

Cisco uBR7200-NPE-G2 Network Processing Engine

Product Overview

With the introduction of the uBR7200-NPE-G2 Network Processing Engine, service providers can now take advantage of the enhanced performance and scalability of the uBR7246VXR Universal Broadband Router to maximize service and revenue generation. At 1.3 Mpps, the performance of the uBR7200-NPE-G2 is double that of the uBR7200-NPE-G1. This enhancement enables service providers to offer higher speed data services and also to increase the number of VoIP sessions that each uBR7246VXR can support.

The uBR7200-NPE-G2 (see Figure 1) is the newest and most powerful engine on the uBR7246VXR. Some highlights of this board include:

- Increased processing capacity to meet the growing performance demand and extreme flexibility to introduce new services
- Investment protection for existing uBR7246VXR customers through incremental processor upgrades
- Sufficient spare processing power enabling future compatibility with uBR7200VXR next generation cable linecards and advanced software features
- Ability to measure digital diagnostics data from the Small Form-Factor Pluggable interfaces, providing customers with enhanced troubleshooting capability

Figure 1. Cisco uBR7200-NPE-G2



New Features

Table 1. Features and Benefits of Cisco uBR7200-NPE-G2

Feature	Benefit
Performance of up to 1.3 Million Packets per Second (Mpps) in Cisco Express Forwarding Switching	<ul style="list-style-type: none"> • Up to 2x performance improvement compared to uBR7200-NPE-G1 • Dramatically increases the performance and scalability of the Cisco uBR7246VXR Series in supporting the number of DOCSIS devices and data forwarding performance, specifically in reference to the number of VoIP sessions
Modularity	<ul style="list-style-type: none"> • Enables maximum investment protection through the ability to upgrade processors incrementally
Three Fixed Gigabit Ethernet Ports (10/100/1000-Mbps Copper or Small Form-Factor Pluggable Optics [SFP])	<ul style="list-style-type: none"> • Maximizes LAN connectivity and performance without taking up bandwidth points or mid-plane capacity

Feature	Benefit
Built-in I/O Function (Compact Flash Memory, Console Port, Auxiliary Port, and Bootflash Memory)	<ul style="list-style-type: none"> Reduces cost as customers no longer need to use the external I/O controller. An I/O controller can still be used if a customer considers it necessary. The Cisco uBR7200- NPE-G2 is supported with the Cisco uBR7246VXR Series I/O controllers with the following part numbers: C7200-I/O-2FE, and C7200-I/O-GE+E.
Support for Third Peripheral-Component-Interconnect (PCI) Bus to the I/O Controller Slot	<ul style="list-style-type: none"> Frees the current I/O controller ports from bandwidth allocation, allowing two PCI buses to be dedicated to the port adapter slots
1 GB of DRAM Default Memory; Optional upgrade to 2 GB DRAM	<ul style="list-style-type: none"> Delivers the maximum amount of default memory when compared to existing Cisco uBR7246VXR Series network processing engines, offering the following benefits: <ul style="list-style-type: none"> Supports more routes and routing tables Supports more Multiprotocol Label Switching (MPLS) virtual routing and forwarding instances (VRFs) Enables higher scalability on features such as NetFlow, access control lists (ACLs), and more Supports more sessions for broadband aggregation
Dedicated Management port for 10/100-Mbps Ethernet	<ul style="list-style-type: none"> Reduces costs and protects the port density of the chassis Increases security by separating management traffic from data plane traffic
Digital Diagnostics on SFP Interfaces (software support will be provided in future releases)	<ul style="list-style-type: none"> Provides a powerful tool to monitor multiple manageable parameters, including optical transmit and receive power, voltage and temperature measurement, and factory parameters
Time Domain Reflectometry (TDR) on Copper Interfaces (software support will be provided in future releases)	<ul style="list-style-type: none"> Provides an effective method of isolating fault at the remote end of the copper wire by monitoring reflected pulsed signals
Two USB Ports (software support will be provided in future releases)	<ul style="list-style-type: none"> Provides large, removable storage for files

Compatible Software Features

The Cisco uBR7200-NPE-G2 is compatible with all of the applicable new uBR7246VXR software features to be delivered in the 12.2 SB software release that supports this new hardware. Some of these features include:

- IPv6 Cable Modem Management
- DOCSIS BSoD L2VPN Support
- Multicast VPN
- DOCSIS Multicast QoS Support
- Service Independent Intercept Enhancements

The Cisco uBR7200-NPE-G2 has a high performance processor to perform data forwarding as well as other network protocols processing. This additional processing capacity on the uBR7200- NPE-G2, as compared to that of the uBR7200-NPE-G1, will provide tremendous potential for customers to acquire new software functionality without requiring a hardware upgrade.

