# Monthly Specification Update

## Intel® Server System P4000IP/R2000IP Family, Intel® Workstation System P4000CR Family

# Revision History

| Date | Modifications |
|---|---|
| April, 2012 | Initial release. |
| July, 2012 | Add errata 20,21,22,23,24 and update errata 6 and 8 |
| October,2012 | Add errata 25,26,27 and update errata 2,4,7,9,12-17,21 |
| Feb, 2013 | Updated errata 26, added errata 28-32 |

# Disclaimers

The Monthly Specification Update Server System may contain design defects or errors known as errata that may cause the product to deviate from the published specifications. Current characterized errata are documented in this Specification Update.

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# Preface

This document is an update to the specifications contained in the *Intel® Server/Workstation Board S2600IP/W2600CR and Intel ® Server/Workstation System P4000IP/CR, R2000IP Technical Product Specification*. It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools. It will contain specification changes, specification clarifications, errata, and document changes.

## Nomenclature

1. **Specification Changes** are modifications to the current published specifications for Intel® server boards. These changes will be incorporated in the next release of the specifications.

2. **Specification Clarifications** describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in the next release of the specifications.

3. **Documentation Changes** include typos, errors, or omissions from the current published specifications. These changes will be incorporated in the next release of the specifications.

4. **Errata** are design defects or errors. Errata may cause the server board behavior to deviate from published specifications. Hardware and software designed to be used with any given processor stepping must assume that all errata documented for that processor stepping are present on all devices.

## Product Scope

The following specific boards, BIOS and components are covered by this update:

| Product Code | Baseboard PBA Revision | BIOS Revision | BMC Revision | FRU/SDR Revision | ME Revision |
|---|---|---|---|---|---|
| P4000IPL | G59237-301 | 01.01.1002 | 1.00 | 1.03 | 02.01.05.069 |
| P4000CRL | G59236-301 | 01.01.1002 | 1.00 | 1.03 | 02.01.05.069 |
| P4000IP | G20993-303 | 01.02.0005 | 1.00 | 1.03 | 02.01.05.091 |
| P4000CR | G21602-302 | 01.02.0005 | 1.00 | 1.03 | 02.01.05.091 |
| R2000IP | G20993-303 | 01.02.0005 | 1.00 | 1.03 | 02.01.05.091 |

# Summary Tables of Changes

The following tables provide an overview of known errata and known document changes that apply to the specified Intel Server Products. The tables use the following notations:

**Doc:**       Intel intends to update the appropriate documentation in a future revision.

**Fix:**       Intel intends to fix this erratum in the future.

**Fixed:**     This erratum has been previously fixed.

**No Fix:**    There are no plans to fix this erratum.

**Shaded:**    This erratum is either new or has been modified from the previous specification update.

**Table 1. Errata Summary**

| No. | Plans | Description of Errata |
|-----|-------|----------------------|
| 1. | Fix | Linux Operating Systems are not supported on RSTe mode |
| 2. | Fixed | UEFI Windows Server 2008* R2 SP1 installation on SCU ports may fail under RSTe RAID mode |
| 3. | Fix | UEFI Operating System installation is not supported on ESRT2 mode |
| 4. | Fixed | HDD status LEDs do not function under specific configuration |
| 5. | Fix | RSTe GUI installation may fail if there are no devices attached to any onboard AHCI ports |
| 6. | Fixed | BMC continuously sends RAID volume rebuild event in RSTe mode of the SCU controller |
| 7. | Fixed | System may halt under specific BIOS configurations |
| 8. | Fixed | Microsoft Windows 2003* x86 installation failure under Pass-through mode of SCU controller |
| 9. | Fixed | System may halt under unsupported configuration in ESRT2 mode |
| 10. | Fixed | Extra events may be seen in the System Event Log (SEL) during system global reset |
| 11. | Fixed | System may continuously report a faulty or assert/deassert log when having blank HDD carriers or un-configured HDDs |
| 12. | Fixed | Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero |
| 13. | Fixed | Integrated BMC Web Console – Power Control page – Perform Action button not functional. |
| 14. | Fixed | IPMI Get Chassis Status command returns incorrect Chassis Identify State |
| 15. | Fixed | The BIOS and ME Firmware can't be updated successfully via Intel® One Boot Flash Update Utility(OFU) under SuSE Linux Enterprise Server 11* (64-bit) with SP2 |
| 16. | Fixed | BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under ESRT2 mode of the SCU controller |
| 17. | Fixed | High CPU utilization may occur when installing or running Microsoft* Windows* Server 2008 R2 or Microsoft* Windows* 7 with default NIC driver for Intel® Gigabit ET Dual Port Server Adapter E1G42ET and Intel® Gigabit ET Quad Port Server Adapter E1G44ET |
| 18. | Fixed | Bios/ME cannot update using OFU utility after S3 resume on P4000CR System |
| 19. | Fixed | System cannot go to S3 status in UEFI OS on P4000CR System |
| 20. | Fixed | Intel® RAID C600 Upgrade Key replacement Issue |
| 21 | Fixed | Intel® LAN driver installation failure on Windows* 7 |
| 22 | Fix | Hard drives connected through SAS expander can't be detected in legacy mode |

