



STL2 Server Board Specification Update

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The STL2 server board 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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REVISION HISTORY

Date of Revision	Description
November, 2000	This document is the first Specification Update for the STL2 Server board.



N440BX DP SERVER SPECIFICATION UPDATE

PREFACE

This document is an update to the specifications contained in the *STL2 Server Board Technical Product Specification* (Order Number A44368-001). 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.

Refer to the *Pentium^a III Processor Specification Update* (Order Number 244453-021) for specification updates concerning the Pentium III processor. Items contained in the Pentium III Processor Specification Update that either do not apply to the STL2 server board or have been worked around are noted in this document. Otherwise, it should be assumed that any processor errata for a given stepping are applicable to the Printed Board Assembly (PBA) revisions(s) associated with that stepping.

Nomenclature

Specification Changes are modifications to the current published specifications for the STL2 server boards. These changes will be incorporated in the next release of the specifications.

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.

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

Errata are design defects or errors. Errata may cause the STL2 server board's 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.



STL2 SERVER BOARD SPECIFICATION UPDATE

Specification Update for the STL2 Server Board



STL2 SERVER BOARD SPECIFICATION UPDATE

GENERAL INFORMATION

Identification Information

Below are the specific boards, BIOS and components covered by this update.

Baseboard Fab #	Baseboard PBA #	BIOS	SSU	Processor Stepping	Chipset Stepping (ServerWorks* ServerSet* III LE CNB30LE & ROSB4)
3	A28808-301	Release 1.1	Release 1R1	Pentium® III processor: cA2, cB0, cC0	RCC-NB6635-P02(2.2) RCC-IB6566-P03(A4.0)
3	A28808-302	Release 1.1	Release 1R1	Pentium® III processor: cA2, cB0, cC0	RCC-NB6635-P03(2.3) RCC-IB6566-P04(B1.0)

Summary Table of Changes

The following tables indicate the Errata and the Document Changes that apply to the STL2 Server Board. Intel intends to fix some of the errata in a future stepping of the component, and to account for the other outstanding issues through documentation or specification changes as noted. These tables use the following notations:

CODES USED IN SUMMARY TABLE

Doc:	Intel intends to update the appropriate documentation in a future revision.
Fix:	This erratum is intended to be fixed in a future stepping of the component.
Fixed:	This erratum has been previously fixed.
NoFix:	There are no plans to fix this erratum.
Shaded:	This erratum is either new or modified from the previous version of the document.



STL2 SERVER BOARD SPECIFICATION UPDATE

NO.	Plans	ERRATA
1	NoFix	Processor fan speeds cannot be monitored
2	NoFix	Full length PCI cards cannot be installed in PCI slot 1
3	Fix	SC5000/SR2050 chassis fault LED is always lit when the STL2 server board is installed.
4	NoFix	Intrusion switch connector does not fit on connector 6A pins 1&2 in the SR2050 chassis
5	NoFix	Microsoft* Windows 98* will not install
6	NoFix	4GB memory size reported incorrectly during POST
7	NoFix	Arrowhead card fails installation under Microsoft* Windows 2000*
8	Fix	DOS load fails with Fujitsu* IDE hard drive model MPE3084AE
9	Fix	SSI power connector lacks extended latch to accommodate ATX power cable
10	Fix	BIOS update process does not ask for confirmation
11	NoFix	BMC firmware update process power down the system automatically upon completion
12	NoFix	BMC firmware corruption is a non-recoverable condition.
13	NoFix	STL2/SC5000 system exceeds system level acoustic specification
14	NoFix	PIO IDE mode 3 drives cause no boot condition
15	Fix	SC5000 350 watt power supply fan failure not reported in the SEL
16	Fix	Boot order issue with SCSI CDROM drives
17	Fix	1GHz heatsink clip is difficult to install on secondary processor socket from Molex
18	Fix	Three percent no boot failure following battery replacement due to Super I/O errata
19	Fix	Primary and secondary processor VRM circuit support for 1.133GHz processors
20	Fixed	Red Hat Linux 6.1 installation issue

NO.	Plans	DOCUMENT CHANGES

Errata

1. *Processor fan speeds cannot be monitored*

PROBLEM: The STL2 server board was not designed to monitor the speed of either the primary or secondary processor fans. The tachometer signal (pin 1) on both processor fan connectors (P12 and P36) is not connected. Only the 12V signal (pin 2) and ground signal (pin 3) are supplied to the processor fan connectors.

