

# **CP307/CP307-V**

## **3U CompactPCI Processor Boards**

Doc. ID: 35978, Rev. 2.0  
December 17, 2008

### **BIOS Guide**



## Revision History

<b>Publication Title:</b> CP307/CP307-V BIOS Guide		
<b>Doc. ID:</b> 35978		
<b>Rev.</b>	<b>Brief Description of Changes</b>	<b>Date of Issue</b>
1.0	Initial issue	11-May-2007
2.0	General update	17-Dec-2008

## Imprint

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## Table of Contents

<b>1. Starting BIOS Setup .....</b>	<b>3</b>
Main Setup Menu .....	4
Setup Default Override (SDO).....	4
Navigation .....	5
<b>2. Main Setup .....</b>	<b>9</b>
System Time.....	9
System Date.....	9
<b>3. Advanced Setup .....</b>	<b>13</b>
CPU CONFIGURATION SCREEN.....	14
Max CPUID Value Limit.....	14
Intel® Virtualization Tech (only for CP307) .....	15
CPU Thermal Monitor Function <sup>SDO</sup> .....	15
Execute-Disable Bit Capability.....	15
Hyper Threading Technology (only for CP307) .....	16
Intel® SpeedStep™ tech. <sup>SDO</sup> (only for CP307) .....	16
Intel® C-STATE tech.: Cn Config .....	16
IDE CONFIGURATION SCREEN.....	17
ATA/IDE Configuration .....	17
Legacy IDE Channels .....	18
Configure SATA as.....	18
Configure SATA Channels.....	19
Hard Disk Drive Write Protect .....	19
IDE Detect Timeout (Seconds) .....	19
ATA (PI) 80-Pin Cable Detection .....	20
SATA Speed Limit .....	20
Primary, Secondary, Third and Fourth IDE Master and Slave.....	21
Primary IDE Master Screen .....	21
Drive Parameters .....	22

Type .....	22
LBA/Large Mode .....	23
Block (Multi-Sector Transfer) .....	23
PIO Mode .....	23
DMA Mode.....	24
S.M.A.R.T. for Hard Disk Drives .....	25
32Bit Data Transfer.....	25
ARMD Emulation Type .....	25
SUPER IO CONFIGURATION SCREEN.....	26
Serial Port1 Address.....	26
Serial Port1 IRQ.....	27
Serial Port2 Address.....	27
Serial Port2 IRQ.....	27
Serial Port2 Mode.....	27
HARDWARE HEALTH CONFIGURATION SCREEN .....	28
Hardware Health Function.....	28
PWM 1 Mode Setting/PWM 1 Ramp Rate.....	28
PWM 2 Mode Setting/PWM 2 Ramp Rate.....	28
FAN 2 Speed .....	28
ACPI CONFIGURATION SCREEN.....	29
Advanced ACPI Configuration Screen.....	30
ACPI Version Features.....	30
ACPI APIC Support .....	30
AMI OEMB Table.....	31
Headless Mode.....	31
Chipset ACPI Configuration Screen .....	32
Energy Lake Feature.....	32
APIC ACPI SCI IRQ .....	32
APM CONFIGURATION SCREEN .....	33
Power Management/APM.....	33
Video Power Down Mode .....	33
Hard Disk Power Down Mode.....	34
Suspend Timeout (Minute) .....	34
Throttle Slow Clock Ratio .....	34
Keyboard and PS/2 Mouse.....	35
Resume on Ring.....	35

<i>Resume on PME#</i> .....	35
<i>Resume on LAN</i> .....	35
<i>Resume on RTC Alarm</i> .....	35
<b>EVENT LOG CONFIGURATION SCREEN</b> .....	36
<i>View Event Log</i> .....	36
<i>Mark all events as read</i> .....	36
<i>Clear Event Log</i> .....	36
<b>MPS CONFIGURATION SCREEN</b> .....	37
<i>MPS Revision</i> .....	37
<b>PCI EXPRESS CONFIGURATION SCREEN</b> .....	38
<i>Active State Power Management</i> .....	38
<i>SB PCIE Ports Configuration Screen</i> .....	39
<i>PCIe Port 0</i> .....	39
<i>PCIe Port 1</i> .....	39
<i>PCIe High Priority Port</i> .....	40
<i>PCIe Port 0 IOxAPIC Enable</i> .....	40
<i>PCIe Port 1 IOxAPIC Enable</i> .....	40
<b>SMBIOS CONFIGURATION SCREEN</b> .....	41
<i>SMBIOS SMI Support</i> .....	41
<b>REMOTE ACCESS CONFIGURATION SCREEN</b> .....	42
<i>Remote Access</i> <sup>SDO</sup> .....	42
<i>Serial Port Number</i> <sup>SDO</sup> .....	42
<i>Serial Port Mode</i> <sup>SDO</sup> .....	43
<i>Flow Control</i> <sup>SDO</sup> .....	43
<i>Redirection After BIOS POST</i> <sup>SDO</sup> .....	43
<i>Terminal Type</i> <sup>SDO</sup> .....	44
<i>VT-UTF8 Combo Key Support</i> .....	44
<i>Sredir Memory Display Delay</i> .....	44
<i>EMS Support (SPCR)</i> .....	44
<b>USB CONFIGURATION SCREEN</b> .....	45
<i>USB Devices Enabled</i> .....	45
<i>Legacy USB Support</i> .....	45
<i>Port 64/60 Emulation</i> <sup>SDO</sup> .....	46
<i>USB 2.0 Controller Mode</i> <sup>SDO</sup> .....	46
<i>BIOS EHCI Hand-Off</i> <sup>SDO</sup> .....	46



*Hotplug USB FDD Support* ..... 46  
*USB Mass Storage Device Configuration Screen* ..... 47  
     *USB Mass Storage Reset Delay* ..... 47  
     *Emulation Type*..... 47

**4. PCI/PnP Setup ..... 51**

*Clear NVRAM* ..... 51  
     *Plug and Play O/S* ..... 52  
*PCI Latency Timer* ..... 52  
*Allocate IRQ to PCI VGA* ..... 52  
*Palette Snooping*..... 53  
*PCI IDE BusMaster*..... 53  
*OffBoard PCI/ISA IDE Card*..... 54  
*IRQs*..... 54  
*DMA*..... 55  
*Reserved Memory Size*..... 55

**5. Boot Setup ..... 59**

*BOOT SETTINGS CONFIGURATION SCREEN*..... 60  
     *Quick Boot* <sup>SDO</sup> ..... 60  
     *Quiet Boot* <sup>SDO</sup> ..... 60  
     *Add-On ROM Display Mode* ..... 61  
     *Boot-Up Num-Lock* ..... 61  
     *PS/2 Mouse Support*..... 61  
     *Wait for 'F1' If Error* <sup>SDO</sup> ..... 62  
     *Hit 'DEL' Message Display*..... 62  
     *Interrupt 19 Capture*..... 62  
     *Retry Boot Sequence* <sup>SDO</sup> ..... 62  
*BOOT DEVICE PRIORITY SCREEN* ..... 63  
     *1st - 6th Boot Device* <sup>SDO</sup> ..... 63  
*HARD DISK DRIVES SCREEN* ..... 64  
     *1st Drive, 2nd Drive, 3rd Drive, etc.*..... 64  
*REMOVABLE DRIVES SCREEN* ..... 65



