Kontron CG2100 Carrier Grade Server

Tested Hardware and Operating System List

Revision 1.8

November 2013

Revision History

Date	Revision Number	Modifications
April 2010	1.0	Final released version
July 2010	1.1	Added Seagate ST9300603SS SAS drive
October 2010	1.2	Added Toshiba MBF Series SAS drives
January 2011	1.3	Updated Sections 2, 4.3, and 6.1
February 2011	1.4	Updated notes for Seagate ST9500430SS – 0005 fw required
July 2011	1.5	Section 5: Added Seagate SAS drive families Constellation.2 and Savvio 10K.5.
August 2011	1.6	Section 5: Added Seagate SAS drive family Savvio 15K.3, Unigen SSDs, Intel 320 Series SSDs. Removed EOL drives: Seagate 15K.1 and 10K.3
November 2011	1.7	Section 3: Added RHEL 6 to certified OS List. Section 4: Added Napatech Adapters, SMART Modular 4GB eUSB
November 2013	1.8	Section 5: Added Savvio 10K.6 and AL13SEB hard drives families

Disclaimers

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Table of Contents

1. Introduction

This document is intended to provide users of the **Kontron CG2100 Carrier Grade Server** with a list of the operating systems, adapter cards, and peripherals tested by Kontron on this server platform. The **CG2100** is integrated using the Intel® Server Board T5520UR.

This document will continue to be updated as new adapters, peripherals, and operating systems are tested or until the **CG2100** is no longer in production. Each new release of the document will present updated information as well as continue to provide the information from previous releases.

The adapters and peripherals specified in this document may or may not have been tested on all available board/riser combinations that make up the **CG2100** product family. Kontron will provide support for the adapters and peripherals listed when used within this family of products.

The **CG2100** product family consists of the following server building blocks and integrated systems. Refer to the **CG2100** Configuration Guide for more details.

Product Code	Product Description
CG2100A-00	CG2100 Model 0 with **AC Power Supply**
CG2100D-00	CG2100 Model 0 with **DC Power Supply**

1.1 Test Overview

Testing performed on the **CG2100** is divided under two separate categories:

- Basic Operating System Installation Testing
- Adapter/Peripheral Compatibility testing and System Stress Testing.

1.1.1 Basic Installation Testing

Basic installation testing is performed with each supported operating system. Basic installation testing validates that the server board can install the operating system and that the base hardware feature set is functional. A small set of peripherals is used for installation purposes only. No add-in adapter cards are tested. Testing includes network connectivity and running of proprietary and industry standard test suites.

The latest version of an operating system signifies the latest supported version at the time of the actual test run. Each new release of this document may have a newly supported release of a given operating system. Previous releases of a supported operating system may not be tested beyond the basic installation test process.

1.1.1.1 Support Commitment for Basic Installation Testing

Kontron commits to provide the following level of customer support for operating systems that receive only basic installation testing:

- Kontron will provide and test operating system drivers for each of the server board's integrated controllers, provided that the controller vendor has a driver available upon request. Vendors will not be required by Kontron to develop drivers for operating systems that they do not already support. This may limit the functionality of certain server board integrated controllers.
- Kontron will support customer issues that involve installation and/or functionality of operating system with the server board's integrated controllers only if a driver has been made available.
- Kontron will NOT provide support for issues related to use of any add-in adapters or peripherals installed in the server system when an operating system that received basic installation testing only is in use.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the operating system. The resolution may include, but is not limited to, on-board controller driver changes, engaging the vendor for resolution, BIOS changes, firmware changes, or determining a customer acceptable workaround for the issue.

1.1.2 Adapter/Peripheral Compatibility and Stress Testing

Adapter/Peripheral Compatibility and Stress testing is performed only on the most current release of a supported operating system at the time of a given validation run. The Adapter/Peripheral Compatibility and Stress testing process consists of three areas: Base Platform, Adapter Compatibility, and Stress.

Base Platform: Each base platform will successfully install a given operating system, successfully run a disk stress test, and successfully run a network stress test.

Adapter Compatibility: Adapter compatibility validation (CV) testing uses test suites to gain an accurate view of how the server performs with a wide variety of adapters under the primary supported operating systems. These tests are designed to show hardware compatibility between the add-in cards and the server platform and include functional testing only. No heavy stressing of the systems or the cards is performed for CV testing.