IMPLICATION: The processor fan speed cannot be monitored through the ISC software. Processor fan failures will not be recorded in the system event log (SEL).

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

2. *Full length PCI cards cannot be installed in PCI slot 1*

PROBLEM: Full length PCI cards cannot be installed in PCI slot 1 of the STL2 server board, as a full length card will interfere with the DIMM slots.

IMPLICATION: Full length PCI cards cannot be utilized in PCI slot 1 of the STL2 server board.

WORKAROUND: Install any full length PCI cards in PCI slot 2-6 of the STL2 server board.

STATUS: NoFix.

3. *SC5000/SR2050 chassis fault LED is always lit when the STL2 server board is installed*

PROBLEM: The SC5000 and SR2050 chassis front panel boards combine the power LED signal with the fan fault LED signal into a single system fault LED. The STL2 server board implements the power fault LED signal (pin 8 of the front panel connector) as a High True signal. The fan fault LED signal (Pin 6 of the front panel connector) is implemented as a Low True signal. The mixing of the High True power fault LED signal and the Low True fan fault LED signal results in the system fault LED being illuminated whenever power is applied to the system. Customers with third party chassis designs utilizing front panels that combine the power fault and fan fault LED signals into a single system fault LED may also experience this issue. Customers with third party chassis designs utilizing front panels that implement separate discrete power and fan fault LEDs should not experience this issue.

IMPLICATION: The system fault LED will be illuminated whenever power is applied to the system when the STL2 board is installed in the SC5000 or SR2050 chassis.

WORKAROUND: The STL2 Server boxed board (STL2) includes an alternate front panel cable (Intel part number A37010-001) for use with the SC5000 chassis, SR2050 chassis, or any third party chassis designs utilizing front panels that combine the power fault and fan fault LED signals into a single system fault LED. A front panel cable spare kit (FTLFPCL, MM# 832781) will be available for customers taking the BTLBB SKU that need to use this cable. The alternate front panel cable effectively removes the physical fan fault LED signal from the system fault LED circuit by disconnecting front panel pins 4 and 6, and also re-routes the power fault LED signal from pin 8 to pin 4. The alternate cable needs to be used in combination with a modified STL2 BMC firmware, version 11.16, that routes both the power and fan fault LED signals to pin 8 on the STL2 server board, thus forming a single system fault LED. STL2 BMC firmware version 11.16 is included on the STL2 boxed board country kit CDROM and is also available for download from the web at http://support.intel.com/support/motherboards/server/stl2/stl2_fw_1116.htm

STATUS: Fix. This erratum will be fixed in a future FAB of the STL2 server board.

4. *Intrusion switch connector does not fit on connector 6A pins 1&2 in the SR2050 chassis*

PROBLEM: When the STL2 server board is installed in the SR2000 chassis, the back side area for the PCI add in cards is indented 5/16 inches. This indented area is directly over the STL2 connector 6A, where the chassis intrusion connector is located. This indented area does not touch the connector pins, but there is not enough clearance to attach any connectors to this site.

IMPLICATION: The SR2050 chassis intrusion switch cannot be connected to STL2 connector 6A.

WORKAROUND: The SR2050 chassis intrusion switch should be connected to STL2 jumper 1L4 pins 3-4.

STATUS: NoFix.

5. *Microsoft* Windows 98* will not install*

PROBLEM: Microsoft* Windows 98* will not install the STL2 server board. Various error messages and hangs have been encountered when attempting the installation.

IMPLICATION: Microsoft* Windows 98* cannot be utilized with the STL2 server board.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

6. *4GB memory size reported incorrectly during POST*

PROBLEM: When 4 GB total memory is installed in the STL2 server board, the BIOS reports the extended memory size as 3,999 MB during POST. The expected extended memory size is 4095 MB. The OS can access all of the installed memory.

IMPLICATION: The BIOS will report the extended memory size as 3,999 MB during POST when 4 GB total memory is installed in the STL2 server board. The OS can access all of the installed memory, so this issue has no impact on product functionality.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix. This issue is caused by an errata in the ServerWorks* III LE chipset. No fix is planned at this time.