1st Drive, 2nd Drive, 3rd Drive, etc. ....	65
CD/DVD DRIVES SCREEN .....	66
1st Drive, 2nd Drive, 3rd Drive, etc. ....	66
USB DRIVES SCREEN.....	67
1st Drive, 2nd Drive, 3rd Drive, etc. ....	67
Network DRIVES SCREEN.....	68
1st Drive, 2nd Drive, 3rd Drive, etc. ....	68
Other DRIVES SCREEN .....	69
1st Drive, 2nd Drive, 3rd Drive, etc. ....	69
<b>6. Security Setup .....</b>	<b>73</b>
Supervisor Password <sup>SDO</sup> .....	73
User Password <sup>SDO</sup> .....	73
Change Supervisor Password.....	74
Change User Password.....	74
Clearing a Supervisor/User Password.....	75
User Access Level.....	75
Password Check <sup>SDO</sup> .....	75
Boot Sector Virus Protection .....	76
Primary Master HDD User Password.....	76
CP307/CP307-V Password Support.....	76
Two Levels of Password Protection .....	76
Remember the Password.....	76
<b>7. Chipset Setup .....</b>	<b>79</b>
NORTHBRIDGE CONFIGURATION SCREEN .....	80
DRAM Frequency.....	80
Memory Hole.....	81
Boots Graphic Adapter Priority <sup>SDO</sup> .....	81
Internal Graphics Mode Select.....	81
Video Function Configuration Screen.....	82
DVMT Mode Select.....	82
DVMT/FIXED Memory .....	82



SOUTHBRIDGE CONFIGURATION SCREEN.....	83
USB Functions.....	83
USB 2.0 Controller <sup>SDO</sup> .....	83
<b>8. OEM Feature .....</b>	<b>87</b>
CLOCK SPREADING SCREEN .....	88
Spread Spectrum Modulation <sup>SDO</sup> .....	88
LAN BOOT SCREEN.....	89
LAN Boot <sup>SDO</sup> .....	89
Interface for LAN Boot <sup>SDO</sup> .....	89
CP307 REAR I/O GPIO SCREEN (only on Rear I/O Version).....	90
GPIO - GPI4 Status .....	90
GPO0 - GPO2 .....	90
SYSTEM INFO SCREEN.....	91
Board Version .....	91
Logic Index .....	91
Hardware Index .....	91
Serial Number.....	91
Ident Number.....	91
EKS Index.....	92
CPU Micro Code.....	92
CPU ID.....	92
Hardware Version .....	92
ICH7 Version .....	92
Rear I/O Config.....	92
System Slot.....	92
CP307/CP307-V FRONT/REAR CONFIG SCREEN .....	93
VGA Connector <sup>SDO</sup> .....	93
Serial Port 1 <sup>SDO</sup> .....	94
Gig. Ethernet 1 / Gig. Ethernet 2 <sup>SDO</sup> .....	94
SETUP DEFAULT CONFIGURATION SCREEN .....	95
Store current settings.....	95
Clear Configuration Block.....	96
Override Structure present .....	96



<i>Kontron EEPROM Release Version</i> .....	96
<i>OEM EEPROM Release Version</i> .....	96
<i>Config. Block Activation Flag</i> .....	96
<b>PCI SCREEN</b> .....	97
<i>Delay for PCI Config Cycle</i> <sup>SDO</sup> .....	97
<i>Accept Class Code FF</i> <sup>SDO</sup> .....	97
<i>PCI-to-PCI Bridge Reset</i> <sup>SDO</sup> .....	98
<i>cPCI Signal to IRQ5</i> .....	98
<i>cPCI Signal to NMI</i> .....	98
<b>WATCHDOG SCREEN</b> .....	99
<i>Watchdog Configuration</i> .....	99
<i>Active for Boot</i> <sup>SDO</sup> .....	99
<i>Watchdog Mode</i> .....	100
<i>WD Active Time</i> <sup>SDO</sup> .....	100
<i>Interrupt Config</i> .....	100
<b>CP307/CP307-V LED CONTROL SCREEN</b> .....	101
<i>LED Mode for OS</i> .....	101
<i>LED0 Mode for OS</i> .....	101
<i>LED1 Mode for OS</i> .....	102
<b>9. Exit Menu</b> .....	<b>105</b>
<i>Save Changes and Exit</i> .....	105
<i>Discard Changes and Exit</i> .....	105
<i>Discard Changes</i> .....	106
<i>Discard Changes Screen</i> .....	106
<i>Load Optimal Defaults</i> .....	107
<i>Load Optimal Defaults Screen</i> .....	107
<i>Load Fail-Safe Defaults</i> .....	107
<b>10. POST Codes</b> .....	<b>111</b>
<i>Bootblock Initialization Code Checkpoints</i> .....	111
<i>Bootblock Recovery Code Checkpoints</i> .....	112
<i>POST Code Checkpoints</i> .....	113
<i>DIM Code Checkpoints</i> .....	115



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*Chapter*

**1**

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# Starting BIOS Setup

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## 1. Starting BIOS Setup

The CP307/CP307-V is provided with a Kontron-customized, pre-installed and configured version of AMI's BIOS. This BIOS is based on the AMIBIOS®8 core which provides a variety of new and enhanced functions specifically tailored to the hardware features of the CP307/CP307-V.

To take advantage of these functions, the BIOS comes with a setup program which provides quick and easy access to the individual function settings for control or modification of the BIOS configuration.

The setup program allows the accessing of various menus which provide functions or access to sub-menus with more specific functions of their own. The individual menus and the configurable functions are described in this guide.

To start the BIOS Setup program, follow the steps below:

STEP	DESCRIPTION
1	Power on the board
2	<p>Press the &lt;Delete&gt; key on your keyboard when the following text prompt appears: Press DEL to run Setup</p> 
3	After pressing the <Delete> key, the CP307/CP307-V Main BIOS Setup screen is displayed. Access is now available to all of the other setup screens by simply selecting the appropriate menu tab.

**Note:** The <Delete> key is normally used to start the BIOS Setup program. If the CP307/CP307-V is connected to a terminal, use the <F4> key to start the BIOS Setup program.

## Main Setup Menu

The Main setup menu is the first screen that appears after starting the setup program.

At the top of this screen and all of the other major screens, there is a setup menu selection bar, which permits access to all of the other major setup menus. These menus are selected via the left-right arrow keys.

All setup menu screens have two main frames. The left frame displays all the functions that can be configured. They are displayed in blue. Functions displayed in gray provide information about the status or the operational configuration.

