



Release Notes for Cisco MICA Portware Version 2.7.3.0 on Cisco AS5x00 Universal Access Servers, Cisco 3600 Series, and Cisco 3700 Series

November 25, 2002

These release notes describe Cisco MICA Portware Version 2.7.3.0 with Cisco IOS software on Cisco AS5x00 universal access servers, and Cisco 3600 series, and Cisco 3700 series.

This document includes the following sections:

- [New Features for Version 2.7.3.0, page 1](#)
- [Compatibility Requirements, page 4](#)
- [Known Problems with Cisco MICA Version 2.7.3.0, page 7](#)
- [Problems Resolved with Cisco MICA Version 2.7.3.0, page 9](#)
- [Downloading Portware Modem Code, page 10](#)
- [Related Links, page 11](#)
- [Obtaining Documentation, page 12](#)
- [Obtaining Technical Assistance, page 13](#)

New Features for Version 2.7.3.0

The following features are new in this Version 2.7.3.0 maintenance release:

- V.110 “blind connect” feature—Allows compatibility with nonstandard clients (enabled by bit 9 in S-register S54). (CSCdr39887)
- S64—New S-register that allows support for finer granularity in modulation selection. (CSCdm94337)
- S71 and S72—Two new S-registers for control of the V.90 uplink maximum and minimum symbol rates, making them independent of the V.34 maximum and minimum symbol rate controls (S41 and S42). (CSCds40079)



Corporate Headquarters:

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

Copyright © 2002. Cisco Systems, Inc. All rights reserved.

**Note**

S71 and S72 are read-only registers unless the **DEBUGTHISMODEM** command has been entered. You can use **ATDEBUGTHISMODEMS71=4** using reverse telnet, or **&F&D2DEBUGTHISMODEMS71=4** using a modemcap. S64 can be set without entering the **DEBUGTHISMODEM** command.

S-Register	Default	Configuration Description
S64	-	Finer granularity in modulation selection. 0—Automode enable (Default - Proceed as defined in S29) 1—V.90 2—K56Flex 3—V.34 4—V.32bis 5—V.32 6—V.22bis 7—V.22 8—V.21 9—V.23 10—Bell212A 11—Bell103 Note S64 forces Cisco MICA to try the standard specified in S64 only. A fallback to V.34 is allowed if S64 is set to 1 (V.90) due to the V.8 specification. If client modem is set to V.90 automode, and Cisco MICA is set to S64=5 (V.32), both modems will connect in V.32. However, if the client modem is set to V.21 and Cisco MICA is set to S64=7 (V.22), the connection will be dropped since Cisco MICA will not try any modulation other than V.22 in this case.
S71	5	V.90 Uplink Maximum Symbol Rate: 3:3000 baud 4:3200 baud 5:3429 baud
S72	3	V.90 Uplink Minimum Symbol Rate: 3:3000 baud 4:3200 baud 5:3429 baud

Continued Feature Support for Cisco MICA Portware

Cisco MICA Portware Version 2.7.3.0 continues to support Version 2.7.2.0 features. Refer to the *Release Notes for Cisco MICA Portware Version 2.7.2.0 on Cisco AS5x00 Universal Access Servers*.

S54 General Capabilities Register

S54 enables the following features:

- V.110 blind connect feature (bit 9)
- Error correction (EC) over parity (bit 6), enabled by default, so that the default value of S54 is 200 in Cisco MICA Portware Version 2.7.3.0 and above. This enables power control (CSCdk11008), 0.5 increment for SQ value (CSCdp40871), and the UART functionality/EC parity bit (CSCds35369)

The bit field values in S54 are as follows.

