

Intel® Server Board SHG2 Troubleshooting Guide

A Guide for Technically Qualified Assemblers of Intel Identified
Subassemblies/Products



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Revision History

Orig./Rev.	Description	Date
1.0	First release	May 2002
1.1	Corrected chassis product codes	May 2002

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SHG2 Troubleshooting

Welcome to the SHG2 server platform. In the unlikely event you do encounter issues, this guide will help you troubleshoot & identify possible problem areas. If you are unable to resolve a problem using this guide, please call Intel Customer Support.

This guide will help you collect the data we will need to help you through your issues. Each issue includes suggestions that may help you, and a list of information we will need to assist you should you need to call. Please visit the Intel Support website for updated versions of this document. <http://support.intel.com/support/motherboard/server/SHG2>.

Boot Issues

1) My server will not power on.

Check for the following possibilities:

- The SHG2 server board requires an ATX +12V power supply. A momentary switch should be used for the power on/off switch and the sleep/resume switch. The power supply chosen must meet the ATX 2.01 or later specification. Does your power supply meet these criteria?
- Have you securely plugged the server AC power cord into the power supply?
- Have you plugged the server into a “powered on” power strip?
- Some ATX power supplies have a power switch on the back of the power supply next to the fan, is it switched on?
- Is the power supply set correctly to 110V or 235V depending on your power output?
- Is the front panel power switch cable properly connected to the front panel header pins on the server board?
- Remove and reseat the memory modules. Try using memory modules from a known working server system.
- Remove all add-in cards and see if the server boots using just the on-board components. If successful, add the cards back in one at a time with a reboot in between to see if you can pinpoint a suspect card.
- Remove the processor and reseat it.

Though it is unlikely that a server will not boot, there are many reasons why it may not boot. If you are unable to resolve this issue, please fill out the customer support form (at the end of this document) and call your customer support representative. Please note the answers to the following questions below.

- What memory is the server using? Is it on the tested memory list? Visit the Intel support site for an updated memory list:
<http://support.intel.com/support/motherboards/server/SHG2>.
- What chassis and power supply is the server using?
- If you are using a chassis with front panel lights, are there any front panel lights on?
- Is the power supply fan spinning?
- Does the system beep? See Issue 2.
- Please note what is displayed on the monitor or any sounds emanating from the server system.
- If the server will still not boot, please fill in the issue report form at the end of this document & contact your Intel customer support representative.

2) Upon booting, my server starts beeping.

Most likely, these beeps are “beep codes.” They identify system events in case video fails to display. The following gives a description of possible beep codes for this board.

Table 1: Beep Codes

Beeps	Reason
1	One short beep before boot (this is normal, not an error)
1-2	Search for option ROMs. One long, two short beeps on checksum failure
1-2-2-3	BIOS ROM checksum
1-3-1-1	Test DRAM refresh
1-3-1-3	Test 8742 Keyboard Controller
1-3-3-1	Auto size DRAM, system BIOS stops execution here if the BIOS does not detect any usable memory DIMMs
1-3-4-1	Base RAM failure; BIOS stops execution here if entire memory is bad
2-1-2-3	Check ROM copyright notice
2-2-3-1	Test for unexpected interrupts

3) My hard disk drive (HDD) lights went on, I heard the drives spin up, and my floppy drive light turned on, but I’m not seeing video.

Check the following:

- Make sure the monitor is turned on and the video cable is plugged in completely.
- Remove all add-in cards and retry booting with just the on-board components. If successful, try adding the add-in cards back into the system one at a time with a reboot in between to try to pinpoint a suspect card.
- Remove and reseat memory modules. Try using memory from a known working system.
- Remove and reseat processor.
- If you are using a switch box to share a monitor between multiple servers, ensure switching to the proper server.

If you are unable to get a video image, please fill out the included customer support form and call your customer support representative. Please note the answers to the following questions below.

- What memory is the system using? Is it on the tested memory list? Visit the Intel support site for an updated memory list:
<http://support.intel.com/support/motherboards/server/SHG2>.
- What chassis and power supply is the system using?
- If the chassis has front panel lights, are any front panel lights on?
- Is the power supply fan spinning?
- Does the system beep? See Issue 2.
- Please note any sounds emanating from the server system.
- If you are using a third party video adapter, please have manufacturer and model number ready.

