



Release Notes for Cisco 880VA Series Multimode VDSL2/ADSL2/2+ DSL Router with firmware release A2pv6C035d.d23j

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Introduction

These release notes describe new enhancements and fixed caveats for the Cisco 880VA Series Multimode VDSL2/ADSL2/2+ DSL Routers using firmware release A2pv6C035d.d23j. These release notes are updated as needed.

System Requirements

This section describes the system requirements for firmware Release A2pv6C035d.d23j and includes the following sections:



- [Memory and IOS Software Requirements, page 2](#)
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Memory and IOS Software Requirements

Table 1 lists the memory and IOS Software requirements for the Cisco 880VA Series Multimode VDSL2/ADSL2/2+ DSL platforms, using firmware Release A2pv6C035d.d23j.



Note

This firmware version is compiled with the SDK version 4.02L.03 and supports IOS release 15.6(2)T and earlier releases up to the supported version mentioned in the firmware release note. This firmware is not supported with Cisco IOS 15.6(3)M version and later releases.

Table 1 **Memory and IOS Requirements for the Cisco 880VA Series Multimode VDSL2/ADSL2/2+ DSL platforms**

Platform	Flash (MB)	DRAM (MB)	IOS Release	VDSL2 Firmware File
CISCO886VA-K9	128	256	15.1(2)T or later	vdsl.bin.32bdslfw (A2pv6C035d.d23j)
CISCO886VA-SEC-K9				
CISCO887VA-K9				
CISCO887VA-SEC-K9				
CISCO887VA-M-K9				

Determining the Firmware Version

To determine the version of firmware currently running on your Cisco 880VA series router, issue the following IOS command and look for the output in **BOLD**:

```
Router#show controller vdsl 0

FirmwareSourceFile Name (version)
-----
VDSL user configflash:vdsl.bin.32bds1fw (10)

Modem FW Version:110802_1752-4.02L.03.A2pv6C035d.d23j
Modem PHY Version:A2pv6C035d.d23j
```

Upgrading to a New Firmware Release

Perform the following steps to upgrade to a new firmware release:

1. Download the new firmware from Cisco.com Software Center, at <http://www.cisco.com/cisco/web/download/index.html>
Choose Routers -> Branch Routers -> Cisco 800 Series Routers -> Cisco 887VA Integrated Services Router -> Very High Bitrate DSL (VDSL) Firmware
2. Copy the firmware to a designated location; for example router flash, or a TFTP server.
3. Configure the router to load the new firmware from a designated location.

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#controller vdsl 0
Router(config-controller)#firmware filename ?
  archive:  Download fw file name
  cns:      Download fw file name
  flash:    Download fw file name
  ftp:      Download fw file name
  http:     Download fw file name
  https:    Download fw file name
  null:     Download fw file name
  nvram:    Download fw file name
  rcp:      Download fw file name
  scp:      Download fw file name
  system:   Download fw file name
  tar:      Download fw file name
  tftp:     Download fw file name
  tmpsys:   Download fw file name
  xmodem:   Download fw file name
  ymodem:   Download fw file name
Router(config-controller)#firmware filename flash:vdsl.bin.32bds1fw
```

4. Restart the controller interface for the new firmware to take effect

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#controller vdsl 0
Router(config-controller)#shut
Router(config-controller)#no shut
Router(config-controller)#end
Router#
```

Modem Settings

New modem commands are introduced with the release of the A2pv6C032b.d23b firmware and IOS release 15.1(2)T to allow custom configurations of DSL modem settings to ensure DSL interoperability in different environments. Please consult your Service Provider on required modem settings (if any) for the particular SP's network.

Before you enable the modem settings, you must execute the "service internal" command in CONFIG mode. For example:

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#service internal
```

The following list contains the modem settings:

UK Annex M FLAG

- Default—disabled
- Command—**modem customUKAnnexM** under **controller vdsl 0**
- Purpose—Enabling UK specific Annex M mask
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d



Note

Reload the router after setting or unsetting this command.

- Verification:
 - When the command is configured:


```
test vdsl 0 modem exec adsl info —cfg
Bit 20 in adslAnnexAParam—ON
Bit 9 in adslDemodCap2Mask—ON
Bit 9 in adslDemodCap2Value—ON
adslAnnexAParam—00107985
adslDemodCap2Mask—00540200
adslDemodCap2Value—00540200
show controller vdsl 0 console—Custom UK Annex M Mask SET
```

- When the command is not configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bit 20 in adslAnnexAParam—OFF
 - Bit 9 in adslDemodCap2Mask—OFF
 - Bit 9 in adslDemodCap2Value—OFF
 - adslAnnexAParam—00007985
 - adslDemodCap2Mask—00540000
 - adslDemodCap2Value—00540000
 - show controller vdsl 0 console**—Custom UK Annex M Mask NOT SET

UKfeature Carrier FLAG

- Default—disabled
- Command—**modem UKfeature** under **controller vdsl 0**
- Purpose—Enabling British Telecom specific feature bit
- Firmware/Driver dependency—Starting from d23b driver and A2pv6C032b



Note

Reload the router after setting or unsetting this command.

- Verification:
 - When the command is configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bit 21 vdslCfgFlagsMask—ON
 - Bit 21 vdslCfgFlagsValue—ON
 - xdslAuxFeaturesMask—00260003
 - xdslAuxFeaturesValue—00260003
 - show controller vdsl 0 console**—UKFeatureBit SET
 - When the command is not configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bit 21 vdslCfgFlagsMask—OFF
 - Bit 21 vdslCfgFlagsValue—OFF
 - xdslAuxFeaturesMask—00060003
 - xdslAuxFeaturesValue—00060003
 - show controller vdsl 0 console** —UKFeatureBit CLEAR

CO5 FLAG

- "Default: disabled
- "Command: "modem co5" under "controller vdsl 0"
- "Purpose: Resolving performance related interoperability issues with Ikanos CO5 DSLAM
- "Firmware/Driver dependency: Starting from d23j driver and A2pv6C035d

**Note**

Reload the router after setting or unsetting this command.

- Verification:
 - When the command is configured:


```
test vdsl 0 modem exec adsl info—cfg
Bit 4 vdslCfgFlagsMask—ON
Bit 4 vdslCfgFlagsValue—ON
Bit 5 vdslCfgFlagsMask—ON
Bit 5 vdslCfgFlagsValue—ON
vdslCfgFlagsMask—00000434
vdslCfgFlagsValue—00000434
show controller vdsl 0 console—CO5 Flag SET
```
 - When the command is not configured:


```
test vdsl 0 modem exec adsl info—cfg
Bit 4 vdslCfgFlagsMask—OFF
Bit 4 vdslCfgFlagsValue—OFF
Bit 5 vdslCfgFlagsMask—OFF
Bit 5 vdslCfgFlagsValue—OFF
vdslCfgFlagsMask—00000404
vdslCfgFlagsValue— 00000404
show controller vdsl 0 console—CO5 Flag NOT SET
```

"V.43" carrier set

- Default—enabled
- Command—**modem disableV43** under **controller vdsl 0**
- Purpose—Disabling V43 carrier set
- Firmware/Driver dependency—Starting from d23b driver and B2pv6C032b

**Note**

Reload the router after setting or unsetting this command.

- Verification:
 - When the command is configured:

```
test vdsl 0 modem exec adsl info—cfg
Bit 16 vdslCfgFlagsMask—ON
Bit 16 vdslCfgFlagsValue—ON
vdslCfgFlagsMask—00010404
vdslCfgFlagsValue—00010404
show controller vdsl 0 console—Disable V43 SET
```
 - When the command is not configured:

```
test vdsl 0 modem exec adsl info—cfg
Bit 16 vdslCfgFlagsMask—OFF
Bit 16 vdslCfgFlagsValue—OFF
vdslCfgFlagsMask—00000404
vdslCfgFlagsValue—00000404
show controller vdsl 0 console—Disable V43 CLEAR
```

"GinpDsSupport" carrier set

- Default—enabled
- Command—**modem disableGinpDsSupport** under **controller vdsl 0**
- Purpose—Disabling G.INP feature bit
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d

**Note**

Reload the router after setting or unsetting this command.

- Verification:
 - When the command is configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bit 17 xdslAuxFeaturesMask—ON
 - Bit 17 xdslAuxFeaturesValue—ON
 - xdslAuxFeaturesMask—00040003
 - xdslAuxFeaturesValue—00040003
 - show controller vdsl 0 console**—Disable GinpDsSupport
 - When the command is not configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bit 17 xdslAuxFeaturesMask—OFF
 - Bit 17 xdslAuxFeaturesValue—OFF
 - xdslAuxFeaturesMask—00060003
 - xdslAuxFeaturesValue—00060003
 - show controller vdsl 0 console**—Enable GinpDsSupport

"GinpUsSupport" carrier set

- Default—enabled
- Command—**modem disableGinpUsSupport** under **controller vdsl 0**
- Purpose—Disabling GinpUs support
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured:
 - test vdsl 0 modem exec adsl info—cfg
 - Bits 18 kDslGinpUsSupported—Off
 - xdslAuxFeaturesValue—00024003
 - show controller vdsl 0 console** —Disable GinpUsSupport
 - When the command is not configured
 - test vdsl 0 modem exec adsl info—cfg
 - Bits 18 kDslGinpUsSupported—On

xdslAuxFeaturesValue—00064003

show controller vdsl 0 console output —Enable GinPUsSupport

Enabling "HBI" Feature

- Default—disabled
- Command—**modem hbifeature** under **controller vdsl 0**
- Purpose—Enabling HBI specific feature bit
- Firmware/Driver dependency—Starting from d23b driver and A2pv6C032b
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured:


```
test vdsl 0 modem exec adsl info—cfg
Bits 12 kDslG992FTFeatureBit—On
xdslAuxFeaturesMask—00061003
xdslAuxFeaturesValue—00061003
show controller vdsl 0 console output—HBI Bit SET
```
 - When the command is not configured:


```
test vdsl 0 modem exec adsl info—cfg
Bits 12 kDslG992FTFeatureBit—Off
xdslAuxFeaturesMask—00060003
xdslAuxFeaturesValue—00060003
show controller vdsl 0 console output—HBI Bit CLEAR
```

Enabling "Channel Policy 2"

- Default—disabled
- Command—**modem hbifeature** under **controller vdsl 0**
- Purpose—Enabling Channel Policy 2 specific feature bit
- Firmware/Driver dependency—Starting from d23b driver and A2pv6C032b
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured.


```
test vdsl 0 modem exec adsl info—cfg
Bits 23 kDslAuxFeatureChanPolicy—On
xdslAuxFeaturesMask—00860003
xdslAuxFeaturesValue—00860003
show controller vdsl 0 console—Chan Policy Bit SET
```
 - When the command is not configured.

```
test vdsl 0 modem exec adsl info—cfg
Bits 23 kDslAuxFeatureChanPolicy—Off
xdslAuxFeaturesMask—00060003
xdslAuxFeaturesValue—00060003
show controller vdsl 0 console —Chan Policy Bit CLEAR
```

Disabling "FireDS" Support

- Default—enabled
- Command—**modem disableFireDsSupport** under **controller vdsl 0**
- Purpose—Disabling FireDS support
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured.


```
test vdsl 0 modem exec adsl info --cfg
Bits 22 kDslFireDsSupported should be Off
adslDemodCap2Value: 00900000
show controller vdsl 0 console—Disable FireDsSupport
```
 - When the command is not configured.


```
test vdsl 0 modem exec adsl info—cfg
Bits 22 kDslFireDsSupported—On
adslDemodCap2Value—00d00000
show controller vdsl 0 console —Enable FireDsSupport
```

Disabling "FireUS" Support

- Default—enabled
- Command—**modem disableFireUsSupport** under **controller vdsl 0**
- Purpose—Disabling FireUS support
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured.


```
test vdsl 0 modem exec adsl info—cfg
Bits 23 kDslFireUsSupported—Off
adslDemodCap2Value—00500000
show controller vdsl 0 console—Disable FireUsSupport
```
 - When the command is not configured.

```
test vdsl 0 modem exec adsl info—cfg
Bits 23 kDslFireUsSupported—On
adslDemodCap2Value—00d00000
show controller vdsl 0 console —Enable FireUsSupport
```

Disabling "MonitorTone"

- Default—enabled
- Command—**modem disableMonitorTone** under **controller vdsl 0**
- Purpose—Disabling MonitorTone
- Firmware/Driver dependency—Starting from d23j driver and A2pv6C035d
- Reload the router after setting or unsetting this command
- Verification:
 - When the command is configured.


```
test vdsl 0 modem exec adsl info—cfg
Bits 14 kDslMonitorToneDisable—On
xdslAuxFeaturesValue—00064003
show controller vdsl 0 console—disable MonitorTone
```
 - When the command is not configured.