Value	Definition
0	All general options disabled
1	Reserved for engineering use
2	Enable aggressive client capping
4 ¹	Force 4-point training
8 ²	Enable power control
16	Enable EC quality checking
32	Cap receive (Rx) rate to 26,400 when detecting PCTEL Modem (CSCdm45403)
64 ²	Enable Universal Asynchronous Receiver/Transmitter (UART) functionality (CSCdj92333)
128 ²	Enable 0.5 increment for signal quality (SQ) value through S32 (CSCdr39887)
256	Digital signal processor (DSP) reset enable (CSCdp94025)
512	Enable V.110 blind connect (also called s&x) option to be the same as Cisco AS5200 (CSCdr39887)
1024	Enables enhanced S detector (CSCdr65889)

1. See note on 4-point training below.

2. Enabled by default.

**Note**

Although 16-point trainup is commonly used to tell modems which constellation size is being used when the modems are training up in phase 4, you can set trainup to 4-point if you are having problems syncing during training. 4-point training has fewer detection errors than 16-point training and is a more robust way of completing the full duplex train in V.34/V.90/K56Flex. 4-point trainup also allows you to operate reliably in a lower signal-to-noise ratio (SNR) environment. Use the S54=4 S-register as a debug tool.

Compatibility Requirements

Cisco MICA Portware Version 2.7.3.0 is backward compatible and runs on Cisco IOS software release 11.2P, 11.3T, 12.0, 12.1, and 12.1(5) with some feature limitations.

Refer to the *Compatibility Matrixes for Cisco AS5x00, Cisco 3600, and Cisco 3700 Platforms with Cisco MICA 6-Port and 12-Port Modem Module Portware*.

**Note**

For a list of modems tested with Cisco MICA portware, use the following link:
http://www.cisco.com/warp/public/cc/pd/as/as5800/prodlit/modem_rg.htm

Supported Platforms

Cisco MICA Portware Version 2.7.3.0 is supported on the following platforms:

- Cisco AS5300
- Cisco AS5800
- Cisco 3600
- Cisco 3725 and 3745

Portware Features

Table 1 Feature Content by Modem Version

Portware Version	Feature Content
2.7.3.0	Maintenance release. New features added to existing 2.7.2.0 features. Cisco IOS Software Release 12.1(5) support. Support for the Cisco 3700 series was added. - V.110 blind connect feature for compatibility with nonstandard clients (CSCdr39887), which is enabled by bit 9 in S-register S54. - New S-registers: - S71 and S72 (Decouple maximum symbol rates for V.90 and V.34) - S64, finer granularity in modulation selection (CSCdm94337)
2.7.2.0	Maintenance release. New features added to existing 2.7.1.0 features. Cisco IOS Software Release 12.1(5) support. - W, X, and (,) dial modifiers - Call Tracker - Support for IPDC protocol for call control signaling - Additional V.110 speeds (CSCdm43898): 38,400, 28,800, 24,000, 12,000 bps - Additional dial modifiers (CSCdk10292) - Decoupled V.90 power levels for S-registers S39 and S59 (CSCdm52396) - New values for S54 general capabilities register - Signal quality threshold changes - Parity for error controlled connections (CSCdj92333) - Added client modems for V.90 Digital Impairment Learning (DIL) sequence detection
2.7.1.0	Feature release. New features added to existing Version 2.6.2.0 features. - V.110 ISDN rate specification - spe download command - Cisco AS5800 supported on Cisco IOS Release 12.0(5)T only Modulation - ITU-T Recommendation Q.931 V.110 Bearer Rates: 1200 bps, 2400 bps, 4800 bps, 7200 bps, 9600 bps, 14,400 bps, 19,200 bps, 38,400 bps. - ITU-T Recommendation Q.931 Intermediate Rates: 8k, 16k, 32k, and 64k bps.

Table 1 Feature Content by Modem Version (continued)

Portware Version	Feature Content (continued)
2.6.2.0	Maintenance release. New features added to existing Version 2.6.1.0 features. Signaling - Resource Pool Management (RPM): - Ring-back tone generation. Port Management - Improved port management interfacing for acquiring modem/port data for AAA records.
2.6.1.0	SS7 support added to Version 2.5.1.0 features. Signaling Continuity Testing (COT) of DSO channels in SS7 networks.
2.5.1.0	V.90 and RFC-2217 dialout support for fax/data. Note The Cisco DialOut Utility (CDU) is no longer supported. Refer to the <i>Cisco DialOut Utility End of Sale/Shipping</i> bulletin and the <i>Sample NAS Configurations for Cisco DialOut Utility</i> document for information. Modulation - V.90 standard supporting rates of 56,000 to 28,000 in 1333.3-bps increments. - Fax out (transmission) Group 3, standards EIA 2388 Class 2 and EIA 592 Class 2.0, at modulations V.33, V.29, V.27ter, V.21, and V.17.
2.3.1.0	R1 support plus K56flex maintenance. Signaling R1 noncompelled and semicompelled.