Stress Testing: This test sequence uses configurations that include add-in adapters in all available PCI slots for a minimum 72-hour test run without injecting errors. Each configuration passes an installation test, a Network/Disk Stress test, and tape backup test. Any fatal errors that occur will require a complete test restart.

1.1.2.1 Support Commitment for Adapter/Peripheral Compatibility and Stress Testing

Kontron commits to provide the following level of customer support for operating systems that receive Adapter/Peripheral Compatibility and Stress testing:

- Kontron will provide support for customer issues with these operating systems involving installation and/or functionality of the server board with or without the adapters and peripherals listed in this document as having been tested under the particular operating system.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the operating system. The resolution may include, but is not limited to, on-board controller driver changes, engaging the vendor for resolution, BIOS changes, firmware changes, or determining a customer acceptable workaround for the issue.
- Kontron will provide and test operating system drivers for each onboard video, network, and storage controller.
- Kontron will enable vendors to provide driver support for add-in adapters using these operating systems.

- Kontron will go through some of the steps to achieve certification to ensure its customers do not run across any problems, but the actual certification is the responsibility of the individual customer.

For operating systems, adapter cards, and peripherals not listed in this document, there is no support commitment. Kontron will consider support requests on a case-by-case basis

1.2 Pass/Fail Test Criteria

For each operating system, adapter, and peripheral configuration, a test passes if specific criteria are met. Specific configurations may have had particular characteristics that were addressed on a case-by-case basis. In general, a configuration passes testing if the following conditions are met:

- The operating system installed without error.
- Manufacturer's installation instructions or Kontron's best-known methods were used for the operating system installation.
- No extraordinary workarounds were required during the operating system installation.
- The server system behaved as expected during and after the operating system installation.
- Application software installed and executed normally.
- Hardware compatibility tests ran to completion without error.
- Test software suites executed successfully
- Test and data files were created in the correct directories without error.
- Files copied from client to server and back compare to the original with zero errors reported.
- Clients remain connected to the server system.
- Industry standard test suites run to completion with zero errors reported.

2. Base System Definitions

The following table lists the base system configurations tested for a given validation test run. Each specific product/system software combination tested is assigned a Base System Identifier Number. These numbers are used in the lists of supported adapters and peripherals referenced in the following sections.

The adapters and peripherals specified in this document may or may not have been tested on all available board/riser combinations that make up the **CG2100** product family. However, Kontron will provide support for the adapters and peripherals listed when used within this family of products

This table is updated when a new test run is performed and a new product/system software combination was used.

> *Kontron will only provide support for adapters and peripherals under the specified operating systems versions with which they were tested The latest version of an operating system signifies the latest supported version at the time of the actual test run. Each new release of this document may have a newly supported release of a given operating system. Previous releases of a supported operating system may not be tested beyond the basic installation test process.*

Base System Configuration Identifier #	Board type	PBA Number	BIOS Revision	BMC Firmware Revision	ME Firmware Revision	FRU/SDR Revision	Notes
1	T5520UR	E24717-650	48	BMC49	1.12	FTU_11	Beta Configuration
2	T5520UR	E24717-650	50	BMC53	1.12	FTU_12	Production
3	T5520UR	E24717-750	54	BMC54	1.12	FTU_13	Production

3. Supported Operating Systems

The following table provides a list of supported operating systems for the **CG2100**. Each of the listed operating systems was tested for compatibility with the Intel® Server Board **T5520UR** in the base system configurations listed in section 2 of this document. Operating systems are supported only with the specified base system configuration(s) with which they were tested.

The following table also indicates whether each operating system received Basic Installation testing, or Adapter/Peripheral Compatibility and Stress testing. For information on the support commitments for Basic Installation Testing vs. Adapter/Peripheral Compatibility and Stress Testing, please reference Section 1 of this document.

Any variations to the standard operating system installation process are documented in the Installation Guidelines section of this document. If there are no installation guidelines noted in the following table, then the operating system installed as expected using manufacturer's installation instructions or Kontron's best-known methods.

Operating System	Base System Configuration Tested/ Type of Testing	Notes
Microsoft Windows* Server 2008 R2 64-bit	1 / Compatibility & Stress	
Red Hat* Linux ES 6.1 32-bit & 64-bit	3 / Compatibility & Stress	
Red Hat* Linux ES 5.4 32-bit & 64-bit	1 / Compatibility & Stress	
SUSE* Linux Enterprise Server 10 SP2 32-bit and 64-bit	1 / Compatibility & Stress	
Solaris 10 10/09	1 / Basic Installation	

3.1 Operating System Certifications

Listed below are the operating systems that Kontron will certify with the **CG2100**. However, the customer is responsible for their own certification from the individual operating system vendors. In many cases, the customer may leverage their operating system certifications from Kontron's testing. See the "Comments" section next to each operating system in the table below for additional information. Kontron's certifications, pre-certification, and operating system testing may help reduce some of the risk in achieving customer certifications with the operating system vendors.

