SI-06 Series

User Manual

2013 Apr. V1

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Safety Information

Your SI-06 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. ***Never insert objects of any kind into the ventilation openings***.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0˚C and 45˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THESTORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.

- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not function properly even if you follow the operating instructions.
  - The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

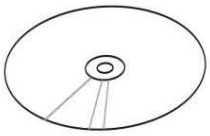
WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

Acknowledgments

Table : Terms and Abbreviation

Term	Description
CPU	Central Processing Unit
DP	Display Port
DS	Digital Signage
DVI	Digital Video Interface
HDMI	High Definition Multimedia Interface
LCD	Liquid Crystal Display
OPS	Open Pluggable Specification
PCH	Platform Controller Hub
UART	Universal Asynchronous Receiver/Transmitter
USB	Universal Serial Bus
Wifi	Wireless IEEE 802.11 technology
SSD	Solid State Drive
SATA	Serial ATA
EPIC	Embedded Platform for Industrial Computing form factor 165 mm x 115 mm
AC/DC	Alternating Current/Direct Current
AMT	Intel® Active Management Technology
CEC	Consumer Electronics Control, for Proof of Play/Display and panel detection
DDR	Double Data Rate – referring to random access memory(RAM)
DIMM	Dual In-line Memory Module
GbE	Gigabit Ethernet
GPIO	General Purpose Input Output
LAN	Local Area Network
LV	Low Voltage
PCIe	PCI Express
PoP	Proof of Play
RFID	Radio Frequency Identification technology
RJ45	Ethernet cable connector
TMDS	Transition Minimized Differential Signaling

Accessories

	
a. Driver CD x 1	b. System Manual x 1

Components

I/O View

Refer to the diagram below to identify the components on this side of the system.

Power Bottom

The power switch allows powering ON and OFF the system.

HDD

The hard disk LED blinks when data is being written into or read from the hard disk.

Power

The power bottom LED illuminated when system been power on.

DVI-I Port

The DVI-I interface is to transmitting uncompressed digital data.

LAN 1

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

USB1/2

The USB (Universal Serial Bus 2.0) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

COM 1

Communication or serial port is compatible with RJ 45 interface without RI (ring indicator) signal.

AUDIO

The stereo audio jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones.

DC-IN 12 V

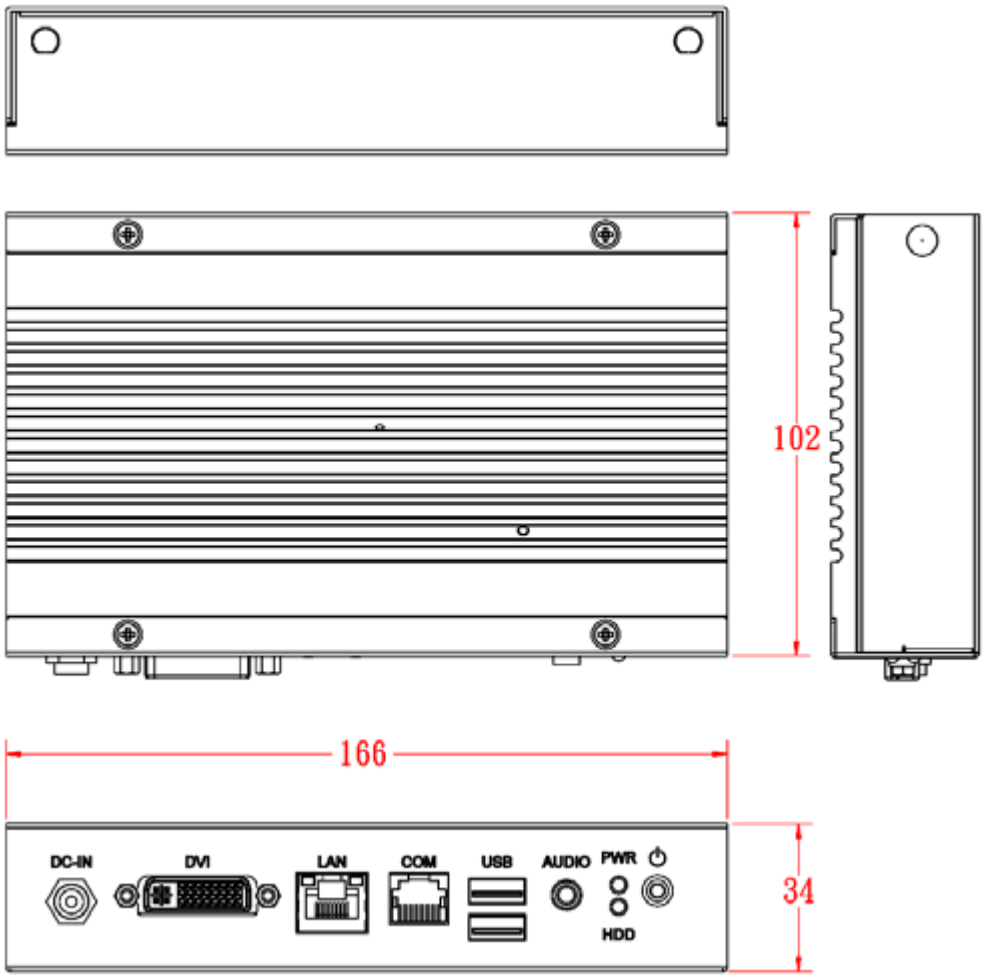
The supplied power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the system. To prevent damage to the system, always use the supplied power adapter.

System Specification

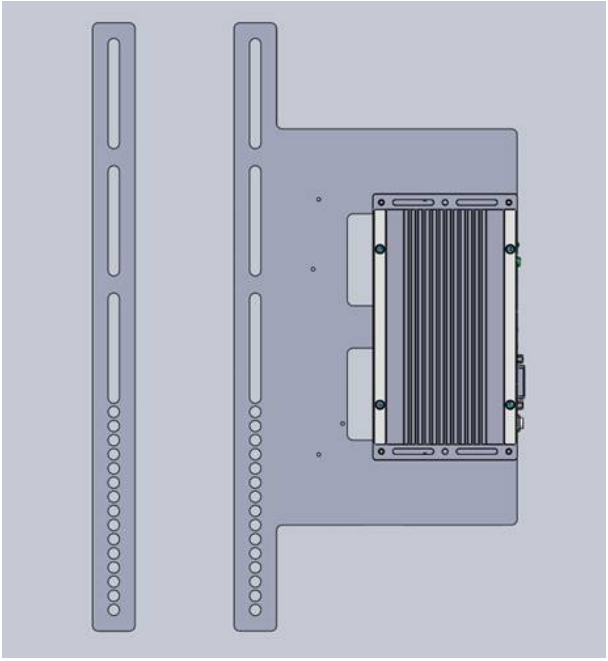
System Mainboard	IB901
CPU Type	Intel® Atom™ Processor D2550
CPU Package	FCBGA559
Chipset	Intel® NM10 Express chipset
Memory	1x 204-pin SO-DIMM socket, support DDR3 800/ 1066MHz, with unbuffered and non-ECC memory module, up to 4GB
Graphics	Intel® GMA 3650 integrated graphic engine
LAN	1x Realtek RTL8111C PCI-E Gigabit LAN controller
Expansion Slot	1x mPCIe(x1) slot for mSATA, WiFi, 3G and TV tuner options
I/O Interface	2x USB 2.0 ports 1x RJ45 for Gigabit LAN 1x RJ45 for RS232 1x Hybrid DVI-I 1x Microjack audio connector for speaker Power LED / HDD LED, power on/off button 12V DC-in power connector
Auto Control and Monitoring	256 segments, 0, 1, 2...255 (sec/min)
Power Requirement	+12V DC-in

·This specification is subject to change without prior notice.