Table 1 Feature Content by Modem Version (continued)

Portware Version	Feature Content (continued)
2.2.3.0	K56flex support. Modulation Rockwell K56flex at 56,000 to 32,000 in 2000 bps increments.
2.0.1.7	Initial V.34+ release. Modulation - ITU-T V.34 Annex 12 at 33600 and 31200 bps. - ITU-T V.34 at 26,400, 24,000, 21,600, 19,200, 16,800, 14,400, 12,000, 9600, 7200, 4800, or 2400 bps. - V.32bis = 14400, 12000, 9600, 7200, 4800; V.32 = 9600, 4800; V.22bis = 2400, 1200; V.21 = 300; Bell212A = 1200, Bell103 = 300; V.22 = 1200; V.23 = 1200/75. Signaling - MF - DTMF - R2 compelled, noncompelled, and semicompelled. Protocols - ITU-T V.42 (including MNP 2-4 and LAPM) Error Correction. - ITU-T V.42bis (1K nodes) and MNP 5 Data Compression. Modem Standard - ITU-T V. 25—Automatic calling or answering equipment on dialup lines. This standard includes the procedures for disabling echo control devices for calls that are established manually and automatically.

Known Problems with Cisco MICA Version 2.7.3.0

This section describes known problems with portware Version 2.7.3.0. If a workaround is not provided, a solution is being developed.

Bugs

- CSCdt39317—PCMCIA client modem falling back to V.34 from V.90
- CSCdr34193—Cisco MICA too quick to retrain in the face of clock slips
- CSCds50294—Modem goes into sudden connect failure mode
- CSCdt29631—States Cisco MICA dialout no digits collected on Ear and Mouth (E&M) Feature Group D (fgd)
- CSCdt45194—FTP transfer data stops when transferring 2x10 test file
- CSCdu04829—Formerly-flu-causing client disconnects in trainup to 2.7.2.2

- CSCdu01616—Calls into Cisco MICA fail during Connect State, Disc Reason:0x6007
- CSCdu25569—Flow control in V.110 corrupts user data
- CSCdu30366—Excessive illegal tokens during performance testing
- CSCdu24349—Dial-out to a specific vendor modem on E1 line type yields poor CSR
- CSCdt68962—New case of Hex marked bad observed without TIMER_ASSERT failure
- CSCdt68782—New case of Hex being marked Bad seen with ASSERT Failure

