

## Cisco ISR and ISR G2 xDSL Interoperability

If your company plans to deploy broadband-based services with the Cisco® Integrated Services Routers (ISRs) and Integrated Services Routers Generation 2 (ISR G2) with integrated xDSL technologies, this document describes the DSL interoperability expectations of these platforms and modules to help you avoid potential problems.

### CPE and DSLAM Interoperability

The Cisco ISR G2 product portfolio supports a diversity of DSL technologies, including very-high-bit-rate DSL 2 (VDSL2), asymmetric DSL (ADSL), ADSL2/2+, multimode VDSL2/ADSL2+, and G.SHDSL. The Cisco ISR G2 customer premises equipment (CPE) described in Tables 1 through 14 has been tested at the Cisco DSL Interoperability Test Lab in San Jose, California, to ensure interoperability with the DSL access multiplexers (DSLAMs) also specified in these tables.

### Multimode VDSL2/ADSL2+ Platforms and Modules

**Table 1.** Cisco 886VA VDSL2/ADSL2+ over ISDN

CPE			VDSL2 DSLAM					
CPE Part Number	Chipset	Firmware; Cisco IOS® Software Release	DSLAM Model	Chipset	Line Card	Firmware		
CISCO886VA	Broadcom 6366U(6368)	B2pv6C030h1.d22k; Cisco IOS Software Release 15.1(2)T or later	ZTE 9806	Broadcom	VSTDC	V1.2.0P4T2		
			Alcatel ISAM 7302	Ikanos	NVLT-D	L6GPAA40 and 126/L6GPA34.412		
			Huawei 5603	Broadcom	H565VDEA	320(2007-12-7)/VE_9_3_6		
			ADSL2+ DSLAM					
			DSLAM Model	Chipset	Line Card	Firmware		
			Alcatel ASAM7300	Broadcom	ABLT-F	L7D6AA47.174		
			ECI Hi-Focus 480	Infineon	ATU- ATUC-32	A4_9.00.48		
			Ericsson ECN320	Broadcom	EDN312xi	132 8112 R2L01 and CXC 132 8113 R2A01		
			Siemens HiX 5300	Infineon	SUADSL:64IXA	542		

**Table 2.** Cisco 887VA VDSL2/ADSL2+ over Basic Telephone Service (Annex A)

CPE			VDSL2 DSLAM					
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware		
CISCO887VA	Broadcom 6366U(6368)	A2pv6C030h.d22k; Cisco IOS Software Release 15.1(2)T or later	ZTE 9806	Broadcom	VSTDC	V1.2.0P4T2		
			Alcatel ISAM 7302	Ikanos	NVLT-D	L6GPAA40.126/L6GPA34.412		
			Alcatel ISAM 7302	Conexant	NVLT-C	L6GPAA40 and 126/L6GPA34.412		
			Huawei 5603	Broadcom	H565VDEA	320(2007-12-7)/VE_9_3_6		
			ADSL2+ DSLAM					
			DSLAM Model	Chipset	Line Card	Firmware		
			Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174		

CPE			VDSL2 DSLAM			
			Alcatel ISAM 7302	Broadcom	NALT-C	3FE27289AABD
			Ericsson EDA2.1	Broadcom	EDN312xp	132 8112 R2L01 and CXC 132 8113 R2A01
			ECI Hi-Focus 480	Infineon	ATUC (ATUC-32)	A4_9.00.60
			Fujitsu FDX Hub 1000	Infineon	ADSL IV-LCSS-FS	5.2.55.554.0
			Fujitsu FDX Hub 1000	Texas Instruments	ADSL IV-LCSS-FS	5.2.55.554.0
			Huawei MA5600	Conexant	H563ADGE VER A	322(2007-9-29)
			Lucent Stinger	Conexant	ep-hs-gs-adsl2plus-card	E.67.15.1
			Nokia D500	Globespan	ADSL2+af	3,5141 and 21:21:47 May 23, 2007