| No. | Plans | Description of Errata |
|---|---|---|
| 23 | Fixed | System will boot from on-board video although install add-in video card |
| 24 | Fix | On-board VGA cannot be set to the highest resolution (1920x1080 and higher). |
| 25 | Fix | Integrated BMC Web Console – Sensor Readings Page – Memory Throttling sensor status will stay "Critical" once triggered |
| 26 | Fixed | WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS |
| 27 | Fixed | S3 feature may not be function on P4000CR System with PBA (G21602-302) |
| 28 | Fix | System only reports the first occurance of power redundancy loss |
| 29 | Fix | The MAC address of Dual Port Intel® X540 10GbE I/O Module(AXX10GBTWLIOM and AXX10GBTWLHW) in BIOS displays as all zero. |
| 30 | Fix | BMC  will generate event log until it full and send PEF continually |
| 31 | Fix | System BIOS may report POST error code 0x146 with the Intel® Xeon Phi™ Coprocessor installed |
| 32 | Fix | Intel® FDR InfiniBand* ConnectX* -3 I/O Module may not comply with FCC and Industry Canada regulations. |

**Table 2. Documentation Changes**

| No. | Plans | Document Name | Description of Documentation Change |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |

The following sections provide in-depth descriptions of each erratum/documentation change indicated in the tables above. The errata and documentation change numbers referenced in the following sections correspond to the numbers in the tables above.

# Errata

## 1.　Linux Operating Systems are not supported using the RSTe mode

Problem　　　Intel® RSTe mode is not supported on Red Hat* Linux and SUSE* Linux.

Implication　User may not be able to install Red Hat* Linux and SUSE* Linux on Intel® C600 Series Chipset based Server Boards under Intel® RSTe mode.

Status　　　This issue may be fixed in a future driver or BIOS release.

Workaround　None.

## 2.　UEFI Windows Server 2008* R2 SP1 installation on SCU ports may fail under RSTe RAID mode

Problem　　　System may encounter blue screen when installing Windows Sever 2008* R2 SP1 under UEFI with below configurations:

i.　Intel® C600 RAID Upgrade Key is installed and SAS HDDs are used on SCU ports.

ii.　BIOS options "EFI Optimized Boot" and "Use Legacy Video for EFI OS" are enabled.

iii.　RSTe RAID mode is used.

Implication　User may not be able to install UEFI Windows Server 2008* R2 SP1 on Intel® C600 Series Chipset based Server Boards with the above mentioned configuration.

Status　　　This issue was fixed in BIOS 01.06.0001 release.

Workaround　None.

## 3.　UEFI Operating System installation is not supported using the ESRT2 mode

Problem　　　UEFI OS installation of Windows*, Red Hat* Linux or SUSE* Linux may fail on AHCI or SCU controller when "EFI Optimized Boot" and "Use Legacy Video for EFI OS" are both enabled.