```
test vdsl 0 modem exec adsl info—cfg
Bits 14 kDslMonitorToneDisable—Off
xdslAuxFeaturesValue—00060003
show controller vdsl 0 console—enable MonitorTone
```

New and Changed Information

This section contains changes introduced with firmware release A2pv6C035d.d23j.

- "Fixed out of range Hlog reporting in G.993.2.
- "Added support for VDSL2 channel policy.
- "Improved the VDSL2 rate selection solution that maximizes INP.
- "Added support for fast mode RS coding in G993.2.
- "Fixed a downshift SRA stall issue in certain conditions in G993.2.
- "Fixed a VDSL2 G.INP training failure when Profile 12b is selected.
- "Fixed a VDSL2 G.INP training failure when minDelay=maxDelay=63ms.
- "Enabled V43 tones in G994.1 by default.
- "Fixed no connect against some CTNW DSLAMs in G992.[35].
- "Fixed Showtime errors and link drop against some CTNW DSLAMs in G992.[35].
- "Improved upstream data rate against some CNXT-based DSLAMs in G992.[35].
- "Fixed long G994.1 training with CNXT-based G992.1 only DSLAMs.
- "Fixed no connect against AD72, ADLT-J/K in short loops in G992.1.
- "Fixed occasional no SRA upshift in G992.[35].
- "Fixed ALB test mode after running QLN first in ADSL mode.
- "Implemented loop length estimate for G992.[135].
- "Fixed lower G.992.[35] DS rate issue in low minINP configurations against CNXT CO
- "Improved robustness of G.992.[135] bitswap and Showtime Stability
- "Fixed PTM's inability to recover lost codeword delineation in certain conditions.
- "Improved INP test performance in G993.2.
- "Added common TPS-TC mode validation in G993.2.
- "Improved HLOG/QLN accuracy in G992.1/3/5.
- "Fixed the first Showtime bit table reporting in G992.3/5.
- "Improved the accuracy and efficiency of bitswap in G992.1/3/5.
- "Improve G.992.[35] AnnexJ US rates against Lantiq and BRCM CO
- "Improve G.992.[35] training time against Lantiq CO
- "Improved SATN accuracy in G992.3/5.
- "Improved Showtime stability during micro-interrupt tests in G992.3/5.
- "Support CIPolicy in G.993.2
-

Known Issues and Limitations

- G.INP mode in 30a mode is not supported yet
- G.INP supports DTU framing type 1 only
- US PhyR in 30a mode has stability issue in certain loops with no delay queue feature enabled against BRCM CO FW version 10.3.1 and older. The issue has been fixed and the fix will be in future CO FW releases
- US SRA with dynamic D may have excessive CRCs under certain conditions with q = 2 against BRCM CO FW version 10.3.4 and older. The issue has been fixed and the fix will be in future CO FW releases
- US SRA with dynamic D may have excessive CRCs under certain conditions with q = 2 against BRCM CO FW version 10.3.4 and older. The issue has been fixed and the fix will be in future CO FW releases
- G.INP supports DTU framing type 1 only

Additional Notes

- G.vector shall be used with BRCM CO VE_10_7_2 and later.
- In vectoring mode, non VDSL protocols should be disabled; SRA should be enabled from driver side. V43 should be disabled by setting CfgFlagsDisableV43 (0x10000) in pG993p2Cap->cfgFlags.
- The performance of G993.2 and G.992.[35] with impulse noise in training can be improved by setting kPhyCfg1EnableImpFiltInArqMode (0x00000001) driver bit for G.INP/PhyR tests and kPhyCfg1EnableImpFiltInFecMode driver bit (0x00000002) for non-G.INP/PhyR tests. These driver bits are set in DslPhyCfg5 parameter.
- Rate selection will reduce achieved DS delay in ADSL modes by setting pDslCmd->param.dslModeSpec.capabilities.auxFeatures in BcmAdslCoreSetConnectionParam() to kDslG992p5MinimizeDSDelay.
- Rate variation in VDSL2 against Alcatel NVLT-C DSLAMs with CO5 FW 1.0.9r48b. The issue is not observed with newer FW versions. This can be worked around by changing pG993p2Cap->cfgFlags in BcmAdslCoreSetConnectionParam() of ADSL driver file BcmAdslCore.c. The change is to set pG993p2Cap->cfgFlags to CfgFlagsAlignAfterPeriodics (0x20) instead of default value of 0.