- If the server will still not boot, please fill in the issue report form at the end of this document & contact your Intel customer support representative.

4) I am installing adapters in my powered-down system, and my system boots up when I install a PCI adapter.

Server management features require full time “standby” power. This means that power is still “on” to parts of the system even if you have turned the system “off” via the power switch on the front panel.

Additionally, signals in the PCI connectors tell the system to boot (normally used by server management adapters/NICs). Plugging in the adapter with the AC power cord still connected can cause false signals to be transmitted commanding the system to boot. Before removing the cover to your chassis, you should always

- Turn off the server via the power switch on the front panel.
- Unplug the AC cord from the server.

5) My system boots up automatically when I power on my power strip.

Some server systems save the “last known power state” since the last AC power connection. If you remove AC power before powering down the system via the power switch on the front panel, your system may automatically attempt to come back to the “on” state it was in once you restore AC power.

- Please keep in mind that unplugging the system or flipping a switch on the power strip both remove AC power.
- Follow the correct A/C removal sequence: press the front panel button, and then remove the A/C power cord.

Allowing your system to fully power up and then power down the system using the front panel power switch should correct this problem. If it does not, fill out the attached issue report form and call your customer support representative. Please have the following information available:

- What BIOS do you have loaded on the system? (The latest tested BIOS is posted to the Intel Customer Support Website.)
- What is the PBA number of the server board? (The PBA number is located on a white label near the edge of the board and is printed in the following format: PBA xxxxxx-xxx.)
- What memory is the server using? Is it on the tested memory list? Visit the Intel support site for an updated memory list: <http://support.intel.com/support/motherboards/server/SHG2>. What chassis and power supply is the system using?

6) Some of my hard drives show up during POST and some don't.

Check on the following:

- Are you using third party SCSI adapters? System memory limitations limit the number & size of option ROMs in the system. If you place too many adapters or adapters that take up too much space in memory, they may not install and show the hard drives connected to them.
- Verify that pin 1 on the data cable connects to pin 1 on the device. In most cases, if you orient the data cable so that the colored stripe on the cable is pointing towards the power connector on the device, you will have proper orientation.
- Verify that the device power cable is firmly connected.
- Check your SCSI ID numbers. SCSI devices must have their own unique ID on the SCSI bus. This number must be set with jumpers on the device. ID number should be set starting at 0 and must be set lower than 8 if booting from the drive.
- Check for proper termination on the SCSI bus.

If your hard drives still do not show, please fill out the included issue report form and call your customer support representative. Please pay special attention to the following information:

- What add-in adapters do you have in your system (manufacturer and model number)?
- What types of hard drives are in the system (manufacturer and model number)?
- What kind of terminator do you have at the end of the cable? (Manufacturer and type e.g. Ultra 160)

Note: only the last device on the SCSI channel requires termination. All LVD devices require "active" vs. "passive" terminators.

- What are the SCSI IDs of the devices on your SCSI bus?
- How many SCSI channels are you using?
- What memory is the system using? Is it on the tested memory list? Visit the Intel support site for an updated memory list:

<http://support.intel.com/support/motherboards/server/SHG2>

Other Questions

General Questions

1) What is Flip Chip Pin Grid Array (FC-PGA)?

FC-PGA is a processor package that was developed to improve the thermal dissipation of the heat generated by faster speed processors. The die has been flipped so that the heat is directed away from the server board. This feature, when combined with active heat sinks is an optimal cooling solution.

2) What type of battery is used in Intel Server Board SHG2?

A standard coin cell (3 volt, CR2032 or equivalent) is used to supply power to the Real Time Clock (RTC) when power is not available from the power supply.

3) How do I disable the onboard LAN?

Onboard features can be disabled through Server Board SHG2 BIOS setup.

Memory Questions

1) What memory configurations are supported on the Intel® Server Board SHG2?

Server Board SHG2 has slots for six 184-pin registered DDR-200/266 ECC SDRAM. The SHG2 server board can support a minimum system memory configuration of 256MB (two sticks of 128MB) and a maximum system memory configuration of 12GB. Server Board SHG2 supports SDRAM sizes of 128MB, 256MB, 512MB, 1GB, and 2GB single or double-sided. Memory sticks must be identical and populated in pairs.

2) What kind of problems might occur in an SDRAM-based system that uses non-compliant DIMMs?