Implication        User may not be able to install UEFI OS under the ESRT2 mode on Intel® C600
                   Series Chipset based Server Boards

Status             This issue may be fixed in a future BIOS revision.

Workaround         None.


# 4.    HDD status LEDs do not function under specific configuration

Problem            If drives are connected through expander to SCU ports and configured under
                   RSTe mode, the HDD status LEDs may not function properly.

Implication        HDD status LED may not show the HDD locate, HDD fault or RAID rebuild
                   message.

Status             This issue was fixed in RSTe driver 3.2.0.1134 and later version.

Workaround         None.


# 5.    RSTe GUI installation may fail if there are no devices attached to any onboard AHCI ports

Problem            When Microsoft Windows 2008* R2 is installed on SCU ports, the installation of
                   RSTe drivers and the Graphic User Interface (GUI) in Windows 2008* R2 will
                   fail, if the AHCI controller is enabled, and no devices are attached to the AHCI
                   SATA ports.

Implication        User may not be able to install RSTe GUI under mentioned configuration when
                   the AHCI controller is enabled and no devices are attached to the AHCI SATA
                   ports.

Status             This issue may be fixed in a future RAID driver.

Workaround         The workaround is to either plug a SATA device into one of the AHCI SATA
                   ports or disable the onboard AHCI controller in BIOS


# 6.    BMC continuously sends RAID volume rebuild event in RSTe mode of the SCU controller

Problem            When RSTe RAID is in degraded mode and a drive is inserted to start the
                   RAID rebuild, System Event Log (SEL) records drive plug and rebuild events
                   and then continuously sends a rebuild event message.

Implication      User may see the SEL flooded with RAID volume rebuild event entries.

Status           This issue was fixed in the latest RSTe driver ver 3.0.0.3020 upd 2012.02.03.

Workaround       None.


## 7.    System may halt under specific BIOS configurations

Problem          Once BIOS options "EFI Optimized Boot" and "Memory Mapped I/O Above
                 4GB" are enabled, and RSTe mode is selected, system may halt during POST.

Implication      User may see system hang with the above mentioned configuration.

Status           This issue was fixed in Bios 01.03.0002 release.

Workaround       None.


## 8.    Microsoft Windows 2003* x86 installation failure occurs using the "Pass-Through" mode of the SCU controller

Problem          Microsoft Windows Server 2003* x86 installations on SCU RSTe "pass-
                 through" mode fail.

Implication      User may not able to install Microsoft Windows Server 2003* x86 on the above
                 mentioned BIOS configuration.

Status           This issue was fixed in the latest RSTe driver ver 3.0.0.3020 upd 2012.02.03

Workaround       None.


## 9.    System may halt under unsupported configuration in ESRT2 mode

Problem          If no Intel $^®$ C600 RAID upgrade key (any of RKSAS4, RKSAS4R5, RKSAS8,
                 RKSAS8R5) is installed to enable SAS support capablity under the ESRT2
                 mode and SAS drivers are used, the system may halt at the boot stage.

Implication      User may see a system halt with no RAID keys installed with SAS drivers used
                 and ESRT2 enabled. User should use SATA drives only if no RAID key
                 installed.

Status           This issue was fixed in Bios01.03.0002 BIOS release.

Workaround        None.

## 10.    Extra events may be seen in the System Event Log (SEL) during system global reset

Problem           The BMC may sporadically log extra reset event during a system DC reset (global reset). These events may appear as there is an extra reset during BIOS POST.

                  The following SEL entries indicate two resets in a POST process:

                  *Informational event: Pwr Unit Status reports the power unit is powered off or being powered down.*

                  *Informational event: Pwr Unit Status reports the power unit is powered off or being powered down.*

Implication       The SEL log may indicate that system has an occasional reset in a normal POST during DC cycle test (global reset).

Status            This issue was fixed in BMC 1.04.

Workaround        None.

## 11.    System may continuously report a faulty or assert/deassert log when having blank HDD carriers or un-configured HDDs

Problem           With ESRT2 SATA RAID 5 config with 3 HDDs, put the 4th HDD in drive carrier and set it to either unconfigured or global hot spare. System event log may be flooded with HDD faulty entries.