Problems Resolved with Cisco MICA Version 2.7.3.0

- CSCdm51072—Hex Death causes Cisco Mica to miss heartbeats
- CSCdp67697—DSP flu in 2711 - DSP yields low CSR but doesn't utterly fail
- CSCdr94776—DSP death during Phase4 of modem start-up (Cisco MICA Answer mode)
- CSCds21207—DSP death case when Originate MICA tries to connect to vendor modem
- CSCdj58113—**ATDL** does not dial the last number but returns an ok
- CSCdm02236—Absolute power level detected for digits are above specifications
- CSCdm28960—**ATVdx** command needs to be modified
- CSCdm47231—MNP connection fails with vendor modem
- CSCdm94337—Cisco MICA should support finer granularity in modulation selection
- CSCdp72881—S7 value not honored on dialout
- CSCdp25016—Cisco MICA reports pre RBS transmit rates only
- CSCdp25550—DTMF detector has to detect frequency values within 1.5%
- CSCdp66870—S19 EC retrans limit should trigger recovery attempt
- CSCdp94723—Link information index 85 not incrementing
- CSCdp78427—Change **sh mo op param#38** to display time averaged # of bad frames
- CSCdp66909—Originate Cisco MICA cant train up in V.22 (1200 bps)
- CSCdp77370—**ATS** output should be 80 columns wide
- CSCdp82120—New vendor modem failed CSR criteria
- CSCdp67281—Cannot make a 12K V.110 connection with vendor TA.
- CSCdr03893—Power transmit levels not capped for foreign countries
- CSCdr07048—Power TX levels running too hot
- CSCdr12088—%r S54 information is misspelled and obsolete
- CSCdr24044—Vendor winmodem 5.75 code does not train in V.90 with Cisco MICA
- CSCdr30360—S55 register in specification incorrect
- CSCdr39817—For country code Japan S39 and S59 should display 9 (-15dBm)
- CSCdr40033—Some parameters in **AT(backslash)S** are somewhat confusing
- CSCdr81990—BIT28 of INFOOD is not set for V.90 calls by Cisco MICA
- CSCdr82367—Featurette: Milliwatt Tone generation (Note: Disabled in 2.7.2.1)
- CSCdr86444—V.110 Loss of Sync Timeout Disabled
- CSCdr56969—S29=2 or S29=3 can hang the SP
- CSCdr39887—V110 call not terminated with AS5300, Alcatel, Mitsubishi are use
- CSCds38258—Link Info Parameter #6 not initialized in the right place
- CSCds22750—PW mail processing loop needs init 2nd time
- CSCds08638—BIT26:27 of INFOOD used in V.90 are not cleared by Cisco MICA
- CSCds82376—Cisco MICA S46 inband busy detect fails if dial tone detect bit is on
- CSCds17281—Vendor modem does not connect to Cisco MICA

- CSCds30003—S64=2 on Cisco MICA S-register doesn't work
- CSCds50046—Mips starvation problem seen in tone_pll routine
- CSCds16196—V.42bis Reset/Disconnect Problem
- CSCds48117—Some link info not updated
- CSCds48158—TxQ underrun counter not incremented
- CSCds38289—Cisco MICA Originate and Answer fail to connect to Bell212A (S64=10)
- CSCds39284—Add debug selectability to link info param # 32
- CSCds35369—EC parity bit in S54 should be on by default
- CSCds50046—Mips starvation problem seen in tone_pll routine
- CSCds36614—Cisco MICA parity over EC feature (CSCdj92333) garbles AT interface
- CSCds55455—R2 busy issue needs to be recommitted into r272x, main, etc.
- CSCds86723—Documentation on Cisco MICA S13 parity settings is incomplete or incorrect
- CSCds71259—Additional changes for false busy detect in R2
- CSCdr40079—Decouple max symbol rates for V.90 and V.34
- CSCdt31649—Code clean up and adding comments into isdn.s
- CSCdt31667—K56Flex echo canceler does not update correctly in data mode
- CSCdt31775—Cisco MICA Flex does not sending correct L2 level
- CSCdt35638—Code in Terminate memory accidentally writes to reserved memory
- CSCdt16071—Incorrect use of instructions (POPD/PSHD) may overflow HW stack
- CSCdt35668—Pointer is not set properly in SSprime phase reversal detector
- CSCdt47453—Redwood messaging has timing issue, needs interrupts disabled
- CSCdt35717—DTMF input buffer could be initially loaded with incorrect sample
- CSCdt26092—SET_BIT and CLR_BIT macros missing braces
- CSCdt21201—V.90 INFO0d bits 28 through 32 are transmitted incorrectly
- CSCdt82242—Modem #UEL fails to connect Bell212A with Cisco MICA (S64=10)
- CSCdt41661—Need memory dump capability from SP
- CSCdt54979—Separate ASSERT statements in timer code

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any Cisco software release. You can reach Bug Navigator II on Cisco.com by following this path:
Service & Support: Online Technical Support: Software Bug Toolkit

Downloading Portware Modem Code

Cisco supports portware configuration using service processing element (SPE) configuration commands. The **spe** command allows portware to be downloaded to the SPE. The **spe** command is available for use with Cisco IOS Software Release 12.0(4)XI1, 12.0(5)T, and higher.



