

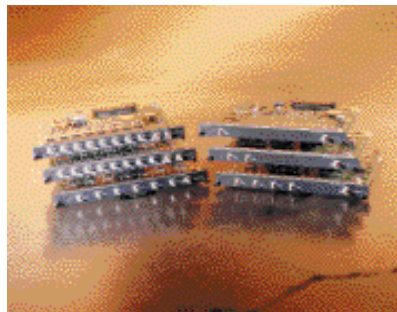
# Cisco Universal Broadband Router Line Cards—A Full Set of DOCSIS 1.1—Qualified Interfaces

Cisco Systems® offers a full set of Universal Broadband Router line cards to partition a Data Over Cable Service Interface Specifications (DOCSIS) cable network and improve system effectiveness (Figure 1). The line cards offer cost-effective market entry and network scaling alternatives to configure upstream-to-downstream channel ratios. They support an unprecedented array of capabilities that enable delivery of differentiated services-with guaranteed service levels-to large numbers of subscribers. The line cards meet all DOCSIS Annex B RF data rates, channel widths, and modulation schemes.

## Applications

- Intelligent routing of IP data and voice between the cable headend and cable modems or cable telephony devices
- Flexible partitioning of the network

Figure 1  
DOCSIS Cisco  
Universal  
Broadband Router  
Line Cards



## Product Description

Table 1 on the next page lists the DOCSIS Universal Broadband Router line cards that support bidirectional and telephone-return operations. The line cards are supported on both the Cisco® uBR7200 Series and uBR10012 Universal Broadband Router. When housed in a Cisco uBR10012, a line card adapter must be used with the Cisco Universal Broadband Router line card.

Cisco also offers the MC16E Universal Broadband Router line card to support European DOCSIS (EuroDOCSIS) operations. Cisco offers other line cards that support DOCSIS operations. These include the Cisco 5x20U and 5x20 Broadband Processing Engine supported on the Cisco uBR10012, and the Cisco uBR7200 Series MC28U, MC16U, MC28X, and MC16X Broadband Processing Engine

supported on the Cisco uBR7246VXR. For these products, see their respective data sheets.

Table 1 DOCSIS Cisco Universal Broadband Router Line Cards

Line Card Model Numbers	Details
Cisco MC28C for the Cisco uBR7200 Series or uBR10012	Two downstreams and eight upstreams configured in two MAC domains
Cisco MC16S for the Cisco uBR7200 Series or uBR10012	One downstream and six upstreams with an integrated spectrum analyzer
Cisco MC16C for the Cisco uBR7200 Series or uBR10012	One downstream and two upstreams
Cisco MC14C for the Cisco uBR7200 Series	One downstream and four upstreams

#### Downstream PHY

- Enhanced ITU J.83 Annex B convolutional Reed-Solomon FEC; downstream frequency range of 54 to 860 MHz
- Modulation: 64 and 256 quadrature amplitude modulation (QAM)
- 6-MHz channel width
- Output power range: 42 dBmV +/-2 dB
- Connector: 75 ohm F connectors

#### Upstream PHY

- Forward Error Correction (FEC) length (T = 0 to 10); upstream frequency range of 5 to 42 MHz edge-to-edge
- FEC length (T = 0 to 10)
- Modulation: Quadrature phase shift keying (QPSK) and 16 QAM
- Channel widths of 0.2, 0.4, 0.8, 1.6, and 3.2 MHz
- Calibrated and widely adjustable upstream voltage level; total input power less than 35 dBmV; operating power range bursts within 6dB of commanded level; RF performance stable to 1.5dB across -5 to 50°C; RF spurs <5 V on inputs and outputs
- Connector: 75 ohm F connectors
- Software highlights
- Support for Committed Access Rate (CAR), Weighted Fair Queuing (WFQ), Weighted Random Early Detection (WRED), and Resource Reservation Protocol (RSVP)
- Regulatory and standards compliance
- Safety: UL 1950, CSA 22.2 No.950, EN60950

## Ordering Information

Part Number	Description
UBR-MC28C	Cisco uBR7200 Series Line Card, 2 DS, 8 US, F-conn
UBR-MC16S	Cisco uBR7200 Series Spectrum Management Line Card, 1 DS, 6 US
UBR-MC16C	Cisco uBR7200 Series Line Card, 1 DS, 6 US
UBR-MC14C	Cisco uBR7200 Series Line Card, 1 DS, 4 US



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