Technology Advancement Group®, Inc.

SV-101-THS “BRICK” Operations Manual

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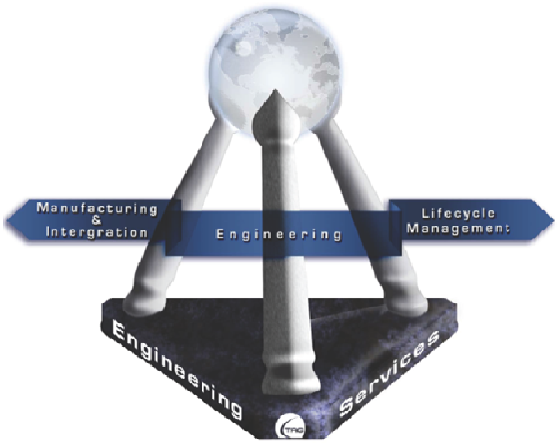
2 About TAG

2.1 Summary of Qualifications

TAG has served as a leading provider of IT solutions to DoD customers over the past 20+ years and has a long-standing and respected history of providing Systems Engineering, Electronic Equipment and Program Management support to US Military warfighters. Headquartered in Dulles, Virginia, TAG's state-of-the-art 35,000 sq. ft. engineering and manufacturing facility provides all the infrastructure, equipment, and manpower necessary to engineer, design, test, manufacture, and certify products to the rugged requirements of the tactical combat theater. Our facilities in Dulles, VA, San Diego, CA, and St. Louis, MO, allow for rapid deployment of products and support across the globe.

TAG quickly, efficiently, and cost-effectively tailors rugged solutions for large DoD programs with specific MIL-STD requirements. TAG's comprehensive Quality Assurance (QA) policy – enforced through application of our UL-registered ISO 9001:2000 certified processes – enables TAG to rapidly deploy systems and solutions that reliably withstand the stresses of the tactical environment. Today, there are over 20,000 TAG systems deployed across various weapons platforms throughout the US Military. TAG effectively balances all corporate assets – our people, expertise, infrastructure, and experience – to consistently and successfully execute and deliver to the DoD.

TAG's success lies in focusing on the corporate Mission Statement and leveraging the tenets of our business model to ensure the customer's expectations are exceeded throughout lengthy program lifecycles.



TAG's Mission is to resolve our customers' IT challenges with World-Class:

- *Engineering;*
- *Manufacturing and Integration; and*
- *Lifecycle Management*

TAG has a proven track record in implementing these tenets to serve as a trusted advisor to our Government customers. TAG uses this foundation to ensure risk is mitigated, expectations are exceeded, and the customer can consistently rely on the company, our equipment, and our services.

2.2 Core Competences

2.2.1 Engineering

TAG's engineering methodology is built upon Multi-Disciplinary Optimization (MDO) and rigorous design reviews. Although PMs drive the schedule at TAG, Engineering leverages Computer-Aided Design (CAD) tools, Computational Fluid Dynamics (CFD) models, rapid prototyping processes, and diverse test equipment and facilities to ensure requirements are being met at every step of the design. TAG Engineering follows a proven design-review process, ensuring all entrance and exit criteria are met at each stage. Rigorous documentation is compiled to demonstrate requirement compliance, risks are mitigated, and decisions are prudent – throughout the design process.

TAG prides itself on its engineering laboratories and facilities. Over the past three years, TAG has invested in several pieces of equipment that allow TAG to test and certify products directly onsite to the harshest environmental requirements of military standards – including the MIL-STD-810F and DO 160D.

TAG's onsite test equipment currently includes a Highly Accelerated Lifecycle Testing (HALT) Chamber, an Electromagnetic Interference (EMI) test chamber, and a high-/low-temperature thermal test chamber. TAG's facility also provides:

- A floor plan designed to support a cellular manufacturing model with modular assembly lines
- A dedicated 24-hour system burn-in room
- A modern production status tracking and Enterprise Resource Planning (ERP) system with external web collaboration capabilities
- Dedicated Quality Assurance workstations for system compliance and validation inspection

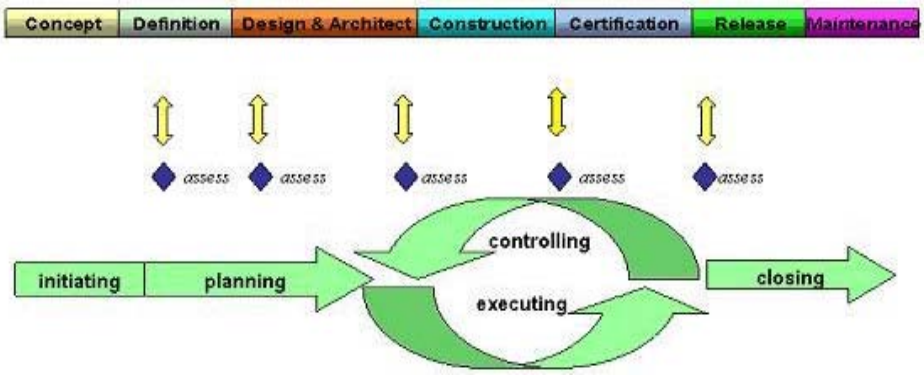
2.2.2 Manufacturing and Integration

TAG implements Cellular Manufacturing processes through our compartmentalized, state-of-the-art production facility to minimize waste byproducts and maximize production efficiency. TAG's manufacturing facility is physically partitioned to model the major philosophies of Lean Manufacturing. Consistent with the model, each of TAG's production cells are capable of operating in isolation; however personnel and tools are shared across all cells to streamline manufacturing operations, costs, and the

production/integration schedule. TAG's floor technicians are cross-trained in multiple disciplines so they can be redistributed to any cell that encounters production bottlenecks, which ensures optimal efficiency.

2.2.3 Lifecycle Management

TAG's world-class Program Management discipline models the renowned methodologies of the Project Management Institute (PMI) to ensure successful completion of the task at hand. Our Program Managers (PMs) serve as the voice of the customer – driving requirements to which the rest of TAG's organization answers. As an explicit tenet of TAG's corporate mission statement, the PMs not only track cost, schedule, and technical compliance throughout a project's period of performance, but also ensure the customer is supported well beyond it.



Document Revision History

Date	Version Number	Updated By	Description of Changes
10/08/2008	1.0	Alan Huckerby	Author
07/14/2009	1.1	Alan Huckerby	Author

3 About This Manual

3.1 Scope and Audience

This Manual provides an introductory overview of the SV-101-THS. The SV-101-THS can stand up to the harshest environments, and is designed specifically to be fully customized to support unique, mission-critical applications.

3.1.1 Organization:

This manual is divided into the following chapters:

- **Chapter 1** Provides Cautions and Warnings.
- **Chapter 2** Provides operational information.
- **Chapter 3** Contains all relevant Procedures
- **Appendix "A"** Contains the Interconnect Diagram.

Table of Contents

List of Figures

Chapter 1

Cautions and Warnings.

4 Safety Instructions

4.1 Types of Warnings Used in This Manual

Read this manual thoroughly, paying special attention to the cautions and warnings.

4.1.1 Safety Symbols and Labels

DANGER

WARNING

CAUTION

These warnings and cautions indicate situations or practice that might result in property damage.

4.1.2 Conventions

4.1.2.1 Important Messages

Important messages appear where mishandling of components is possible or when work orders can be misunderstood. These messages also provide vital information associated with other aspects of system operation. The word “important” is written as “**IMPORTANT**,” both capitalized and bold and is followed by text in italics. The italicized text is the important message.

4.1.2.2 Warnings

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The

word “warning” is written as “**WARNING**,” both capitalized and bold and is followed by text in italics. The italicized text is the warning message.

4.1.2.3 Cautions

Cautionary messages should also be heeded to help you reduce the chance of losing data or damaging the system. Cautions are easy to recognize. The word “caution” is written as “**CAUTION**,” both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

4.1.2.4 Notes

Notes inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help you avoid making mistakes. Notes are easy to recognize. The word “note” is written as “**NOTE**,”

Chapter 2

SV-101-THS.

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5 SV-0101-THS Overview

5.1 Product Information

Your system may contain components not described in this User Manual. For detailed information on those components, refer to the manufactures website or contact TAG Technical Support at **tech.support@tag.com**.

5.2 SV-101-THS

Figure 5-1 SV-101-THS

5.2.1 SV-101-THS Specifications

Chassis and Power Specifications:

- 3.41”H x 8” W (without mounting feet) x 12.5”D.
- Weight 11.2lbs.

System Specifications

- Intel Celeron M Processor (1GHz.).

- Cache: 2MB L2 Cache.
- Memory: Capacity 1GB DDR2 RAM.
- Storage:
    - Standard 32 GB Solid State 2.5” SATA Hard Drive (Removable).
- I/O Ports
    - (2)USB 2.0 A (Front Accessible).
    - (1) RS232 and (3) RS422 Serial ports (In a single Mil-connector).
    - (1) Fast Ethernet Port (RJ45 Connector).
    - (1) S-Video Port (38999 Mil-connector).
    - (1) Power (38999 Connector)

Maintenance and Repair

- The SV-101-THS” is considered a line replaceable unit (LRU) and will be maintained and spared at the LRU level.
- HD’s are removable

Operating System Support

- Microsoft Windows XP Professional.

Power Specifications

- Power for all the equipment in the system is from a DC input.
    - . The system will operate over the input DC power voltage of 28V, compliant with MIL-STD-704A (particularly, withstand 50ms drop-out)
    - Power consumption - max 50 Watts.

Graphics

- On-Board graphics.

Marking

- Reference TAG Branding Manual. Silkscreen generation for identification of interconnections and buttons are prepared per TAG Procedure KP-301-B.

Manufacturing

- This unit is manufactured to the criteria and procedures per TAG MP-011 and MP-900.

5.2.2 SV-101-THS

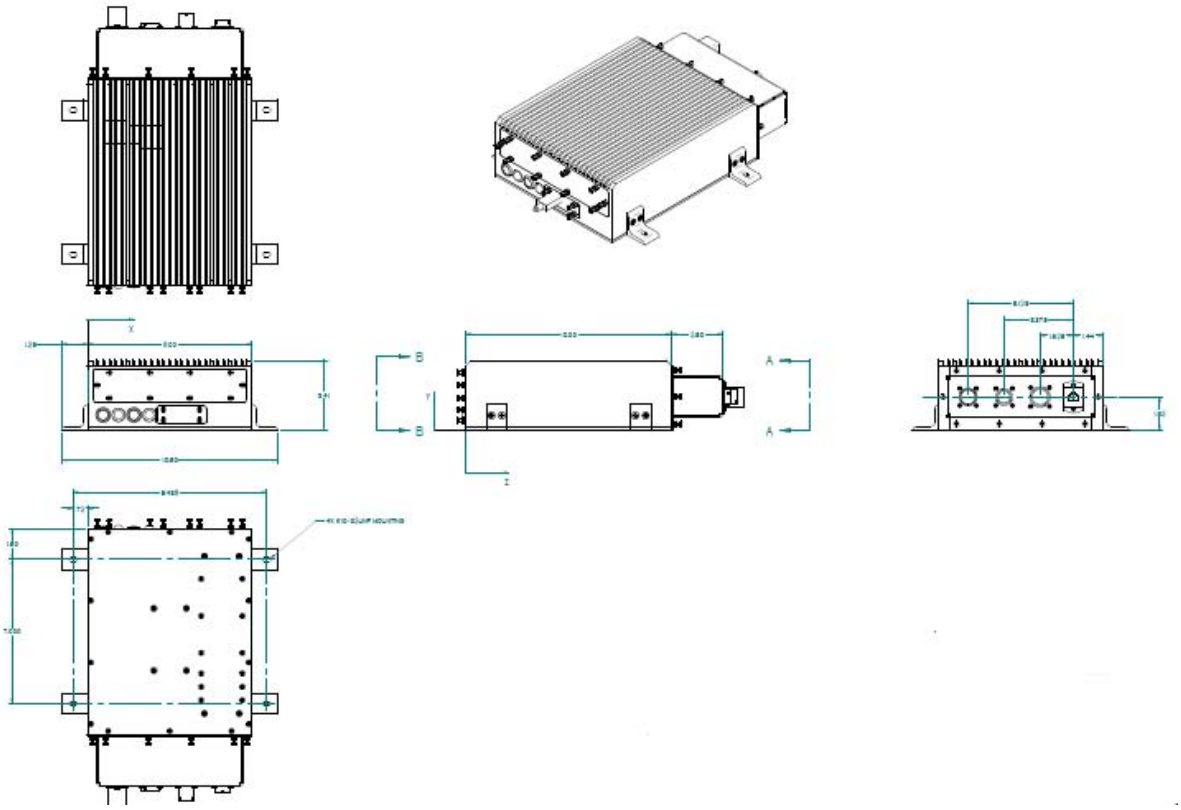

Figure 5-2 SV-101-THS Layout Drawing

Figure 5-3 SV-101-THS Front View (With Covers)

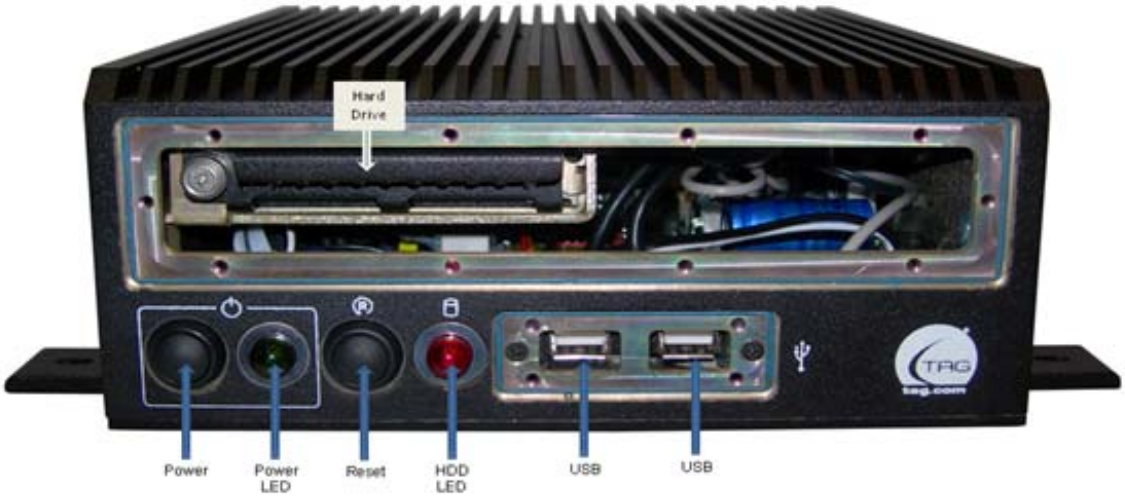

Figure 5-4 SV-101-THS Front View with Covers Removed

Figure 5-5 SV-101-THS Rear View

5.3 SV-101-THS Components

This section provides an overview of the most common components installed in the SV-101-

THS Information is also provided on how to identify specific components within your SV-101-THS. For detailed information on the specific components installed, refer the manufactures website.