7. *Arrowhead card fails installation under Microsoft* Windows* 2000*

PROBLEM: The Arrowhead server management card will not complete installation when used with the STL2 server board and Microsoft Windows 2000. A black screen is encountered during installation.

IMPLICATION: The Arrowhead server management card cannot be utilized with the STL2 server board and Microsoft Windows 2000.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

8. *DOS load fails with Fujitsu IDE hard drive model MPE3084AE*

PROBLEM: DOS cannot be loaded to Fujitsu IDE hard drive model MPE3084AE. The system hangs during the installation.

IMPLICATION: The Fujitsu IDE hard drive model MPE3084AE cannot be utilized with the STL2 server board.

WORKAROUND: No workaround exists for this issue.

STATUS: Fix. Intel is working with Fujitsu to root cause and correct this issue.

9. *SSI power connector lacks extended latch to accommodate ATX power cable*

PROBLEM: The STL2 24-pin SSI power connector does not have an extended latch to help secure ATX power cables. The 24-pin SSI power connector used on other Intel boards has an extended latch feature that secures 20-pin ATX power cables to the 24-pin SSI baseboard power connector.

IMPLICATION: Without the extended latch to secure the cable, the 20-pin ATX power supply cable may disconnect during shipping. This issue does not effect the STL2 server board when used in the SC5000 or SR2050 chassis. This issue will affect customers using third party chassis with 20-pin ATX power supply cables.

WORKAROUND: Customers should be aware of this issue and should secure long power supply cables to reduce the risk of 20-pin power supply cables disconnecting during shipping.

STATUS: Fix. This erratum will be fixed in a future FAB of the STL2 server board.

10. BIOS update process does not ask for confirmation

PROBLEM: When a STL2 BIOS update is performed, the STL2 BIOS update utility immediately begins programming the BIOS upon boot from the BIOS update diskette, without prompting for confirmation first. This is different than the BIOS update process for other Intel server products, which prompts the user to confirm the BIOS update before proceeding.

IMPLICATION: STL2 BIOS updates will be performed immediately after booting to the BIOS update diskette, without user confirmations.

WORKAROUND: No workaround exists for this issue.

STATUS: Fix. This issue will be fixed in a future BIOS release.

11. BMC firmware update process powers down the system automatically upon completion

PROBLEM: When a STL2 BMC firmware update is performed, the STL2 BMC firmware update utility automatically powers down the system upon successful completion, without prompting for power down confirmation first. This is different than the BMC firmware update process for other Intel server products.

IMPLICATION: The STL2 system will automatically power down when a BMC firmware update is successfully completed. This is expected behavior.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

12. BMC firmware corruption is a non-recoverable condition

PROBLEM: If BMC firmware corruption occurs on a STL2 board during the BMC firmware update process or by other means, this is a non-recoverable condition. This is different from some other Intel server boards which include a BMC force update jumper to allow recovery from BMC firmware corruption.

IMPLICATION: Since BMC firmware corruption is a non-recoverable condition, extra care should be taken to not accidentally power down the STL2 system when a BMC firmware update is in process.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

13. STL2 / SC5000 system exceeds system level acoustic specification

PROBLEM: Intel server boards typically have a protection circuit on the 12V fan voltage pin that reduces the fan voltage from 12V to approximately 11V. On the STL2 server board, there is no protection circuit on the fan voltage pin, so the full 12V is supplied to the system fan. This causes the system fans to run faster than designed and pushes the system acoustic level over Intel's specified 50dBA acoustic limit.

IMPLICATION: If the SC5000 chassis fans are connected directly to the STL2 baseboard fan connectors, the STL2/SC5000 system will exceed the acoustic level of 50dB. This issue may affect customers using third party chassis.

WORKAROUND: A fan extension cable with a 5 ohm resistor has been designed (Intel part number A38302-001), which lowers the system fan voltage. Two fan extension cables are included in the STL2 server boxed board. It is necessary to use a fan extension cable with each of the SC5000 system fans in order to lower the system level acoustics below 50dBA. Customer using third party chassis should evaluate their system's acoustics and use the fan cable if desired to lower system level acoustics.

STATUS: NoFix.

14. PIO IDE mode 3 drives causes no boot condition

PROBLEM: The STL2 server board will not boot with a PIO IDE mode 3 drive connected. Only PIO modes 0 and 4 IDE drives work with the STL2 server board.

