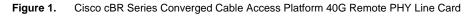# Cisco cBR Series Converged Cable Access Platform 40G Remote PHY Line Card

Product Overview

The Cisco® cBR Series Converged Cable Access Platform 40G Remote PHY line card is specifically designed for Remote PHY deployment. While the 8 downstream by 16 upstream Converged Cable Access Platform line card is designed with downstream and upstream PHY modules and can run in both integrated CCAP and Remote PHY deployments, the 40G Remote PHY line card is designed to support Remote PHY deployment cost-effectively and exclusively as a purely digital card that does not support PHY modules.

A 40G Remote PHY line card is paired with a cBR CCAP 8x10G Remote PHY Digital Physical Interface Card (D-PIC) to provide 40G bandwidth to transmit DEPI and UEPI traffic over the D-PIC. In a Remote PHY deployment, Cisco cBR Series Converged Broadband Routers equipped with the 40G Remote PHY line card and D-PIC is the CCAP core. A remote physical device (RPD) is used to transfer DOCSIS frames between an IP network interface and a RF interface. The RPD does not participate in the DOCSIS MAC protocol. Instead, Remote PHY system provides an IP pseudowire that seamlessly transports the DOCSIS frames between the CCAP core and the RPD. As such, for most DOCSIS functions, the CCAP core system functions almost identically to an integrated CCAP. This preserves common functionality and features between the two systems.

The Remote PHY line card can be configured into a redundancy group to support N+1 fully protected, high-capacity configuration.

Figure 1.   Cisco cBR Series Converged Cable Access Platform 40G Remote PHY Line Card

Features and Benefits

Table 1.   Features and Benefits of the Cisco cBR Series Converged Cable Access Platform 40G Remote PHY Line Card

Feature	Benefits
Remote PHY Standard compliant	Standard based, support GCP, DEPI, UEPI, R-OOB, R-DTI
Support N+1 Line card redundancy	High Availability
Optimized for Remote PHY deployment; a purely digital card designed to not need Downstream and Upstream PHY modules	Lower power consumption
Support up to 32 Remote PHY devices at product launch	Scale service groups beyond the port capacity of traditional CMTS
Same form factor as the 8x16 CCAP RF line card	Use existing cBR-8 installed base for Remote PHY deployment
OBFL and board health monitoring	Failure detection simplified

Product Specifications

Table 2.   Product Specifications

Description	Specification
Dimensions (H x W x D) in. (cm)	1.43 x 16.27 x 18.66 in. (3.6 x 41.3 x 47.4 cm)
Power Consumption (W)	Typical: 200W, Maximum rated power: 226W
Weight lbs. (Kg)	13.56 lbs(6.15Kg)
LED	- One STATUS LED (Green/Yellow/Off): Green indicates the card is operational, yellow when the card is up but HA fault has been detected, off means card is not booted up - One PROTECT LED (Green/Blue/Off): Green indicates the card is live and passing traffic. Blue means card is configured as the protect card. Off indicates the card is not configured as the protect card - One REPLACE LED (White/Off): White indicates the card has been identified for replacement. Off indicates the card has not been marked for replacement
Environmental	- Operating Temperature (nominal): 32 to 104°F (0 to 40°C) Sea Level - Operating humidity (nominal) (relative humidity): 5 to 85% - Operating humidity (short-term): 5 to 90% **Note:** Not to exceed 0.024 kg water per 1 kg of dry air. - Storage Temperature: -40 to 158°F (-40 to 70°C) - Storage (relative humidity): 5 to 95% **Note:** Not to exceed 0.024 kg water per 1 kg of dry air. - Operating Altitude: -60 to 4000m
Regulatory Compliance	Safety - UL/CSA/IEC/EN 60950-1 2nd Ed. - United States, Canada, Europe - AS/NZS 60950.1 - Australia - EN60825/IEC 60825 Laser Safety - FDA - Code of Federal Regulations Laser Safety Electromagnetic Emissions Certification - EN50083-2 - Europe - KN 32 Class A - Korea - FCC Part 15 Class A - United States - ICES 003 Class A - Canada - AS/NZS Class A - Australia - CISPR 22 Class A - Europe - EN55022 Class A - Europe - VCCI Class A - Japan - CNS13438 Class A - Taiwan - IEC/EN61000-3-2 Power Line Harmonics - Europe - IEC/EN61000-3-3 Voltage Fluctuations and Flicker - Europe

Description	Specification
	Immunity ● EN50083-2 - Europe ● CISPR 24 - Europe ● KN 35 - Korea ● IEC/EN61000-4-2 Electrostatic Discharge Immunity (8kV contact, 15kV air) ● IEC/EN61000-4-3 Radiated Immunity (10V/m) ● EC/EN61000-4-4 Electrical Fast Transient Immunity (2kV power, 1kV signal) ● IEC/EN61000-4-5 Surge AC Port (4kV CM, 2kV DM) ● IEC/EN61000-4-5 Surge Signal Port (1kV) ● IEC/EN61000-4-5 Surge DC Port (1kV) ● IEC/EN61000-4-6 Immunity to Conducted Disturbances (10Vrms) ● IEC/EN61000-4-8 Power Frequency Magnetic Field Immunity (30A/m) ● IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations Network Equipment Building Standards The system is designed to meet the following Networking Equipment Building Standards (NEBS): ● NEBS Level 3, Bellcore: GR-63-CORE, GR-1089-CORE European Telecommunication Standards Institute (ETSI) ● EN 300 386 Telecommunications Network Equipment (EMC) ● EN50083-2 Cable networks for television signals, sound signals and interactive services ● EN55022 Information Technology Equipment (Emissions) ● EN55024 Information Technology Equipment (Immunity) ● EN61000-6-1 Generic Immunity Standard ● EN61000-6-2 Generic Immunity Standard for Industrial Environments
Network Management Information	● ENTITY-MIB ● IF MIB ● CISCO-ENTITY-ALARM-MIB ● CISCO-ENTITY-ASSET-MIB ● CISCO-ENTITY-FRU-CONTROL-MIB ● CISCO-ENVMON-MIB
Software Release	● Cisco IOS® Software Release IOS XE 16.5.1 or later

System Requirements

Table 3.   System Requirements

Item	Details
Software	Cisco IOS® Software Release IOS XE 16.5.1 or later

Ordering Information

To place an order, visit the Cisco Ordering page.

Table 4.   Ordering Information for Cisco cBR-8 Router RF Line Card for Remote PHY

Product Description	Part Number
Cisco cBR Series Converged Cable Access Platform 40G Remote PHY Line Card	CBR-CCAP-LC-40G-R
Cisco cBR Series Converged Cable Access Platform 40G Remote PHY Line Card, Spare	CBR-CCAP-LC-40G-R=

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For More Information

For more information about the Cisco cBR-8 Converged Broadband Router and Remote PHY deployment, visit http://www.cisco.com/go/ccap or contact your local account representative.

Printed in USA

C78-738847-00   04/17