                  With ESRT2 SAS RAID 1 with 2 HDDs, put 3rd HDD and set to unconfigured or global hot spare. System event log may be flooded flood with HDD faulty entries.

Implication       User may see the SEL flooded with HDD faulty entries when either of the two scenarios above are used.

Status            This issue was fixed in BMC 1.04**.**

Workaround        None.

## 12.  Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero

Problem          On some systems the Integrated BMC Web Console Power Statistic page may display the Minimun wattage as zero (0W) after the system has been powered. This reading will stay at zero until the next power cycle of the system.

Implication      This is an incorrect reading only and does not affect operation.

Status           This issue was fixed in BMC 1.10.r3560 release.

Workaround       None.

## 13.  Integrated BMC Web Console – Power Control page – Perform Action button not functional

Problem          After performing a Graceful shutdown from the Integrated BMC Web Console Power Control page the Perform Action button is greyed out and cannot be pressed to request another action.

Implication      You cannot perform a power on of the system.

Status           This issue was fixed in BMC 1.10.r3560 release.

Workaround       Select another page in the Integrated BMC Web Console and then return to the Power Control Page. The Perform Action button will then be available.

## 14.  IPMI Get Chassis Status command returns incorrect Chassis Identify State

Problem          When a Get Chassis Status command is issued, after the Chassis Identify LED has been forced on, the status of off (00b) is returned for Chassis Identify State (response data byte 4 – bits [5:4]).

Implication      Unable to correctly read when the Chassis Identify LED is on.

Status           This issue was fixed in BMC 1.10.r3560 release.

Workaround       None.

## 15. The BIOS and ME Firmware can't be updated successfully via Intel® One Boot Flash Update Utility(OFU) under SuSE Linux Enterprise Server 11* (64-bit) with SP2

Problem         OFU will fail to update BIOS & ME under SuSE Linux Enterprise Server 11* (64-bit) with SP2 Operating System.

Implication      If the system is running SuSE Linux Enterprise Server 11* (64-bit) with SP2 Operating System, using OFU to update System Firmware Update Package(SFUP) will fail.

Status           This issue was fixed in OFU Version 11.0 Build 8.

Workaround     Update System Firmware Update Package(SFUP) from EFI environment using iFlash32, FWPIAUpdate and FRUSDR Utility.

## 16. BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under the ESRT2 mode of the SCU controller

Problem         HDD fault will keep asserting and de-asserting frequent during RAID rebuild under ESRT2.

Implication      During HDD ESRT2 RAID rebuild, there's flood HDD fault assert/deassert(SAS RAID) or Rebuild/remap (SATA RAID) logs into SEL.

Status           This issue was fixed in ESRT2 drivers 15.00.0528.2012 release.

Workaround     None.

## 17. High CPU utilization may occur when installing or running Microsoft* Windows* Server 2008 R2 or Microsoft* Windows* 7 with default NIC driver for Intel® Gigabit ET Dual Port Server Adapter E1G42ET and Intel® Gigabit ET Quad Port Server Adapter E1G44ET

Problem         There has been high CPU load observed when installing or running Microsoft Windows Server 2008* R2 or Microsoft Windows 7* with default NIC (Network Interface Card) driver.

Implication      When the ports are not electrically "linked" and the embedded driver is loaded the DPC rate steadily increases until the system slows to the point where it is essentially unusable.

Status           This issue was fixed in NIC driver 16.8 release.

Workaround     None.

## 18.    Bios/ME cannot update using OFU utility after S3 resume on P4000CR System

Problem          BIOS/ME update under OS will fail after S3 resume.

Implication      Can not update Bios and ME with OFU utility.

Status           This issue was fixed in Bios 01.02.0004. .

Workaround    None.

## 19.    System cannot go to S3 status in UEFI OS on P4000CR System

Problem          System Cannot goto S3 status in UEFI native OS.

Implication      System will lose S3 function if use UEFI native OS.

Status           This issue was fixed in Bios 01.02.0004.

Workaround    None.