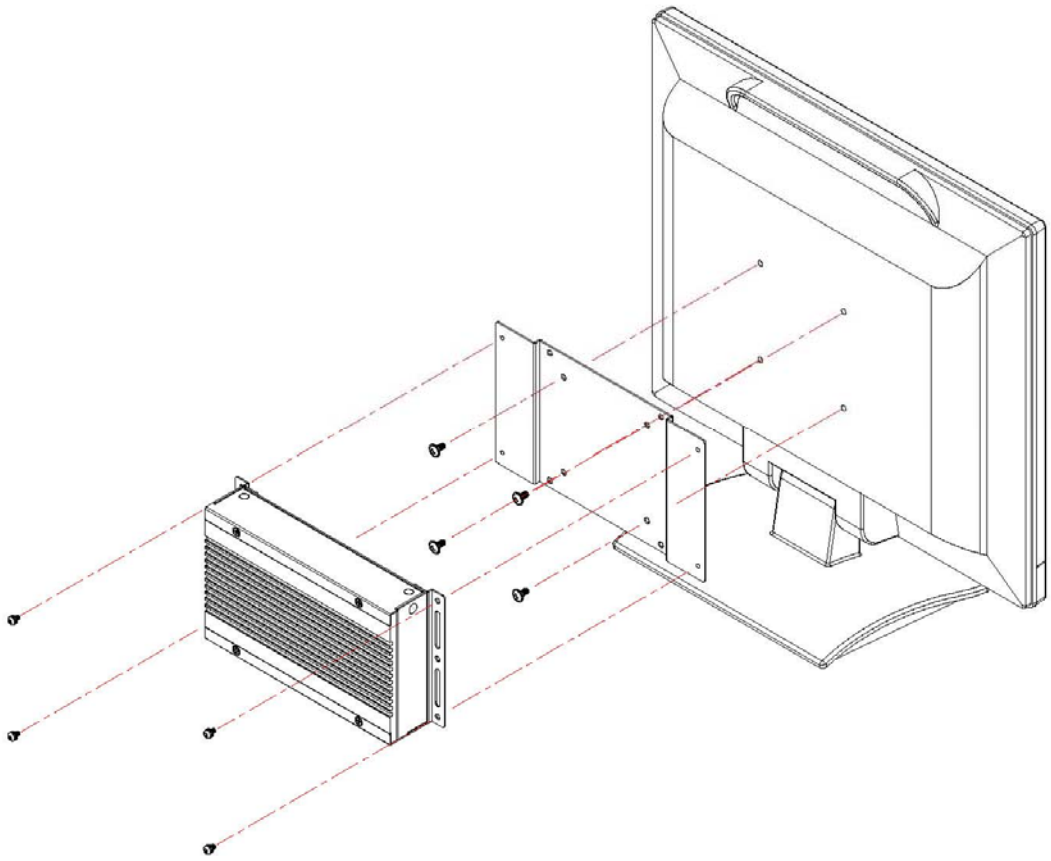
Mechanical Specification



SI-06/08/18 Mounting Bracket (SC2SI18----0A1100P)

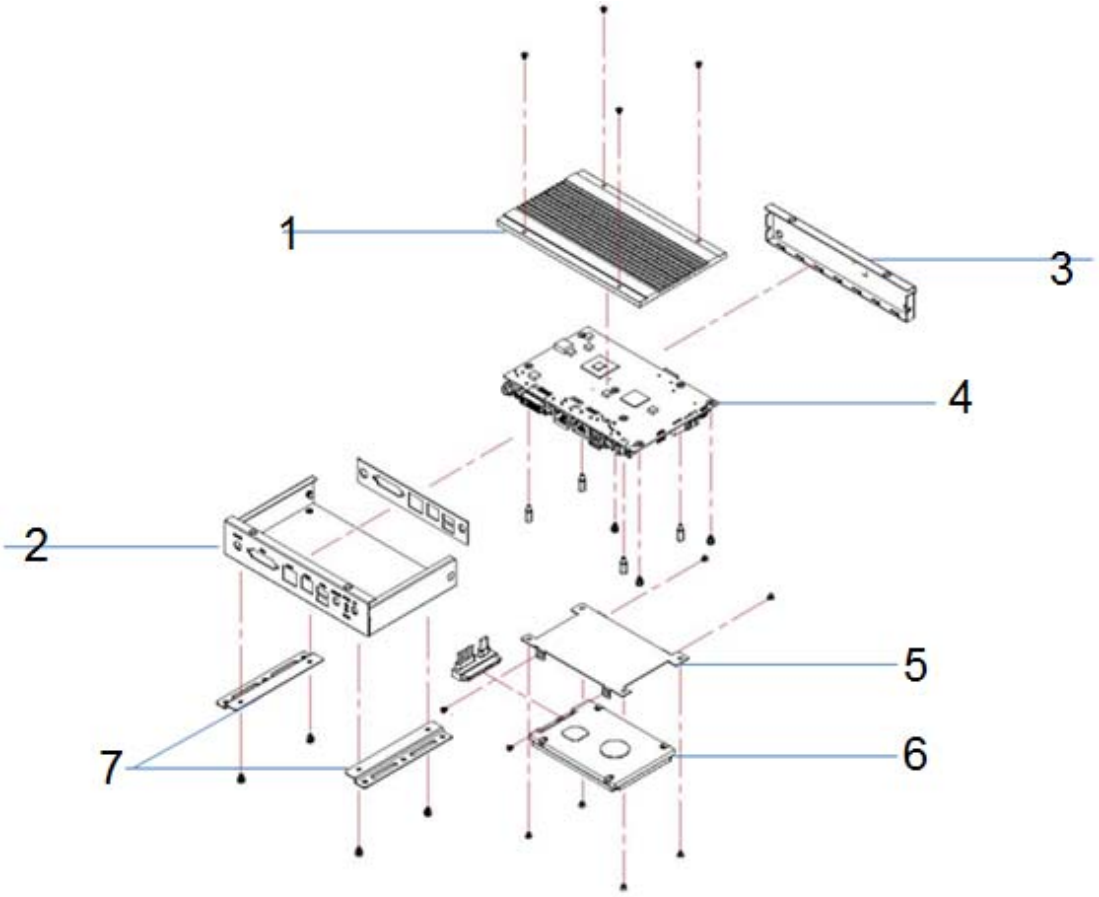


SI-06 VESA Mounting solution



You can install SI-06 on plastic (LCD monitor), wood, drywall surface over studs, or a solid concrete or metal plane directly. Ensure the installer uses at least four M3 length 6mm screws to secure the system on wall. Six M3 length 6mm screws are recommended to secure the system on wall.

Exploded view of the SI-06 assembly



Parts description

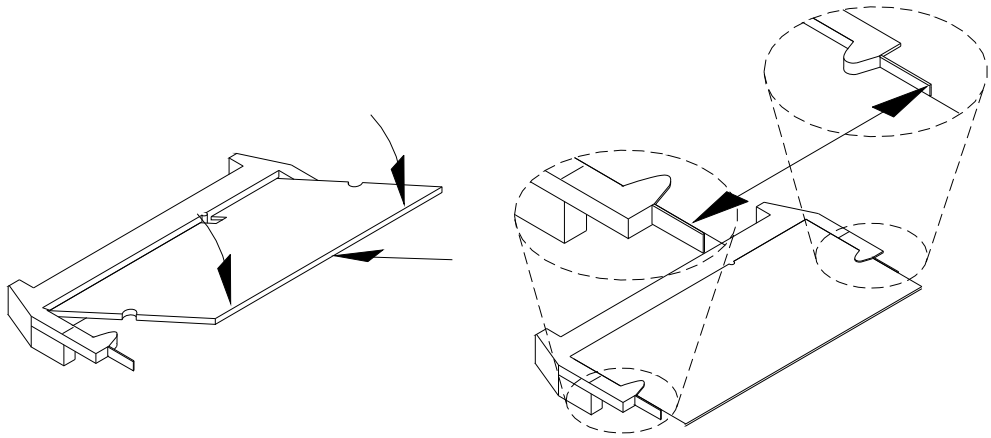
Part NO.	Description	Part NO.	Description
1	Top cover	2	Main chassis
3	Rear Panel	4	SI-06 MB
5	HDD holder	6	2.5” HDD
7	Brackets		

Installation

Installing the memory

The IB901 board supports two DDR3 memory socket for a maximum total memory of 16GB in DDR3 SO-DIMM memory type. Installing and Removing Memory Modules To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

1. Hold the DDR3 module so that the key of the DDR3 module aligns with that on the memory slot. Insert the module into the socket at a slight angle (approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.
2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
4. To remove the DDR3 module, press the clips with both hands.

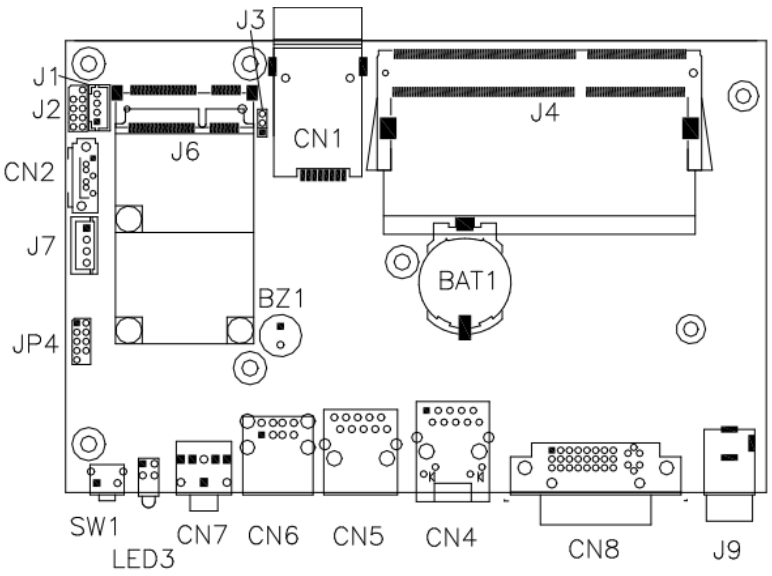


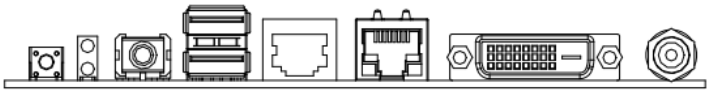
Setting the Jumpers

Jumpers are used on IB901 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best

configuration for your needs. The following lists the connectors on IB901 and their respective functions.

