



# Release Notes for Cisco uMG9850 QAM Module, Cisco IOS Release 12.2(20)EU2

---

**November 2, 2005**

These release notes describe the features, memory requirements, and hardware and software requirements in Cisco IOS release 12.2(20)EU2 to support the Cisco uMG9850 QAM Module. The Cisco uMG9850 supports the ITU-T J.83 Annex B standard for the delivery of digital video and audio signals.



**Note**

---

This document supersedes and replaces *Release Notes for Cisco uMG9850 QAM Module, Cisco IOS Release 12.2(20)EU1*. That software release is no longer available. For more information, see [Introduction, page 2](#).

---



**Note**

---

Use these release notes with *Release Notes for Cisco Catalyst 4500 Series Switch, Cisco IOS Release 12.2(20)EWA*, located on Cisco.com. Refer to [Obtaining Documentation, page 7](#).

---

These release notes discuss the following topics:

- [Introduction, page 2](#)
- [System Requirements, page 2](#)
- [Caveats, page 6](#)
- [Obtaining Documentation, page 7](#)
- [Documentation Feedback, page 8](#)
- [Cisco Product Security Overview, page 8](#)
- [Obtaining Technical Assistance, page 9](#)
- [Obtaining Additional Publications and Information, page 11](#)



---

Corporate Headquarters:  
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Copyright © 2005 Cisco Systems, Inc. All rights reserved.

## Document History

Document Version	Date	Notes
1	09/28/2005	This document was first published for Cisco IOS Release 12.2(20)EU2. For more information, see <a href="#">Introduction</a> , below.
2	11/02/2005	DDTS CSCei61732 is documented. See <a href="#">Resolved Caveats—Release 12.2(20)EU2</a> , page 6.

## Introduction

Cisco IOS Release 12.2(20)EU2 is an Early Deployment (ED) release based on Cisco IOS Release 12.2(20)EWA.

This document supersedes and replaces *Release Notes for the Cisco uMG9850 QAM Module, Cisco IOS Release 12.2(20)EU1*.

Although Cisco IOS Release 12.2(20)EU1 has been removed from CCO, no catastrophic or deferring defect exists. You do not need to upgrade your images. A legacy feature has been removed, and images with that feature are no longer available on CCO. You may continue to operate with existing copies of Cisco IOS Release 12.2(20)EU1 in your network.

For more information, see [Resolved Caveats—Release 12.2\(20\)EU2](#), page 6.



### Note

Cisco IOS Release 12.2(20)EU2 is compatible with Cisco IOS Release 12.2(20)EWA. Cisco IOS Release 12.2(20)EU2 is designed, however, to support the functionality of the Cisco uMG9850 in VoD and digital broadcast applications. Not all features applicable to traditional switching apply to the Cisco uMG9850. For configuration instructions and the command reference for the Cisco uMG9850, refer to *Configuring the Cisco uMG9850 QAM Module* in [Obtaining Documentation](#), page 7.

The Cisco uMG9850, designed for the Cisco Catalyst 4500 series switches, provides video-on-demand (VoD) and digital broadcast services for a hybrid fiber-coaxial (HFC) cable network. It accepts Moving Pictures Expert Group-2 (MPEG-2) digital video from an IP network, and outputs the video as a quadrature amplitude modulated (QAM) RF stream that can be received by digital set-top boxes (STBs) over the cable network.

## System Requirements

This section describes the system requirements for Cisco IOS Release 12.2(20)EU2:

- Memory
- Supported hardware
- Supported features
- Unsupported features

## Memory Requirements

Minimum memory and flash configurations on the Cisco Catalyst 4500 series switch are sufficient to support the Cisco uMG9850 QAM Module.

## Hardware Compatibility

[Table 1](#) lists hardware that is compatible with the Cisco uMG9850 QAM Module when used with Cisco IOS Release 12.2(20)EU2.