5.3.1 Motherboard Model and Type

The version of the SV-101-THS motherboard can be determined by decoding the last three digits of the board part number.

For example: For the product C44686-703, the number following the "-" is as follows:

7 = Fabrication (FAB) Number 03 = Revision 3.

The board part number can be found on the motherboard.

Figure 5-6 System Mother Board

5.4 System Mother Board

The motherboard is an Intel® Pentium® M/ Celeron™ M CPU equipped with graphics,

Fast Ethernet and audio interface. Designed with the space-limited applications in mind to simplify system integration, it packs provisions such as super I/Os, XVGA, LCD, Ethernet, solid state disk, all on a single board.

Dependability of the series is enhanced by its built-in watchdog timer, a special industrial feature not commonly seen on other motherboards.

5.4.1 System Mother Board Components

- CPU: Intel® Pentium® M and Celeron® M
- System Chipset: Intel® 915GM + ICH6M
- Bus Clock: 400/533 MHz
- BIOS:
  - Phoenix-Award BIOS, Y2K compliant
  - 4Mbit Flash, DMI, Plug and Play
  - SmartView for multiple LCD type selection, display mode option and application extension features
  - RPL/PXE Ethernet Boot ROM
  - “Load Optimized Default” to backup customized Setting in the BIOS flash chip to prevent from CMOS battery fail
- System Memory:
  - One 200-pin DDR2 SO-DIMM Socket.
  - Maximum up to 1GB
- L2 Cache: Integrated in CPU
- Onboard IDE:
  - 2 channels up to 3 devices (1 parallel ATA-100 and 1 serial ATA-150)
  - PATA-100 as PIO Mode 0-4, DMA Mode 0-2 and Ultra DMA/33/66/100
- Onboard Serial ATA:
  - Independent DMA operation.
  - Data transfer rate up to 150 Mbyte/s
- Compact Flash Socket:

- Support Compact Flash type-II Socket jumper selectable as Master or Slave and DMA mode supported
- Power is 3.3V (Default) or 5V Option).

- Onboard Multi I/O:
  - One floppy port supporting up to one devices (LS-120 or ZIP Bootable)
  - One SPP/EPP/ECP parallel port with 26-pin 2.0 pitch box-header ; supports LS-120
  - Two 16550 UART-compatible serial ports with +5V/+12V power output in Pin 1 or Pin 9 via DIP jumper setting. 1 x RS-232 1 x RS-232/422/485 and selectable via jumper setting and auto flow control supported COM3/4 are optional
- USB Interface: 4 USB ports with fuse protection and complies with USB Spec. Rev. 2.0
- Real Time Clock: Integrate Intel® ICH6M
- Watchdog Timer:
  - 255 levels as SMI and Reset from 0~255 seconds controlled by W83627HG
- Board Unique ID:
- Dallas DS2401 board unique ID supported for customized application
- Hardware Monitoring:
  - Integrate Winbond W83627HG Super I/O.
  - Monitoring for CPU/System temperatures, System Voltage and Chassis/CPU Fan speeds
- Graphics/Streaming:
  - VGA On-chip Intel® 915GM
  - Supports up to 2048x1536 at 60 Hz resolution on noninterlaced CRT minitors

    - Optional Dual LVDS LCD via Chrontel CH7308A transmitter on the AX93208 stacking board
    - LCD backlight control supported
    - 18Bits or 36Bits LVDS LCD interface.
- Ethernet:
    - Dual Ethernet
    - Fast/Gigabit Ethernet; standard for single LAN, 2nd is optional from AX93208 stacking Board
    - Wake On LAN (via ATX power supply)
    - Equipped with RJ-45 interface
    - optional Intel 82573V as Gigabit
- Audio:
    - Realtek ALC202A AC'97 codec audio
    - Amplify for speaker-out with 2.5W for each channel
    - MIC-in, Line-in, Line-out/Speaker-out (jumper selectable)
- Expansion Slots:
    - 1*140-pin AMP connector for SDVO,
    - 2*PCI Master,
    - 1* PCI-Express and LPC signals
- Power Management: ACPI (Advanced Configuration and Power Interface)
- Form Factor: 2.5" Hard Disk drive form factor
- 1.2 Utilities Supported
    - Chipset Driver
    - Ethernet Driver
    - VGA Drivers
    - Audio Drivers

5.5 Type MLP 85 ºC Flatpack, Ultra-Long Life, Aluminum Type MLP 85 °C

Figure 5-7 MLP 85 ºC Flatpack

The MLP's high-energy storage and box-shape make it perfect for voltage holdup or filtering in military SEM-E modules, telecom circuit packs and computer cards. The MLP delivers up to 20 joules of energy storage in a 1/2" height with 50 year's life at +45 ºC. You can readily heatsink it to double the ripple-current capability. Ratings up to 250 V can operate at 75% of rated voltage up to 125 ºC if clamped or potted to prevent expanding beyond 1/2".

Highlights

- Low-profile replacement for snap-ins
- Double the ripple capability with a heatsink
- Nearly hermetic welded seal assures 50-year life
- Withstands more than 80,000 feet altitude

Operating Temperature:

- 55 °C to +85 °C up to 250 Vdc, –40 °C to 85 °C 300 Vdc & up

Rated Voltage:

- 7.5 to 450 Vdc

Capacitance:

- 110 µF to 47,000 µF ±20%

Leakage Current:

- ≤ 0.002 CV µA @ 25 °C and 5 min

Cold Impedance:

- 55 ºC multiple of 25 ºC Z is ≤ 10 for up to 20 V, 2 for 25 V to 250 V
- 20 ºC multiple of 25 ºC Z is ≤4 for 300 V and up

5.5.1.1 Hard Drives (Standard 32 GB)

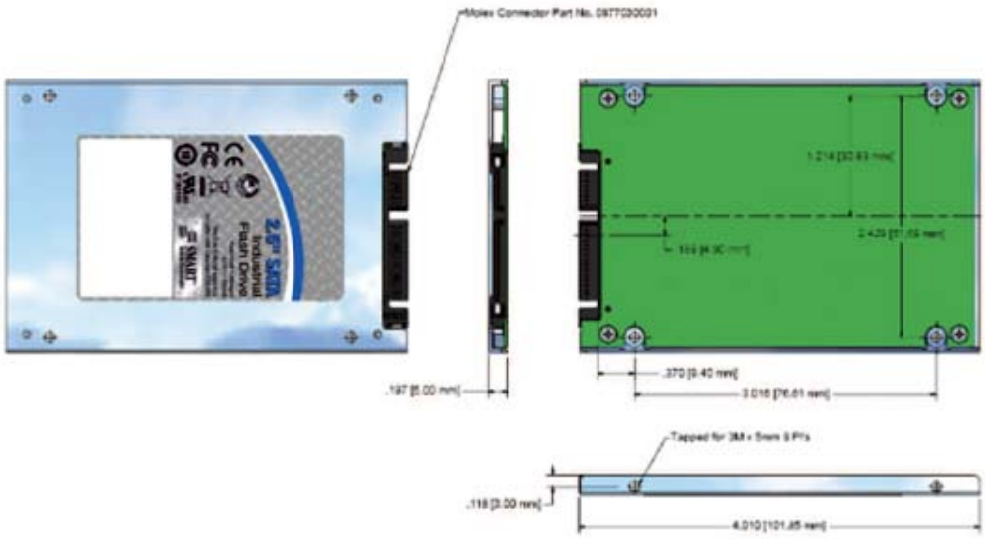

Figure 5-8 Solid-State Drive

The SSD offers the industry's lowest power consumption for rugged, low cost data storage applications. Ideally suited for HDD replacement in systems that require high reliability storage in a low profile (H-5mm x W-68.9 x L-100.25) package, the industrial grade SSD is suited for use as rugged, reliable boot drives in a wide range of communications applications including mobile and embedded computing, medical, automotive, and industrial. The SSD features enhanced reliability as a

result of advanced on-board error detection as well as correction and comprehensive wear leveling algorithms that provide consistent operation throughout the product life cycle.

Compatibility

- Serial ATA: High-speed serialized AT attachment, revision 1.0a, Serial ATA working group

Standard Performance

- Burst Read/Write: 150MB/sec
- Sustained Read: up to 40MB/sec
- Sustained Write: up to 25MB/sec
- Access time:.2ms (typical)

Physical

- Form factor: 2.5”
- Dimensions (mm): 100.25 (L) x 68.9 (W) x 5 (H)
- Weight: 0.1kg.

Environmental

- Industrial grade operating temperature: 0ºC to +70ºC
- Industrial temp operating temperature: -40ºC to +85ºC
- Storage temperature: -65ºC to +150ºC
- Humidity: 5% to 95%
- Operating shock: 50G peak @ 2ms
- Operating vibration: 15G peak to peak

Power

- Input voltage: 5.0V ± 5%
- Typical consumption
- Idle: 60mA
- Sustained Read/Write: 110mA/130mA

5.6 Power Management

Modern motherboards provide Advanced Configuration and Power Management Interface (ACPI) settings such as wake-up, power button function and standby/suspend timers. These functions are configured in the CMOS Setup

Most modern BIOS' allow automatic detection of parameters. The settings can be individually configured.

5.6.1 ATX Power Supply

Based on the electrical design of the picoPSU-120, the picoPSU-90 is a small yet powerful and fully compliant ATX power supply designed to power a wide variety of motherboard from a single 12V regulated power source.

The PICOPSU-90 is the only snap power supply solution for general purpose motherboards. Compatible with an entire range of mini-ITX, UATX or full size ATX motherboards the picoPSU-90 provides cool, silent power for system. The PICOPSU-90 has many advantages over a regular power supply:

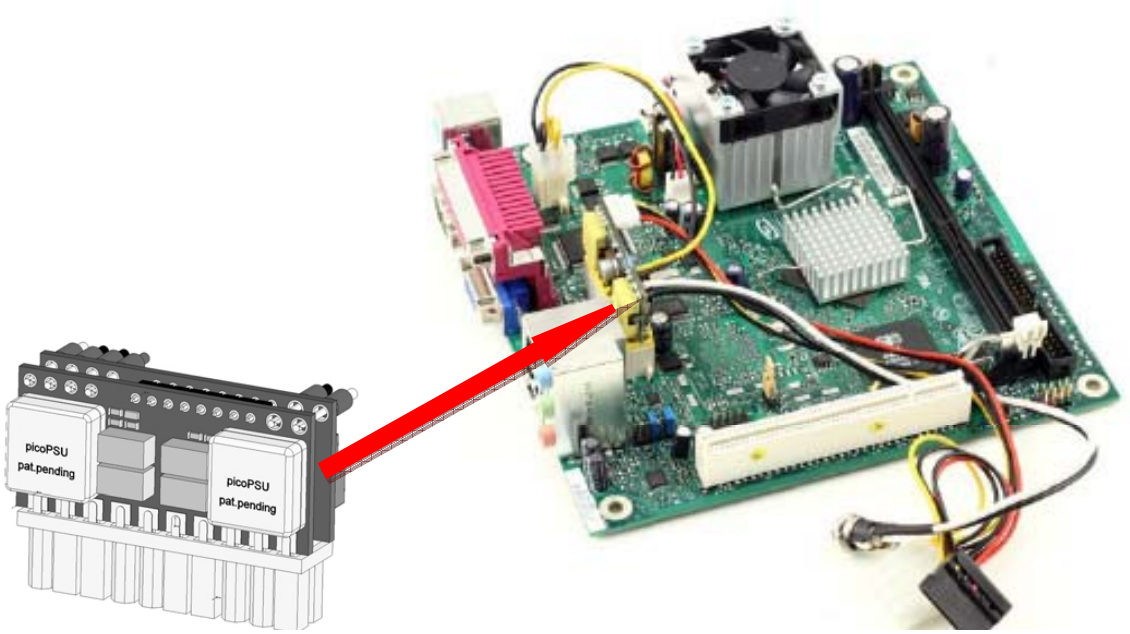

Figure 5-9 ATX Power Supply

5.6.2 ATX Components

Input Requirements: 12V regulated, min=2A, max=10A (load dependent). Over-voltage shutdown will occur at ~13-13.5V.