The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an function is selected in the left frame, it is displayed in white. Often a text message will accompany it..

```

Main  Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  *
*****
* System Overview                               * Use [ENTER], [TAB]  *
* *****                                     * or [SHIFT-TAB] to *
* AMIBIOS                                       * select a field.   *
* Version   :08.00.15                          *                   *
* Build Date:09/30/08                          * Use [+] or [-] to *
* ID        :307I0201                          * configure system  *
*                   *                   *                   *
* Processor                               *                   *
* Genuine Intel(R) CPU                      U2500 @ 1.20GHz *                   *
* Speed     :1200MHz                          *                   *
* Count     :1                                *                   *
*                   *                   *                   *
* System Memory                             * *   Select Screen *
* Size      :1016MB                          * **  Select Item   *
*                   *                   * + -  Change Field *
* System Time                               [17:04:21]          * Tab  Select Field  *
* System Date                               [Thu 03/13/2003]   * F1   General Help  *
*                   *                   * F10  Save and Exit *
*                   *                   * ESC  Exit          *
*                   *                   *                   *
*****
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```

## Setup Default Override (SDO)

BIOS normally has two types of default settings: Optimal and Fail-Safe, which can be loaded as required.

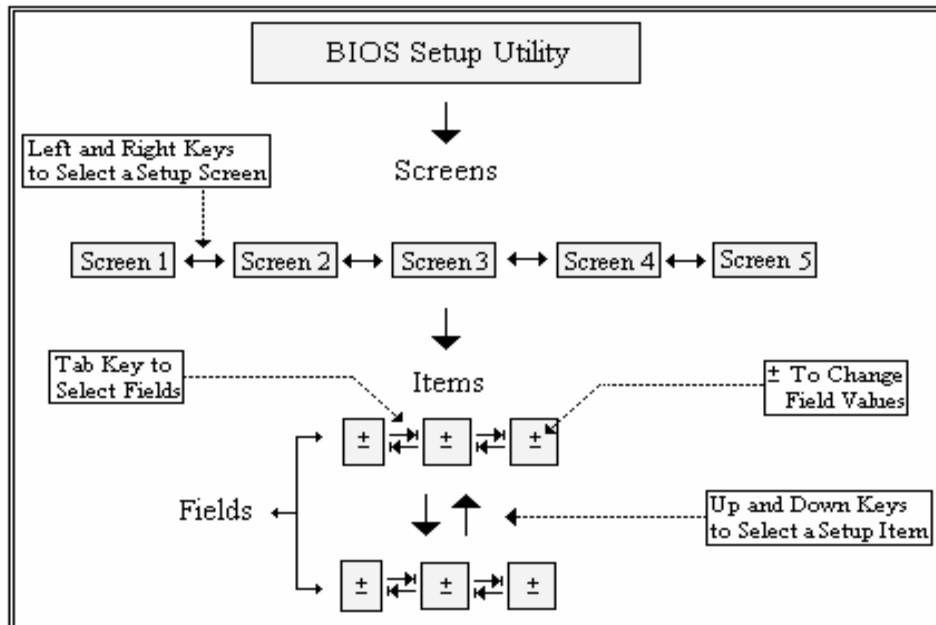
The BIOS provides functionality which permits overriding of the default settings for Optimal and Fail-Safe defaults for certain functions to be specified. This functionality is known as “Setup Default Override” and its usage is documented under the OEM Feature: Setup Default Configuration (SDO).

Functions for which the Optimal and Fail-Safe defaults can be overridden are indicated by the superscripted letters SDO after the function title: e.g. **Remote Access**<sup>SDO</sup>.



## Navigation

The CP307/CP307-V BIOS setup program uses a hot key-based navigation system. Most of these hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.



**Note:** There is a hot key legend located in the right frame on most CP307/CP307-V setup screens.

HOT KEY	DESCRIPTION
←→ Left/Right	The <i>Left and Right</i> <Arrow> keys are used to select a major setup screen. For example: Main Screen, Advanced Screen, Chipset Screen, and so on.
↑↓ Up/Down	The <i>Up and Down</i> <Arrow> keys are used to select a setup function or a sub-screen.
+ - Plus/Minus	The <i>Plus and Minus</i> <Arrow> keys are used to change the field value of a particular setup function. For example: Date and Time.
Tab	The <Tab> key is used to select function fields.

**Note:** The <F8> key on the keyboard is the Fail-Safe key. It is not displayed on the CP307/CP307-V key legend by default. To set the Fail-Safe settings of the BIOS, press the <F8> key on your keyboard. It is located on the upper row of a standard 101 keyboard. The Fail-Safe settings allow booting with the least amount of options set. This can lessen the probability of conflicting settings.

HOT KEY	DESCRIPTION																												
F1	<p>The &lt;F1&gt; key is used to display the <i>General Help</i> screen. Press the &lt;F1&gt; key to open the <i>General Help</i> screen.</p> <div data-bbox="363 421 1233 853" style="border: 1px solid black; padding: 10px;"> <p><b>General Help</b></p> <table border="0"> <tr> <td>←→</td> <td>Select Screen</td> <td>↓↑</td> <td>Select Item</td> </tr> <tr> <td>+ -</td> <td>Change Screen</td> <td>Enter</td> <td>Go to Sub Screen</td> </tr> <tr> <td>PGDN</td> <td>Next Page</td> <td>PGUP</td> <td>Previous Page</td> </tr> <tr> <td>Home</td> <td>Go to Top of the Screen</td> <td>End</td> <td>Go to Bottom of Screen</td> </tr> <tr> <td>F2/F3</td> <td>Change Colors</td> <td>F7</td> <td>Discard Changes</td> </tr> <tr> <td>F8</td> <td>Load Failsafe Defaults</td> <td>F9</td> <td>Load Optimal Defaults</td> </tr> <tr> <td>F10</td> <td>Save and Exit</td> <td>ESC</td> <td>Exit</td> </tr> </table> <p style="text-align: center;">[Ok]</p> </div>	←→	Select Screen	↓↑	Select Item	+ -	Change Screen	Enter	Go to Sub Screen	PGDN	Next Page	PGUP	Previous Page	Home	Go to Top of the Screen	End	Go to Bottom of Screen	F2/F3	Change Colors	F7	Discard Changes	F8	Load Failsafe Defaults	F9	Load Optimal Defaults	F10	Save and Exit	ESC	Exit
←→	Select Screen	↓↑	Select Item																										
+ -	Change Screen	Enter	Go to Sub Screen																										
PGDN	Next Page	PGUP	Previous Page																										
Home	Go to Top of the Screen	End	Go to Bottom of Screen																										
F2/F3	Change Colors	F7	Discard Changes																										
F8	Load Failsafe Defaults	F9	Load Optimal Defaults																										
F10	Save and Exit	ESC	Exit																										
F10	<p>The &lt;F10&gt; key is used to save any changes you have made and exit CP307/CP307-V Setup. Press the &lt;F10&gt; key to save your changes. The following screen will appear:</p> <div data-bbox="363 965 1233 1155" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">Save configuration changes and exit now?</p> <p style="text-align: center;">[Ok]                      [Cancel]</p> </div> <p>Press the &lt;Enter&gt; key to save the configuration and exit. To abort this function and return to the previous screen, use the &lt;Arrow&gt; key to select <i>Cancel</i> and then press the &lt;Enter&gt; key.</p>																												
ESC	<p>The &lt;Esc&gt; key is used to discard any changes you have made and exit the CP307/CP307-V Setup. Press the &lt;Esc&gt; key to exit the CP307/CP307-V setup without saving the changes. The following screen will appear:</p> <div data-bbox="363 1368 1233 1559" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">Discard changes and exit setup now?</p> <p style="text-align: center;">[Ok]                      [Cancel]</p> </div> <p>Press the &lt;Enter&gt; key to discard changes and exit. To abort this function and return to the previous screen, use the &lt;Arrow&gt; key to select <i>Cancel</i> and then press the &lt;Enter&gt; key.</p>																												
Enter	<p>The &lt;Enter&gt; key is used to display or change the function setting listed for a particular setup item. The &lt;Enter&gt; key can also be used to display the setup sub-screens.</p>																												

**Note:** If the CP307/CP307-V is connected to a terminal, the <F8>, <F9> and <F10> keys cannot be used via the serial port.





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*Chapter* **2**

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# Main Setup

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## 2. Main Setup

Upon entering the BIOS Setup program, the Main setup screen is displayed. This screen provides very basic system information as well as functions for setting the system time and date. In addition, the remaining major setup menus can be accessed from this screen. This screen can also be selected from any other major setup screen by using the Main tab.