Cisco uBR7200-NPE-G2 Key Features

Table 2. Hardware and Software Features

Feature	Description
Processor	1.67-GHz Motorola Freescale 7448 processor 512 KB NVRAM, 16 MB Bootflash (Note: This size NVRAM and Bootflash are only available when a Cisco I/O controller is not used)
Cache Size	1-MB Layer 2 cache
SDRAM Memory Size	1 GB SDRAM default memory (expandable to 2 GB)
Flash Memory Size	256 MB of Compact Flash memory
On Board Software	Error Correcting Code (ECC) support

Product Specifications

Physical

- Weight: 3.25 lb. (1.49 kg)
- Dimensions: 15.15 x 11.12 x 1.40 in. (38.481 x 28.245 x 3.556 cm)

Environmental

- Storage temperature: -38° to 150° F (-40° to 70° C)
- Operating temperature, nominal: 41° to 104° F (5° to 40° C)
- Operating temperature, short term: 23° to 131° F (- 5° to 55° C)
- Storage relative humidity: 5% to 95% relative humidity (RH)
- Operating humidity, nominal: 5% to 85% RH
- Operating humidity, short term: 5% to 90% RH
- Operating altitude: -60 m to 2000m

Regulatory Compliance

Safety

- UL/CSA/IEC/EN 60950-1
- AS/NZS 60950
- EN60825/IEC 60825 Laser Safety
- FCA-Code of Federal Regulations Laser Safety

EMC

Emissions:

- FCC Part 15 (CFR 47) Class B*
- ICES-003 Class B*
- EN55022 Class B*
- CISPR22 Class B*
- AS/NZS CISPR 22 Class B*
- VCCI Class B*

Immunity:

- EN61000-4-2: Electrostatic Discharge Immunity
- EN61000-4-3: Radiated Immunity
- EN61000-4-4: Electrical Fast Transient Immunity
- EN61000-4-5: Surge
- EN61000-4-6: Immunity to Conducted Disturbances
- EN55024: Information Technology Equipment (Immunity)
- EN300386: Telecommunications Network Equipment (EMC)
- EN50082-1: Generic Immunity Standard

Note: *Requires use of Shielded (STP) CAT5E cables or better to be used for 10/100/1000BaseT Cu ports to meet Class B compliance

Upgrade Paths

The Cisco uBR7200-NPE-G2 is part of the Cisco Technology Migration Program (TMP). Customers are encouraged to review their networking requirements and to use the TMP to upgrade from previous generations of Cisco 7200VXR Series network processing engines to the Cisco uBR7200NPE-G2. Refer to <http://www.cisco.com/go/TMP> and contact your local Cisco account representative related to the TMP.

Availability

The Cisco uBR7200-NPE-G2 is supported in Cisco IOS Software Release 12.2SB, which includes PCMM, admission control, Advanced Mode DSG, and SII features. The Cisco uBR7200-NPE-G2 is supported in the Cisco uBR7246VXR chassis.

Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#).

Table 3. Ordering Information

Part Number	Product Name
uBR7200-NPE-G2	Cisco uBR7200 Network Processing Engine including three GE/FE/E ports, 1 –GB default DRAM and 256-MB default flash memory
uBR7200-NPE-G2=	Cisco uBR7200 Network Processing Engine including three GE/FE/E ports, 1 –GB default DRAM and 256-MB default flash memory, spare
MEM-NPE-G2-2GB	One 2-GB memory module for the Cisco uBR-7200-NPE-G2
MEM-NPE-G2-2GB=	One 2-GB memory module for the Cisco uBR-7200-NPE-G2, spare
MEM-NPE-G2-FLD256	256-MB Compact Flash disk for the Cisco NPE-G2
MEM-NPE-G2-FLD256=	256-MB Compact Flash disk for the Cisco NPE-G2, spare
SFP-GE-S	One 1000-Base-SX SFP with Digital Optical Monitoring (DOM)
SFP-GE-S=	One 1000-Base-SX SFP with Digital Optical Monitoring (DOM), spare
SFP-GE-L	One 1000-Base-LX/LH SFP with Digital Optical Monitoring (DOM)
SFP-GE-L=	One 1000-Base-LX/LH SFP with Digital Optical Monitoring (DOM), spare
SFP-GE-Z	One 1000-Base-ZX Gigabit Ethernet SFP with Digital Optical Monitoring (DOM)
SFP-GE-Z=	One 1000-Base-ZX Gigabit Ethernet SFP with Digital Optical Monitoring (DOM), spare
MAS-7200-CBLMGMT	One Cisco NPE-G2 Cable Management Bracket
IO-CONTROLR-BLANK=	One Cisco IO Controller Blank, spare – included with the Cisco uBR7200-NPE-G2

Service and Support

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For More Information

For more information about the Cisco uBR7200-NPE-G2, please contact your local Cisco account representative.



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