Size: 44.5mm(L) * 20mm(W) * 30mm (H) (1U compliant).

Weight: 45gramms, including cable harness, 20 grams without cable harness.

DC-Jack: Female, panel mount, 2.5*5.5*10 mm.

Connectors

- Molex 39-01-2200 compatible, two 3.5” drive power connectors (PATA and SATA) and one P4-12V 4 connector (mini-fit JR 4p). Header and mating connector for the removable cable harness can be found at: http://www.jst-mfg.com/product/pdf/eEH.pdf.

Overload protection

- Overload protection will be effected when either of the loads (+5V & +3.3V) exceeds > 200% Max Load.

Turn-on Delay

- After turning on, at least 20 ms will be needed for the rise of +5VSB output voltage (measured from 10% to 95%) to reach its peak.

Remote ON/OFF control (PS_ON)

- Logic level is LOW - Output voltage is enabled (PS_ON pin).
- Logic level is HIGH - Output voltage is disabled (PS_ON pin).
- PWR_GD.
  - Logic level is low: PWR_GD=OK.
  - Logic level is high: PWR_GD=not OK (10.5V<V(in)>13.5V or other fault conditions).

Operating environment: Temperature: -20 to 85 degree centigrade.

NOTE: Thermal shutdown occurs at 105-115C.

- Relative Humidity: 10 to 90 percent, non-condensing.

Efficiency, MTBF: 95%. MTBF=100K hours at 55Celsius.

5.6.3 DC-DC Converter Module

Figure 5-10 DC-DC Converter Module

5.6.4 DC-DC Converter Module

This DC-DC converter module uses advanced power processing, control and packaging technologies to provide the performance, flexibility, reliability and cost effectiveness of a mature power component. High frequency ZCS/ZVS switching provides high power density with low noise and high efficiency.

5.6.4.1 DC-DC Converter Module Features

- RoHS Compliant (with F or G pin option).
- DC input range: 10 – 36 V.
- Input surge withstand: 50 V for 100 ms.
- DC output: 3.3 – 48 V.
- Programmable output: 10 to 110%.
- Regulation: ±0.2% no load to full load.
- Efficiency: Up to 85%.

- Maximum operating temp: 100°C.
- Power density: up to 40 W per cubic inch.
- Height above board: 0.43 in. (10,9 mm).
- Parallelable, with N+M fault tolerance.
- Low noise ZCS/ZVS architecture.

5.6.5 COTS 28 Vin Filter

Figure 5-11 Vin Filter

The M-FIAM5 is a DC front-end module that provides EMI filtering and transient protection. The M-FIAM5 enables designers using Vicor's Maxi, Mini, Micro Series 24 V DC-DC converters to meet conducted emission/ conducted susceptibility per MIL-STD-461E; and input transients per MIL-STD-704E/F. The M-FIAM5 accepts an input voltage of 14 – 36 Vdc and delivers output current up to 20 A.

5.6.6 Vin Filter Features

- Transient protection-MIL-STD-704E/F.
- Environments-MIL-STD-810, MIL-STD- 202.
- Environmental stress screening.
- Low profile mounting options.
- Output current up to 20 A.
- Mini sized package.
- Inrush current limiting.
- Reverse polarity protection.

Chapter 3

Procedures.

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6 Procedures

The procedures within this Chapter contain relevant information to ensure the SV-101-THS maintains its maximum performance potential.

6.1 Server Startup

1. Check to make sure that all the cables are seated and connected correctly to the unit such as keyboard, mouse, monitor S-Video cable and power cables.
2. Then Press the **power switch** ON to start the computer (power switch is located in the front of the unit) .
3. Once the unit starts, System will go thru Power On self Test (POST) (no action is required at this time).
4. At windows dialog box press **Ctrl+Alt+Delete** at once to login.
5. Type in the **correct user name** and **password** and then press **enter** to login.
6. Once the operator is logged on to the unit they could use the computer as they wish.

NOTE: *Assuming the* SV-101-THS *is not connected to any network.*

6.2 Server Shutdown

1. The operator needs to save all data, and then close all applications.
2. Once all data is saved and applications are closed, click on **Start menu**, select **shutdown** and then click **OK** to shutdown the computer.

6.2.1.1 Passwords

In most cases a user (startup) password and a supervisor (setup) password can be set in the CMOS. When a Setup password is required, the computer will prompt for it when you try to access the BIOS setup. When a Startup password is configured, the computer will prompt for it at every startup.

The CMOS password can be reset by shortening the "CMOS restore to factory defaults jumper" or by temporarily removing the CMOS battery.

7 Identifying Server Components Using Device Manager

The Device Manager is one of Windows' most useful diagnostic tools. It lets you see all of the devices attached to your computer, and which resources they are each using. To access the Device Manager do the following:

1. Click **Start**, point to **Settings**, and then click **Control Panel**. (Figure 7-1).

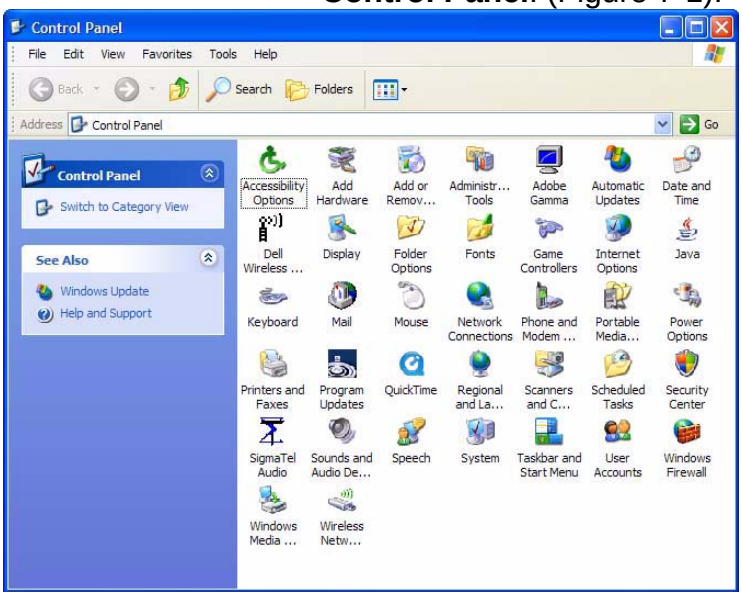

Figure 7-1 Control Panel

2. Double-click the **System** icon in the **Control Panel** page to open system properties. (Figure 7-2).

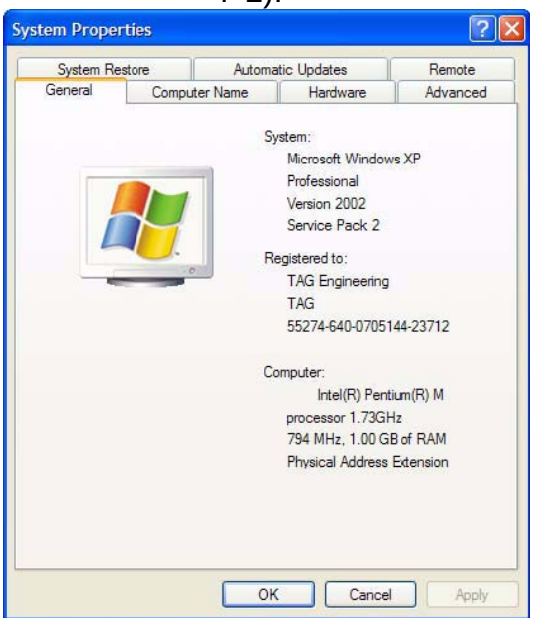

Figure 7-2 System Properties

3. Click the **Hardware** tab, and then click the **Device Manager** button. (Figure 7-3).

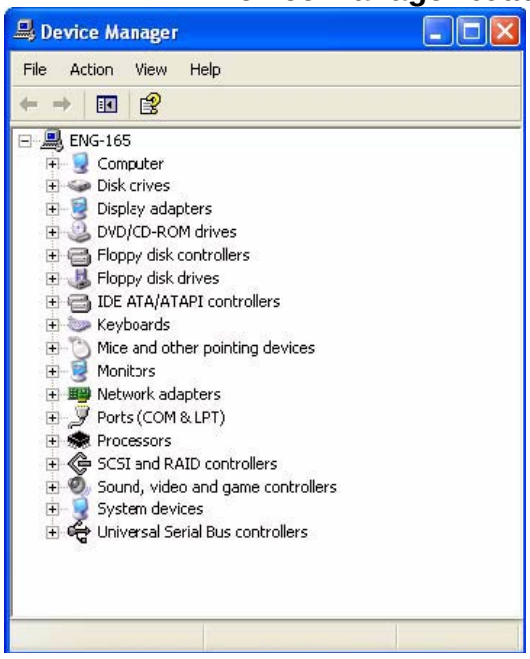

Figure 7-3 Device Manger

After opening Device Manager, you will see a list of all the devices Windows detected on your system. The Device Manager display is recreated each time the computer is started, or whenever a dynamic change to the computer configuration occurs, such as addition of a new device while the system is running.

NOTE: ***To include hidden devices, on the View menu, click Show hidden devices. A check mark next to Show hidden devices indicates hidden devices are showing. Click it again to clear the check mark. Hidden devices include non-PnP devices and devices that have been physically removed from the computer but have not had their drivers uninstalled.***

The devices shown represent the computer's current hardware configuration information. Any non-functioning devices are displayed with an exclamation point, indicating that a problem exists with the device; disabled devices are displayed with a small red "x" over the icon.

You can use Device Manager to enable or disable devices, troubleshoot devices, update drivers, use driver rollback, and change resources such as interrupt requests (IRQs) assigned to devices.

7.1 Working with Device Properties

To display a device's properties do the following:

1. Access the Device Manager. (Figure 7-4). As described in steps 1 through 3.

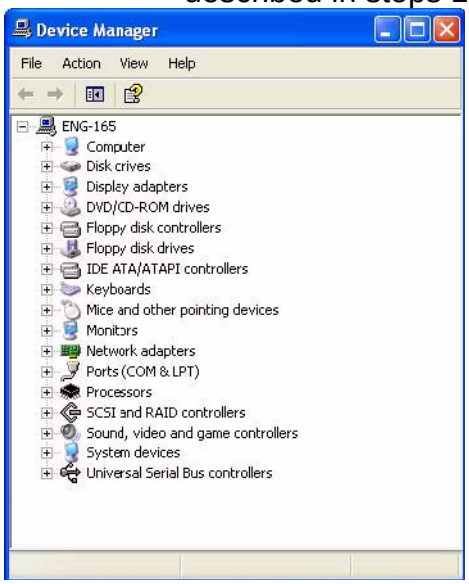

Figure 7-4 Device Manager

2. In the Device manager dialog box (Figure 7-5), double-click the device, or select the device and then click the **Properties** toolbar button.

Figure 7-5 Properties Dialog Box

In the device's Properties dialog box, there might be several tabs. You can view the status and configuration information, as well as the device manufacturer, device type, and location in the upper portion of the General tab.

The Device status box in the middle of the General tab displays the status of the device, including any errors. If the device has any problems, the Device Status box briefly describes the problem, and usually describes the appropriate course of action to correct the problem.

3. Click **Troubleshoot...** to use the built-in mechanisms for detecting the nature of the problem.

   Other tabs include the Driver tab, which displays the details of the driver being used. This tab also lets you update or uninstall the driver. The Resources tab displays the hardware resources being used. This tab allows you to see and resolve any conflicts caused by non-PnP devices. Along with these tabs, some devices have additional advanced settings or tabs for device-specific settings.

7.2 Installing and Removing Hardware in Windows

Plug and Play (PnP) is a standard that makes installing new hardware devices easier. Prior to PnP, installing new hardware meant finding and installing peripheral drivers and making sure the new device didn't conflict with another device. Theoretically, if you have a computer designed for PnP and are using a PnP operating system (like Windows), installing a printer, sound card, modem, or other peripheral is a simple matter of plugging in the device.

It's not always quite this simple. Assuming you are using a PnP computer, when you attach a PnP device, you may see a message indicating that Windows has recognized the new device-

either immediately or the next time you start up your system. If Windows needs a driver that is not currently installed, you may at that point be asked to insert a disk or the Windows CD-ROM. If you don't see a message but the device appears to be working, you can assume that everything is fine.