**Table 3.** Cisco 887VA-M VDSL2/ADSL2+ over Basic Telephone Service (Annex M)

CPE			VDSL2 DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
			Alcatel ISAM 7302	Ikanos	NVLT-D	L6GPAA40 and 126/L6GPA34.412
			Huawei 5603	Broadcom	H565VDEA	320(2007-12-7)/VE_9_3_6
			<b>ADSL2+ DSLAM</b>			
			<b>DSLAM Model</b>	<b>Chipset</b>	<b>Line Card</b>	<b>Firmware</b>
			Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
			Fujitsu FDX Hub 1000	Infineon	ADSL IV-LCSS-FS	5.2.55.554.0
			Lucent Stinger	Conexant	stngr-72-gs-adsl-card	E.67.15.1
		A2pv6C032b.d22k;	Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
		Cisco IOS Software Release 15.1(2)T or later	Lucent Stinger	Conexant	stngr-72-gs-adsl-card	E.67.15.1
			Fujitsu FDX Hub 1000	Infineon	ADSL IV-LCSS-FS	5.2.55.554.0
			Fujitsu FDX Hub 1000	Texas Instrument	ADSL IV-LCSS-FS	5.2.55.554.0

**VDSL2 Platforms and Modules**

**Table 4.** Cisco 887V VDSL2 Router and HWIC-1VDSL Module

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Software/Firmware
CISCO887V and HWIC-1VDSL	Broadcom	AvC011b.d21j1; Cisco IOS Software Release 12.4(24)T or later	ZTE 9806	Broadcom	VSTDC	V1.2.0P4T2
			Alcatel ISAM 7302	Ikanos	NVLT-D	L6GPAA40 and 126/L6GPA34.412
			Huawei 5603	Broadcom	H565VDEA	320(2007-12-7)/VE_9_3_6

## ADSL/ADSL2/2+ Platforms and Modules

**Table 5.** Cisco 886 ADSL-over-ISDN Router (Annex B)

CPE)			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO886	ST Micro 20190P	4.0.15; Cisco IOS Software Release 15.0(1)M or later	Alcatel ASAM7300	Broadcom	ABLT-F	L7D6AA47.174
			ECI Hi-Focus 480	Infineon	ATU-32C	A4_9.00.48
			Ericsson ECN320	Broadcom	EDN312xi	132 8112 R2L01 and CXC 132 8113 R2A01
			Siemens HiX 5300	Infineon	SUADSL:64IXA	542

**Table 6.** Cisco 867 and Cisco 887 ADSL-over-Basic Telephone Service Router (Annex A)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO887 CISCO867	ST Micro 20190P	4.0.15; Cisco IOS Software Release 15.0(1)M or later	Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
			Alcatel ISAM 7302	Broadcom	NALT-C	3FE27289AABD
			Alcatel ISAM 7330	Broadcom	EBLT-C	3FE21541AAAB
			Ericsson EDA2.1	Broadcom	EDN312xp	132 8112 R2L01 and CXC 132 8113 R2A01
			ECI Hi-Focus 480	Infineon	ATU-C (ATUC-32)	A4_9.00.60
			Fujitsu FDX Hub 1000	Infineon	ADSL IV-LCSS-FS	5.2.55.554.0
			Fujitsu FDX Hub 1000	Texas Instruments	ADSL IV-LCSS-FS	5.2.55.554.0
			Huawei MA5600	Conexant	H563ADGE VER A	322(2007-9-29)
			Lucent Stinger	Conexant	ep-hs-gs-adsl2plus-card	E.67.15.1
			Nokia D500	Globespan	ADSL2+af	3,5141 and 21:21:47 May 23, 2007

**Table 7.** Cisco 887M ADSL-over-Basic Telephone Service Router (Annex M)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO887M	ST Micro 20190P	4.0.15; Cisco IOS Software Release 15.0(1)M or later	Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
			Ericsson EDA2.1	Broadcom	EDN312xp	132 8112 R2L01, CXC 132 4220 R10A04, and CXC 132 8113 R2A01
			ECI Hi-Focus 480	Infineon	ATU-C	A4_9.00.60
			Huawei MA 5600	Conexant	ADGE	322(2007-9-29)
			Lucent Stinger	Conexant	stngr-72-gs-adsl-card	E.67.15.1

