slots in this platform allows for future upgrades in capacity as technology evolves.

Q. What's the power supply used on Cisco uBR7225VXR?

A. The Cisco uBR7225VXR will be configured with 540W power supply (Part Number: PWR-UBR7225-AC-E) starting from Sep, 2012. The new power supply is supported starting from Cisco IOS Software Release 12.2SCD. 540W power supply can work with the Cisco IOS Software Release prior to 12.2SCD, however, the software wouldn't be able to identify the new power supply hence it's not possible to monitor and manage the new 540W power supply.

Q. Why do we release the 540W AC Power Supply for Cisco uBR7225VXR?

- A.** The 540W AC Power Supply is targeted for Cisco uBR7225VXR loaded with Cisco uBR-MC88V. In some extreme cases (For instance, at high temperature 55°C with heavy traffic), one single 300W AC Power Supply (no redundant) might not be able to support uBR7225VXR fully loaded with 2 uBR-MC88V. Although it's a rare occurrence and Power Supply redundancy can well address this problem, we still believe a new Power Supply is required to help customer deploy uBR7225VXR with uBR-MC88V under those circumstances.

Q. Can this platform be upgraded?

- A.** Unlike competitive fixed-configuration CMTS platforms, the modularity of the processor and line card slots in the Cisco uBR7225VXR allows for future upgrades in capacity as technology evolves.

Q. Does the Cisco uBR7225VXR support DOCSIS 3.0?

- A.** Yes, Cisco uBR7225VXR support DOCSIS 3.0 by utilizing the full DOCSIS3.0 compliant line card UBR-MC88V.

Line Cards Supported**Q. How many cable line cards does the Cisco uBR7225VXR support and what is the upstream and downstream port density of the platform?**

- A.** The Cisco uBR7225VXR supports two cable line cards and touts industry-leading port density over any entry-level cable line card in the market to provide up to 16 downstreams and 16 upstreams in a 2RU form factor.

Q. Does the Cisco uBR7225VXR platform support new low-cost cable line cards? Are existing Cisco uBR7246VXR chassis line cards supported on the Cisco uBR7225VXR?

- A.** Cisco is introducing DOCSIS3.0 compliant cable line cards for the Cisco uBR7225VXR—the Cisco uBR-MC88V Broadband Processing Engine. It's also compatible with the uBR7246VXR chassis.

Q. Can the new DOCSIS3.0 line cards coexist with the Cisco uBR7225VXR UBR-E-28U, UBR-MC28U, UBR-E-16U) in the Cisco uBR7225VXR chassis?

- A.** No, the Cisco uBR-MC88V is not allowed to coexist with other line cards in order to maximize the system performance as 8x8 has different packet forwarding model than other line cards.

Key Features**Q. What are the key features of the Cisco uBR-MC88V line cards?**

- A.** The Cisco uBR-MC88V Broadband Processing Engine supports eight DOCSIS® 3.0 downstream channels through two quad-stacked physical connectors and eight upstream channels, each on a unique physical connector. The line card achieves full DOCSIS 3.0 capability, including downstream (DS) and upstream (US) channel bonding, multicast, IPv6, Advanced Encryption Standard (AES) encryption, Synchronized Code Division Multiple Access (S-CDMA), etc. This new line card enables the Cisco uBR7200VXR Series (both Cisco uBR7225VXR and Cisco uBR7246VXR) to be the optimal integrated cable modem termination system (I-CMTS) platforms for entry and midlevel CMTS markets.

Q. Does the Cisco uBR7225VXR support the transparent bridging mode?

A. No, the Cisco uBR7225VXR does not support the bridging functionality. The Cisco uBR7225VXR supports only the routing mode of operation. Routing operation is the typical default mode for Cisco CMTS routers. It provides a wide spectrum of Cisco IOS Software routing features, such as a DHCP server and control over which packets are sent over each interface. Bridging operation between the cable interface and port adapter interfaces is typically not used in DOCSIS CMTS installations because of potential performance and security problems.

Q. What is the competitive advantage and value proposition of Cisco uBR7225VXR platform?

A. A strong heritage of open systems and a product portfolio that addresses all market segments allow Cisco to bring its unmatched networking expertise and industry leadership to address the expanding service and operational needs of cable operators. Key benefits include:

- Cost efficiency with the lowest entry-level CMTS pricing in the industry, while maintaining modularity for capacity growth
- Industry-leading port density of any entry-level cable line card
- Standards compliance to help cable operators maximize their return on investment for converged services and accelerate their deployment of advanced IP services
- Operational savings and lower capital expenditures with DOCSIS, Euro-DOCSIS, and J-DOCSIS support on one line card

Standards Support**Q. Does the Cisco uBR7225VXR support the CableLabs® OpenCable™ DOCSIS Set-Top Gateway (DSG) specification?**

A. The Cisco uBR7225VXR supports the DSG specification. DSG enables cable operators to transport upstream and downstream video traffic directly through the CMTS instead of through a proprietary, standalone video infrastructure. Incorporating out-of-band (OOB) messaging in DOCSIS digitally modulated carriers, cable operators can consolidate cable modem and set-top box (STB) data traffic on a shared DOCSIS channel.

Q. Is the Cisco uBR7225VXR CableLabs-qualified?

A. The Cisco uBR7225VXR has not received CableLabs qualification yet. However, the Cisco uBR7225VXR is based on PacketCable 1.1, DOCSIS 1.1, Euro-DOCSIS 2.0, full DOCSIS3.0 and PacketCable Multimedia (PCMM) standards to protect cable operator investment and help ensure compatibility with next-generation multiservice networks.

Q. Does the Cisco uBR7225VXR support S-CDMA?

A. Cisco supports the CableLabs process and has a long record of submitting its products for qualification including DOCSIS, PacketCable, DSG, and PCMM. However the feedback Cisco has received from the marketplace is that S-CDMA is not critical for the services being offered today. Because customers have urged Cisco to develop innovative technology such as channel bonding and IPv6 instead of S-CDMA, Cisco has chosen not to implement S-CDMA on its current generation of DOCSIS 2.0 line cards. Cisco supports the A-TDMA portion of DOCSIS 2.0 and has received tComLabs DOCSIS 2.0 A-TDMA qualification for Cisco CMTS products. In Europe, S-CDMA is optional in the EuroDOCSIS 2.0 specification. Cisco products are fully DOCSIS 2.0 compliant in all areas with the exception of S-CDMA support as demonstrated by Euro CableLabs qualification testing.

Q. Is the Cisco uBR7225VXR compliant with CableLabs and tComLabs?

- A.** The Cisco uBR7225VXR supports DOCSIS 3.0, 1.1 and 1.0, Euro-DOCSIS 3.0, 2.0, 1.1, and 1.0, and PacketCable 1.1. In addition, it supports PacketCable Multimedia (PCMM), enabling cable operators to deploy unique, next-generation multimedia services on their communications-grade CMTSSs.

Q. What is the pricing of the Cisco uBR7225VXR and the new line cards?

- A.** Product pricing varies with product configuration. Assistance in the configuration and pricing of the Cisco uBR7225VXR is available from your Cisco account manager or channel partner.



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