IMPLICATION: PIO IDE mode 3 drives cannot be utilized with the STL2 server board.

WORKAROUND: No workaround exists for this issue.

STATUS: NoFix.

15. SC5000 350 watt power supply fan failure not reported in the SEL

PROBLEM: When a STL2 server board is installed in the SC5000 chassis, a 350-watt power supply fan failure will currently light the front panel fault LED but there will be no corresponding system event log (SEL) entry for this failure.

IMPLICATION: SC5000 chassis 350-watt power supply fan failures will not be recorded in the STL2 server board SEL.

WORKAROUND: No workaround exists for this issue.

STATUS: Fix. A fix is planned in STL2 FRU/SDR v. 4.3.6.

16. Boot order issue with SCSI CDROM drives

PROBLEM: The STL2 server board changes the boot order of an installed SCSI CDROM drive when a CDROM is not loaded in the CDROM drive. The SCSI CDROM drive is moved to a bottom of the boot priority list in BIOS setup when the system is booted without a CDROM in the CDROM drive.

IMPLICATION: The customer may need to set the boot order of the SCSI CDROM drive in <F2> BIOS setup prior to booting the system from a bootable CDROM, otherwise the system may not boot from the bootable CDROM.

WORKAROUND: Set the boot order of the SCSI CDROM drive in <F2> BIOS setup just prior to booting the system from a bootable CDROM.

STATUS: Fix. This issue will be fixed in a future BIOS release.

17. 1GHz heatsink clip is difficult to install on secondary processor socket from Molex

PROBLEM: It is difficult to install the heat sink clip included with 1GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from the manufacturer Molex, due to the very close proximity of the capacitor at location 9D8. This issue is not present on STL2 server boards built with a secondary CPU socket from the manufacturers AMP or Foxconn, because the tab to which the heat sink clip attaches is slightly smaller than the tab on the Molex connectors.

IMPLICATION: It is difficult to install the heat sink clip included with 1GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from the manufacturer Molex.

WORKAROUND: It is possible to install the heat sink clip included with 1GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from the manufacturer Molex. To make the installation as easy as possible, it is recommended that the processors and heat sinks be installed before the STL2 server board is installed into the chassis. When installing the processors and heat sinks, the STL2 server board should be placed on a flat, firm, ESD protected surface. Follow the installation procedures included with the 1GHz boxed Intel® Pentium® III processors for the PGA370 socket when installing the heat sink clip. It is necessary to apply force to the heat sink clip tab until the clip is latches into place.

STATUS: Fix. This erratum will be fixed in a future FAB of the STL2 server board. The capacitors near the secondary processor socket are being moved slightly to allow for easier heat sink clip installation.

18. *Three percent no boot failure following battery replacement due to Super I/O errata*

PROBLEM: Due to an erratum with the Super I/O PC97317 component, approximately three percent of STL2 server boards will not boot following user replacement of an expired battery.

IMPLICATION: When the battery is replaced on the STL2 server board following battery expiration, there is a three percent chance that the board will not boot.

WORKAROUND: No workaround exists for this issue.

STATUS: FIX. This issue will be fixed in a future BIOS release.

19. *Primary and secondary processor VRM circuit support for 1.133GHz processors*

PROBLEM: The STL2 FAB 3 server board primary and secondary voltage regulator module (VRM) circuits do not support 1.133Ghz Pentium® III processors.

IMPLICATION: 1.133Ghz Pentium® III processors cannot be used with the STL2 FAB 3 server board.

WORKAROUND: No workaround exists for this issue.

STATUS: FIX. This erratum will be fixed in a future FAB of the STL2 server board.

20. *Red Hat Linux 6.1 installation issue*

PROBLEM: The driver for the onboard Adaptec* AIC-7899 SCSI controller included in the Red Hat Linux 6.1 distribution does not load during the first part of the installation. The error message “SCSI HOST 0 ABORT TIMED OUT – RESETTING” appears.

IMPLICATION: Difficulties installing Red Hat Linux 6.1 on the STL2 server board may be encountered.

WORKAROUND: Red Hat Linux 6.2 SBE2 includes the correct drivers to allow normal installation. Install Red Hat Linux 6.2 or update the Adaptec drivers in Red Hat Linux 6.1.

STATUS: FIX. This erratum is fixed in Red Hat Linux 6.2 SBE2.