**Table 8.** Cisco 876 and 1802 ADSL Routers and HWIC-1ADSLI and HWIC-ADSLI-B/ST over ISDN (ADSLoISDN) (Annex B)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO876, CISCO1802, HWIC-1ADSLI, and HWIC-ADSLI-B/ST	ST Micro 20190	4.0.15; Cisco IOS Software Release 12.4(22)T	Alcatel ASAM7300	Broadcom	ABLT-F	L7D6AA47.174
			ECI Hi-Focus 480	Infineon	ATU-C 32	A4_9.00.48
			Ericsson EDA 2.1	Broadcom	EDN312xi	CXC 132 8112 R2L01
			Siemens HiX 5300	Infineon	SUADSL:64IXA	542

**Table 9.** Cisco 857, 877, and 1801 Routers and HWIC-1ADSL/HWIC-ADSL-B/ST ADSL-over-Basic Telephone Service Modules (Annex A)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO 857, CISCO 877, CISCO 1801, HWIC-1ADSL, and HWIC-ADSL-B/ST	ST Micro 20190	4.0.15; Cisco IOS Software Release 12.4(22)T	Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
			ECI Hi-Focus 480	Infineon	ATU-C 32	A4_9.00.48
			Ericsson EDA 2.1	Broadcom	EDN312xp	CXC 132 8112 R2L01
			Huawei MA5600	Globespan	H563ADGE VER A	MA5600V300R003
			Lucent Stinger	Conexant	ep-72-hs-gs-adsl2plus	E.67.1.36
			Nokia D500*	Globespan	ADSL2+af	3,5141,21:21:47 May 23, 2007
			Siemens HiX 5300	Infineon	SUADSL:64IXA	542

**Table 10.** Cisco 877M ADSL-over-Basic Telephone Service Router and HWIC-1ADSL-M (Annex M)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO877M and HWIC-1ADSL-M	ST Micro 20190P	4.0.15; Cisco IOS Software Release 12.4(22)YB3 or later	Alcatel ASAM7300	Broadcom	ABLT-D	L7D6AA47.174
			Ericsson EDA2.1	Broadcom	EDN312xp	132 8112 R2L01 CXC 132 4220 R10A04, and CXC 132 8113 R2A01
			ECI Hi-Focus 480	Infineon	ATU-C	A4_9.00.60
			Lucent Stinger	Conexant	stngr-72-gs-adsl-card	E.67.15.1

**Table 11.** Cisco 877M ADSL-over-Basic Telephone Service Router (Annex M UK Mask)

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO877M	ST Micro 20190P	4.0.15; Cisco IOS Software Release 12.4(22)YB3 or later	Huawei MA 5300	Conexant	ADGE	322(2007-9-29)

## G.SHDSL Platforms and Modules

**Table 12.** Cisco 888E G.SHDSL Router and HWIC-4SHDSL-E Module with Ethernet-in-the-First-Mile Support

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO888E (2- and 4-wire support) and HWIC-4SHDSL-E	Conexant	G100; Cisco IOS Software Release 15.1(1)T or later	Alcatel 7302	Infineon	NSLT-A	Feature Group 4.0 and firmware Version 1.3.13
			Huawei 5603	Infineon	SHEB	1.4.13
			Hatteras HN4000e	Infineon	HN4000e	6.2.1

**Table 13.** Cisco 878 and 888 G.SHDSL Routers and WIC-1SHDSL-V3 with ATM Support

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
CISCO 878, CISCO 888, and WIC-1SHDSL-V3	Conexant	R4.3.1; Cisco IOS Software Releases 15.1(1)T1 or later, 15.0(1)M3 or later, 12.4(22)T5 or later, and 12.4(24)T4 or later  R4.2.1; all other supported Cisco IOS Software releases for these platforms and modules	Alcatel 7300	Globespan	SMLT-A	LDP7AA46.020
			Alcatel ISAM 7302	Infineon	NSLT-A	1.3.13/1.3.5
			Alcatel ISAM 7330	Infineon	SMLT-J	1.2.42
			ECI 480	Infineon	STU-C 16	S3_8.10.16
			Huawei 5600	Globespan	H561SHEA	MA5600V300R003C03B028 (320(2007-9-29))
			Huawei 5600	Infineon	SHEB	H569 (336)SHEB
			Lucent Stinger	Globespan	STGR-LIM-SL-72	9.7.4e21 (firmware R3.0.5)
					stngr-48-shdsl-card	R3.0.2
			Lucent AnyMedia	Conexant	LPS702	01.29.52.05
			Nokia D500	Globespan	SHDSL24f	3,5141,21:50:35 May 23 2007
Siemens HiX 5300	Infineon	SUSHDSL:32:PAM16	S50010-M1295-A101-			

