



Cisco uBR-MC20X20V Broadband Processing Engine for the Cisco uBR10012 Universal Broadband Router

At-A-Glance

Product Overview

The Cisco® uBR-MC20X20V Broadband Processing Engine (BPE) is a DOCSIS® 3.0-capable next-generation line card for the Cisco uBR10012 Universal Broadband Router. It adds exciting features to the Cisco uBR10012 platform – including 20 upstream and 20 downstream channels – while supporting the industry benchmark standards for excellence and reliability that were established by the Cisco 5x20H BPE.

With the explosion of video traffic and social networking applications, speed and scalability are critical factors to keeping consumers happy. Cisco's Visual Networking Index (VNI) forecasts that by 2013, annual global IP traffic will reach two-thirds of a zettabyte (one trillion gigabytes), video traffic will exceed 90 percent of global consumer traffic, and global online video will comprise 60 percent of consumer Internet traffic (up from 32 percent in 2009).

As consumer demand for high-quality media on any device grows daily, cable operators are considering new intelligent solutions for their medianets (all-IP Next-Generation Networks optimized for rich media).

Cisco provides an end-to-end, DOCSIS 3.0-capable solution enabling multiple services to multiple devices over the same infrastructure to both residential and commercial subscribers.

This solution will allow cable operators to provide subscribers with the best possible quality of experience, while minimizing operating expenses and differentiating next-generation services from those of their competitors.

Cisco's DOCSIS 3.0 solution with the Cisco uBR-MC20X20V card **delivers faster speeds and higher capacity than earlier technology**, with a flexible and scalable architecture. The resulting benefits are **faster time to market, lower total cost of ownership, and higher revenues than previously possible**, thus

helping cable operators prepare their networks for the exponential growth of IP traffic.

The Cisco uBR-MC20X20V allows cable operators to cost-effectively deploy DOCSIS 3.0 services in existing and new Cisco uBR10000 Series Universal Broadband Router deployments. It is also an ideal solution for cable operators looking for the operational simplicity of integrated Cable Modem Termination System (CMTS) technology. Along with these benefits of the line card, the Cisco uBR10012 platform offers operators the flexibility to deploy hybrid integrated and modular CMTS architectures at the same time in the same chassis. The Cisco uBR-MC20X20V provides 160 downstream channels and 160 upstream channels on the Cisco uBR10012 chassis and can scale to 304 downstream channels when used with Cisco's DOCSIS 3.0-ready wideband Shared Port Adapter (SPA).

The Cisco uBR-MC20X20V is available in three license options that offer customers a pay-as-you-grow model:

- uBR-MC20X20V-0D: Includes base hardware and software licenses for 0 downstream and 20 upstream channels
- uBR-MC20X20V-5D: Includes base hardware and software licenses for 5 downstream and 20 upstream channels
- uBR-MC20X20V-20D: Includes base hardware and software licenses for 20 downstream and 20 upstream channels

Software licenses are available to upgrade to the full capacity of the Cisco uBR-MC20X20V. Capacity upgrades no longer require hardware changes, thus making them operationally simple and efficient.

Beating the Competition with Higher-Speed, Affordable, Easy Upgrade

Cable operators are facing increasing competition from wireline service providers and fiber-to-the-x (FTTx)

technologies (such as to the home, premises, building, or node) offering higher-speed services to businesses and residential customers than what was achievable with older DOCSIS technologies. With the introduction of DOCSIS 3.0 technology, cable operators now have the tools to combat this threat by not only matching the speeds offered by the competition but also beating them. However, the challenge for operators lies in minimizing capital and operational expenditures (CapEx and OpEx) while deploying DOCSIS 3.0 services. With the Cisco uBR-MC20X20V, it's all possible.