Jumper Locations on IB901





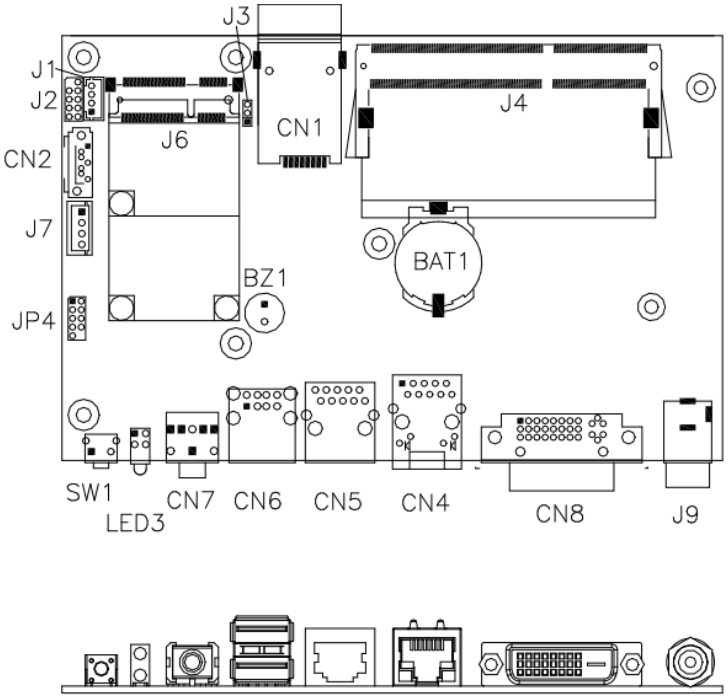
Pin No.	Name	Type	Description
33, 34, 35, 36, 37, 38, 39, 40	+12V~+19V	-	The Pluggable Module supports a voltage range of +12V~+19V DC IN (mandatory). The *recommended* total current rating should be targeted at no more than 4A (500mA for each pin) to preserve connector pin reliability and also the limit on panel power supply compliance. *It is mandatory for the Pluggable Module(OPS) manufacturer to provide a Power Rating label on the Pluggable Module which includes the min. power required from the PANEL power supply to power up the pluggable platform sufficiently*
3, 6, 9, 12, 16, 19, 22, 25, 28, 32, 53, 56, 59, 62, 65, 68, 75, 76, 77, 78, 79, 80	GND	-	Ground

J3: Clear CMOS Contents

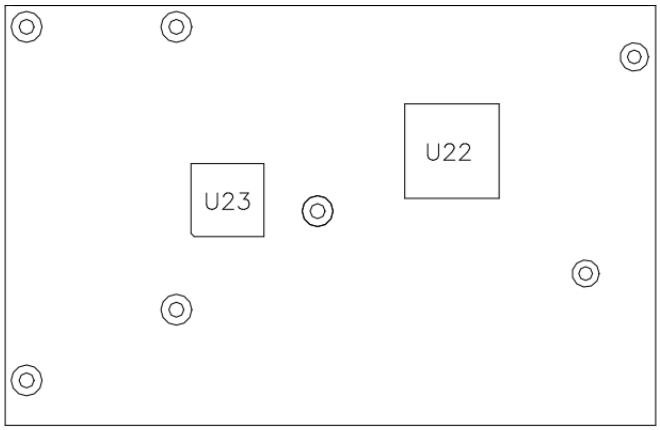
J3	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

Connector Locations on IB901

Top Side



Bottom Side



SW1: Power Switch

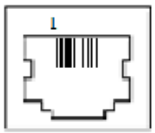
CN1: 3G SIM Card Slot

CN2: SATA 2.5” HDD/SSD Connector

CN4: Gigabit LAN Connector (Realtek RTL8111E)

This RJ45 LAN connector features LAN wakeup.

CN5: COM Serial Port

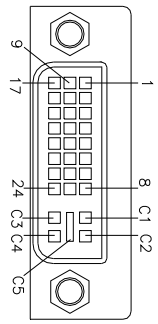
CN5	Pin #	Signal Name
	1	DSR, Data set ready
	2	GND, ground
	3	GND, ground
	4	TXD, Transmit data
	5	RXD, Receive data
	6	DCD, Data carrier detect
	7	DTR, Data terminal ready
	8	CTS, Clear to send
	9	RTS, Request to send
	10	RI, Ring indicator

CN6: USB2.0 Connector

CN7: Audio Connector (Headphone out)

CN8: DVI-I Connector

CRT via DVI-I connector



Signal Name	Pin #	Pin #	Signal Name
DATA 2-	1	16	HOT POWER
DATA 2+	2	17	DATA 0-
Shield 2/4	3	18	DATA 0+
DATA 4-	4	19	SHIELD 0/5
DATA 4+	5	20	DATA 5-
DDC CLOCK	6	21	DATA 5+
DDC DATA	7	22	SHIELD CLK
VSYNC	8	23	CLOCK -
DATA 1-	9	24	CLOCK +
DATA 1+	10	C1	Red.
SHIELD 1/3	11	C2	Green
DATA 3-	12	C3	Blue
DATA 3+	13	C4	HSYNC
DDC POWER	14	C5	Ground
A GROUND 1	15	C6	Ground

J2: SPI Flash (Factory use only)

J4: DDR3 SO-DIMM Socket

J6: Mini PCIE Connector

Supports mSATA and 3G SIM card

J7: SATA PWR Connector

J9: +12V DC-IN Connector

BIOS Setup

BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press <DEL> to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

System Date

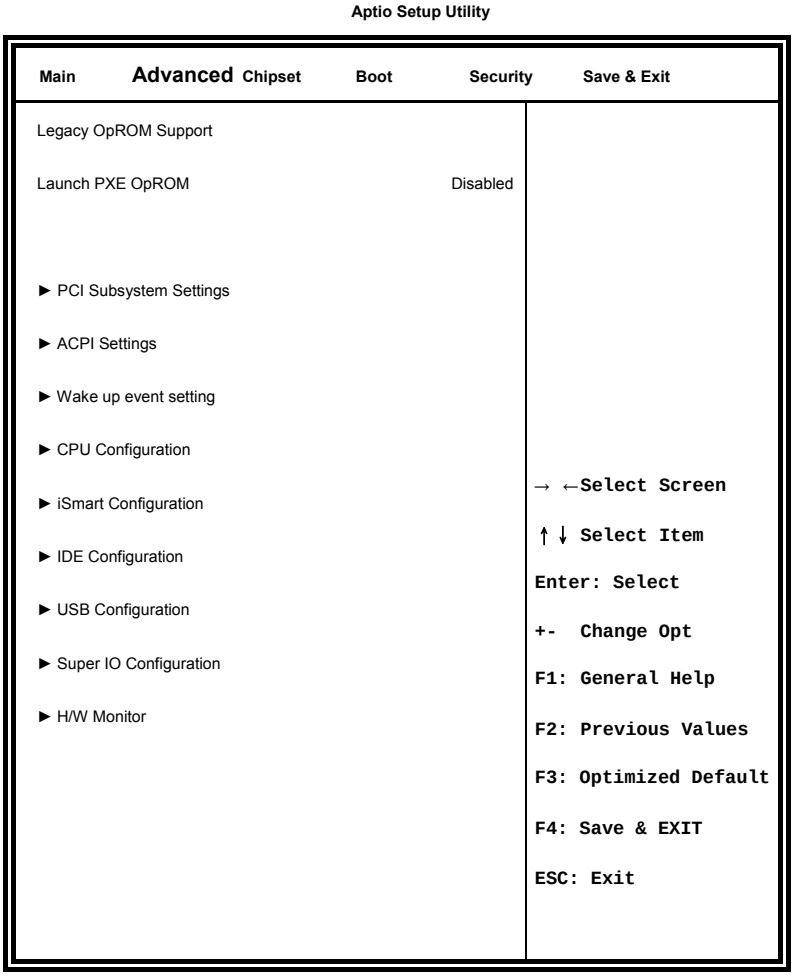
Set the Date. Use Tab to switch between Data elements.

System Time

Set the Time. Use Tab to switch between Data elements.