```

Main  Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  *
*****
* System Overview                               * Use [ENTER], [TAB] *
* *****                                     * or [SHIFT-TAB] to *
* AMIBIOS                                       * select a field.   *
* Version   :08.00.15                          *                   *
* Build Date:09/30/08                          * Use [+] or [-] to *
* ID       :307I0201                          * configure system Time.*
*                   *                   *
* Processor                               *                   *
* Genuine Intel(R) CPU U2500 @ 1.20GHz        *                   *
* Speed     :1200MHz                          *                   *
* Count     :1                                *                   *
*                   *                   *
* System Memory                            * * Select Screen   *
* Size      :1016MB                          * ** Select Item    *
*                   * +- Change Field      *
* System Time                               * Tab Select Field  *
* System Date                               * F1 General Help   *
*                   * F10 Save and Exit    *
*                   * ESC Exit           *
*                   *                   *
*****
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```

### System Time

SETTING	DESCRIPTION
<HH:MM:SS>	Use this function to change the system time. Select System Time using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the <Tab> key or the Left and Right <Arrow> keys to move between fields.

**Note:** The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

### System Date

SETTING	DESCRIPTION
<MM/DD/YYYY>	Use this function to change the system date. Select System Date using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the <Tab> key or the Left and Right <Arrow> keys to move between fields.



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*Chapter* **3**

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# Advanced Setup

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### 3. Advanced Setup

Select the Advanced tab to enter the Advanced Setup screen. This screen lists the advanced configuration sub-screens. To display a sub-screen, select it using the <Arrow> keys and press <Enter>.

```

Main  Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  *
*****
* Advanced Settings                                     * Configure CPU. *
* ***** *
* WARNING: Setting wrong values in below sections *
*      may cause system to malfunction. *
* *
* * CPU Configuration *
* * IDE Configuration *
* * SuperIO Configuration *
* * Hardware Health Configuration *
* * ACPI Configuration *
* * APM Configuration *
* * Event Log Configuration *
* * MPS Configuration * * Select Screen *
* * PCI Express Configuration * ** Select Item *
* * Smbios Configuration * Enter Go to Sub Screen *
* * Remote Access Configuration * F1 General Help *
* * USB Configuration * F10 Save and Exit *
* * ESC Exit *
* *
*****
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```



## CPU CONFIGURATION SCREEN

This screen provides basic information about the CPU and functions for specifying CPU configuration settings.

```

Advanced
*****
* Configure advanced CPU settings                ** Disabled for WindowsXP *
* Module Version:3F.10                          **                    *
* *****                                       **                    *
* Manufacturer: Intel                           **                    *
* Genuine Intel(R) CPU          U2500 @ 1.20GHz **                    *
* Frequency      :1.20GHz                       **                    *
* FSB Speed      :532MHz                         **                    *
* Cache L1       :64 KB                          **                    *
* Cache L2       :2048 KB                        **                    *
* Ratio Actual Value:9                          **                    *
*                                                     **                    *
* Max CPUID Value Limit      [Disabled]          ** *   Select Screen   *
* Intel(R) Virtualization Tech [Enabled]         ** **  Select Item     *
* CPU Thermal Monitor function [Enabled]         ** +-  Change Option  *
* Execute-Disable Bit Capability [Enabled]       ** F1  General Help   *
* Intel(R) SpeedStep(tm) tech. [Automatic]       ** F10 Save and Exit  *
* Intel(R) C-State tech.          ** ESC   Exit             *
*   C1 Config.                    [Standard]     **                    *
*   C2 Config.                    [Standard]     **                    *
*****
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```

### Max CPUID Value Limit

This function is used to determine the values that the operating system can write to the CPUID's EAX register to obtain information about the processor.

**Note:** This function must be disabled for Windows XP.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the Max. CPUID Value Limit.
Enabled	Use this setting to enable the Max. CPUID Value Limit.

Optimal and Fail-Safe default settings: Disabled







### Intel® Virtualization Tech (only for CP307)

This function is used to enable a Virtual Machine Manager (VMM) to utilize the additional hardware capabilities. To change the state of this function, a hardware reset is necessary.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the CPU virtualization capability.
Enabled	Use this setting to enable the CPU virtualization capability. A VMM can utilize the additional hardware capabilities.

Optimal and Fail-Safe default settings: Enabled

### CPU Thermal Monitor Function <sup>SDO</sup>

This function is used to specify the Thermal Monitor Feature. BIOS chooses Intel® Thermal Monitor 1 (TM1) to control the processor temperature and the power consumption by activating the Thermal Control Circuit (TCC) when the processor silicon reaches its maximum operating temperature.

If the processor supports the Intel® Enhanced SpeedStep™ technology, BIOS chooses Intel® Thermal Monitor 2 (TM2), which controls the processor temperature and power consumption by initiating an Intel® Enhanced Speedstep™ Technology transition when the processor silicon reaches its maximum operating temperature.

If Disabled is selected, the BIOS disables the Thermal Monitor 1 or the Thermal Monitor 2 Feature respectively, i.e. the BIOS disables the CPU built in automatic thermal throttling. If the CPU becomes overheated, the CP307/CP307-V will shut off automatically.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the CPU Thermal Monitor function.
Enabled	Use this setting to enable the CPU Thermal Monitor function.

Optimal and Fail-Safe settings: Enabled

**Note:** Intel® Thermal Monitor 1 or Intel® Thermal Monitor 2 must be enabled for the processor to operate within specification.

### Execute-Disable Bit Capability

This function is used to enable the Execute-Disable Bit Capability feature.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the Execute-Disable Bit Capability function. When this setting is used, the BIOS forces the XD feature flag to always return to 0.
Enabled	Use this setting to enable the Execute-Disable Bit Capability function.

Optimal and Fail-Safe default settings: Enabled



### Hyper Threading Technology (only for CP307)

If displayed, this function has no effect on the CP307.

SETTING	DESCRIPTION
Disabled	N/A
Enabled	N/A

Optimal and Fail-Safe default settings: Disabled

### Intel® SpeedStep™ tech. <sup>SDO</sup> (only for CP307)

This function is used to specify the Intel® SpeedStep™ feature.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the Intel® SpeedStep™ feature. Use of this setting will force the BIOS to use minimum speed.
Maximum Speed	Use this setting to set the maximum speed.
Minimum Speed	Use this setting to set the minimum speed.
Automatic	Use this setting to allow the operating system to control the CPU speed. The BIOS will start with high CPU speed.

Optimal and Fail-Safe default settings: Automatic

### Intel® C-STATE tech.: Cn Config

This function controls the availability of the CPU C-STATE power saving technology. The individual C-STATE functions are selectable independent of one another, i.e. C1, C2, C3, and C4 may be enabled/disabled in any combination.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the Cn Config.
Standard	Use this setting to make the Cn State available to the OS.