Note

If you enter the **copy xxxx modem** command on an access server running Cisco IOS Release 12.0(4)XI1, 12.0(5)T, 12.1(1), or higher, you are prompted to use the **spe** command.

SPE Download Tasks

To download modem portware/firmware using the **spe** command, enter the **spe** command, one configuration command per line.

Step 1 Enter the **spe** command and subcommands, one configuration command per line:

```
Router# configure terminal
Router(config)# spe <slot>/<spe_begin> <slot>/<spe_end>
Router(config-spe)# firmware location system:/ucode/mica_port_firmware
Router(config-spe)# ^Z
```

For example, the following display shows a Cisco AS5300 SPE download to all modems in Slot 1 (that is, all modems on a feature card containing ten 6-port modem modules). The modem code resides in the Flash memory, and the modem code filename is mica-modem-portware.2.7.3.0.bin.

```
Router(config)# spe 1/0 1/9
Router(config-spe)# firmware location flash:mica-modem-portware.2.7.3.0.bin
```

Step 2 Copy the configuration from NVRAM into running RAM:

```
Router# copy running-config startup-config
```

Download occurs when the modems become available and shows the SPE firmware upgrade option defined (default: busyout). The **spe** command generates NVRAM modem download and configuration file entries.



Note If the configuration is not saved as described above, download of the portware specified with the **spe** command will not occur after the next reboot.

For detailed information on the **spe** command, go to the following link:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/120newft/120t/120t7/spe1206t.htm>

Modem-Pool Download Tasks

If you have an account on Cisco.com, you can download modem portware/firmware using FTP if you are using Cisco IOS Software Release 12.0(5)T or earlier at the following link:

<http://www.cisco.com/kobayashi/sw-center/sw-access.shtml>

Related Links

For further information about Cisco MICA portware and Cisco IOS software, see the following related sources:

- *Cisco AS5x00 Cisco MICA 6-Port and 12-Port Modem Module Portware/Cisco IOS Software Compatibility Matrixes*
- *Cisco MICA Modem Dial Modifiers for Cisco AS5300, Cisco AS5400, and AS5800 Universal Access Servers*
- Cisco IOS software release 12.1 index page

- *AT Command Set and Register Summary for Cisco MICA 6-Port Modules*
- *SPE and Firmware Download Enhancements*
- Cisco AS5300 universal access servers Cisco MICA release notes index page
- Cisco AS5300 access servers, Appendix A, “Managing Modems,” and Appendix B, “Rom Monitor,” in the *Cisco AS5300 Universal Access Server Software Configuration Guide*
- *Modem Management Commands*
- *Cisco IOS Dial Services Command Reference for Cisco IOS Software Release 12.1*
- V.90 and RFC-2217 dialout support for fax/data
- Cisco 3600 Series Routers index page
- Cisco 3700 Series Routers index page

**Note**

The Cisco DialOut Utility (CDU) is no longer supported. Refer to the *Cisco DialOut Utility End of Sale/Shipping* bulletin and the *Sample NAS Configurations for Cisco DialOut Utility* document for information.

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered CCO users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

<http://www.cisco.com/tac/caseopen>

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

We appreciate and value your comments.

This document is to be used in conjunction with the Cisco MICA portware and Cisco IOS software documents.

AccessPath, AtmDirector, Browse with Me, CCIP, CCSI, CD-PAC, *CiscoLink*, the Cisco *Powered* Network logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, Fast Step, Follow Me Browsing, FormShare, FrameShare, GigaStack, IGX, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, the iQ Logo, iQ Net Readiness Scorecard, MGX, the Networkers logo, *Packet*, RateMUX, ScriptBuilder, ScriptShare, SlideCast, SMARTnet, TransPath, Unity, Voice LAN, Wavelength Router, and WebViewer are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, Discover All That's Possible, and Empowering the Internet Generation, are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, the Cisco IOS logo, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastSwitch, IOS, IP/TV, LightStream, MICA, Network Registrar, PIX, Post-Routing, Pre-Routing, Registrar, StrataView Plus, Stratm, SwitchProbe, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site 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. (0106R)

Copyright © 1999–2001, Cisco Systems, Inc.
All rights reserved.