Advanced Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

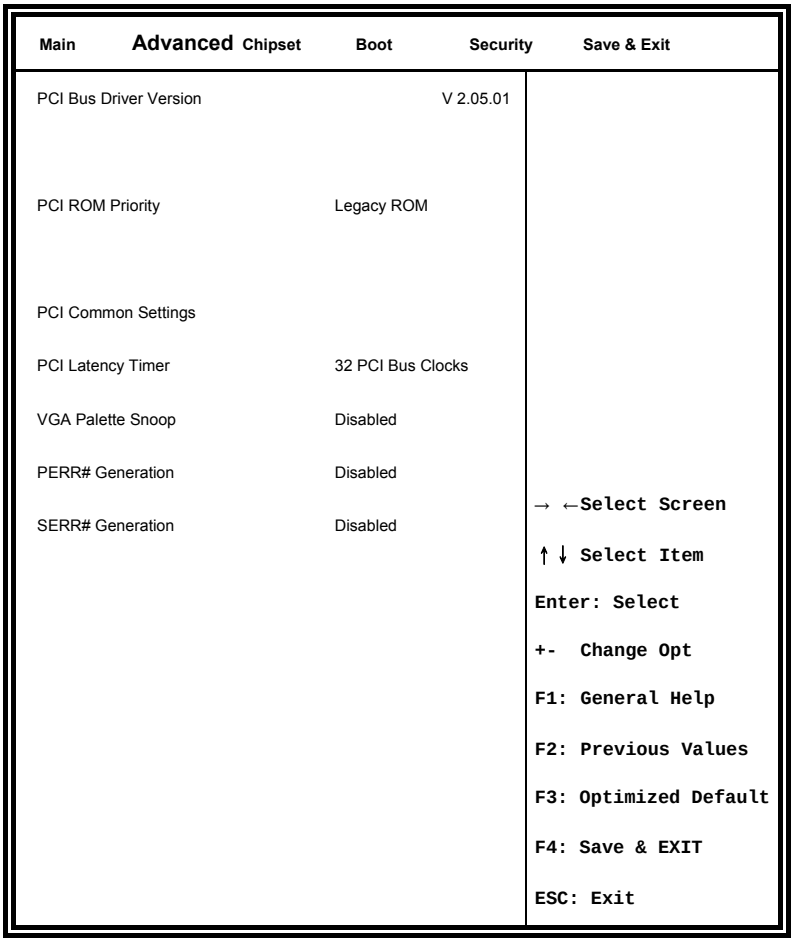


Launch PXE OpROM

Enable or Disable Boot Option for Legacy Network Devices.

PCI Subsystem Settings

Aptio Setup Utility



PCI ROM Priority

In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or Disables VGA Palette Registers Snooping.

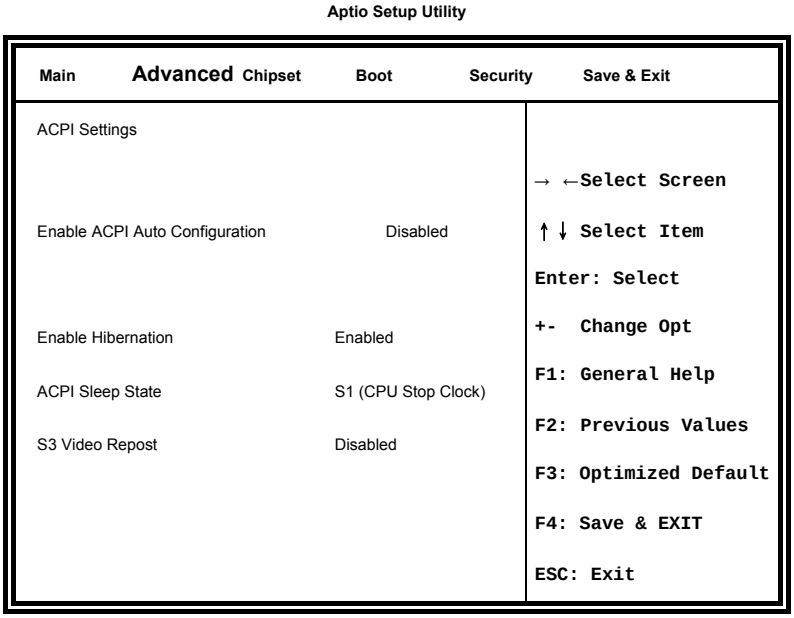
PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

ACPI Settings



Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

Enable Hibernation

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

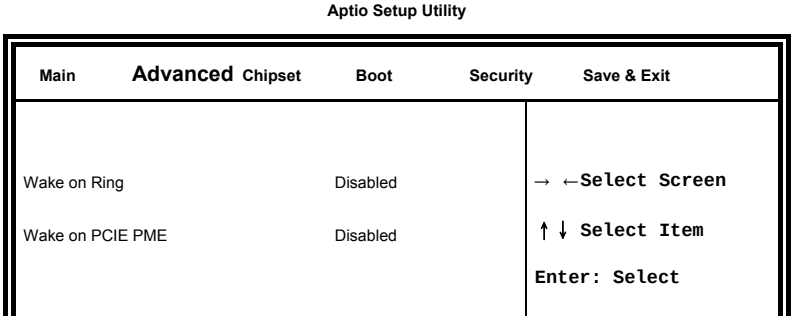
ACPI Sleep State

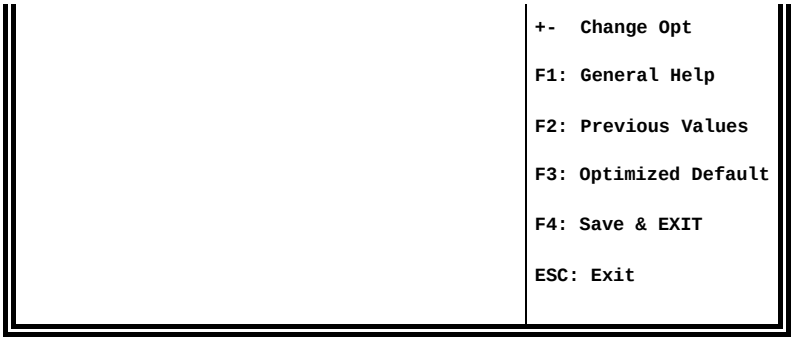
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

Enabled ACPI Auto Configuration

Enable or Disable S3 Video Repost.

Wake up event setting





Wake on Ring

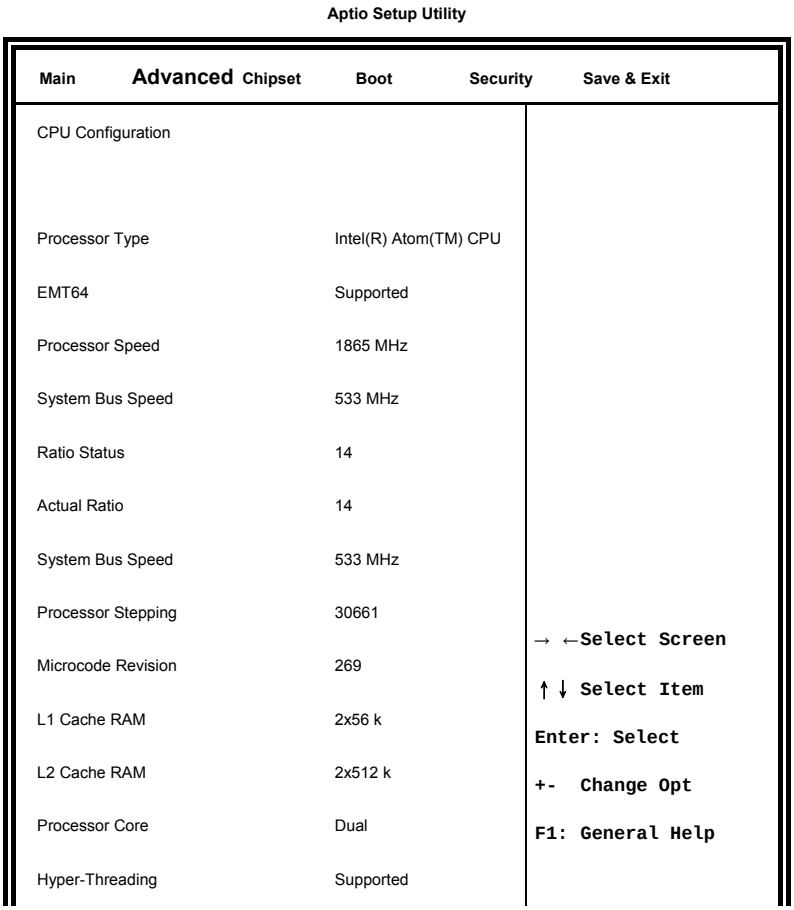
The options are Disabled and Enabled.

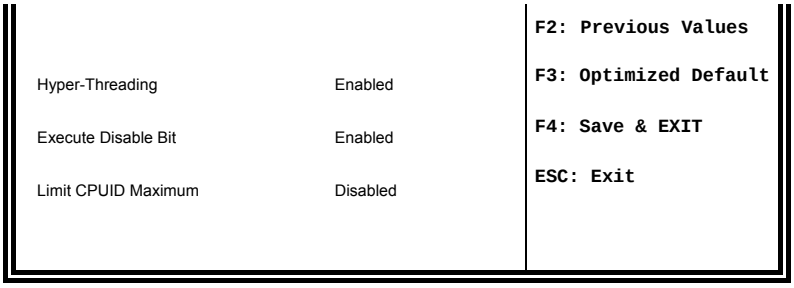
Wake on PCIE PME

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.





Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

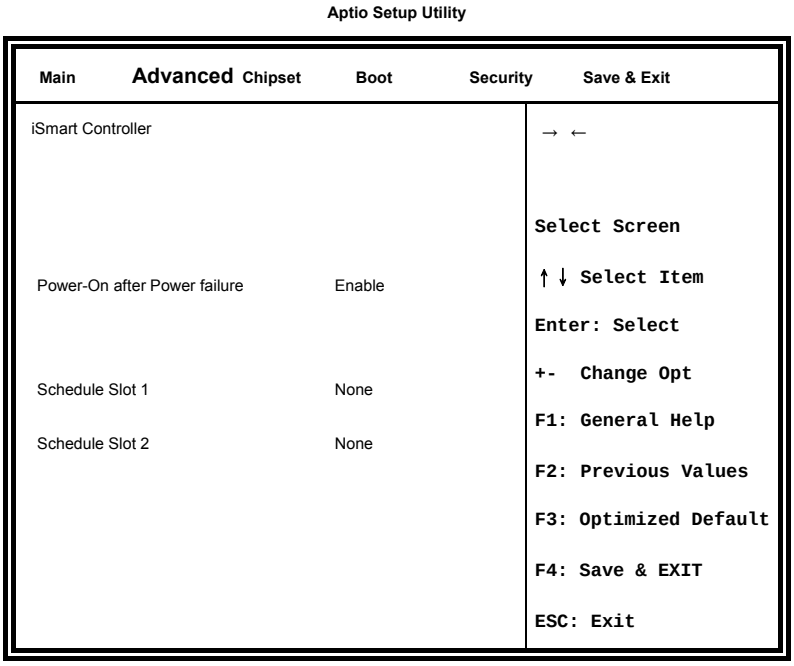
Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, Re33dHat Enterprise 3 Update 3.)

Limit CPUID Maximum

Disabled for Windows XP.

iSmart Controller



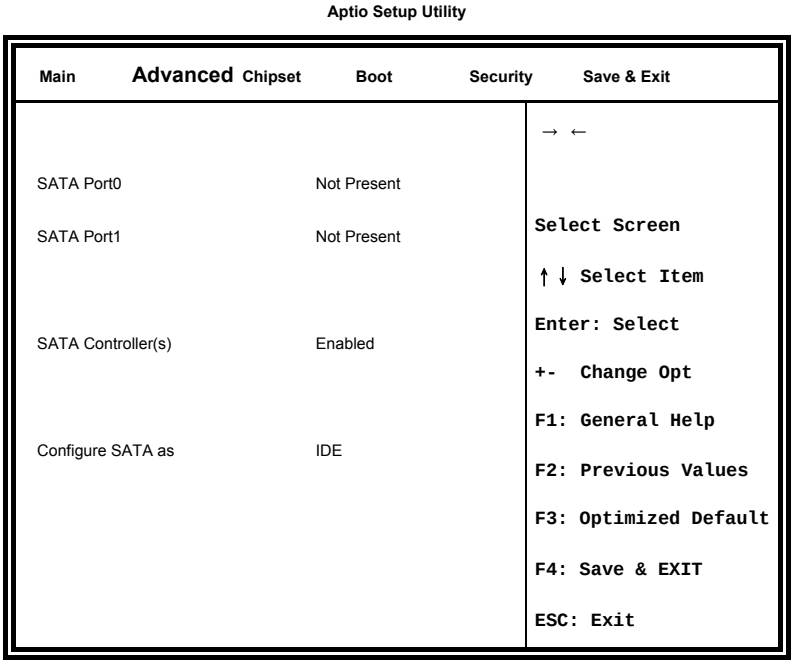
Power-On after Power failure

This field sets the system power status whether on or off when power returns to the system from a power failure situation.

Schedule Slot

None / Power On / Power On/Off – Setup the hour/minute for system power on.

IDE Configuration



SATA Controller(s)

Enable / Disable Serial ATA Controller.

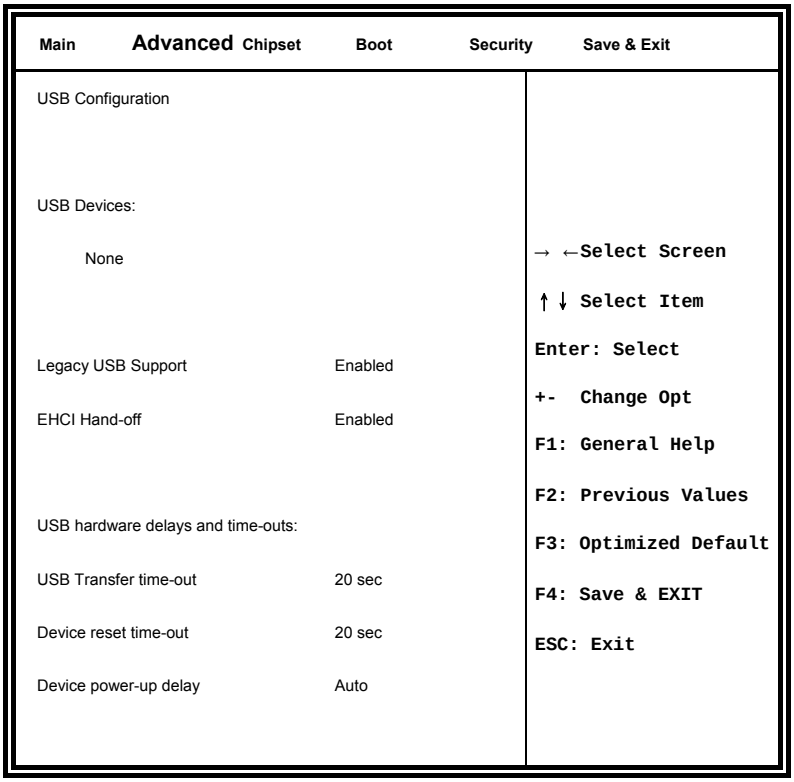
Configure SATA as

(1) IDE Mode.

(2) AHCI Mode.

USB Configuration

Aptio Setup Utility



Legacy USB Support

Enables Legacy USB support.

AUTO option disables legacy support if no USB devices are connected.

DISABLE option will keep USB devices available only for EFI applications.

EHCI Hand-off

Enabled/Disabled. This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

USB Transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

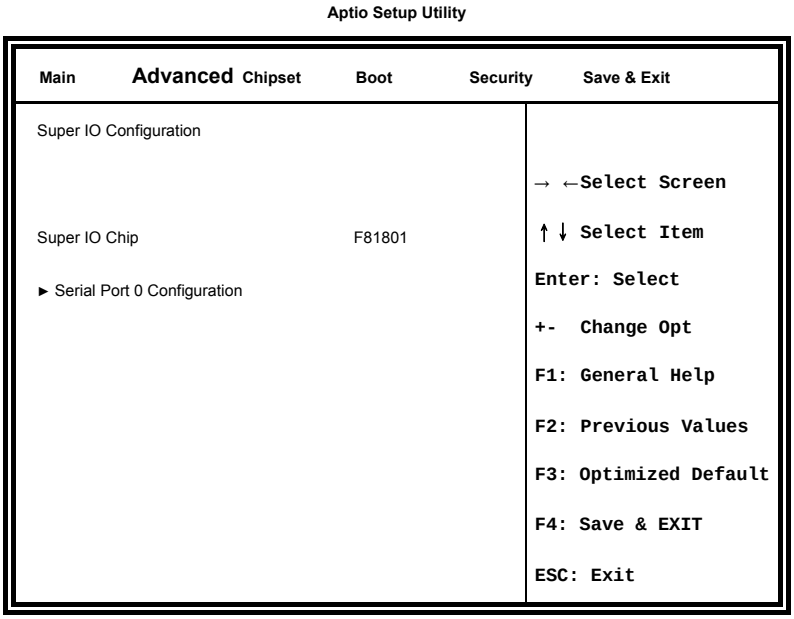
Device reset time-out

USB mass Storage device start Unit command time-out.

Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller. ‘Auto’ uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