Optimal and Fail-Safe default settings for C1, C2 and C3: Standard

Optimal and Fail-Safe default settings for C4: Disabled



## IDE CONFIGURATION SCREEN

This screen provides functions for specifying IDE configuration settings.

```

Advanced
*****
* IDE Configuration * Options *
* ***** *
* ATA/IDE Configuration [Compatible] * Disabled *
* Legacy IDE Channels [SATA Pri, PATA Sec] * Compatible *
* Port0 SATA AHCI Speed: GEN 2 (3.0 Gb/sec) * Enhanced *
* *
* * Primary IDE Master : [Hard Disk] * *
* * Primary IDE Slave : [Not Detected] * *
* * Secondary IDE Master : [Hard Disk] * *
* * Secondary IDE Slave : [Not Detected] * *
* *
* Hard Disk Write Protect [Disabled] * *
* IDE Detect Time Out (Sec) [35] * * Select Screen *
* ATA(PI) 80Pin Cable Detection [Host & Device] * ** Select Item *
* SATA Speed limit [No Limit] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* *
*****
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```

### ATA/IDE Configuration

This function specifies the IDE channel modes.

SETTING	DESCRIPTION
Disabled	Use this setting to completely disable all PATA and SATA devices. This setting prevents the OS from detecting the controller devices.
Compatible	Use this setting to allow the PATA channel and two out of four SATA devices to be joined together to one legacy IDE compatible PCI controller device.
Enhanced	Use this setting to allow the PATA channel and the SATA devices to appear as two independent PCI controller devices.

Optimal and Fail-Safe default settings: Compatible



## Legacy IDE Channels

This function controls the configuration of the available device channels within the legacy compatible IDE controller device.

**Note:** This function is only available when the IDE Configuration is set to Compatible.

SETTING	DESCRIPTION
SATA Only	Use this setting to specify the onboard SATA connector (SATA0) as the primary master, the daughterboard connector (SATA2) as the secondary master, the RIO-1 channel (SATA1) as the primary slave, and the RIO-2 channel (SATA3) as the secondary slave.
PATA Pri, SATA Sec	Use this setting to specify the PATA channel as the primary channel, the RIO-1 SATA channel (SATA1) as the secondary master, and the RIO-2 (SATA3) as the secondary slave.
SATA Pri, PATA Sec	Use this setting to specify the onboard SATA connector as the primary master, the daughterboard SATA connector as the primary slave and the PATA channel as the secondary channel.
PATA Only	Use this setting to specify the PATA channel as the primary channel. With this setting, all SATA connectors are disabled by default.

Optimal and Fail-Safe default settings: SATA Pri, PATA Sec

## Configure SATA as

This function controls the SATA controller device's operating mode.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the SATA controller.
IDE	Use this setting to allow the SATA controller to operate as a legacy IDE controller. In this case, old IDE drivers can be used.
RAID	Use this setting to allow the SATA controller to operate as a RAID controller.
AHCI	Use this setting to allow the SATA controller to operate as an AHCI controller. In this case, AHCI drivers must be used.

Optimal and Fail-Safe default settings when the Configuration is set to Enhanced: IDE

Optimal and Fail-Safe default settings when the Configuration is set to PATA only: Disabled



## Configure SATA Channels

This function configures the BIOS logical drive order.

**Note:** This function is only available when the IDE Configuration is set to Enhanced.

SETTING	DESCRIPTION
Before PATA	Use this setting to specify that the SATA controller device's channels are enumerated as primary and slave channels and the PATA controller's channel is enumerated as third.
Behind PATA	Use this setting to specify that the PATA controller channel is enumerated as primary and the SATA controller's channels are enumerated as third and fourth.

Optimal and Fail-Safe default settings: Before PATA

## Hard Disk Drive Write Protect

This function is used to enable write protection for all hard disk drives in the system.

SETTING	DESCRIPTION
Disabled	Use this setting to allow the hard disk drive to be used normally. Read, write, and erase functions can be performed to the hard disk drive.
Enabled	Use this setting to prevent the hard disk drive from being erased.

Optimal and Fail-Safe default settings: Disabled

## IDE Detect Timeout (Seconds)

This function is used to specify the number of seconds after which the BIOS stops searching for IDE devices. Basically, this allows you to fine-tune the settings to allow for faster boot times. Adjust this setting until a suitable timing that can detect all IDE disk drives attached is found.

**Note:** Different IDE disk drives take longer for the BIOS to locate than others do.

SETTING	DESCRIPTION
0	This value is the best setting to use if the onboard IDE controllers are set to a specific IDE disk drive in the AMIBIOS.
5	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within five seconds. A large majority of ultra ATA hard disk drives can be detected well within five seconds.
10	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 10 seconds.
15	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 15 seconds.
20	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 20 seconds.
25	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 25 seconds.
30	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 30 seconds.
35	Use this setting to stop the BIOS from searching the IDE bus for IDE disk drives within 35 seconds. This is the recommended setting when all IDE connectors are set to <i>AUTO</i> in the BIOS setting.

Optimal and Fail-Safe default settings: 35



## ATA (PI) 80-Pin Cable Detection

This function is used to select the method used to detect the ATA (PI) 80-pin cable.

SETTING	DESCRIPTION
Host & Device	Use this setting when both the motherboard onboard IDE controller and the IDE disk drive are to be used to detect the type of IDE cable used.
Host	Use this setting when the motherboard onboard IDE controller is to be used to detect the type of IDE cable used.
Device	Use this setting when the IDE disk drive is to be used to detect the type of IDE cable used.

Optimal and Fail-Safe default settings: Host & Device

The use of an 80-conductor ATA cable is mandatory for running Ultra ATA/66, Ultra ATA/100 and Ultra ATA/133 IDE hard disk drives. The standard 40-conductor ATA cable cannot handle the higher speeds.

The 80-conductor ATA cable is plug-compatible with the standard 40-conductor ATA cable. Because of this, the system must determine the presence of the correct cable.

This detection is achieved via an open in the host connector in one of the lines on the 80-conductor ATA cable that is normally an unbroken connection in the standard 40-conductor ATA cable. It is this break that is used to make this determination. The BIOS can instruct the drive to run at the correct speed for the cable type detected.

## SATA Speed Limit

This function limits the maximum Serial ATA transfer speed.

SETTING	DESCRIPTION
No Limit	Use this setting when the SATA transfer speed is to depend on the drive capability up to 3.0 Gbit/s.
GEN1 Rate	Use this setting when the SATA transfer speed is to be limited to 1.5 Gbit/s (GEN1 Rate).

Optimal and Fail-Safe default settings on CP307-V and the CP307 vers. without rear I/O: No Limit  
 Optimal and Fail-Safe default settings on the CP307 version with rear I/O: GEN1 Rate



## Primary, Secondary, Third and Fourth IDE Master and Slave

These functions provide access to the Primary, Secondary, Third and Fourth IDE Master and Slave sub-screens. They are only available if an IDE device is detected as Primary, Secondary, Third or Fourth IDE Master or Slave.

To access the submenu for the Primary, Secondary, Third and Fourth IDE Master and Slave drives, select the respective function from the IDE Configuration screen and press <Enter>.

The following screen is representative for the Primary, Secondary, Third and Fourth IDE Master and Slave devices.

### Primary IDE Master Screen

This screen provides information about the Primary IDE Master device and functions for specifying various device configuration settings.

```

Advanced
*****
* Primary IDE Master                               * Select the type *
* *****                                         * of device connected *
* Device      :Hard Disk                          * to the system.   *
* Vendor      :ST3160812AS                        *                 *
* Size        :160,0GB                            *                 *
* LBA Mode    :Supported                          *                 *
* Block Mode  :16Sectors                          *                 *
* PIO Mode    :4                                  *                 *
* Async DMA   :MultiWord DMA-2                    *                 *
* Ultra DMA   :Ultra DMA-6                        *                 *
* S.M.A.R.T. :Supported                            *                 *
* *****                                         *                 *
* Type                [Auto]                       * *   Select Screen *
* LBA/Large Mode      [Auto]                       * **  Select Item   *
* Block (Multi-Sector Transfer) [Auto]             * +-  Change Option *
* PIO Mode            [Auto]                       * F1  General Help  *
* DMA Mode            [Auto]                       * F10 Save and Exit *
* S.M.A.R.T.          [Auto]                       * ESC Exit          *
* 32Bit Data Transfer [Enabled]                    *                 *
* *****                                         *                 *
*****
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```



## Drive Parameters

The “grayed-out” items in the left frame are the IDE disk drive parameters taken from the firmware of the IDE disk drive selected. The drive parameters listed are as follows:

PARAMETER	DESCRIPTION
Device	Type of device, such as hard disk drive.
Vendor	Manufacturer of the device.
Size	The size of the device.
LBA Mode	LBA (Logical Block Addressing) is a method of addressing data on a disk drive. The CP307/CP307-V supports 48-bit LBA mode. Thus, hard disks with a drive capacity of greater than 137 GB and can be used on the CP307/CP307-V.
Block Mode	Block mode boosts IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per interrupt if block mode is not used. Block mode allows transfers of up to 64 KB per interrupt.
PIO Mode	IDE PIO mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.
Async DMA	This indicates the highest Asynchronous DMA Mode that is supported.
Ultra DMA	This indicates the highest Synchronous DMA Mode that is supported.
S.M.A.R.T.	Self-Monitoring Analysis and Reporting Technology protocol used by IDE drives of some manufacturers to predict drive failures.