**Table 1** *Hardware Compatibility*

	Product Number	Description	Notes
Cisco Catalyst Switches	WS-C4503	Cisco Catalyst 4503 switch chassis	
	WS-C4506	Cisco Catalyst 4506 switch chassis	
	WS-C4507R	Cisco Catalyst 4507R switch chassis	
Memory	MEM-C4K-FLD64M=	Cisco Catalyst 4500 Series Compact Flash, 64-MB option	
	MEM-C4K-FLD128M=	Cisco Catalyst 4500 Series Compact Flash, 128-MB option	
Supervisor Engine	WS-X4013+	Cisco Catalyst 4500 Series Supervisor Engine II-Plus	
	WS-X4013+/2	Cisco Catalyst 4507R Redundant Supervisor Engine II-Plus	
	WS-X4515	Cisco Catalyst Supervisor Engine IV	
	WS-X4515/2	Cisco Catalyst 4507R Redundant Supervisor Engine IV	

Table 1 Hardware Compatibility (Continued)

	Product Number	Description	Notes
Power Supplies	PWR-C45-1000AC	1000 W AC power supply	For the Cisco Catalyst 4506 or Cisco Catalyst 4507R switch chassis, can be configured with up to three Cisco uMG9850 QAM Modules. With four or five modules inserted in the Cisco Catalyst 4506 or 4507R switch chassis, the 1400W (AC or DC) power supply must be used. Can be configured with the maximum number of Cisco uMG9850 QAM Modules in the Cisco Catalyst 4503 switch chassis.
	PWR-C45-1000AC/2	Redundant power supply	Can be configured along with the 1000 W AC power supply.
	PWR-C45-1400DC-P	1400 W DC power supply with integrated power entry module (PEM)	For either switch chassis, can be configured with up to five Cisco uMG9850 QAM Modules.
	PWR-C45-1400DC-P/2	Redundant power supply	Can be configured along with the 1400 W DC power supply.
	PWR-C45-1400AC	1400 W AC power supply	Can be configured with the maximum number of Cisco uMG9850 QAM Modules in the Cisco Catalyst 4506 or 4507R switch chassis.
	PWR-C45-1400AC/2	Redundant power supply	Can be configured along with the 1400 W AC power supply.
Switching Modules	WS-X4148-RJ=	48-port 10/100 Fast Ethernet RJ-45 switching module	
	WS-X4306-GB=	6-port 1000BASE-X (GBIC) Gigabit Ethernet switching module	
	WS-X4712-UMG9850	Cisco Catalyst 4500 QAM Module, 12 RF ports, 24 QAM channels, ITU-T J.83 Annex B	
SFPs	GLC-SX-MM=	1000BASE-SX SFP	
	GLC-LX-SM=	1000BASE-LX SFP	
	CWDM-SFP-XXXX=	Cisco CWDM SFP	XXXX=wavelength

**Table 1** Hardware Compatibility (Continued)

	Product Number	Description	Notes
GBICs	WS-G5483=	1000BASE-T GBIC	
	WS-G5484=	1000BASE-SX short-wavelength GBIC (multimode only)	
	WS-G5486=	1000BASE-LX/LH long-haul GBIC (single-mode or multimode)	
	WS-G5487=	1000BASE-ZX extended-reach GBIC (single-mode)	
	CWDM-GBIC-xxxx	Cisco 1000BASE-CWDM xxxx nm GBIC, where xxxx is the number 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610	
	DWDM-GBIC-xx.yy	Cisco 1000BASE-DWDM ITU 100-GHz grid 15xx.yy nm GBIC	
	WDM-GBIC-REC=	Cisco receive-only 1000BASE-WDM GBIC	

## Software Compatibility

The Cisco uMG9850 QAM Module is supported in Cisco IOS Release 12.1(20)EU, Cisco IOS Release 12.1(20)EU1, Cisco IOS Release 12.2(20)EU1, and Cisco IOS Release 12.2(20)EU2 (this release). Images for Cisco IOS Release 12.2(20)EU2 are listed in [Table 2](#) and are available from Cisco.com at this URL:

[http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?get\\_crypto=&data\\_from=&hardware\\_name=&software\\_name=&release\\_name=12.2.20-EU2&majorRel=12.2&state=:RL&type=Early%20Deployment](http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?get_crypto=&data_from=&hardware_name=&software_name=&release_name=12.2.20-EU2&majorRel=12.2&state=:RL&type=Early%20Deployment)

**Table 2** Cisco IOS Software Release 12.2(20)EU2 Images and Features

Image	Description
cat4000-i9su3-mz	Cisco IOS software for the Cisco uMG9850 QAM Module—Basic MPEG-2 digital video gateway software image, including Routing Information Protocol (RIP) v1 and v2, and static routes.
cat4000-i5su3-mz	Cisco IOS software for the Cisco uMG9850 QAM Module—Enhanced MPEG-2 digital video gateway plus routing software image, including Open Shortest Path First (OSPF), Intermediate System to Intermediate System (IS-IS), Interior Gateway Routing Protocol (IGRP), and Enhanced IGRP (EIGRP).