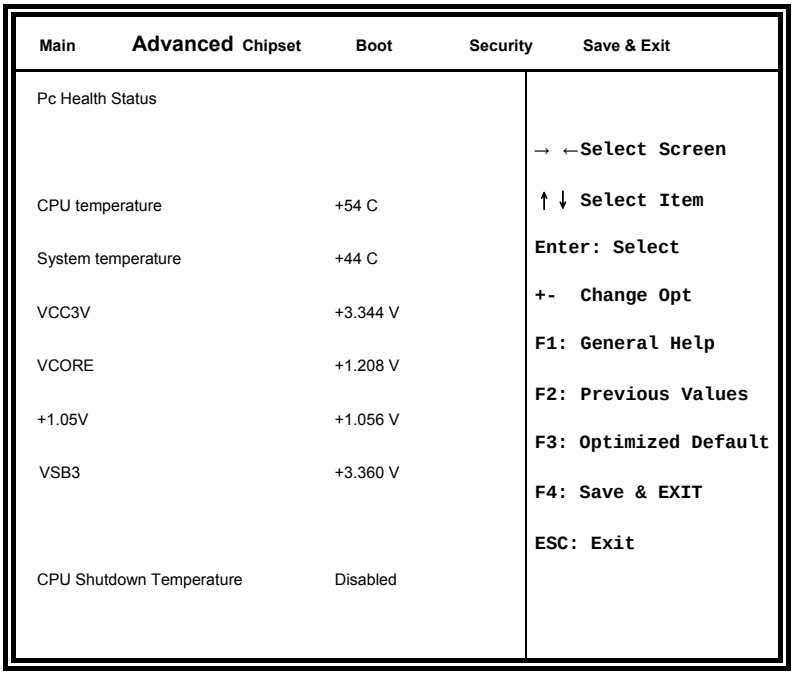
Super IO Configuration



Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

H/W Monitor



Temperatures/Voltages

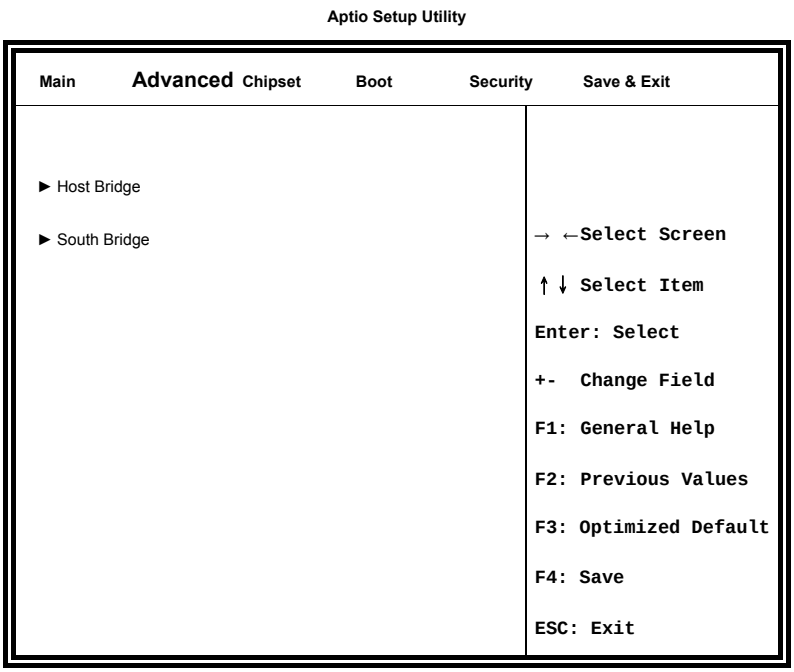
These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

CPU Shutdown Temperature

The default setting is disabled.

Chipset Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



Host Bridge

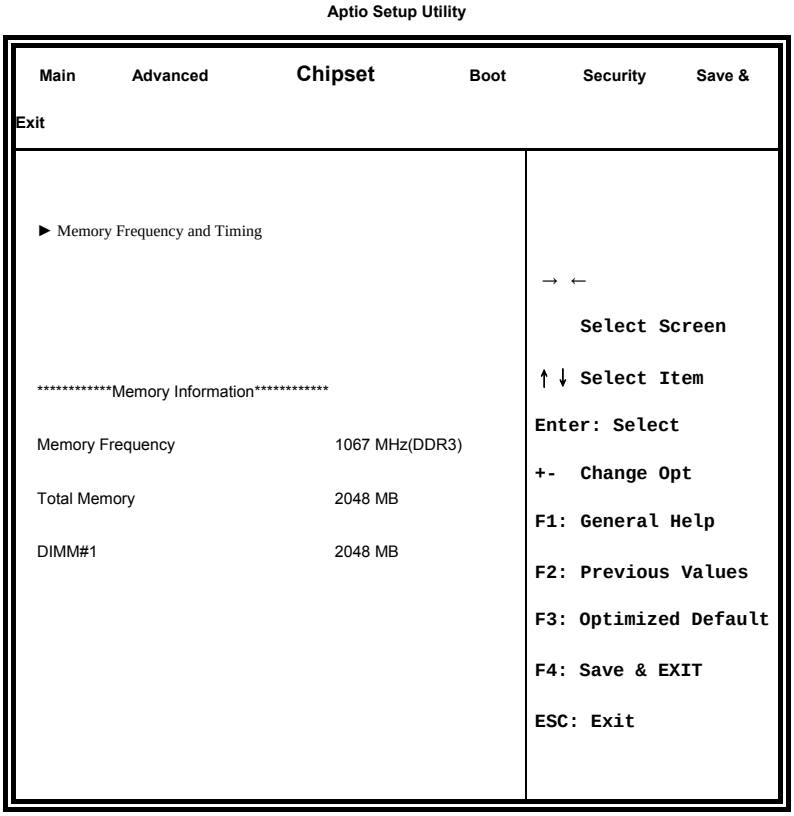
This item shows the Host Bridge Parameters.

South Bridge

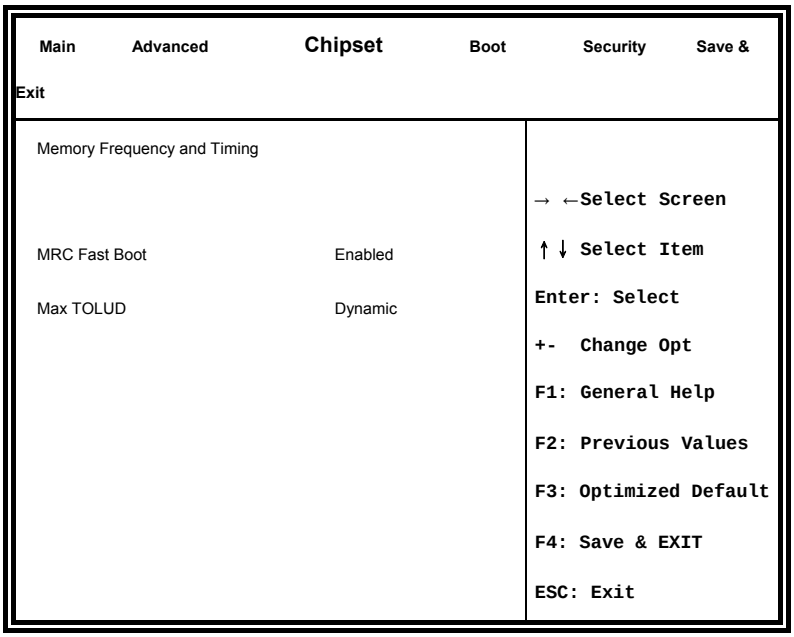
This item shows the South Bridge Parameters.

Host Bridge

This section allows you to configure the Host Bridge Chipset.



Memory Frequency and Timing



MRC Fast Boot

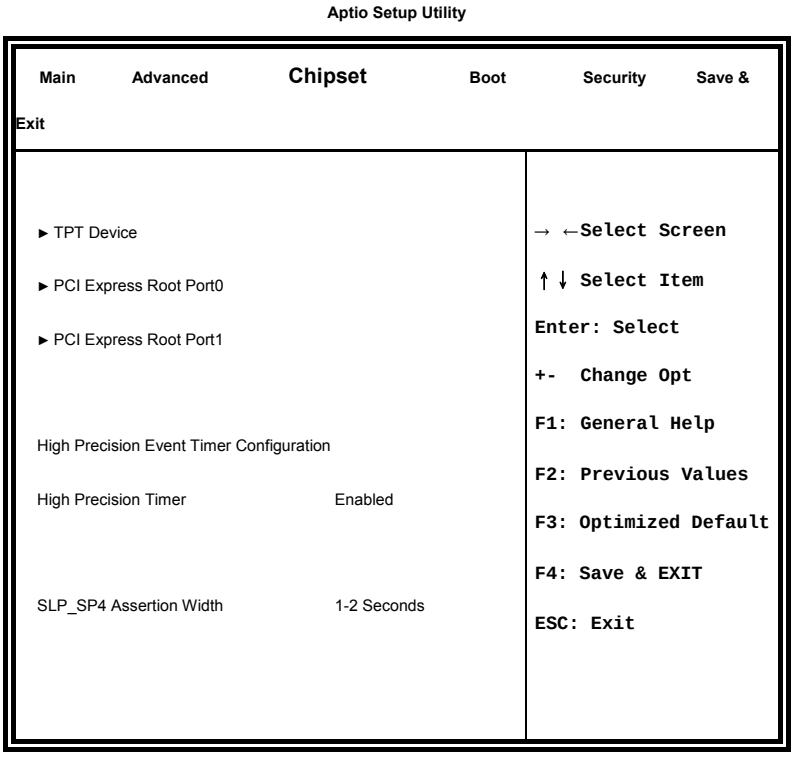
The options are Disabled and Enabled.

Max TOLUD

The default setting is Dynamic.

South Bridge

This section allows you to configure the South Bridge Chipset.