## Type

SETTING	DESCRIPTION
Not Installed	Use this setting to prevent the BIOS from searching for an IDE disk drive on the specified channel.
Auto	Use this setting to allow the BIOS to auto detect the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel.
CD/DVD	Use this setting to specify that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS will not attempt to search for other types of IDE disk drives on the specified channel.
ARMD	Use this setting to specify an ATAPI Removable Media Device. This includes, but is not limited to: <ul style="list-style-type: none"> <li>• ZIP</li> <li>• LS-120</li> </ul>

Optimal and Fail-Safe default settings: Auto





## LBA/Large Mode

LBA (Logical Block Addressing) is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB.

**Note:** For drive capacities over 137 GB, the BIOS must be equipped with 48-bit LBA mode addressing. If not, install an ATA/133 IDE controller card that supports 48-bit LBA mode or contact Kontron for further assistance.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the BIOS from using Large Block Addressing mode control on the specified channel.
Auto	Use this setting to allow the BIOS to auto detect the Large Block Addressing mode control on the specified channel.

Optimal and Fail-Safe default settings: Auto

## Block (Multi-Sector Transfer)

This function sets the block mode multi-sector transfer feature.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the BIOS from using Multi-Sector Transfer on the specified channel. The data to and from the device will occur one sector at a time.
Auto	Use this setting to allow the BIOS to auto detect device support for Multi-Sector Transfers on the specified channel. If supported, use this setting to allow the BIOS to auto detect the number of sectors per block for transfer from the hard disk drive to the memory. The data transfer to and from the device will occur multiple sectors at a time.

Optimal and Fail-Safe default settings: Auto

## PIO Mode

The IDE PIO (Programmable I/O) mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.

SETTING	DESCRIPTION
Auto	Use this setting to allow the BIOS to auto detect the PIO mode if the IDE disk drive support cannot be determined.
0	Use this setting to allow the BIOS to use PIO mode 0. This mode has a data transfer rate of 3.3 Mbit/s.
1	Use this setting to allow the BIOS to use PIO mode 1. This mode has a data transfer rate of 5.2 Mbit/s.
2	Use this setting to allow the BIOS to use PIO mode 2. This mode has a data transfer rate of 8.3 Mbit/s.
3	Use this setting to allow the BIOS to use PIO mode 3. This mode has a data transfer rate of 11.1 Mbit/s.
4	Use this setting to allow the BIOS to use PIO mode 4. This mode has a data transfer rate of 16.6 Mitb/s. This setting generally works with all hard disk drives manufactured after 1999. For other disk drive, such as IDE CD-ROM drives, check the specifications of the drive.

Optimal and Fail-Safe default settings: Auto



## DMA Mode

This function is used to adjust the DMA mode options.

SETTING	DESCRIPTION
Auto	Use this setting to allow the BIOS to auto detect the DMA mode if the IDE disk drive support cannot be determined.
SWDMA0	Use this setting to allow the BIOS to use Single Word DMA mode 0. This mode has a data transfer rate of 2.1 MB/s.
SWDMA1	Use this setting to allow the BIOS to use Single Word DMA mode 1. This mode has a data transfer rate of 4.2 MB/s.
SWDMA2	Use this setting to allow the BIOS to use Single Word DMA mode 2. This mode has a data transfer rate of 8.3 MBs/.
MWDMA0	Use this setting to allow the BIOS to use Multi Word DMA mode 0. This mode has a data transfer rate of 4.2 MB/s.
MWDMA1	Use this setting to allow the BIOS to use Multi Word DMA mode 1. This mode has a data transfer rate of 13.3 MB/s.
MWDMA2	Use this setting to allow the BIOS to use Multi Word DMA mode 2. This mode has a data transfer rate of 16.6 MBs.
UDMA0	Use this setting to allow the BIOS to use Ultra DMA mode 0. This mode has a data transfer rate of 16.6 MB/s, which is the same transfer rate as the PIO mode 4 and the Multi Word DMA mode 2.
UDMA1	Use this setting to allow the BIOS to use Ultra DMA mode 1. This mode has a data transfer rate of 25 MB/s.
UDMA2	Use this setting to allow the BIOS to use Ultra DMA mode 2. This mode has a data transfer rate of 33.3 MB/s.
UDMA3	Use this setting to allow the BIOS to use Ultra DMA mode 3. This mode has a data transfer rate of 44.4 MB/s. To use this mode, it is required that an 80-conductor ATA cable is used.
UDMA4	Use this setting to allow the BIOS to use Ultra DMA mode 4. This mode has a data transfer rate of 66.6 MB/s. To use this mode, it is required that an 80-conductor ATA cable is used.
UDMA5	Use this setting to allow the BIOS to use Ultra DMA mode 5. This mode has a data transfer rate of 99.9 MB/s. To use this mode, it is required that an 80-conductor ATA cable is used.
UDMA6	Use this setting to allow the BIOS to use Ultra DMA mode 6. This mode has a data transfer rate of 133.2 MB/s. To use this mode, it is required that an 80-conductor ATA cable is used.

Optimal and Fail-Safe default settings: Auto



### S.M.A.R.T. for Hard Disk Drives

The Self-Monitoring Analysis and Reporting Technology (SMART) feature can help predict impending drive failures.

SETTING	DESCRIPTION
Auto	Use this setting to allow the BIOS to auto detect hard disk drive support if the IDE disk drive support cannot be determined.
Disabled	Use this setting to prevent the BIOS from using the SMART feature.
Enabled	Use this setting to allow the BIOS to use the SMART feature on support hard disk drives.

Optimal and Fail-Safe default settings: Auto

### 32Bit Data Transfer

This function is used to set the 32-bit data transfer.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the BIOS from using 32-bit data transfers.
Enabled	Use this setting to allow the BIOS to use 32-bit data transfers on support hard disk drives.

Optimal and Fail-Safe default settings: Enabled

### ARMD Emulation Type

An ATAPI Removable Media Device (ARMD) is a device that uses removable media, such as the LS120, MO (Magneto-Optical), or Iomega Zip drives. To boot from media on an ARMD, it is required to emulate booting from a floppy or hard disk drive. This is especially necessary when trying to boot to DOS.

SETTING	DESCRIPTION
Auto	Use this setting to allow the BIOS to automatically set the emulation used by ARMD.
Floppy	Use this setting to specify that ARMD should emulate a floppy drive during boot up.
Hard disk drive	Use this setting to specify that ARMD should emulate a hard disk drive during boot up.