7.2.1 Using the Add New Hardware Wizard

If the device is not working properly, try using the Add New Hardware Wizard. To run this wizard, do the following:

1. From the **Start** menu, point to **Settings** and then click **Control Panel**. (Figure 7-6).

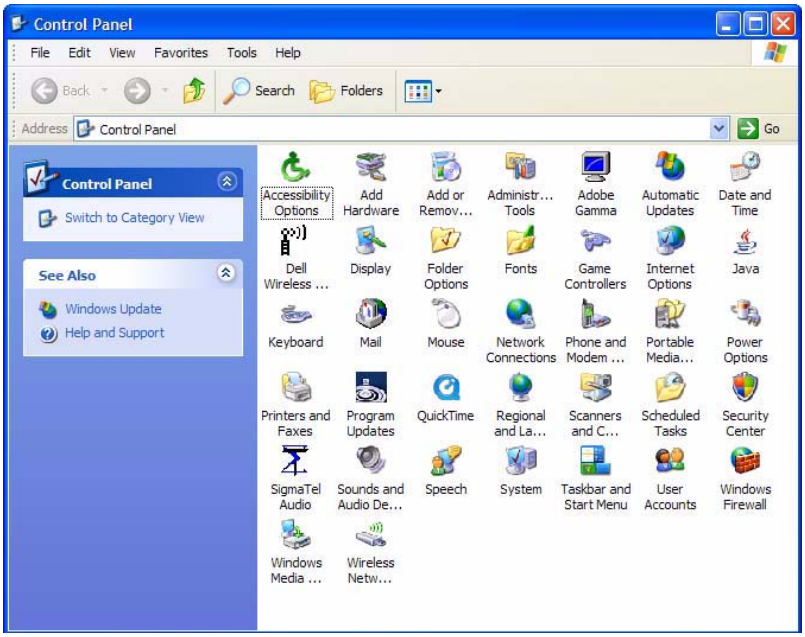

Figure 7-6 Control Panel

2. Double-click the **Add Hardware** icon. (Figure 7-7).

Figure 7-7 Add Hardware Wizard

7.3 Installing Legacy Peripherals

When you install what Microsoft calls a legacy peripheral, you will need to use the Add Hardware Wizard, as described to let Windows know about the new device.

NOTE: ***The term legacy refers to anything that's no longer on the cutting edge.***

7.3.1 Removing Legacy Peripherals

When removing a legacy peripheral from your system, you need to let Windows know that the device is gone. This enables Windows to reuse the resources (places in memory and internal communications channels) that it previously allocated to that device.

To tell Windows that you have removed a legacy device, perform the following steps:

1. From the **Start** menu, point to **Settings** and then click **Control Panel**. (Figure 7-8).

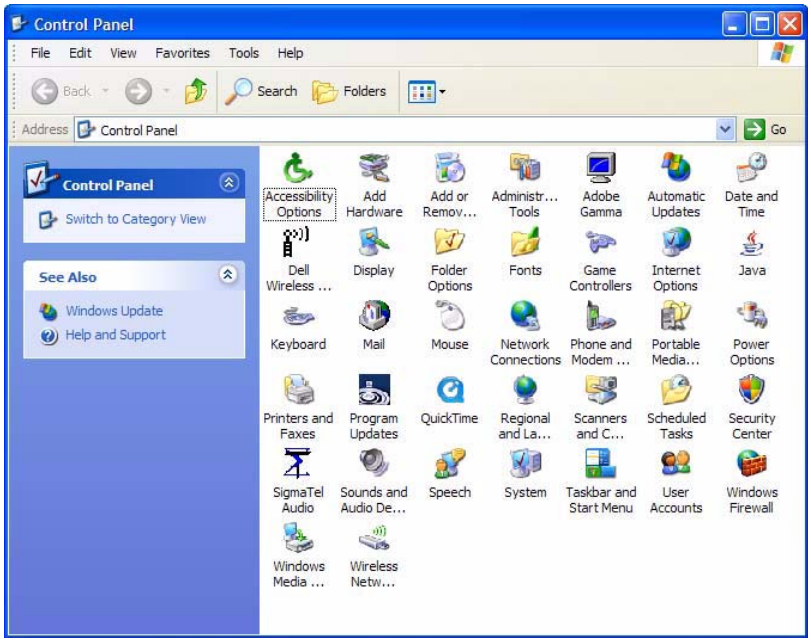

Figure 7-8 Control Panel

2. Double-click the **System** icon. (Figure 7-9).

Figure 7-9 System Properties

3. Click the **Hardware** tab.

4. Click the **Device Manager** button. (Figure 7-10).

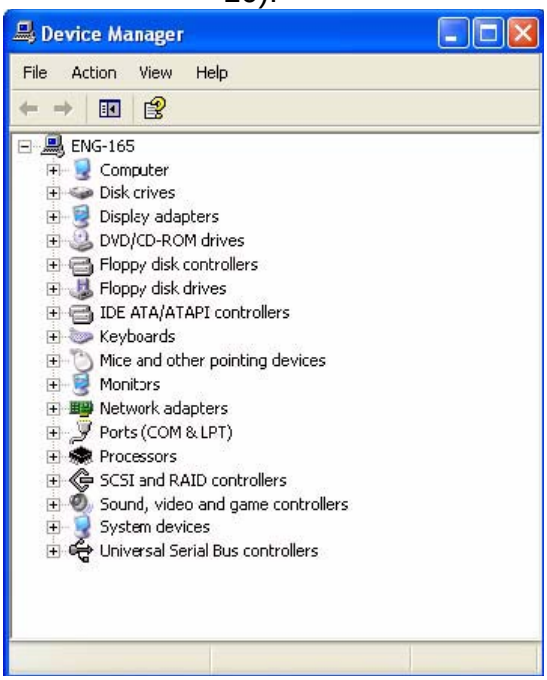

Figure 7-10 Device Manger

5. Click the **name** of the item you have removed from your system. If you don't see the item, look for a category heading that describes the type of device you removed, and then click the plus sign to its left to display a list of items in that category.
6. From the **Action** menu, click **Uninstall**.
7. Click **OK**.

7.4 TAG Approved BIOS

The BIOS (basic input/output system) is the program stored on the CMOS that the server's microprocessor uses to get the system started after you turn it on. The BIOS also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, and mouse.

CAUTION: ***The BIOS installed on your server was loaded and tested with all the devices initially installed in your system. If you desire to have the BIOS updated, consult TAG technical support in advance as updates to your approved BIOS may cause your system to become unstable or inoperable.***

7.4.1 BIOS Configuration for BIOS Version B11-IF-0

Load the Intel BIOS version B11.IF0.0. Enter BIOS by pressing F2 when prompted in POST. Once the BIOS Configuration Utility has been entered scroll to the exit tab using the arrow keys. Under the exit menu option select “Load Optimal Defaults” when prompted select OK to load optimal defaults. Scroll back to the Main menu and ensure that all of the settings seen in the screenshots below are set. Upon exit ensure that settings are saved upon exit.

1. On the **Main BIOS Setup Utility** screen select **Standard CMOS Features** and Press **Enter**. (Figure 7-11).

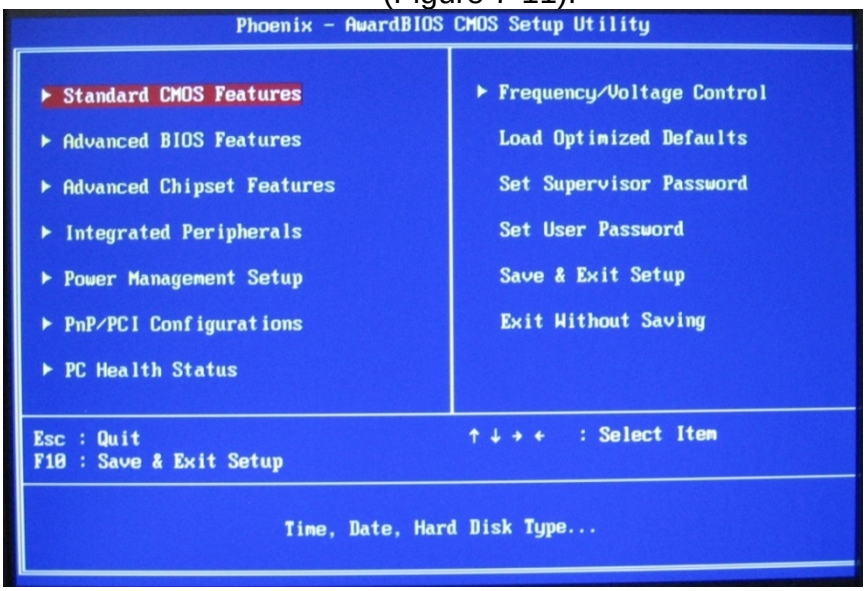

Figure 7-11 Standard CMOS Features

2. On the **Standard CMOS Features** screen ensure **System Time and Date** are correct. Scroll down to **Drive A** and Press **Enter.** (Figure 7-12).

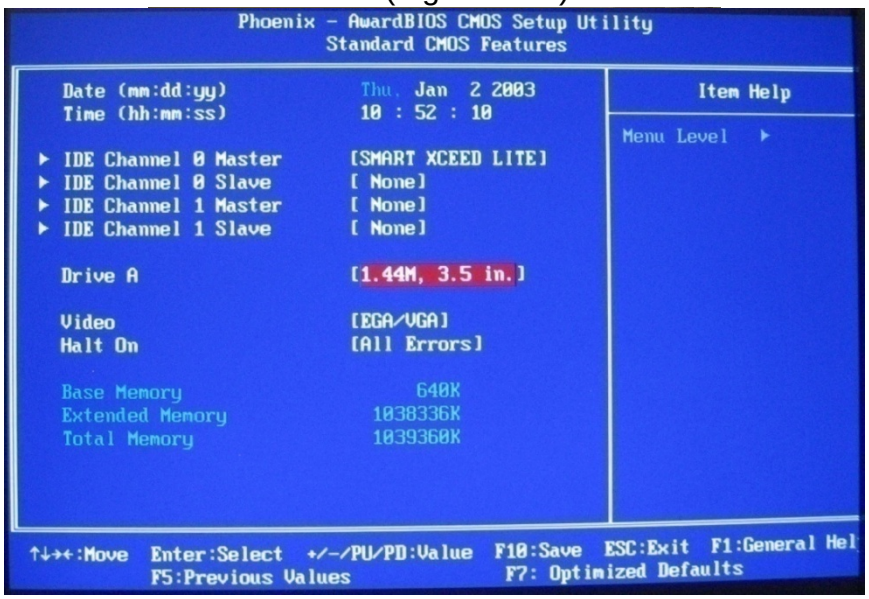

Figure 7-12 Standard CMOS Features

3. On the **Drive A Popup** that appears on the **Standard CMOS Features** screen select **None**. Press **Enter**. (Figure 7-13).

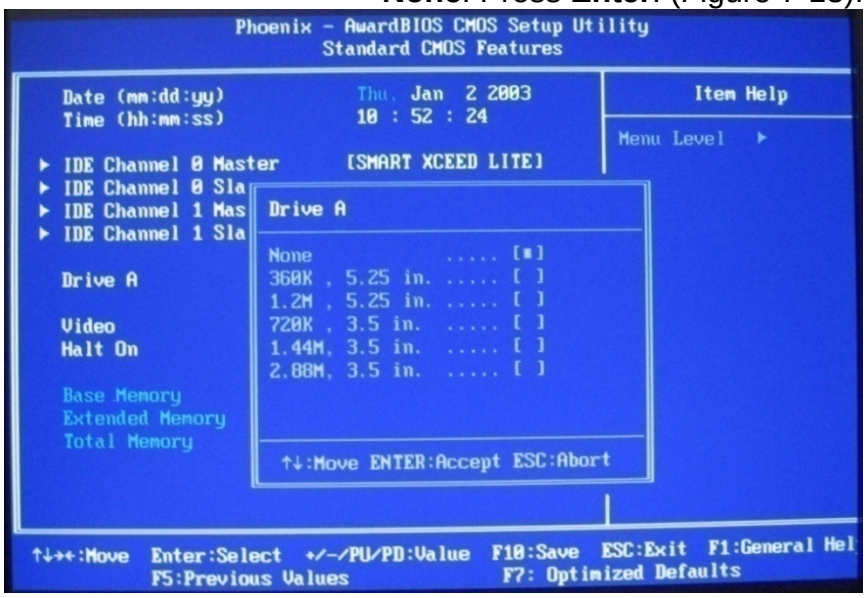

Figure 7-13 Drive A Popup Screen

4. Press **Escape** to return to the **Main BIOS Setup Utility** screen. Scroll down to **Advanced BIOS Features**, Press **Enter**. (Figure 7-14).