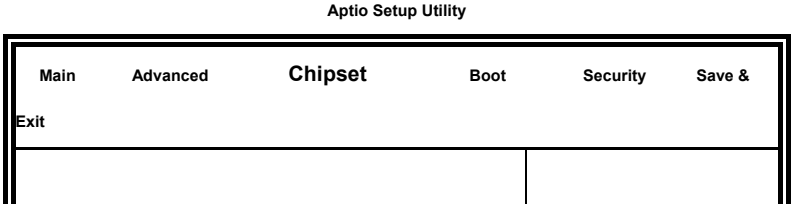
High Precision Event Timer Configuration

Enable/or Disable the High Precision Event Timer.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

TPT Device



Azalia Controller	HD Audio	→ ←Select Screen
		↑↓ Select Item
Select USB Mode	By Controllers	Enter: Select
UHCI #1 (port 0 and 1)	Enabled	+- Change Opt
UHCI #3 (port 4 and 5)	Enabled	F1: General Help
USB 2.0(EHCI) Support	Enabled	F2: Previous Values
		F3: Optimized Default
		F4: Save & EXIT
		ESC: Exit

PCI Express Root Port0

Aptio Setup Utility

Main Advanced **Chipset** Boot Security Save & Exit

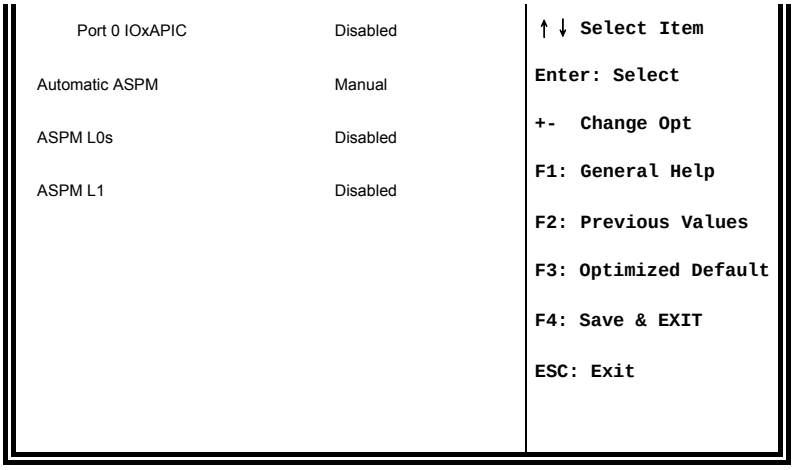
PCI Express Port 0	Enabled	→ ←Select Screen
Port 0 IOxAPIC	Disabled	↑↓ Select Item
Automatic ASPM	Manual	Enter: Select
ASPM L0s	Disabled	+- Change Opt
ASPM L1	Disabled	F1: General Help
		F2: Previous Values
		F3: Optimized Default
		F4: Save & EXIT
		ESC: Exit

PCI Express Root Port1

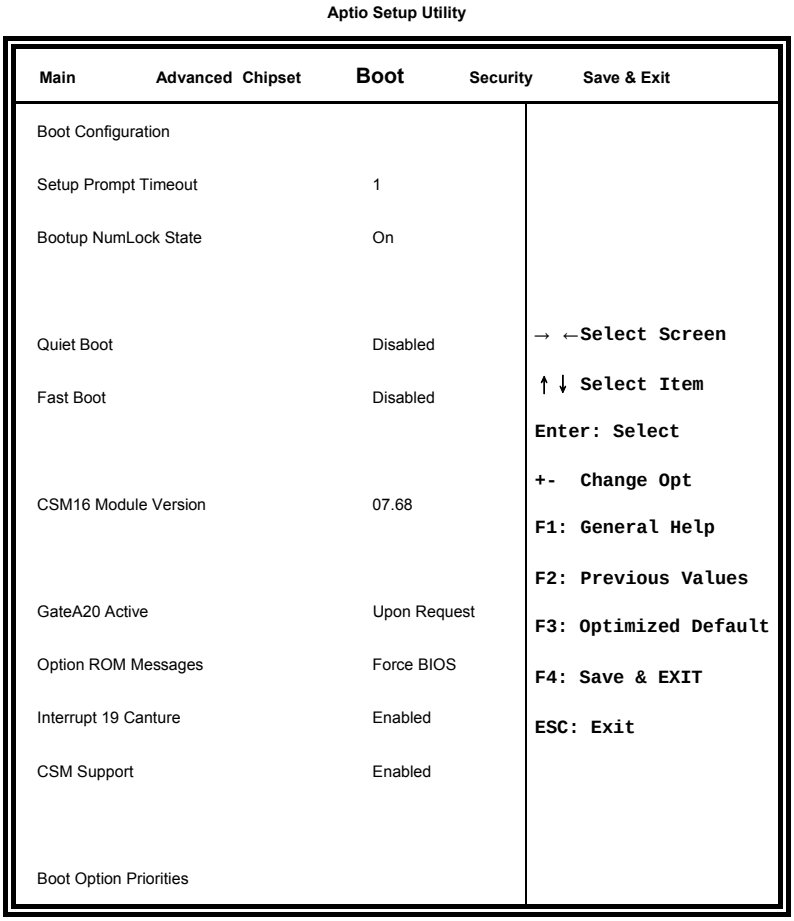
Aptio Setup Utility

Main Advanced **Chipset** Boot Security Save & Exit

PCI Express Port 0	Auto	→ ←Select Screen



Boot Settings



Setup Prompt Timeout

Number of seconds to wait for setup activation key.

65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state.

Quiet Boot

Enables/Disables Quiet Boot option.

Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services.
ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options: Force BIOS; Keep Current.

Interrupt 19 Capture

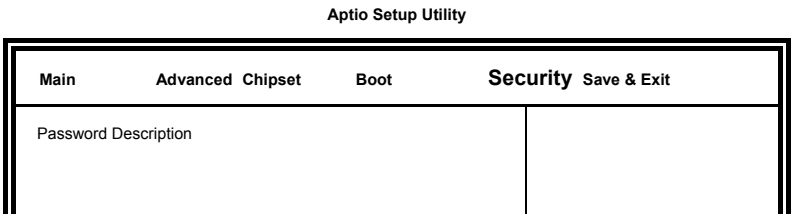
Enable: Allows Option ROMs to trap Int 19.

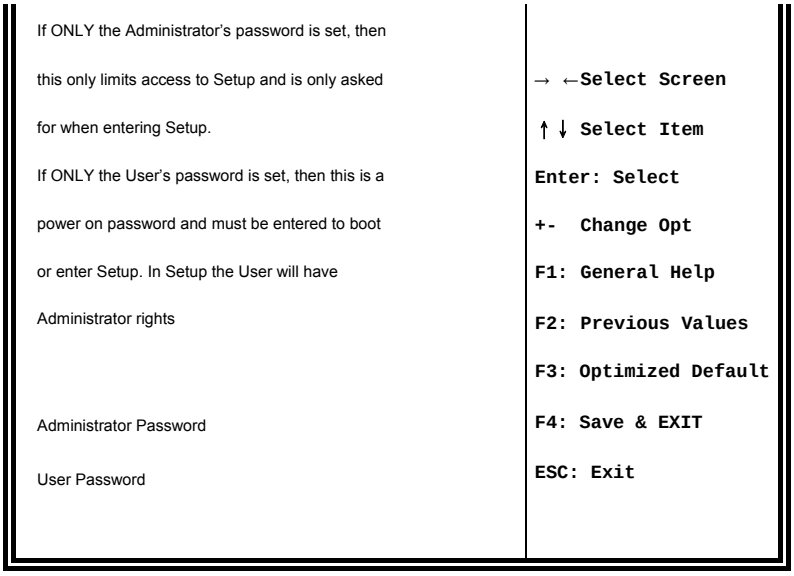
CSM Support

Enables/Disables/Auto CSM Support.

Security Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.





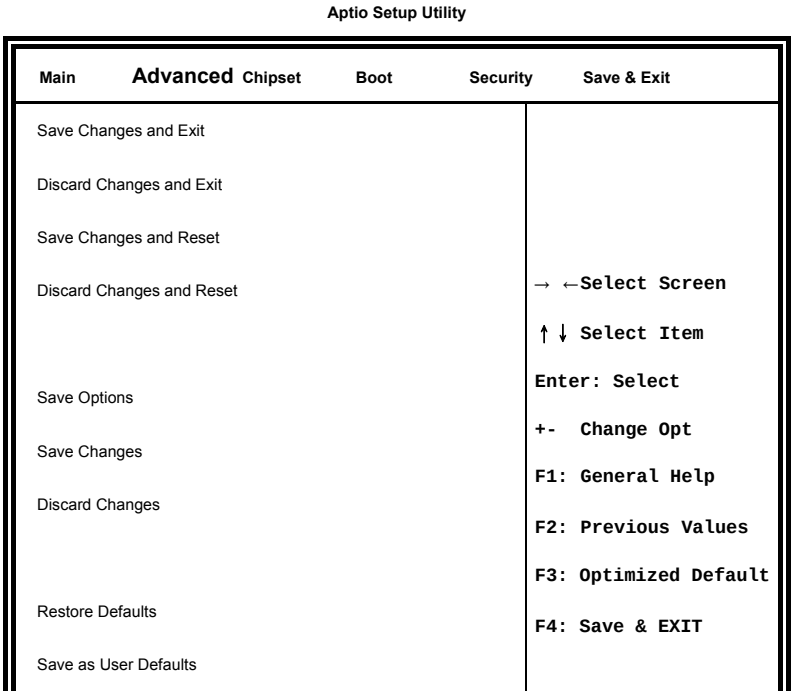
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings



Save Changes and Exit

Exit system setup after saving the changes.

Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Drivers Installation

IMPORTANT NOTE:

After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

1. Insert the disc that comes with the board. Click System and then SI-06/IB901 Drivers.

2. Click Intel(R) Chipset Software Installation Utility.

3. When the Welcome screen to the Intel® Chipset Device Software appears, click Next to continue.
4. Click Yes to accept the software license agreement and proceed with the installation process.
5. On the Readme File Information screen, click Next to continue the installation.
6. The Setup process is now complete. Click Finish to restart the computer and for changes to take effect.

VGA Drivers Installation

To install the VGA drivers, follow the steps below to proceed with the installation.

1. Click Intel(R) Cedarview Graphics Driver.

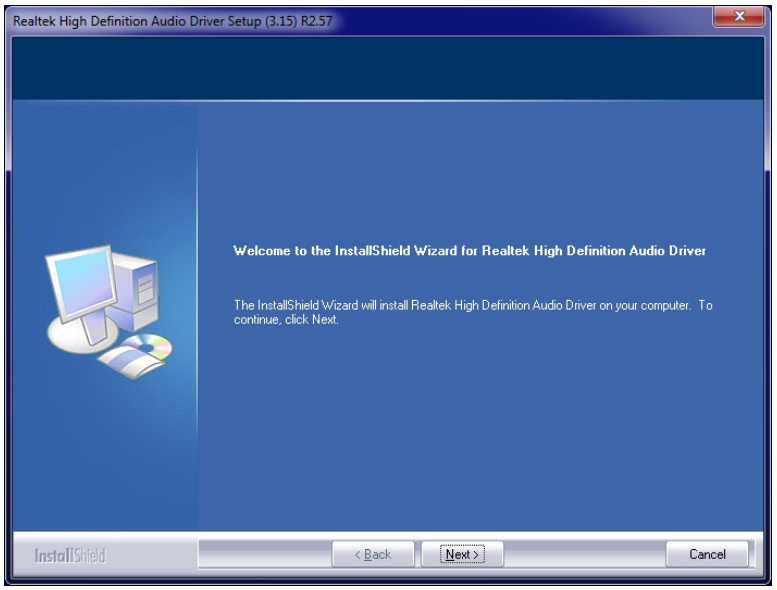
2. When the Welcome screen appears, click Next to continue.

3. Click Yes to to agree with the license agreement and continue the installation.
4. On the Readme File Information screen, click Next to continue the installation of the Intel® Graphics Media Accelerator Driver.
5. On Setup Progress screen, click Next to continue.
6. Setup complete. Click Finish to restart the computer and for changes to take effect.

Realtek HD Audio Driver Installation

1. Click Realtek High Definition Audio Driver.

2. On the Welcome to the InstallShield Wizard screen, click Next to proceed with and complete the installation process.



3. Restart the computer when prompted.

Realtek LAN Controller Drivers Installation

Follow the steps below to install the Realtek LAN Drivers.

1. Click Realtek GbE_FE Ethernet PCI-E NIC Driver.

2. When the welcome screen to InstallShield Wizard appears, click Next to start the installation
3. On Ready to Install the Program screen, click Install to continue.
4. When the InstallShieldWizard has finished installing the Realtek LAN drivers, click Finish.

Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
0000-001F	Direct memory access controller
0000-001F	PCI bus
0020-0021	Programmable interrupt controller
0024-0025	Programmable interrupt controller
0028-0029	Programmable interrupt controller
002C-002D	Programmable interrupt controller
0030-0031	Programmable interrupt controller
0034-0035	Programmable interrupt controller
0038-0039	Programmable interrupt controller
003C-003D	Programmable interrupt controller
0040-0043	System timer

0050-0053	System timer
0060-0060	Standard PS/2 Keyboard
0064-0064	Standard PS/2 Keyboard
0070-0077	System CMOS/real time clock
0081-0091	Direct memory access controller
0093-009F	Direct memory access controller
00A0-00A1	Programmable interrupt controller
00A4-00A5	Programmable interrupt controller
00A8-00A9	Programmable interrupt controller
00AC-00AD	Programmable interrupt controller
00B0-00B1	Programmable interrupt controller
00B4-00B5	Programmable interrupt controller
00B8-00B9	Programmable interrupt controller
00BC-00BD	Programmable interrupt controller
00C0-00DF	Direct memory access controller
00F0-00F0	Numeric data processor
03B0-03BB	Intel(R) Graphics Media Accelerator 3600 Series
03C0-003D F	Intel(R) Graphics Media Accelerator 3600 Series

Address	**Device Description**
03F8-03FF	Communications Port (COM1)
04D0-04D1	Programmable interrupt controller
0D00-FFFF	PCI bus
E000-E0FF	Realtek PCIe GBE Family Controller
E000-E0FF	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
F000-F01F	Intel(R) N10/ICH7 Family SMBus Controller - 27DA
F020-0xF03F	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA

F040-F05F	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
F060-F06F	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
F070-F073	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
F080-F087	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
F090-F093	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
F0A0-F0A7	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
F0B0-F0B7	Intel(R) Graphics Media Accelerator 3600 Series

B. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices.

Level	Function
IRQ 0	System timer
IRQ 1	Standard PS/2 Keyboard
IRQ 4	Communications Port (COM1)
IRQ 7	Intel(R) N10/ICH7 Family SMBus Controller - 27DA
IRQ 8	System CMOS/real time clock
IRQ 12	Microsoft PS/2 Mouse
IRQ 13	Numeric data processor
IRQ 18	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
IRQ 19	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
IRQ 22	High Definition Audio Controller
IRQ 23	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
IRQ 23	Intel(R) N10/ICH7 Family USB2

	Enhanced Host Controller - 27CC
IRQ 4294967292	Realtek PCIe GBE Family Controller
IRQ 4294967293	Intel(R) Graphics Media Accelerator 3600 Series
IRQ 4294967294	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0

C. Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

SAMPLE CODE:

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include "F81801.H"
//---------------------------------------------------------------------------
int main (int argc, char *argv[]);
void EnableWDT(int);
```

```
void DisableWDT(void);
//---------------------------------------------------------------------------
int main (int argc, char *argv[])
{
                                                    unsigned char bBuf;
                                                    unsigned char bTime;
                                                    char **endptr;

                                                    char SIO;

                                                    printf("Fintek 81801 watch
dog program\n");

                                                    SIO = Init_F81801();
                                                    if (SIO == 0)
                                                    {

                                                    printf("Can not detect
Fintek 81801, program abort.\n");

                                                    return(1);
                                                    }//if (SIO == 0)

                                                    if (argc != 2)
                                                    {


                                                    printf("  Parameter
incorrect!!\n");

                                                    return (1);

                                                    }

                                                    bTime = strtol (argv[1],
endptr, 10);
```

```
                                        printf("System will reset
after %d seconds\n", bTime);

                                        if (bTime)
                                        {
                                        EnableWDT(bTime);
                                        }
                                        else
                                        {
                                        DisableWDT();
                                        }

                                        return 0;
}
//---------------------------------------------------------------------------
void EnableWDT(int interval)
{



                                        unsigned char bBuf;

                                        bBuf                    =
Get_F81801_Reg(0x2B);
                                        bBuf &= (~0x30);
                                        Set_F81801_Reg(0x2B,
bBuf);



                                        //Enable WDTO

                                        Set_F81801_LD(0x07);
```

```
                                        //switch to logic device 7
                                        Set_F81801_Reg(0x30,
0x01);


                                        //enable timer

                                        bBuf                    =
Get_F81801_Reg(0xF5);
                                        bBuf &= (~0x0F);
                                        bBuf |= 0x52;
                                        Set_F81801_Reg(0xF5,
bBuf);


                                        //count mode is second

                                        Set_F81801_Reg(0xF6,
interval);


                                        //set timer

                                        bBuf                    =
Get_F81801_Reg(0xF0);
                                        bBuf |= 0x80;
                                        Set_F81801_Reg(0xF0,
bBuf);


                                        //enable WDTO output
```

```
                                                    bBuf                    =
Get_F81801_Reg(0xF5);
                                                    bBuf |= 0x20;
                                                    Set_F81801_Reg(0xF5,
bBuf);



                                                    //start counting
}
//---------------------------------------------------------------------------
void DisableWDT(void)
{
                                                    unsigned char bBuf;

                                                    Set_F81801_LD(0x07);



                                                    //switch to logic device 7

                                                    bBuf                    =
Get_F81801_Reg(0xFA);
                                                    bBuf &= ~0x01;
                                                    Set_F81801_Reg(0xFA,
bBuf);



                                                    //disable WDTO output

                                                    bBuf                    =
Get_F81801_Reg(0xF5);
```

```
                                                    bBuf &= ~0x20;
                                                    bBuf |= 0x40;
                                                    Set_F81801_Reg(0xF5,
bBuf);



                                                    //disable WDT
}
//---------------------------------------------------------------------------
```