Optimal and Fail-Safe default settings: Auto

SUPER IO CONFIGURATION SCREEN

This screen provides functions for specifying the Super I/O settings.

```

Advanced
*****
* Configure SCH3112 Super IO Chipset               * Allows BIOS to Select *
* *****                                          * Serial Port1 Base   *
* Serial Port1 Address   [3F8]                     * Addresses.         *
* Serial Port1 IRQ       [4]                       *                   *
* Serial Port2 Address   [2F8]                     *                   *
* Serial Port2 IRQ       [3]                       *                   *
* Serial Port2 Mode      [Normal]                  *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   *                               *                   *
*                   * *   Select Screen            *                   *
*                   * **  Select Item              *                   *
*                   * +-  Change Option           *                   *
*                   * F1   General Help           *                   *
*                   * F10  Save and Exit          *                   *
*                   * ESC   Exit                  *                   *
*                   *                               *                   *
*                   *                               *                   *
*****
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```

Serial Port1 Address

This function is used to specify the base I/O port address of Serial Port 1.

**Note:** If the system does not use a serial device, set this port to Disabled.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the serial port from accessing any system resources. When this setting is used, the serial port physically becomes unavailable.
3F8	Use this setting to allow the serial port to use 3F8 as its I/O port address.
2F8	Use this setting to allow the serial port to use 2F8 as its I/O port address.
3E8	Use this setting to allow the serial port to use 3E8 as its I/O port address.
2E8	Use this setting to allow the serial port to use 2E8 as its I/O port address.

Optimal and Fail-Safe default settings: 3F8



### Serial Port1 IRQ

This function is used to specify the Interrupt Request address of Serial Port 1.

**Note:** This function is not available if Serial Port 1 Address is set to Disabled.

SETTING	DESCRIPTION
3	Use this setting to allow the serial port to use IRQ3 for the interrupt address.
4	Use this setting to allow the serial port to use IRQ4 for the interrupt address.
10	Use this setting to allow the serial port to use IRQ10 for the interrupt address.
11	Use this setting to allow the serial port to use IRQ11 for the interrupt address.

Optimal and Fail-Safe default settings: 4

### Serial Port2 Address

This function is used to specify the base I/O port address of Serial Port 2.

**Note:** If the system does not use a serial device, set this port to Disabled.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the serial port from accessing any system resources. When this setting is used, the serial port physically becomes unavailable.
3F8	Use this setting to allow the serial port to use 3F8 as its I/O port address.
2F8	Use this setting to allow the serial port to use 2F8 as its I/O port address.
3E8	Use this setting to allow the serial port to use 3E8 as its I/O port address.
2E8	Use this setting to allow the serial port to use 2E8 as its I/O port address.

Optimal and Fail-Safe default settings: 2F8

### Serial Port2 IRQ

This function is used to specify the Interrupt Request address of Serial Port 2.

**Note:** This function is not available if Serial Port 2 Address is set to Disabled.

SETTING	DESCRIPTION
3	Use this setting to allow the serial port to use IRQ3 for the interrupt address.
4	Use this setting to allow the serial port to use IRQ4 for the interrupt address.
10	Use this setting to allow the serial port to use IRQ10 for the interrupt address.
11	Use this setting to allow the serial port to use IRQ11 for the interrupt address.

Optimal and Fail-Safe default settings: 3

### Serial Port2 Mode

This function has no effect on the operation of the CP307/CP307-V. It is recommended to leave this function at the default setting.

Optimal and Fail-Safe default settings: Normal

**Note:** This function is not available if Serial Port 2 Address is set to Disabled.



## HARDWARE HEALTH CONFIGURATION SCREEN

This screen provides information about the hardware health attributes as well as functions for specifying the hardware health configuration settings.

```

Advanced
*****
* Hardware Health Configuration                ** Enables Hardware *
* ***** Health Monitoring                  **                 *
* H/W Health Function [Enabled]              ** Device.         *
* PWM 1 Mode Setting [Fan Always On Full]    **                 *
* PWM 1 Ramp Rate [4.85 Hz]                  **                 *
* PWM 2 Mode Setting [Fan Always On Full]    **                 *
* PWM 2 Ramp Rate [4.85 Hz]                  **                 *
* *****
* CPU Temp (Diode via SIO) : 35*C/95*F      **                 *
* SuperIO Temperature : 29*C/84*F           **                 *
*                               **                 *
* Fan1 Speed : N/A                          **                 *
* Fan2 Speed : N/A                          ** *   Select Screen *
*                               ** **  Select Item   *
* +2.5V : 2.460 V                            ** +-  Change Option *
* Vccp : 0.960 V                             ** F1  General Help  *
* Vcc : 3.282 V                              ** F10 Save and Exit *
* +5Vin : 5.048 V                            ** ESC  Exit         *
* +12Vin : 12.048 V                          **                 *
* VTR : 3.282 V                              **                 *
*****
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```

### Hardware Health Function

This function has no effect on the operation of the CP307/CP307-V.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the H/W Health Function.
Enabled	Use this setting to enable the H/W Health Function.

Optimal and Fail-Safe default settings: Enabled

### PWM 1 Mode Setting/PWM 1 Ramp Rate

These functions are available only on the rear I/O board version and require additional hardware to be installed. For further information on using these settings, please contact Kontron.

### PWM 2 Mode Setting/PWM 2 Ramp Rate

These functions are not implemented on the CP307/CP307-V.

### FAN 2 Speed

This display-only function has no effect on the CP307/CP307-V.





## ACPI CONFIGURATION SCREEN

This screen provides access to the Advanced Configuration and Power Interface (ACPI) setup sub-screens.

```

Advanced
*****
* ACPI Settings                               * Advanced ACPI           *
* ***** * Configuration settings *
* * Advanced ACPI Configuration             *
* * Chipset ACPI Configuration             *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
* *      Select Screen                       *
* **      Select Item                       *
* Enter Go to Sub Screen *
* F1      General Help                     *
* F10     Save and Exit                    *
* ESC     Exit                             *
*                                           *
*                                           *
*****
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```



## Advanced ACPI Configuration Screen

This screen provides functions for specifying the advanced ACPI configuration settings.

```

Advanced ACPI Configuration
*****
* Advanced ACPI Configuration          * Enable RSDP pointers *
* *****                          * to 64-bit Fixed System *
* ACPI Version Features               * Description Tables, Di *
* [ACPI v1.0]                         * ACPI version has some *
* ACPI APIC support                   * [Enabled]             *
* AMI OEMB table                      * [Enabled]             *
* Headless mode                       * [Disabled]           *
*                                     *                       *
*                                     *                       *
*                                     *                       *
*                                     *                       *
*                                     *                       *
*                                     *                       *
*                                     * *   Select Screen   *
*                                     * **  Select Item    *
*                                     * +-  Change Option  *
*                                     * F1  General Help   *
*                                     * F10 Save and Exit  *
*                                     * ESC Exit            *
*                                     *                       *
*                                     *                       *
*****
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```

### ACPI Version Features

This function is used to select the ACPI specification version required by the BIOS for generating the ACPI tables.

SETTING	DESCRIPTION
ACPI v. 1.0	Use this setting to specify that RSDT, FACP and MADT follow the ACPI 1.0 specification.
ACPI v. 2.0	Use this setting to specify that XSDT, FACP and MADT follow the ACPI 2.0 specification.
ACPI v. 3.0	Use this setting to specify that XSDT, FACP and MADT follow the ACPI 3.0 specification.

Optimal and Fail-Safe default settings: ACPI v. 1.0

### ACPI APIC Support

This function is used to include the ACPI APIC table pointer to the RSDT pointer list.