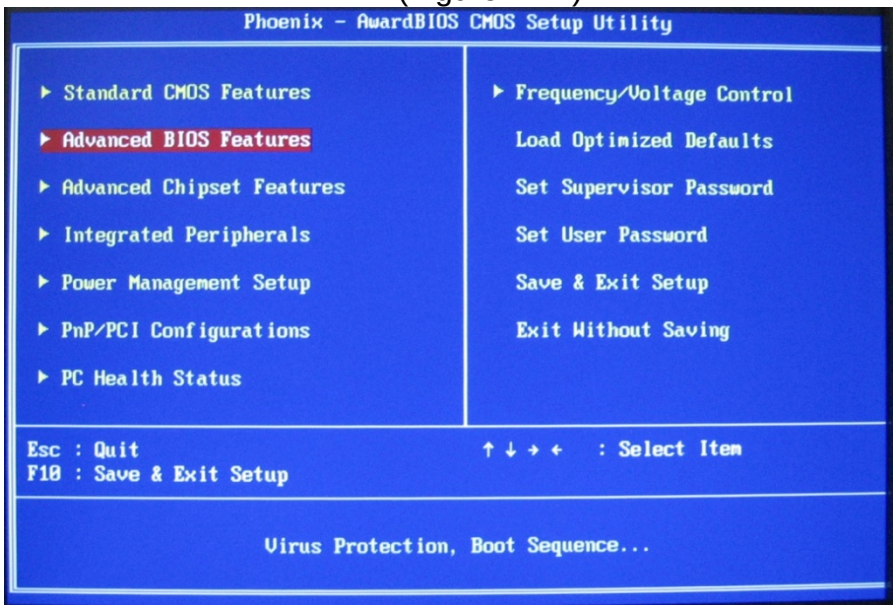

Figure 7-14 Advanced BIOS Features

5. On the **Advanced BIOS Features** screen scroll down to **First Boot Device** and Press **Enter**. (Figure 7-15).

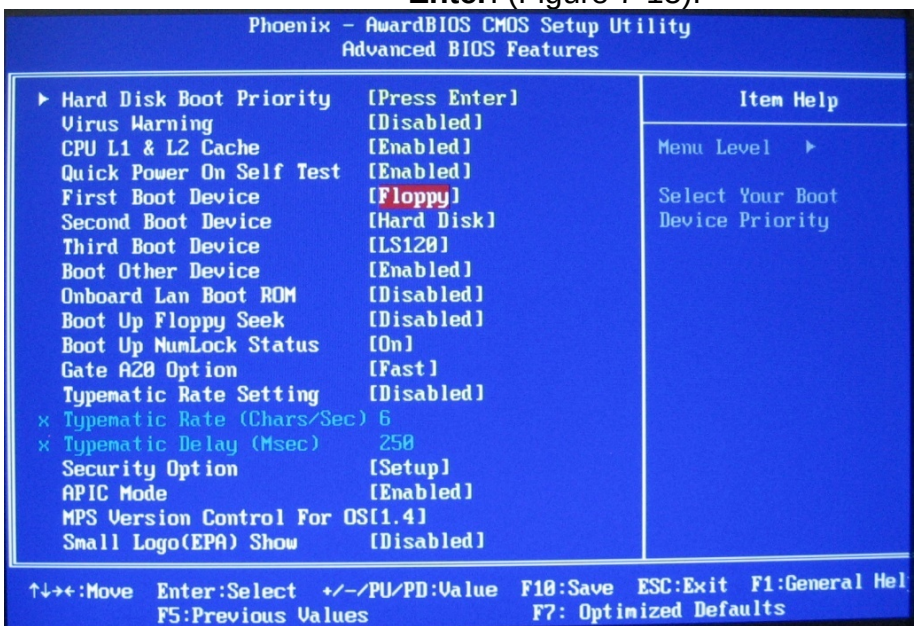

Figure 7-15 First Boot Device

6. On the **First Boot Device Popup** that appears select **USB-FDD**. Press **Enter**. (Figure 7-16).

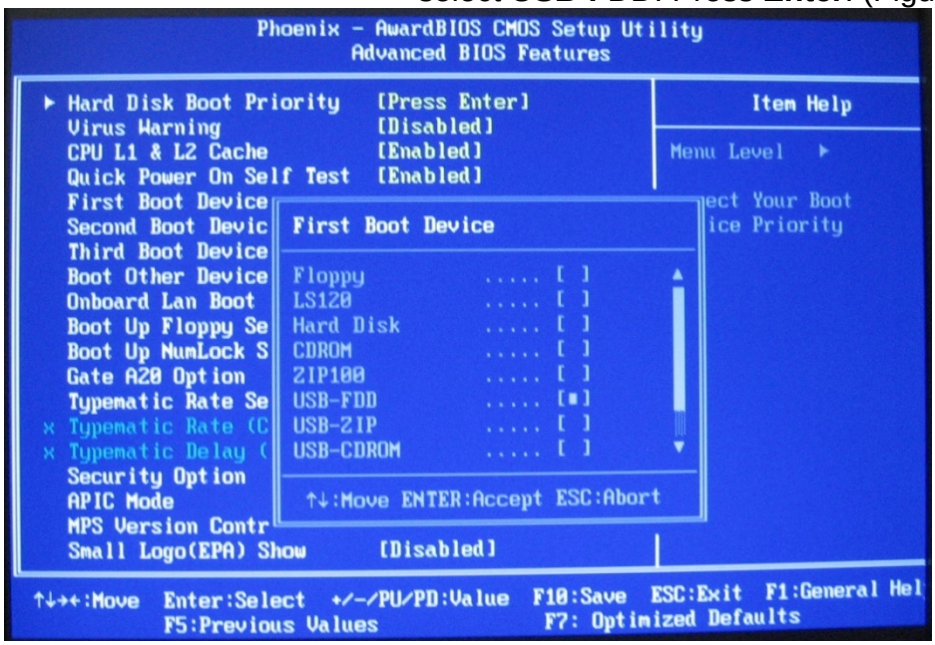

Figure 7-16 First Boot Device Popup

7. On the **Advanced BIOS Features** screen scroll down to **Second Boot Device** and Press **Enter**. (Figure 7-17).

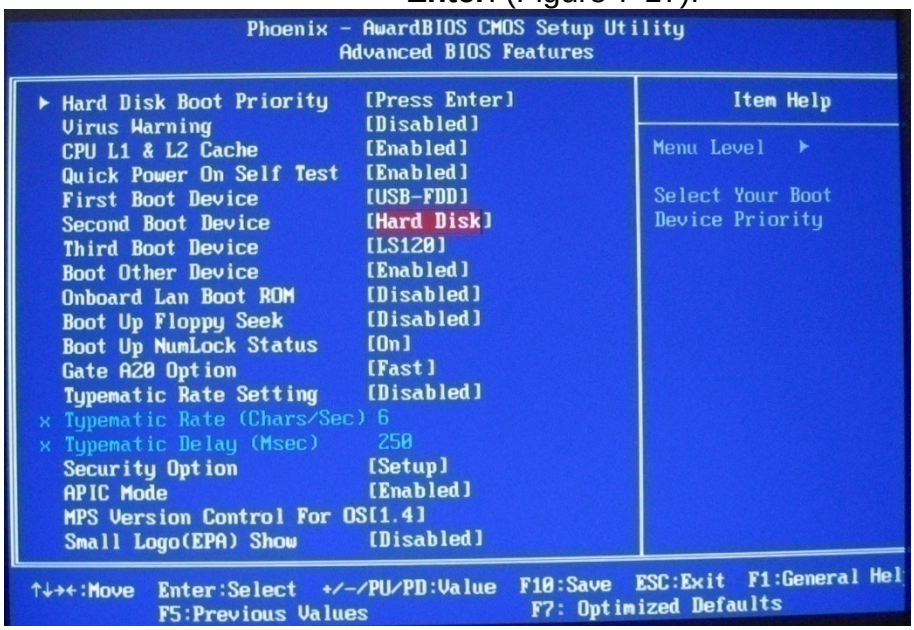

Figure 7-17 Second Boot Device

8. On the **Second Boot Device Popup** select **USB-CDROM**. Press **Enter**. (Figure 7-18).

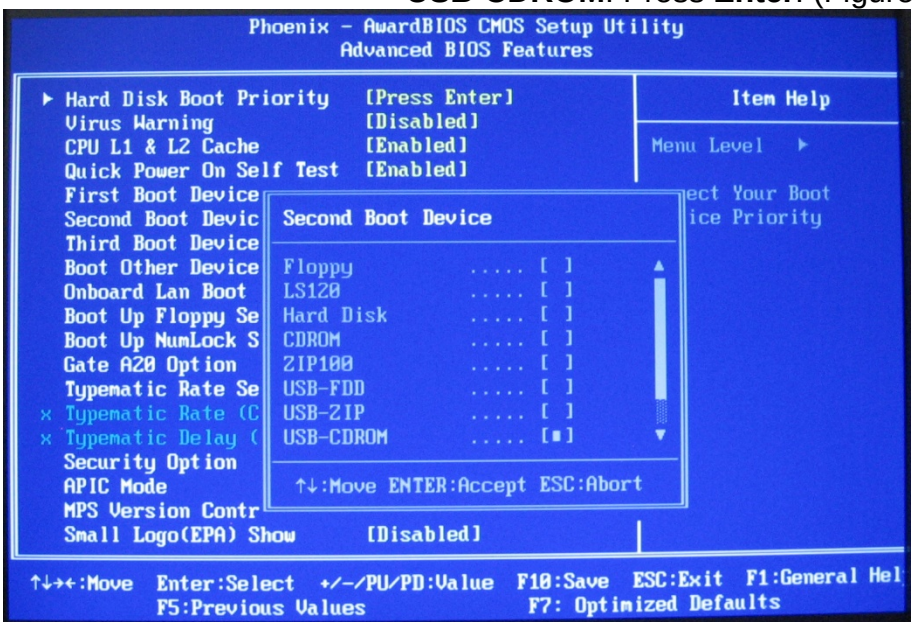

Figure 7-18 Second Boot Device Settings

9. On the **Advanced BIOS Features** screen scroll down to **Third Boot Device** and Press **Enter**. (Figure 7-19).

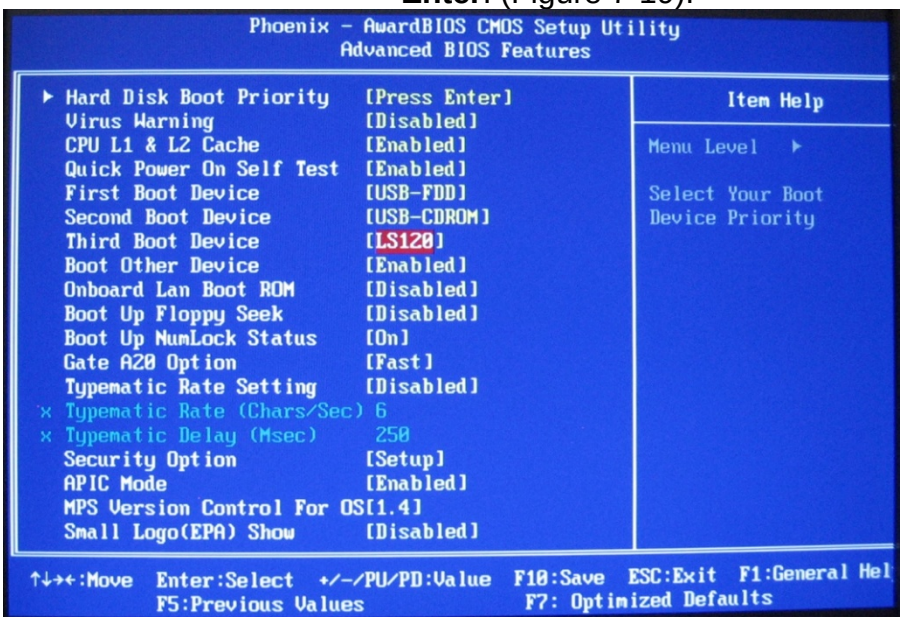

Figure 7-19 Third Boot Device

10. On the **Third Boot Device Popup** select **Hard Disk**. Press **Enter**. (Figure 7-20).

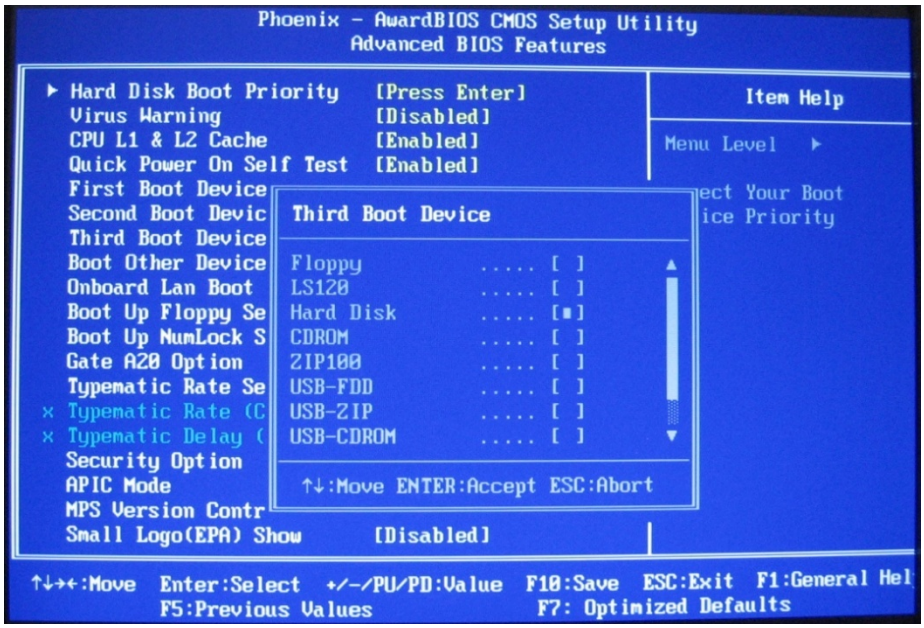

Figure 7-20 Third Boot Device Settings

11. Press **Escape** to get back to **Main BIOS Utility** page. Select **Advanced Chipset Features**, Press **Enter.** (Figure 7-21).