The most extreme example is memory failure, when the system hangs while booting. This can happen when the system is unable to communicate properly with the memory. In less extreme cases, the memory may generate intermittent errors or fail during stress. Always use memory from the Intel® Server Board SHG2 Tested Memory List for maximum reliability: <http://support.intel.com/support/motherboards/server/SHG2>

Jumpers and BIOS Setup Options

1) Why can't I find speed settings in my BIOS configuration mode?

The processor speed option previously available in configuration mode is not displayed with newer Intel® processors and will not affect the processor speed. Newer Intel processors boot with the frequency speed preset and are tested during manufacturing.

2) How should the jumpers be set on Intel Server Board SHG2?

A single configuration jumper on Server Board SHG2 is used to access BIOS configuration mode. All configuration options are made available through the BIOS configuration screens. Refer to the Technical Product Specification for more information on configuration jumper settings.

Input/Output

1) Does the Intel Server Board SHG2 support Ultra ATA/33/66/100 hard drives?

Yes. One of the features of the Intel Server Board SHG2 is its ability to support all Ultra ATA transfer rates (i.e., 33MB/sec, 66MB/sec, and 100 MB/sec). To take advantage of the increased bandwidth available on the IDE channels, a hard drive that implements higher spindle speeds and a large onboard buffer size may be required.

2) What IDE cable should I use to support both Ultra ATA/100 and previous IDE transfer protocols?

A 40-pin, 80-conductor cable can be used with Server Board SHG2 and is fully backward compatible with all IDE transfer protocols. It will also support Ultra ATA/100 if used with one or two Ultra ATA/100 drives attached.

3) Can I mix Ultra ATA devices with other devices on the same IDE channel?

Yes. However, for better performance we recommend that the Ultra ATA capable devices be attached to their own IDE channel separate from other non-Ultra ATA capable drives.

If you must contact customer support, please fill out the following support form and have it ready.

Intel Server Board SHG2 Issue Report

Please Complete All That Apply

Company Name: _____	Date Submitted: _____
Contact: _____	Email Address: _____
Telephone #: _____	Priority: _____ 1-Hot, 2-Critical, 3-High, 4-Low

Chassis

<input type="checkbox"/> Intel® Server Chassis SC5200 Base _____
<input type="checkbox"/> Intel® Server Chassis SC5200 HSRP _____
<input type="checkbox"/> Other: _____
Manufacturer: _____
Part Number: _____
Power Supply Mfr: _____
Power Supply Part Number: _____
Type of Chassis Fans: _____
Quantity of Chassis Fans: _____
Fan Manufacturer: _____
Fan Part Numbers: _____

Problem Description

Complete details of the problem setup, problem description, error messages, recreation steps, troubleshooting steps completed, etc.

System Configuration Information

Hardware

Main Board Part Number (PBA#/AA#):	_____
System BIOS Version:	_____
BMC firmware version:	_____
HSC firmware version:	_____
SCSI Backplane (PBA#):	_____
Processors Installed (Quantity):	_____
Processor Speed (frequency):	_____
Processor ID (CPUID#)	_____
Memory Modules (total number of DIMMs):	_____
Size per DIMM (please indicate MB or GB):	_____
RAM Manufacturer and part number:	_____
Is this RAM on the tested memory list?	_____
If less than 6 DIMMs are installed, which slot numbers are being utilized?	_____

Operating System

Operating System: (name & version)
Language:
Service Pack:

Utilities

Intel Server Management (ISM) version: _____
System Setup Utility (SSU) version: _____
FRU/SDR versions: _____

PCI Adapters

PCI Slot	Manufacturer/Model number:	Driver version:	Is this adapter on the tested hardware list?
1			
2			
3			
4			
5			
6			

Onboard Devices

Device	In Use
Video	<input type="checkbox"/>
10/100 NIC	<input type="checkbox"/>
10/100/1000 NIC	<input type="checkbox"/>
Adaptec AIC-7899W SCSI (channel 1)	<input type="checkbox"/>
Adaptec AIC-7899W SCSI (channel 2)	<input type="checkbox"/>

Peripherals:

Manufacturer/Model number	Quantity	Comments:
Hard Drives		SCSI or ATA?
Tape Drives		Internal or external?
CDROM		Internal or USB?
CDRW		Internal or USB?
DVDROM		Internal or USB?
Keyboard		USB or PS/2?
Mouse		USB or PS/2?
Other:		