**Table 14.** Cisco HWIC-2SHDSL and HWIC-4SHDSL with ATM Support

CPE			DSLAM			
CPE Part Number	Chipset	Firmware; Cisco IOS Software Release	DSLAM Model	Chipset	Line Card	Firmware
Cisco HWIC-2SHDSL and HWIC-4SHDSL	Infineon	1.6.1_002; Cisco IOS Software Releases 15.0(1)M3 or later, 15.1(1)T1 or later, 12.4(15)T14 or later, and 12.4(24)T4 or later  1.5.8_002; all other supported Cisco IOS Software releases for these modules	Alcatel 7300	Globespan	SMLT-A	LDP7AA46.030 □
			Alcatel 7300	Globespan	SMLT-C	LPR9AA46.029
			Alcatel ISAM 7302	Infineon	NSLT-A	1.3.13/1.3.5
			Alcatel ISAM 7330	Infineon	SMLT-J	1.2.42
			ECI 480	Infineon	STU-C 16	S3_8.10.16
			Lucent Stinger	Globespan	STGR-LIM-SL-72	9.7.4e21 (firmware R3.0.5)
			Huawei 5600	Globespan	H561SHEA	MA5600V300R003C03B028 (320(2007-9-29))
			Huawei 5600	Infineon	SHEB	H569 (336)SHEB

### Additional Firmware Options

For multimode VDSL2/ADSL2+, VDSL2, ADSL/ADSL2/2+, and Cisco 888E G.SHDSL platforms, you can independently upgrade the modem firmware. As new firmware revisions become available, you can download them from the following locations.

**DSL firmware for part numbers CISCO886VA, CISCO887VA, and CISCO887VA-M:**

<http://www.cisco.com/cisco/software/navigator.html?a=a&i=rch>.

- Select “Routers”.
- Select “Branch Routers”.
- Select “Cisco 800 Series Routers”.
- Select “Cisco 886VA Integrated Services Router”, “Cisco 887VA Integrated Services Router”, or “Cisco 887VA M Integrated Services Router”.
- Select “Very High Bitrate DSL (VDSL) Firmware”.

**DSL firmware for part numbers CISCO887V and HWIC-1VDSL:**

<http://www.cisco.com/cisco/software/navigator.html?a=a&i=rch>.

- Select “Routers”.
- Select “Branch Routers”.
- Select “Cisco 800 Series Routers”.
- Select “Cisco 887V Integrated Services Router”.
- Select “Very High Bitrate DSL (VDSL) Firmware”.

Supported ADSL firmware for ST Micro chipset-based products with part numbers CISCO857, CISCO867, CISCO876, CISCO886, CISCO877, CISCO877M, CISCO887, CISCO887M, CISCO1801, CISCO 1801-M, CISCO1802, HWIC-1ADSL, HWIC-ADSL-B/ST, HWIC-1ADSLI, HWIC-ADSLI-B/ST, and HWIC-1ADSL-M:

<http://www.cisco.com/cgi-bin/tablebuild.pl/800>, <http://www.cisco.com/cgi-bin/tablebuild.pl/800>, or

<http://www.cisco.com/cisco/software/navigator.html?a=a&i=rch>.

- Select “Routers”.
- Select “Branch Routers”.
- Select “Cisco 800 Series Routers”.
- Select one of the ST Micro-based ADSL routers listed previously.
- Select “Asymmetric Digital Subscriber Line (ADSL) Firmware”.

For the Cisco 888 G.SHDSL platform, WIC-1SHDSL-V3, HWIC-2SHDSL, and HWIC-4SHDSL with ATM support, modem firmware is embedded in the Cisco IOS Software.



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