Operating System	Certification Listing	Comments
Microsoft Windows Server 2008 R2 64-bit	Kontron CG2100 Carrier Grade Server	OEM must request certification by Microsoft for their specific product. URL – http://www.windowsservercatalog.com/
Red Hat Linux ES 6.1 32-bit and 64-bit	Kontron CG2100 Carrier Grade Server	Red Hat checks Kontron's results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Kontron certification, if customer product meets the operating system vendor standard. https://hardware.redhat.com/show.cgi?id=713543
Red Hat Linux ES 5.4 32-bit and 64-bit	Kontron CG2100 Carrier Grade Server	Red Hat checks Kontron's results, certifies (if appropriate), and posts the certificate on their web site. Customer can leverage the Kontron certification, if customer product meets the operating system vendor standard.
SUSE Linux Enterprise Server 10 SP2 32-bit and 64-bit	Kontron CG2100 Carrier Grade Server	Novell checks Kontron's test results, certifies (if appropriate), and posts the certification to their web site.
Solaris 10 10/09 s10x_u8wos_08a X86 (64-bit)	Kontron CG2100 Carrier Grade Server	URL - http://www.sun.com/bigadmin/hcl/data/systems/details/44678.html
VMware	Kontron CG2100 Carrier Grade Server	http://www.vmware.com/resources/compatibility/search.php?action=search&deviceCategory=server&productId=1&advancedORbasic=advanced&maxDisplayRows=50&key=kontron&release[]=-1&datePosted=-1&partnerId[]=-1&formFactorId[]=-1&filterByEVC=0&filterByFT=0&min_sockets=&min_cores=&min_memory=&rorre=0

4. Adapters and Peripherals

Add-in adapter card and peripheral compatibility and stress testing will only be performed with the latest version of an operating system at the time the validation testing occurred. The following table shows the operating system and base system configurations used to validate each device. The adapters are divided into categories based on their functionality. All integrated on-board devices are tested by default and are therefore not included in the following tables.

Note that not all adapter cards were tested under all operating systems. The following notations are used in the tested adapters and peripherals table below to indicate the support level that Kontron provides for a particular adapter under a particular operating system:

Number (i.e. 1)	This adapter or peripheral has been tested and is supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
Number in brackets (i.e. [1])	This adapter or peripheral has been tested, but is NOT supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
NT	This adapter or peripheral has not been tested under this operating system and is not supported under this operating system.
ND	This adapter or peripheral has not been tested under this operating system due to limitations in driver availability, and is not suported under this operating system.
SA (Similar Adapter) Referenced in the "Comments" column for each adapter that is supported but not tested.	This adapter is supported, but not tested. This adapter model has not been tested with this server board, but Kontron will support it based on successful testing of a similar adapter from the same adapter family. Kontron has high confidence that this adapter will function correctly with the server board. This adapter uses the same firmware and drivers, and has a nearly identical system interface to another adapter of the same family that has been successfully tested with this server board. Customers should always test adapters as part of the final system configuration prior to deployment. All installation guidelines for the tested adapter also apply to the similar adapter.

Any variations to the standard adapter installation process or to expected adapter functionality are documented in the Installation Guidelines section of this document. If there are installation guidelines affecting a particular adapter and operating system combination, these are referenced in the following table. If there are no installation guidelines noted in the following table, then the adapter installed and functioned as expected using manufacturer's installation instructions or Kontron's best-known methods.

Testing of adapters cards normally is performed with unused add-in adapters and onboard controller expansion ROMs disabled in BIOS Setup. Kontron recommends that customers disable the option ROM for add-in controllers and/or the on-board controllers when not booting from the controller or needing to use its built in utilities.

Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.1 32-bit	Red Hat Enterprise Linux 6.1 64-bit	Red Hat Enterprise Linux 5.3 32-bit	Red Hat Enterprise Linux 5.3 64-bit	SuSE Enterprise Linux 10 SP2 32-bit	SuSE Enterprise Linux 10 SP2 64-bit
4.1 Fibre Channel											
Emulex	LPe11002	Dual Channel, 4Gb FC, native PCI Express, enterprise class	PCI Express* 2.0 x4					1	1		
QLogic	QLE2462	Dual channel 4Gb FC HBA - LC Multi-mode Optic	PCI Express* 2.0 x4					SA	SA		
QLogic	QLE2562	Dual channel 8Gb FC HBA - LC Multi-mode Optic	PCI Express* 2.0 x8					1	1		
4.2 Infiniband											
Mellanox	MHGH29-XTC	Dual-Port, 20Gb/s, PCIe2.0 x8, 5.0GT/s	PCI Express* 2.0 x8					1	1	1	1
4.3 Network Interface Controllers (NICs)											
Cavium Networks	CN5750-750-SSP-NIC10E	CN5750	PCI Express* 2.0 x8	Limit 2 - Install in top and bottom slots on full height riser for optimal airflow						3	3
Napatech	NT20E-NEBS	2x10G Capture Adapter	PCI Express* 2.0 x8			3	3				
Napatech	NT4E-NEBS	4x1G Deep Packet Capture Adapter	PCI Express* 2.0 x8			3	3				
Intel®	E1G42ET	Dual Port 1GbE Server Adapter	PCI Express* 2.0 x8		1			1	1		
Intel®	E1G44ET2	Intel® Gigabit ET2 Quad Port Server Adapter	PCI Express* 2.0 x4		3	3	3			3	3
Intel®	E1G44ET	Quad Port 1GbE Server Adapter	PCI Express* 2.0 x8		1			1	1		

Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.1 32-bit	Red Hat Enterprise Linux 6.1 64-bit	Red Hat Enterprise Linux 5.3 32-bit	Red Hat Enterprise Linux 5.3 64-bit	SuSE Enterprise Linux 10 SP2 32-bit	SuSE Enterprise Linux 10 SP2 64-bit
Intel®	E10G42BT	Intel® Ethernet Server Adapter X520-T2	PCI Express* 2.0 x8		3	3	3			3	3
Intel®	EXPI9400PT	1 port, copper, 1GbE, 82572EI (Rimon)	PCI Express* 2.0 x1					1	1	1	1
Intel®	EXPI9402PT	2 port, copper, 1GbE, 82571EB (Ophir)	PCI Express* 2.0 x4					SA	SA	SA	SA
Intel®	EXPI9404PTL	4 port, copper, 1GbE, 2x82571EB (Ophir), I/OAT Enabled	PCI Express* 2.0 x4					SA	SA	SA	SA
Intel®	EXPX9502AFXSR	Dual Port, Oplin, A1, XFP, SR	PCI Express* 2.0 x8					1	1	1	1
Intel®	PWLA8492MT	PRO/1000 MT Dual Port Server Adapter	PCI-X133		1						
Intel®	PWLA8490MT	10/100/1000baseT, Copper, No bridge	PCI-X133					1	1	1	1
Intel®	PWLA8494GT	4 port, copper, 1GbE, 2x82546GB	PCI-X133					1	1	1	1
4.4 USB Drives											
Memorex	32509369	1GB Travel Drive	USB 2.0 External					1	1	1	1
Memorex	32509389	4GB Travel Drive	USB 2.0 External					1	1	1	1
PNY	P-FD02GU20	Attache' 2GB	USB 2.0 External					1	1	1	1
SanDisk	SDCZ2-4096	Cruzer Mini USB Flash	USB 2.0 External					1	1	1	1
TEAC	FD-O5PUB	FD-O5PUB	USB 2.0 External Floppy Drive					1	1	1	1
4.5 Tape Drives											
HP	DAT 72 USB	HP StorageWorks DAT 72 USB Tape Drive	USB 2.0 External	72GB; 21.6GB/hr Sustained Transfer Rate; 8MB Buffer. Reads and writes DAT 72, DDS-4, and DDS-3 formats							

Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.1 32-bit	Red Hat Enterprise Linux 6.1 64-bit	Red Hat Enterprise Linux 5.3 32-bit	Red Hat Enterprise Linux 5.3 64-bit	SuSE Enterprise Linux 10 SP2 32-bit	SuSE Enterprise Linux 10 SP2 64-bit
4.6 Solid State Drives											
Smart Modular	SG9ED52M4GGA	4GB Z-U130 Value Solid State Drive	USB 2.0		1	3	3	1	1	1	1
Smart Modular	SG9ED52M4GGC	4GB Z-U130 Value Solid State Drive	USB 2.0		1			1	1	1	1
Transcend	TS8GSDHC150	8GB Secure Digital High Capacity SLC NAND Flash	SD		1			1	1	1	1
4.7 Input Devices											
Keytronic	KT800U3	KT800U3	USB	External keyboard				1	1	1	1
Logitech	M002446716	Media Keyboard Elite	USB	External keyboard							
Logitech	931145-403	Logitech Optical Mouse	USB	External optical mouse				1	1	1	1
AOpen	O 35M	Mini Optical Mouse	USB	External optical mouse				1	1	1	1

5. Hard Disk Drives

The hard drives listed in the following table have been tested with the server board integrated into the **CG2100** by Kontron in its validation labs and/or by individual drive vendors. The following operating system identifiers are used in the table to specify which OS each drive was tested under.

Identifier number/ Base Configuration	Operating System
1	Microsoft Windows Server 2008, Enterprise Edition, R2, 64-bit
2	SuSE Linux Enterprise Server 10 SP2 – 32bit
3	SuSE Linux Enterprise Server 10 SP2 – 64bit
4	Red Hat Enterprise Linux 5 Update 4 – 32bit
5	Red Hat Enterprise Linux 5 Update 4 – 64bit
6	Solaris 10 10/09
7	Hard drive validation tool based on SLAX

Note: For the definition of the *Base Configuration* number see the table describing the *Base System Configuration Identifier #* in section two of this document.

Note that not all hard drives were tested under all operating systems. The following notation is used in the tested hard drives table below to indicate the support level that Kontron provides for a particular hard drive with a particular operating system:

Number (i.e. 1)	This hard drive has been tested and is supported under the operating system identified by the operating system identification number.
Number in brackets (i.e. [1])	This hard drive has been tested, but is NOT supported under the operating system identified by the operating system identification number.
SD (Similar Drive)	The hard disk drive is supported, but not tested. This hard drive model/capacity has not been tested with this server board, but Kontron will support it based on successful testing of a larger capacity hard drive from the same hard drive family. Kontron has high confidence that this hard drive will function correctly with the server board. This drive uses the exact same firmware and drivers as a larger capacity hard drive that has been successfully tested with this server board. The only difference between this drive and the one that was used in testing is the storage capacity. Kontron provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested or not. Customers should always test hard drives as part of the final system configuration prior to deployment. Given the fact that a larger capacity hard drive from the same drive family has successfully completed testing on this server board, this particular hard drive capacity point will not be tested.
IHVT (IHV Tested)	The hard disk drive was tested according to Kontron-approved guidelines and test procedures by the Independent Hardware Vendor (IHV) that manufactured the drive. Kontron provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested in an Kontron lab or not. IHV test reports remain the property of the IHV (Kontron cannot provide copies of these reports).