## 20.    Intel® RAID C600 Upgrade Key replacement Issue

Problem           With Manageability Engine (ME) Firmware 02.01.05.069, the server may detect the incorrect Storage Control Unit (SCU) Redundant Array of Inexpensive/Independent Disks (RAID) information after installing or replacing the RAID upgrade key. The board or system may still show the previous RAID information even if you replace the key with a new one.

Implication      With the ME firmware 02.01.05.069, the system may not detect the new RAID activation key during the first time AC power on.

Status           The issue is fixed with ME firmware 02.01.05.091.

Workaround    Do a second AC power cycle to the system after the RAID upgrade key has been installed or replaced to ensure the correct type of key is identified.

## 21. Intel® LAN driver installation failure on Windows* 7

Problem          The Intel® LAN driver version 16.8 and below may not be installed sucessfully on Windowns* 7 with the .bat installation scripts in the driver package.

Implication      The LAN driver can not be installed by the .bat installation scripts in the driver package.

Status           The issue was fixed in a Intel® LAN driver version 17.1 release.

Workaround       Two workarounds are availalbe:

> 1. The LAN driver can be manually installed.
>
> 2. User can lower the "User Account Control" to "Never Notify", then the driver can be installed with the .bat installation scripts.

## 22. Hard drives connected through SAS expander can't be detected in legacy mode

Problem          If hard drives are connected through expander to SCU ports and configured under RSTe mode, the hard drives can't be detected by system in legacy mode (default BIOS setting).

Implication      Users can't use the hard drives connected through expander as boot device to install OS. But users can install OS to other hard drives which are not connected through expander and load RSTe driver to make the hard drives connected through expander visible to OS. Or users can change Boot Options -> EFI Optimized Boot to "Enabled" in BIOS Setup so that hard drives connected through expander can be detected by the system.

Status           This issue may be fixed in a future BIOS release.

Workaround       None.

## 23. System will boot from on-board video although install add-in video card

Problem          When try to boot from add-in video card, system can not boot up.

Implication      Bios video output policy by default was booting from onboard video although install the add-in video card.

Status           This issue was fixed in Bios 01.02.0009 and changed video output to installed add-in video card by default.

Workaround     Need to install internal video cable to boot up system first then disable on-board video option in Bios.

## 24.    On-board VGA cannot be set to the highest resolution (1920x1080 and higher).

Problem          The Graphics ID register in the on-board video controller is getting set incorrectly.

Implication      The video cannot be set to the highest resolutions listed here:

[1920x1080,High 256 Color, 60 Hertz]
[1920x1200,High 256 Color, 60 Hertz]
[1920x1080,High Color(16bit), 60 Hertz]
[1920x1200,High Color(16bit), 60 Hertz]

Status           This issue may be fixed in a future BMC release.

Workaround     None.

## 25.    Integrated BMC Web Console – Sensor Readings Page – Memory Throttling sensor status will stay "Critical" once triggered

Problem          When Memory Throttling is triggered, the Memory "P1 MTT and/or P2 MTT" sensor status will stay at "Critical" status in the Integrated BMC Web Console even after throttling has stopped.

Implication      You may observe Memory "P1 MTT and/or P2 MTT" status as "Critical" even when there is no throttling. No functional impact to the system.

Status           This issue may be fixed in a future ME release.

Workaround     Need a AC cycle or reset ME through IPMI to reset the MTT sensor status.

## 26.    WOL (Wake on LAN) may not be function under Red Hat* Linux 6.2 64bit OS

Problem          With Intel® LAN driver version 17.1, WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS.

Implication        You may not be able to wake system through onboard NIC port.

Status        This issue will be fixed in Intel® LAN driver version 17.4 and later release

Workaround     None.

## 27. S3 feature may not be function on P4000CR System with PBA (G21602-302)

Problem        The PBA G21602-302 with Bios 01.02.0005 may not enter S3 status even upgrade to later Bios release with normal capsule .

Implication        S3 feature may not work on the system.

Status        This issue is fixed by Bios 01.03.0001.

Workaround     Upgrade to new Bios with recovery capsule.