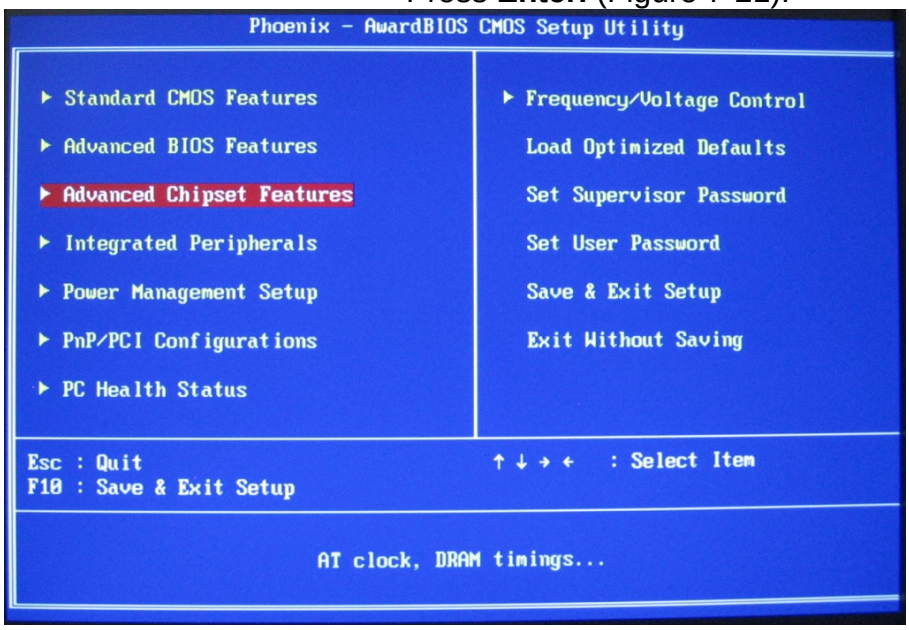

Figure 7-21 Advanced Chipset Features.

12. On the **Advanced Chipset Features** page**. No Change** for **Advanced Chipset Features.** Press **Enter**. (Figure 7-22)

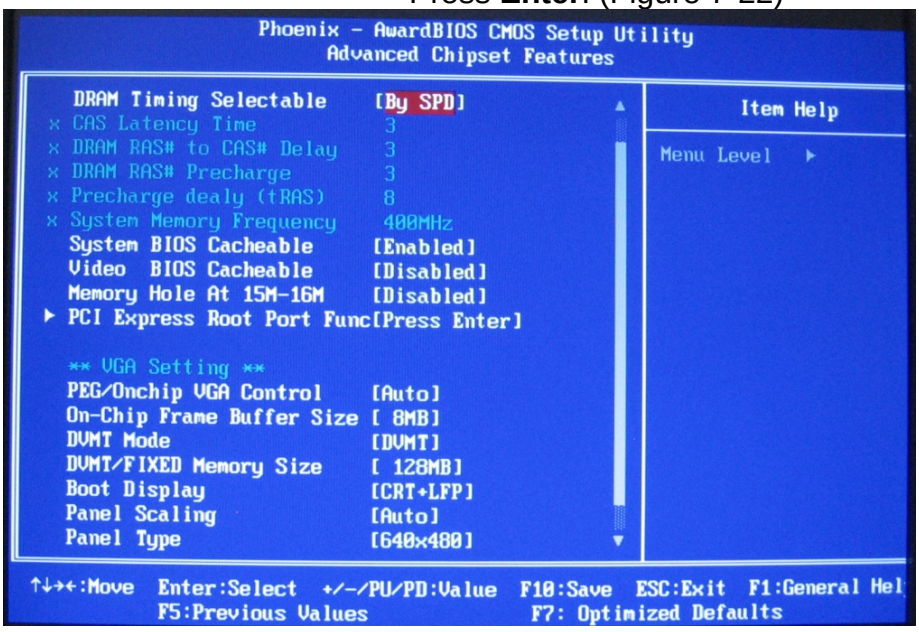

Figure 7-22 Advanced Chipset Features

13. Press **Escape** to get back to **Main BIOS Utility** page. Select **Integrated Peripherals**, Press **Enter**. (Figure 7-23).

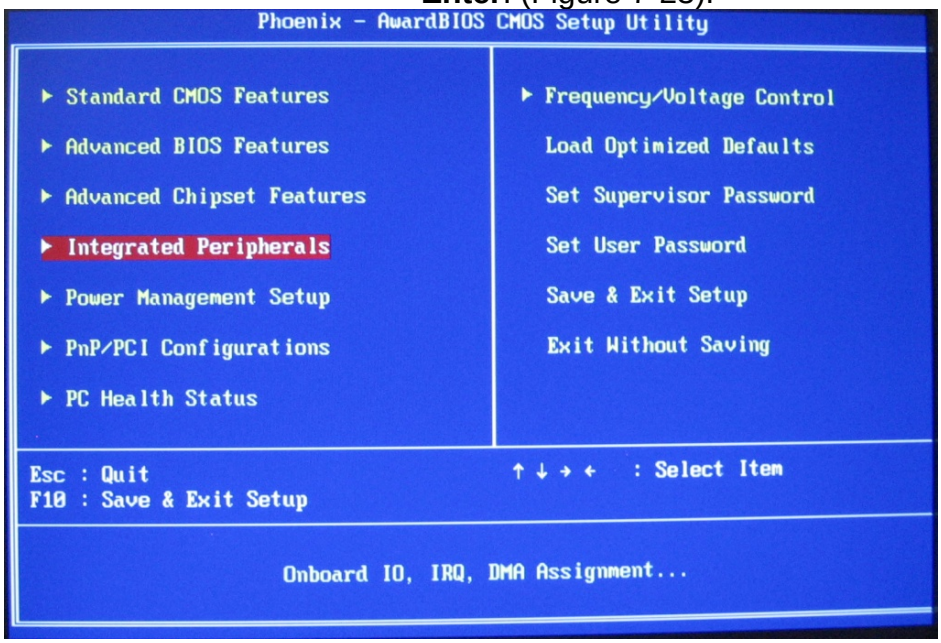

Figure 7-23 Integrated Peripherals

14. No changes for **OnChip IDE Devices**. Press **Enter**. (Figure 7-24).

Figure 7-24 OnChip IDE Devices

15. **No change** for **IDE Devices.** Press **Enter.** (Figure 7-25).

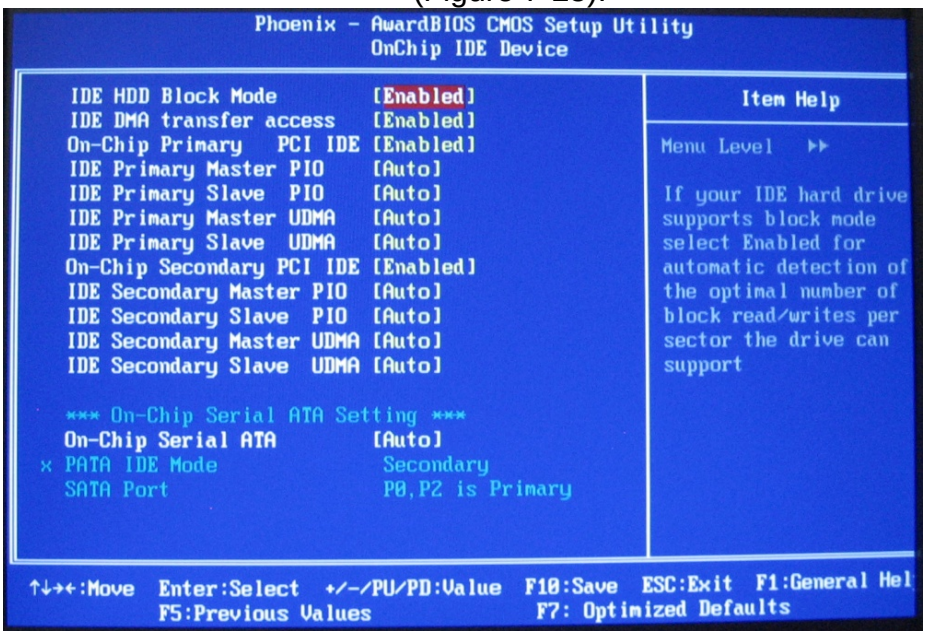

Figure 7-25 IDE Devices

16. On the Integrated Peripherals screen scroll down and Select **Onboard Device** and Press **Enter**. (Figure 7-26).

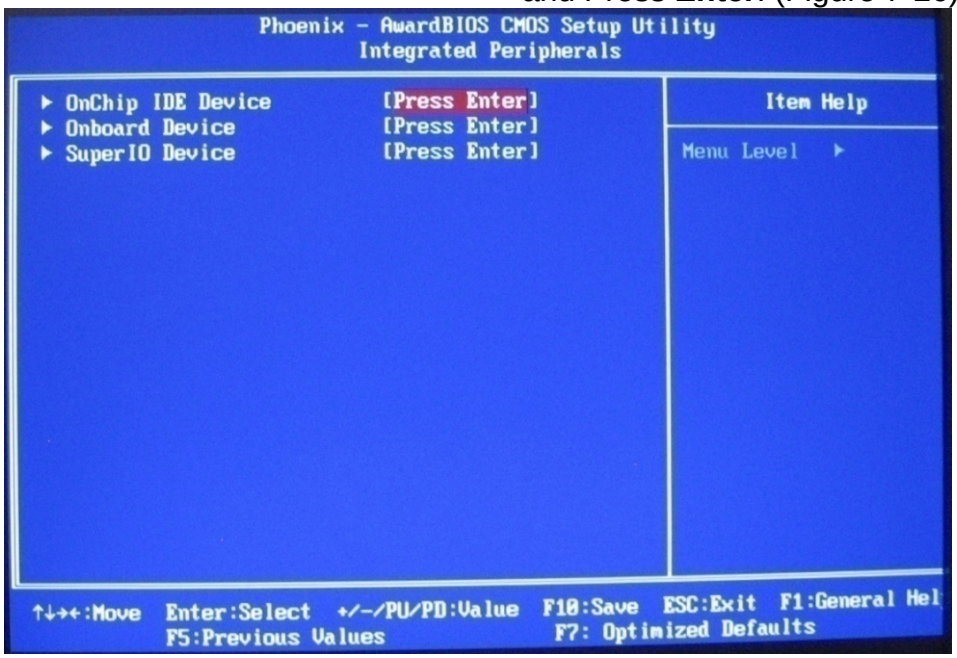

Figure 7-26 Onboard Device

17. On the **Onboard Device** screen select **USB Keyboard Support** and Press **Enter**. (Figure 7-27).

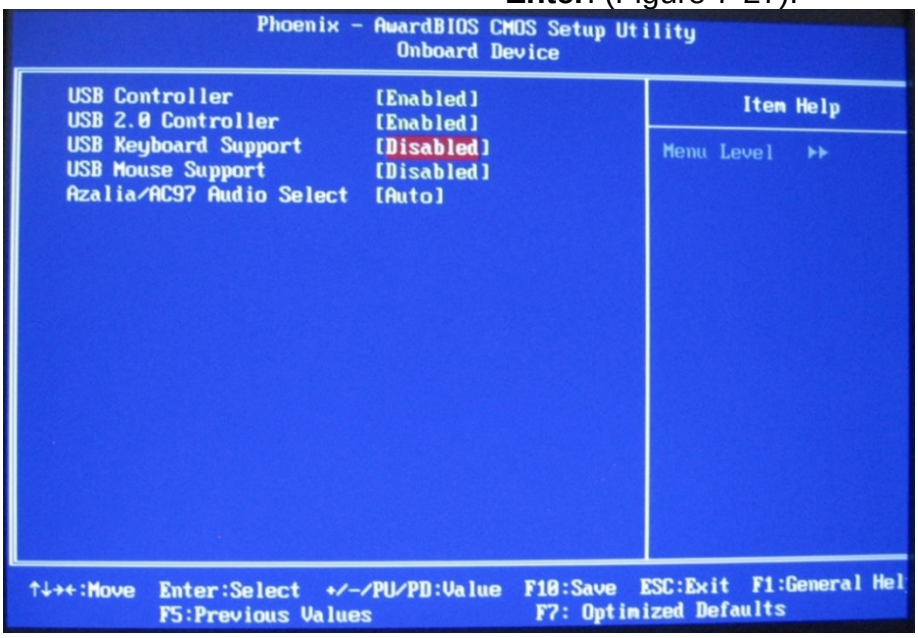

Figure 7-27 USB Keyboard Support

18. Select **Enabled** on the **Popup** screen. Press **ENTER.** (Figure 7-28).

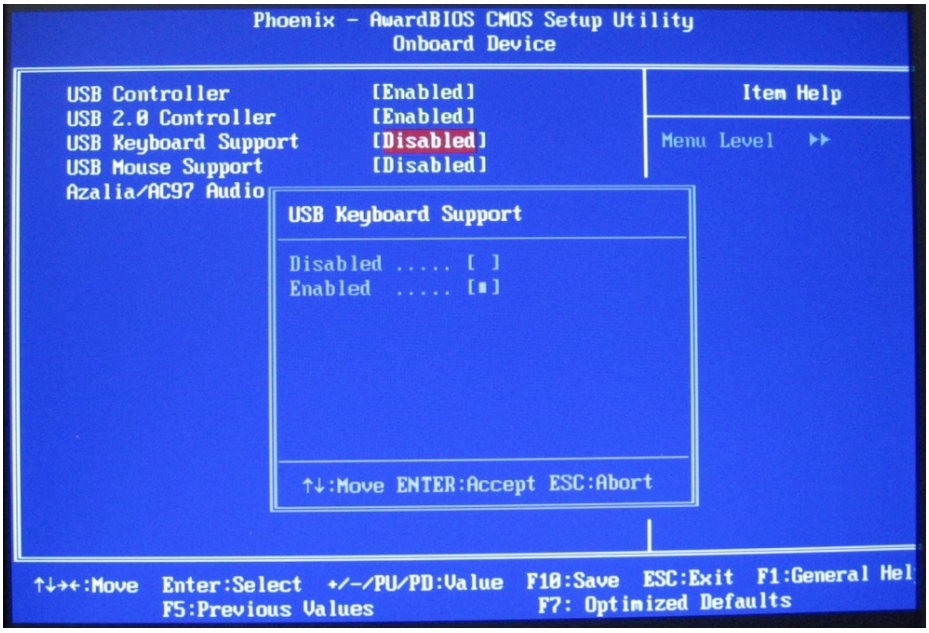

Figure 7-28 USB Keyboard Support

19. On the **Onboard Device** screen. Scroll down and select **USB Mouse Support** and Press **Enter**. Select **Enabled** on the **Popup** screen. Press **Enter**. (Figure 7-29).