## Determining the Software Version

To determine the version of Cisco IOS software running on a Cisco Catalyst 4500 series switch, log in to the switch and enter the **show version EXEC** command:

```
Switch> show version
```

Cisco Internetwork Operating System Software  
IOS (tm) Catalyst 4000 L3 Switch Software (cat4000-cat4000-i9su3-mz), Version  
12.2(20)EU2, EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)

## Upgrading from a Previous Software Release

### Updating the Switch Software

For information on upgrading software in your Cisco Catalyst 4500 series switch, refer to *Release Notes for the Catalyst 4500 Series Switch, Cisco IOS Release 12.2(20)EWA on Cisco.com* at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol\\_5184.htm](http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol_5184.htm)

## Caveats

Caveats describe unexpected behavior in Cisco IOS Release 12.2(20)EU2 specific to the Cisco uMG9850 QAM Module.

### Open Caveats—Release 12.2(20)EU2

This section lists the open caveats for Cisco IOS Release 12.2(20)EU2.

- CSCeg43631  
Simultaneous changes to both PAT and PMT data in unicast session causes an “Invalid PSI” error message to display.

### Resolved Caveats—Release 12.2(20)EU2

This section lists caveats resolved in Cisco IOS Release 12.2(20)EU2.

- CSCei76358  
Through normal software maintenance processes, Cisco is removing deprecated functionality from the OS boot routine. These changes have no impact on system operation or feature availability.
- CSCei61732  
Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.  
Cisco has made free software available that includes the additional integrity checks for affected customers.

This advisory is posted at <http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml>.

## Related Documentation

### Platform-Specific Documents

For a list of documents for the Cisco Catalyst 4500 series switch, refer to the *Release Notes for the Catalyst 4500 Switch, Cisco IOS Release 12.2(20)EWA* on Cisco.com at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol\\_5184.htm](http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol_5184.htm)

### Hardware Documents

For instructions for installing the Cisco uMG9850 QAM Module in a Cisco Catalyst 4500 series switch, refer to *Quick Start Guide—Installing the Cisco uMG9850 QAM Module* on Cisco.com at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9850/9850qsg.htm>

### Software Documents

For configuration information specific to the Cisco uMG9850 QAM Module, refer to *Configuring the Cisco uMG9850 QAM Module* on Cisco.com at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9850/9850cfg.htm>

### Cisco IOS Software Documentation Set

For a list of Cisco IOS software documents, refer to *Release Notes for the Catalyst 4500 Switch, Cisco IOS Release 12.2(20)EWA* on Cisco.com at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol\\_5184.htm](http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/relnotes/ol_5184.htm)

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

### Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/techsupport>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

## Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at [tech-doc-store-mkpl@external.cisco.com](mailto:tech-doc-store-mkpl@external.cisco.com) or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

## Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Customer Document Ordering  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

## Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)



From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

[http://www.cisco.com/en/US/products/products\\_psirt\\_rss\\_feed.html](http://www.cisco.com/en/US/products/products_psirt_rss_feed.html)

## Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—[security-alert@cisco.com](mailto:security-alert@cisco.com)

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—[psirt@cisco.com](mailto:psirt@cisco.com)

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



Tip

---

We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

The link on this page has the current PGP key ID in use.

---

## Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

## Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>



### Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:  
<http://www.cisco.com/go/marketplace/>
- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:  
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:  
<http://www.cisco.com/packet>
- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:  
<http://www.cisco.com/go/iqmagazine>  
or view the digital edition at this URL:  
<http://ciscoiq.texterity.com/ciscoiq/sample/>
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:  
<http://www.cisco.com/ipj>
- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:  
<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:  
<http://www.cisco.com/discuss/networking>
- World-class networking training is available from Cisco. You can view current offerings at this URL:  
<http://www.cisco.com/en/US/learning/index.html>

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

CCSP, CCVP, the Cisco Square Bridge logo, Follow Me Browsing, and StackWise are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and iQuick Study are service marks of Cisco Systems, Inc.; and Access Registrar, Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, LightStream, Linksys, MeetingPlace, MGX, the Networkers logo, Networking Academy, Network Registrar, *Packet*, PIX, Post-Routing, Pre-Routing, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StrataView Plus, TeleRouter, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0502R)

Copyright © 2005 Cisco Systems, Inc. All rights reserved.