## 28. System only reports the first occurrence of power redundancy lost events

Problem        The integrated platform management subsystem will only report the first occurrence of a power redundancy lost event. Any additional power redundancy lost events that may occur after the initial event, will not be reported unless an AC cycle of the server is performed.

Implication        With the first power redundancy lost event detected, the system status LED will change the state to flashing Green and the system event log will display the event as shown below.

                    Power Unit, Pwr Unit Redund (#0x2) Informational event: Pwr Unit Redund reports full redundancy has been lost. Integrated BMC - LUN#0 (Channel#0)

                    After hot swapping the faulty power supply, which would change the state of the system back to normal (system status LED goes back to solid Green), the system will NOT report any further power redundancy lost events, until an AC cycle of the server is performed.

Status        This issue will be fixed in a future BMC release.

## 29. The MAC address of Dual Port Intel® X540 10GbE I/O Module(AXX10GBTWLIOM and AXX10GBTWLHW) in BIOS displays as all zero

Problem            With BIOS R01.06.0001, the MAC address of Dual Port Intel® X540 10GbE I/O
                   Module(AXX10GBTWLIOM and AXX10GBTWLHW) in BIOS displays as all
                   zero.

Implication        Users are not able to check the MAC address of Dual Port Intel® X540 10GbE
                   I/O Module(AXX10GBTWLIOM and AXX10GBTWLHW) in BIOS.

Status             This issue may be fixed in a future BIOS release.

Workaround     None.


## 30.    BMC will generate flood event log and send PEF continuously

Problem            1. Use IPMI tool to set a PEF (6 commands)
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x01 0x01
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x02 0x01
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x9 0x14 0xa8
                   0x1f 0x0
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x6 0x14 0x80
                   0x1 0xa 0x10 0xff 0xff 0xff 0xff 0xff 0xff 0xff 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
                   0x0
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x0c 0x01 0x1 0x12 0xf
                   0x80 0x5 0x7
                       ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x0c 0x01 0x1 0x13 0xf
                   0x0 0x0 0xa 0x24 0x71 0x7b 0x0 0x0 0x0 0x0 0x0 0x0
                   2. Go to BMC web console and go to configurations=>alert, check all alert and
                   must set  destination IP to remote concole =>Save
                   3. Try to generate an event (unplug power), you can see there are a lot of
                   event in event log and make event log full.
                   4. Even when restore the PSU, the SEL is continuing to grow w/o PSU
                   redundancy regain.

Implication        The flood even log will fulfill the SEL in several minutes

Status             The issue may be fix in future BMC release

Workaround      Restore the system and uncheck all alerts in BMC web console.


## 31.    System BIOS may report POST error code 0x146 with the Intel® Xeon Phi™ Coprocessor  installed

Problem            System BIOS may report POST error code 0x146 "PCI out of resource error"
                   when one or more Intel® Xeon Phi™ Coprocessors are installed with the BIOS
                   default setting.

Implication        The Intel® Xeon Phi™ Coprocessor might not be recognized using the default
                   BIOS setting as it requires more PCI space..

Status             This issue may be fixed in a future BIOS release.

Workaround      Press F2 to enter BIOS Setup, change Advanced -> PCI Configuration ->
                Memory Mapped I/O Size to 256G or larger. The value also depends on your
                system PCI configuration

## 32.    InfiniBand* ConnectX* -3 I/O Module may not comply with FCC and Industry Canada regulations

Problem          Intel® FDR InfiniBand* ConnectX* -3 I/O Module AXX1FDRIBIOM and
                 AXX2FDRIBIOM may not comply with Part 15 of the Federal Communications
                 Commission (FCC) and Industry Canada regulations when used with copper
                 InfiniBand* cables.

Implication      Except for not complying with FCC and Industry Canada regulations when used
                 with copper InfiniBand* cables, no other functionality impact. And except for the
                 United States of America and Canada where the regulations apply, no other
                 countries are impacted.

Status           This issue may be fixed by hardware improvement in the future.

Workaround       This product must be used with optical cables in the United States of America
                 and Canada to comply with FCC and Industry Canada regulations.

# Documentation Changes

None.