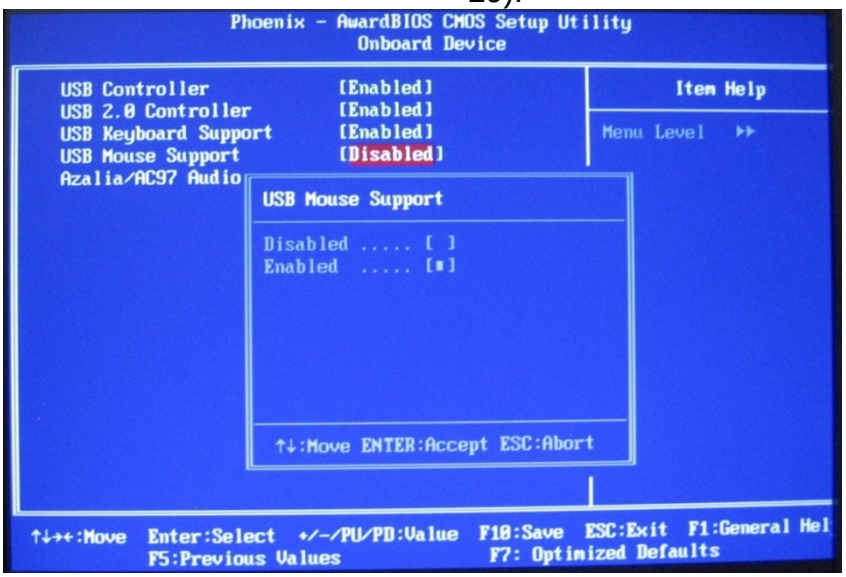

Figure 7-29 USB Mouse Support

20. On the **Integrated Peripherals** screen. Scroll down and select **Super IO Device** and Press **Enter**. (Figure 7-30.

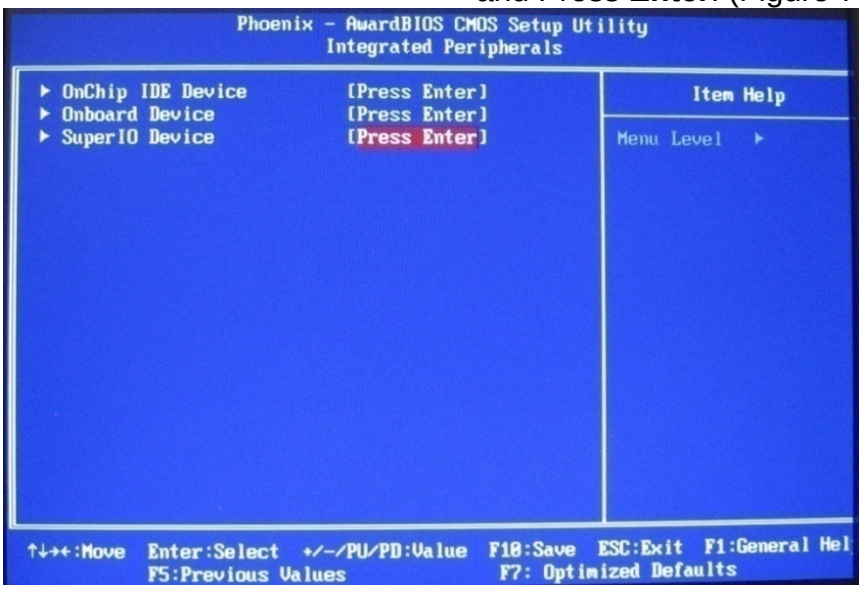

Figure 7-30 Super IO Device

21. On the **Super IO Device** page**. No Change.** Press **Enter**. (Figure 7-31).

Then Press **Escape** to return to the **Main BIOS Utility** page.

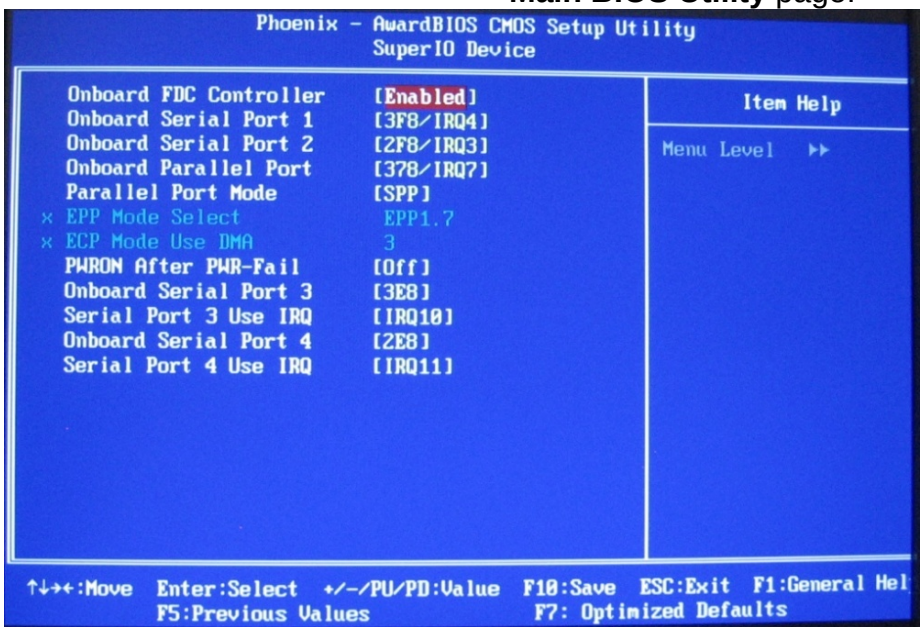

Figure 7-31 Clear NURAM

22. On the **Main BIOS Utility** page. Select **Power Management Setup**, Press **Enter**. (Figures 7-32).

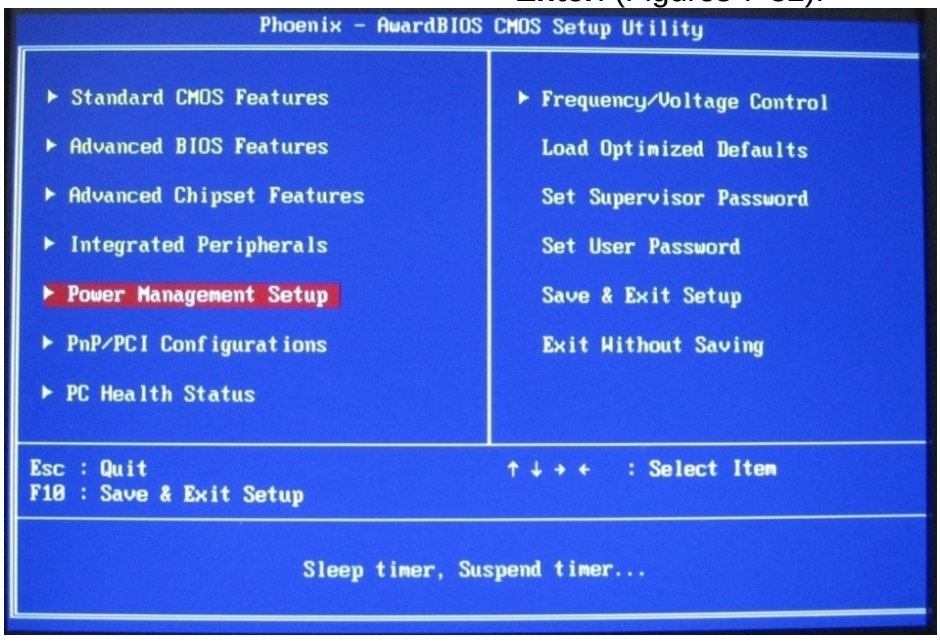

Figure 7-32 Power Management Setup

23. On the **Power Management Setup** page. **No change**. Press **Enter**. (Figure 7-33).

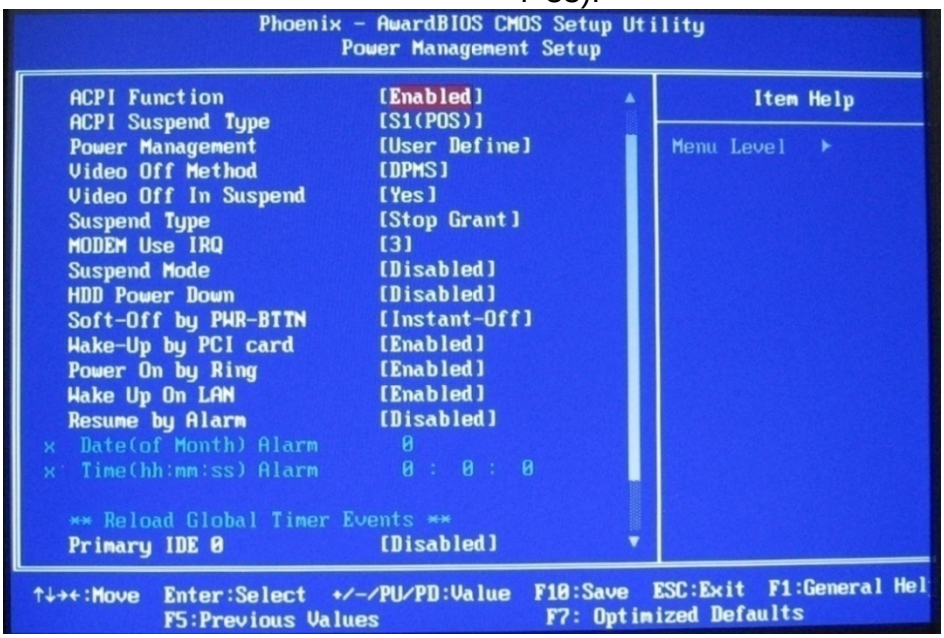

Figure 7-33 Power Management Setup

24. Scroll down to **PnP/PCI Configuration** and Press **Enter**. (Figure 7-34).

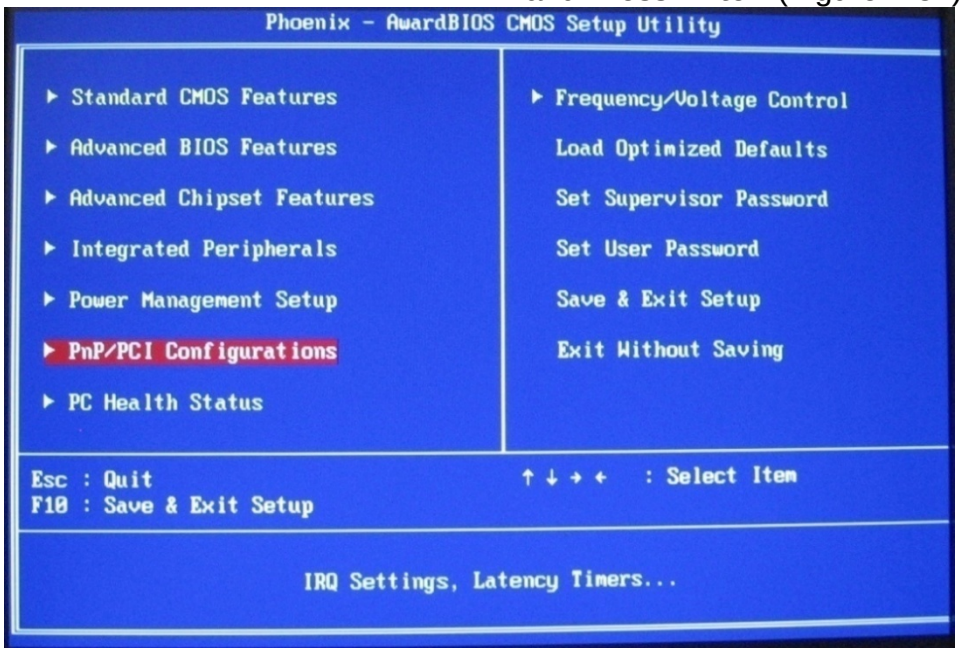

Figure 7-34 PnP/PCI Configuration

25. On the **PnP/PCI Configuration** screen. **No Change** and Press **Enter**. (Figure 7-35).

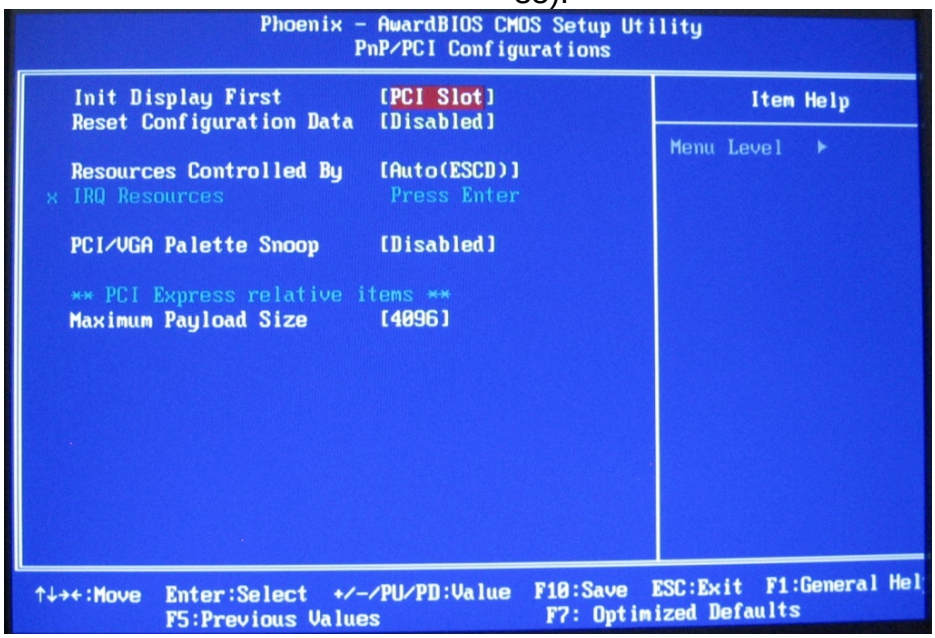

Figure 7-35 PnP/PCI Configuration

26. Press **Escape** to return to the **Main BIOS** page. Scroll down to .**PC Health Status** and Press **Enter**. (Figure 7-36).