Hard Disk Drives

Manufacturer	Model Number	Product Family	Interface	RPM	Drive size GB/Inches	Tested Operating Systems	Notes
SAS Hard Drives							
Seagate	ST91000640SS	Constellation.2	SAS-600	7.2K	1 TB / 2.5	1,2,3,4,5	0002 fw validated
Seagate	ST9500620SS	Constellation.2	SAS-600	7.2K	500 GB / 2.5		SD
Seagate	ST9500430SS	Constellation	SAS-300	7.2K	500 GB / 2.5	1,2,3,4,5	0005 fw required
Seagate	ST9900805SS	Savvio 10K.5	SAS-600	10K	900 GB / 2.5	1,2,3,4,5	0002 fw validated
Seagate	ST9600205SS	Savvio 10K.5	SAS-600	10K	600 GB / 2.5		SD
Seagate	ST9450405SS	Savvio 10K.5	SAS-600	10K	450 GB / 2.5		SD
Seagate	ST9300605SS	Savvio 10K.5	SAS-600	10K	300 GB / 2.5		SD
Seagate	ST900MM0026	Savvio 10K.6	SAS 6Gb/s	10K	900 GB / 2.5	7	
Seagate	ST600MM0026	Savvio 10K.6	SAS 6Gb/s	10K	600 GB / 2.5		SD
Seagate	ST450MM0026	Savvio 10K.6	SAS 6Gb/s	10K	450 GB / 2.5		SD
Seagate	ST300MM0026	Savvio 10K.6	SAS 6Gb/s	10K	300 GB / 2.5		SD
Seagate	ST9300653SS	Savvio 15K.3	SAS-300	15K	300 GB / 2.5	1,2,3,4,5	0002 fw validated
Seagate	ST9146853SS	Savvio 15K.3	SAS-300	15K	146 GB / 2.5	1,2,3,4,5	0002 fw validated
Hitachi	HUC151414CSS600	Ultrastar C15K147	SAS-600	15K	147GB / 2.5	1,2,3,4,5,6	
Hitachi	HUC103014CSS600	Ultrastar C10K300	SAS-600	10K	147GB / 2.5	1,2,3,4,5,6	
Toshiba	MBF2600RC	MBF Series	SAS-600	10K	600GB / 2.5	1,2,3,4,5	
Toshiba	MBF2450RC	MBF Series	SAS-600	10K	450GB / 2.5		SD
Toshiba	MBF2300RC	MBF Series	SAS-600	10K	300GB / 2.5		SD
Toshiba	MBC2073RC	MBC Series	SAS-300	15K	73 GB / 2.5	1,2,3,4,5	
Toshiba	MBC2036RC	MBC Series	SAS-300	15K	36 GB / 2.5		SD
Toshiba	MBB2147RC	MBB Series	SAS-300	10K	147 GB / 2.5	1,2,3,4,5	
Toshiba	AL13SEB900	AL13SEB	SAS 6Gb/s	10.5K	900 GB / 2.5	7	
Toshiba	AL13SEB600	AL13SEB	SAS 6Gb/s	10.5K	600 GB / 2.5		SD
Toshiba	AL13SEB450	AL13SEB	SAS 6Gb/s	10.5K	450 GB / 2.5		SD
Toshiba	AL13SEB300	AL13SEB	SAS 6Gb/s	10.5K	300 GB / 2.5		SD
Manufacturer	**Model Number**	**Product Family**	**Interface**	**RPM**	**Drive size GB/Inches**	**Tested Operating Systems**	**Notes**
SATA Hard Drives							
Western Digital	WD3000BLHX	Velociraptor	SATA 6Gb/s	10K	300 GB / 2.5	1,2,3,4,5	04.05G04 fw validated
Western Digital	WD3000BLFS	Velociraptor	SATA 3Gb/s	10K	300 GB / 2.5	1,2,4	

Manufacturer	Model Number	Product Family	Interface	RPM	Drive size GB/Inches	Tested Operating Systems	Notes
SATA Solid State Drives							
Intel®	SSDSA2CW300G3	320 Series	SATA 3 Gb/s	N/A	300 GB/2.5-inch	1,2,3,4,5	0302 fw validated
Intel®	SSDSA2CW160G3	320 Series	SATA 3 Gb/s	N/A	160 GB/2.5-inch	1,2,3,4,5	0302 fw validated
Unigen	UGB88APC128HM3.ET	Unigen Enterprise	SATA 3 Gb/s	N/A	128 GB/2.5-inch	1,2,3,4,5	M3 fw validated
Unigen	UGB88PGC120HF3	Unigen Enterprise	SATA 3 Gb/s	N/A	120 GB/2.5-inch	1,2,3,4,5	F3 fw validated
Unigen	UGB88PGA100HS3	Unigen Enterprise	SATA 3 Gb/s	N/A	100 GB/2.5-inch	1,2,3,4,5	S3 fw validated
Intel®	SSDSA2SH032G1GN	Intel® X25-E Solid State Drive	SATA 3Gb/s	N/A	32 GB/2.5-inch	1,2,4	
Intel®	SSDSA2SH064G1C5	Intel® X25-E Solid State Drive	SATA 3Gb/s	N/A	64 GB/2.5-inch		SD

6. Installation Guidelines and Test Notes

6.1 High CPU Utilization under Windows 2008 R2

After installing Microsoft* Windows Server 2008 R2, the system responds slowly, even though the installation itself completes successfully.

Users may find logging into the system very slow, and the keyboard and mouse response are sluggish. If opening Task Manager after a successful login, all CPU cores show high utilization.

The problem is related to the version of the network card driver included in Microsoft* Windows Server 2008 R2.

1) Use the following workaround:

    a) Attach a network cable to both of the onboard network ports; it can be attached to a switch or just back to back. This needs to be done prior to loading the driver.
    b) Download the latest network card driver package from http://downloadcenter.intel.com/Detail_Desc.aspx?agr=Y&DwnldID=18388.

2) Or upgrade to BIOS 59 or later to permanently solve the issue.