Deploying the new line card involves a simple upgrade from the Cisco 5x20H or Cisco 5x20U line card. From a connectivity point of view, the Cisco uBR-MC20X20V is identical to Cisco MC520H/MC520U with five downstream ports and 20 upstream ports. In addition, the Cisco uBR-MC20X20V uses the same MCX and UCH2 connectors. An upgrade to the Cisco uBR-MC20X20V is therefore a simple matter of disconnecting existing cables, removing the MC520H line card, inserting the Cisco uBR-MC20X20V into the slot, and reconnecting the connectors. Cisco Bighorn IOS® Software (required for uBR-MC20X20V) provides online insertion and removal (OIR) compatibility features to make transitioning DOCSIS 2.0 configurations on previous line cards to the new line cards operationally simple as well.

Cisco supports operating the uBR-MC20X20V as well as Cisco 5x20H/Cisco 5x20U in the same uBR10012 chassis. Furthermore, a single uBR-MC20X20V can act as Protect/Standby for both uBR-MC20X20V as well as 5x20H/5x20U operating as Working/Active Line Cards in a uBR10012 chassis thereby providing flexible and cost-effective solution for Line Card redundancy.

From a CapEx perspective, the Cisco uBR-MC20X20V is one of the industry's leading values today. Cisco IOS Software brings unparalleled feature richness and flexibility. Software licensing options bring greater pricing flexibility.



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DOCSIS 3.0 allows operators to offer significantly higher-bandwidth services to customers, but a large percentage of end users with cable modems are expected to use legacy devices for months or years before upgrading. With the Cisco uBR-MC20X20V, all downstream and upstream channels can be used for DOCSIS 1.x/2.0 devices and can also be bonded together for higher-bandwidth services. Cisco IOS Software provides a full suite of load balancing and quality of service (QoS) features, such as dynamic bandwidth sharing, to efficiently utilize the bandwidth between end users on various service tiers.

Features and Benefits

Key features of the Cisco uBR-MC20X20V:

- DOCSIS line rate operation for all 20 downstream channels at Annex A or Annex B (256QAM)
- DOCSIS line rate operation for all 20 upstream channels (up to 64-QAM/6.4 MHz)
- Full CableLabs® and EuroCableLabs compliance
- Four frequency-stacked downstream channels per physical port
- 8+ channel DOCSIS line rate DS bonding capable; 4 channel DOCSIS line rate US bonding capable
- Advanced Direct Digital Synthesis upconverter technology supporting operation up to 1 GHz
- Full suite of software features including load balancing and QoS
- Superior RF performance because of advanced spectrum management, ingress cancellation
- Time Division Multiple Access (TDMA), Advanced Time Division Multiple Access (A-TDMA), and Synchronous Code Division Multiple Access (S-CDMA) supported
- Operationally simple upgrade from the Cisco MC520H/MC520U to the Cisco uBR-MC20X20V
- Software licensing options for cost flexibility

Key operator benefits with the Cisco uBR-MC20X20V:

- Cable operators can increase revenue by offering higher-value services for both DOCSIS 1.x/2.0 and DOCSIS 3.0 subscribers
- Prevents subscriber loss to competing technologies
- The downstream and upstream capacity of the Cisco uBR10012 chassis is significantly increased with the Cisco uBR-MC20X20V, allowing operators to quickly counter competitive-speed offerings without major CapEx
- Operating costs are reduced by ease of upgrades from the MC520H/MC520U to the Cisco uBR-MC20X20V
- Software licensing options offer attractive pricing for cost-sensitive operators

Why Cisco?

Cisco has years of experience, leadership, and a record of innovation in the cable industry. This background uniquely positions Cisco to understand the needs of cable operators and to design products to meet those needs. Our goal is to help cable operators deliver superior service while reducing operating expenses at the same time. The Cisco uBR-MC20X20V provides investment protection for customers who have already deployed the Cisco uBR10012 successfully. And it provides new customers with a proven path to deliver carrier-class data, voice, and video services to subscribers. Together, the Cisco uBR-MC20X20V line card and the Cisco uBR10012 platform provide a cost-effective solution for the move to DOCSIS 3.0 and the current and future needs of cable operators.