- Rate variation may happen in VDSL2 against Alcatel NVLT-C DSLAMs with Ikanos chipset in Auto Profile mode. This can be worked around by changing pG993p2Cap->cfgFlags in BcmAdslCoreSetConnectionParam() of ADSL driver file BcmAdslCore.c. The change is to set pG993p2Cap->cfgFlags to CfgFlagsNoG994AVdslToggle (0x10) instead of default value of 0.
- ANSI T1.413 is disabled by default. It can be turned on by setting the modCfg in BcmAdslCoreSetConnectionParam() to kAdslCfgModGdmtOnly | kAdslCfgModGliteOnly | kAdslCfgModT1413Only.
- ATM/PTM configuration for all modes can be set using adsl configure - TpsTc <0xBitMap-AvPvAaPa>. Value 0 means default (same as 0xE) where ATM/PTM are enabled for VDSL2 modes but only ATM is enabled for ADSL modes.
- Alternative ATTNDR calculation in G993.2 which accounts for INP, delay and available interleaving memory can be enabled by changing pG993p2Cap->cfgFlags in BcmAdslCoreSetConnectionParam() of ADSL driver file BcmAdslCore.c. The change is to set pG993p2Cap->cfgFlags to CfgFlagsEnableATTNDRframingConstraints (0x8000) instead of default value of 0.

- CPE sometimes connects in T1.413 mode against certain multimode DSLAMs with G.DMT enabled. This issue can be resolved by setting `pDslCmd->param.dslModeSpec.capabilities.auxFeatures` in `BcmAdslCoreSetConnectionParam()` to `kDslHsPreferGdmtOverT1p413(0x80000)`.
- The performance of G.992.[35] with impulse noise in training can be improved by setting `kPhyCfg1EnableImpFiltInArqMode (0x00000001)` driver bit for G.INP/PhyR tests and `kPhyCfg1EnableImpFiltInFecMode` driver bit (`0x00000002`) for non-G.INP/PhyR tests. These driver bits are set in `DslPhyCfg5` parameter.
- Rate variation may happen in VDSL2 against Alcatel NVLT-C DSLAMs with Ikanos chipset in Auto Profile mode. This can be worked around by changing `pG993p2Cap->cfgFlags` in `BcmAdslCoreSetConnectionParam()` of ADSL driver file `BcmAdslCore.c`. The change is to set `pG993p2Cap->cfgFlags` to `CfgFlagsNoG994AVdslToggle (0x10)` instead of default value of 0.
- ATM/PTM configuration for all modes can be set using `adsl configure -TpsTc <0xBitMap-AvPvAaPa>`. Value 0 means default (same as 0xE) where ATM/PTM are enabled for VDSL2 modes but only ATM is enabled for ADSL modes.
- Alternative ATTNDR calculation in G993.2 which accounts for INP, delay and available interleaving memory can be enabled by changing
- `pG993p2Cap->cfgFlags` in `BcmAdslCoreSetConnectionParam()` of ADSL driver file `BcmAdslCore.c`. The change is to set `pG993p2Cap->cfgFlags` to `CfgFlagsEnableATTNDRframingConstrains (0x8000)` instead of default value of 0.

Additional References

Use this release note with the documents and websites in this release note and the documents listed in the following sections:

- [Platform-Specific Documents, page 14](#)
- [Release-Specific Documents, page 14](#)

Release-Specific Documents

The following documents are specific to Release 15.0 and apply to Release 15.0(1)XA:

- *New and Changed Information*
- *Caveats for Cisco IOS Release 15.0M*

Platform-Specific Documents

Hardware installation guides, configuration and command reference guides, and additional documents specific to the Cisco 800 series routers are available at:

http://www.cisco.com/en/US/products/hw/routers/ps380/tsd_products_support_series_home.html

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS

command references, and several other supporting documents.

Documentation Modules

Each module in the Cisco IOS documentation set consists of one or more configuration guides and one or more corresponding command references. Chapters in a configuration guide describe protocols, configuration tasks, and Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference. Cisco IOS Software Documentation is available in html or pdf form. Select your release and click the command references, configuration guides, or any other Cisco IOS documentation you need.

Obtaining Documentation, Obtaining Support, and Security

For information on obtaining documentation, obtaining support, providing documentation feed-back, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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