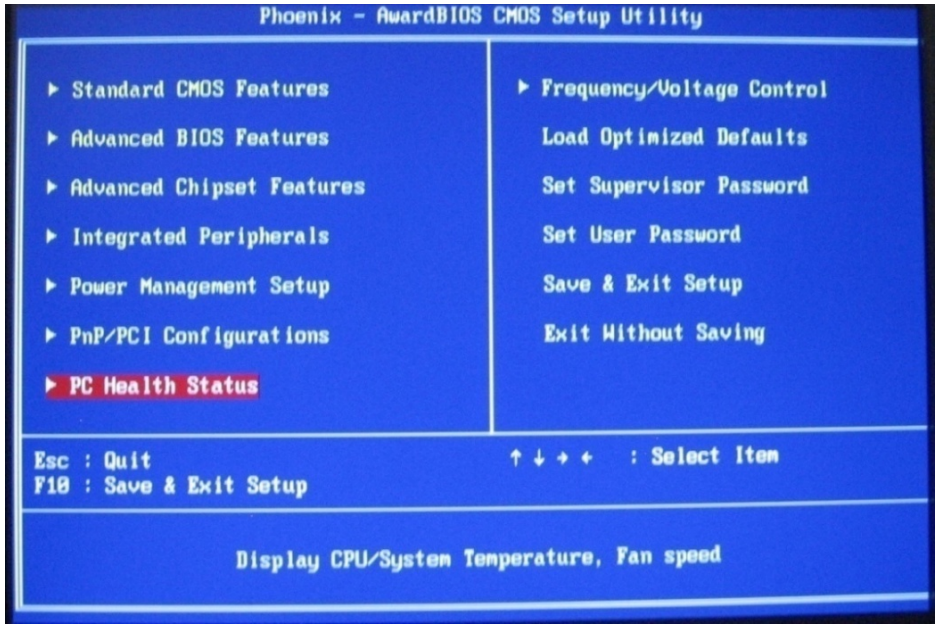

Figure 7-36 Main BIOS Page

27. On the **PC Health Status** screen. **No Change** and Press **Enter**. (Figure 7-37)**.**

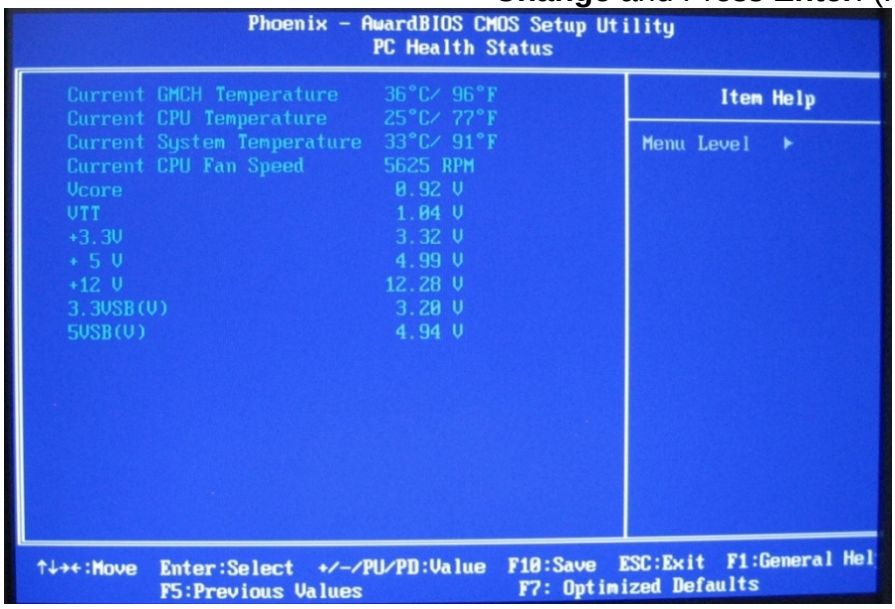

Figure 7-37 PC Health Status

28. Press **Escape** to return to the **Main BIOS** screen. Select **Frequency Voltage Control.** Press **Enter**. (Figure 7-38).

Figure 7-38 Frequency Voltage Control

29. On the **Frequency Voltage Control** screen. **No Change** and Press **Enter**. (Figure 7-39).

Figure 7-39 Frequency Voltage Control

30. Press **Escape** to return to the **Main BIOS Utility** page**.** Scroll down and select **Save and Exit Setup.** Press **Enter**. (Figure 7-40).

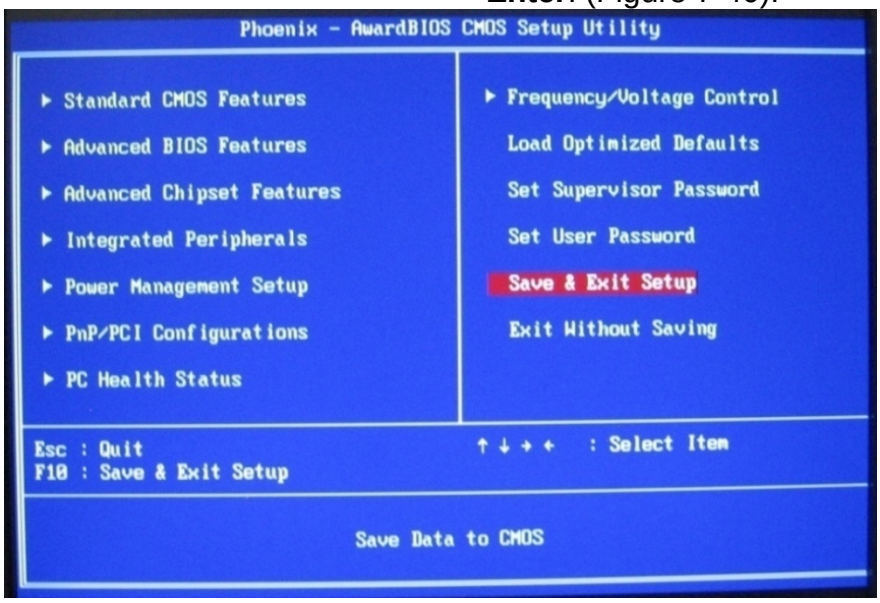

Figure 7-40 Main BIOS Utility

31. Select **Y** on the **Save to CMOS Popup** screen and Press **Enter.** (Figure 7-41).

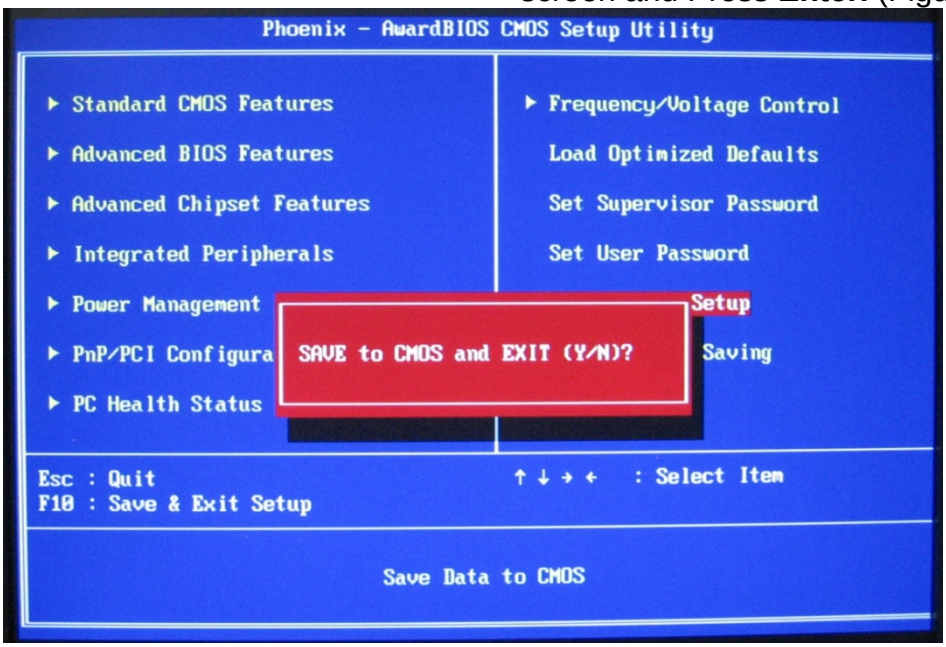

Figure 7-41 Save Changes and Exit

8 Appendix A
Electrical Drawing

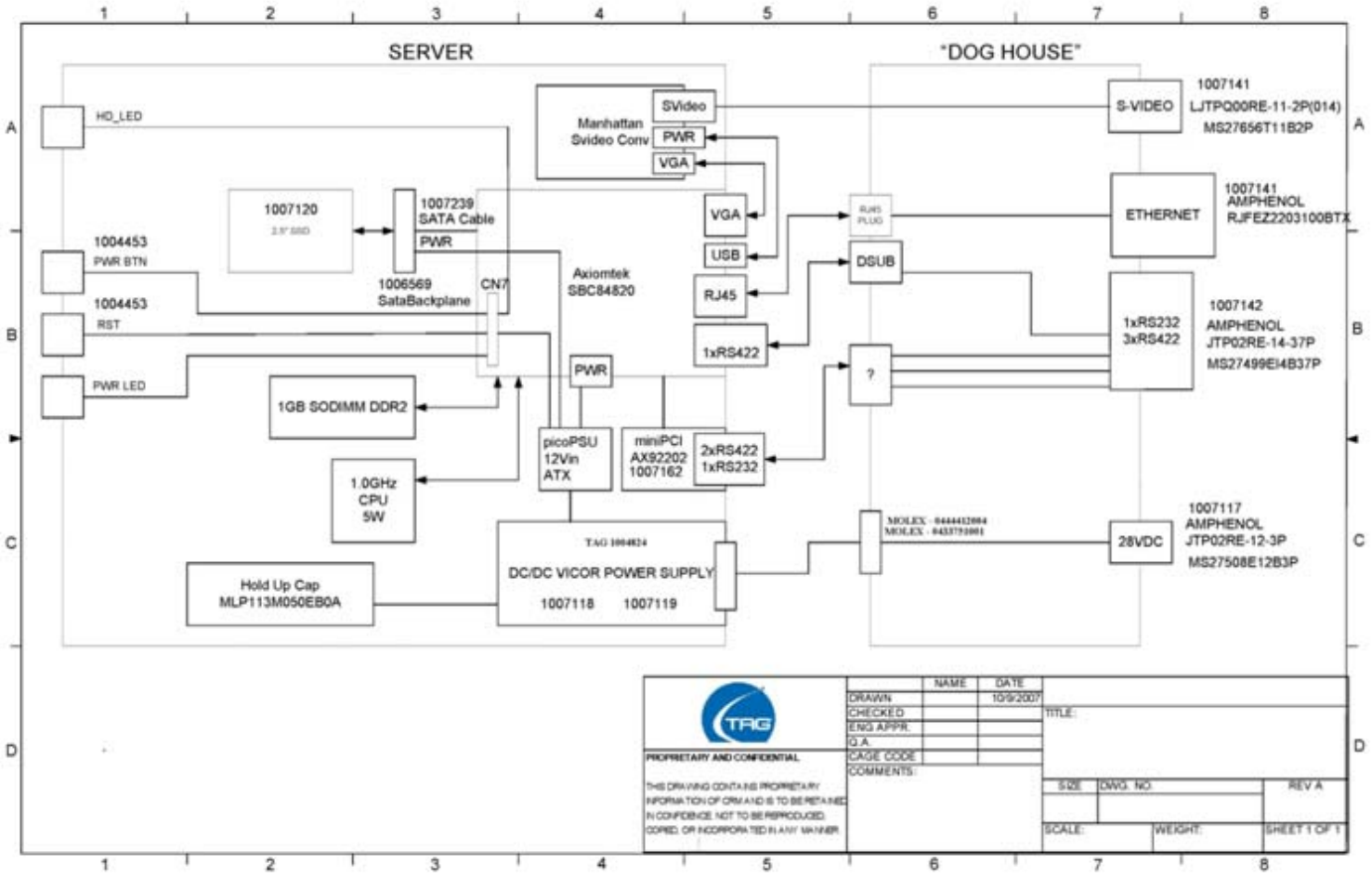

Figure 8-1 SV-101-THS System

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