SETTING	DESCRIPTION
Disabled	Use this setting to exclude the ACPI APIC table pointer from the RSDT pointer list.
Enabled	Use this setting to include the ACPI APIC table pointer to the RSDT pointer list.

Optimal and Fail-Safe default settings: Enabled







### AMI OEMB Table

This function is used to include the OEMB table pointer to R(X)SDT pointer list.

SETTING	DESCRIPTION
Disabled	Use this setting to exclude the OEMB table pointer from the R(X)SDT pointer list.
Enabled	Use this setting to include the OEMB table pointer to the R(X)SDT pointer list.

Optimal and Fail-Safe default settings: Enabled

### Headless Mode

This function is used to update the ACPI FACP table to indicate headless operations.

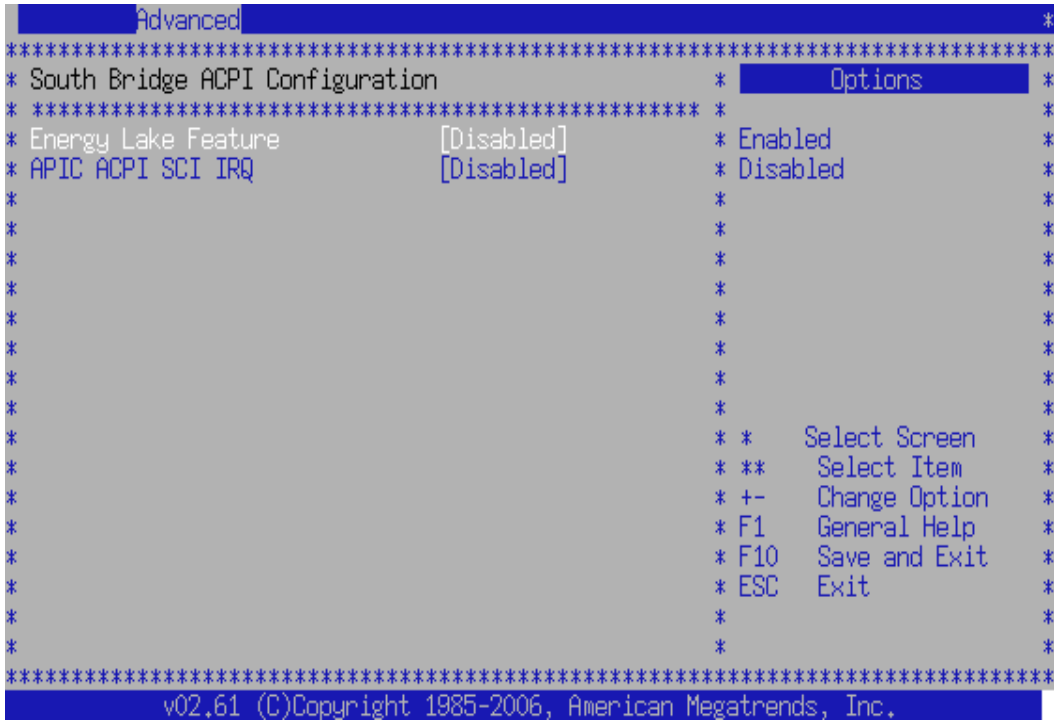
SETTING	DESCRIPTION
Disabled	Use this setting to disable updating of the ACPI FACP table to indicate headless operation.
Enabled	Use this setting to enable updating of the ACPI FACP table to indicate headless operation.

Optimal and Fail-Safe default settings: Disabled



**Chipset ACPI Configuration Screen**

This screen provides functions for specifying the chipset ACPI configuration settings.



**Energy Lake Feature**

This function is not supported on the CP307/CP307-V. It is recommended to leave this function at the default setting.

Optimal and Fail-Safe default settings: Disabled

**APIC ACPI SCI IRQ**

This function enables/disables the APIC ACPI SCI IRQ.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the APIC ACPI SCI IRQ.
Enabled	Use this setting to enable the APIC ACPI SCI IRQ.

Optimal and Fail-Safe default settings: Disabled





## APM CONFIGURATION SCREEN

This screen provides functions for specifying Advanced Power Management (APM) configuration settings.

```

Advanced
*****
* APM Configuration * Enable or disable *
* ***** * APM. *
* Power Management/APM [Enabled] *
* Video Power Down Mode [Suspend] *
* Hard Disk Power Down Mode [Suspend] *
* Suspend Time Out [Disabled] *
* Throttle Slow Clock Ratio [50%] *
* Keyboard & PS/2 Mouse [MONITOR] *
* *
* *
* Advanced Resume Event Controls *
* Resume On Ring [Disabled] *
* Resume On LAN [Disabled] * * Select Screen *
* Resume On PME# [Disabled] * ** Select Item *
* Resume On RTC Alarm [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* *
*****
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```

### Power Management/APM

This function is used to allow Power Management/APM support.

SETTING	DESCRIPTION
Disabled	Use this setting to inhibit the chipset power management and APM features.
Enabled	Use this setting to allow the chipset power management and APM features.

Optimal and Fail-Safe default settings: Enabled

### Video Power Down Mode

This function is used to select the state of the video devices if APM power save is requested by the OS.

SETTING	DESCRIPTION
Disabled	Use this setting to inhibit the state change of the video devices.
Suspend	Use this setting to allow the state change of the video devices.

Optimal default setting: Suspend

Fail-Safe default setting: Disabled



### Hard Disk Power Down Mode

This function is used to select the state of the hard disk devices if APM power save is requested by the OS.

SETTING	DESCRIPTION
Disabled	Use this setting to inhibit the state change of the hard disk devices.
Suspend	Use this setting to allow the state change of the hard disk devices.

Optimal default setting: Suspend

Fail-Safe default setting: Disabled

### Suspend Timeout (Minute)

This function specifies the length of time the system waits before it enters suspend mode.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the system from entering suspend mode.
1 Min 2 Min 4 Min 8 Min 10 Min 20 Min 30 Min 40 Min 50 Min 60 Min	Use one of these settings to specify the computer system's suspend timeout.

Optimal and Fail-Safe default settings: Disabled

### Throttle Slow Clock Ratio

This function is used to select the CPU duty cycle if the system is put into throttling mode via APM.

SETTING	DESCRIPTION
87.5 % 75.0 % 62.5 % 50.0 % 37.5 % 25.0 % 12.5 %	Use one of these setting to specify the CPU duty cycle if the system is put into throttling mode via APM

Optimal and Fail-Safe default settings: 50.0 %



## Keyboard and PS/2 Mouse

This function is used to specify whether the keyboard and the PS/2 mouse actions reset the APM standby timers.

SETTING	DESCRIPTION
MONITOR	Use this setting to monitor the keyboard and PS/2 actions.
IGNORE	Use this setting ignore the keyboard and PS/2 actions.

Optimal and Fail-Safe default settings: MONITOR

## Advanced Resume Event Controls

The following functions are currently not supported on the CP307/CP307-V.

### Resume on Ring

This function is used to enable wake from sleep state upon serial RI# event.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent wake from sleep state upon RI# event.
Enabled	Use this setting to allow wake from sleep state upon RI# event.

Optimal and Fail-Safe default settings: Disabled

### Resume on PME#

This function is used to enable Power Management Event (PME) wake from sleep states.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent PME wake from sleep states.
Enabled	Use this setting to allow PME wake from sleep states.

Optimal and Fail-Safe default settings: Disabled

### Resume on LAN

This function is used to enable Resume on RoL magic package.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent Resume on RoL magic package.
Enabled	Use this setting to allow Resume on RoL magic package.

Optimal and Fail-Safe default settings: Disabled

### Resume on RTC Alarm

This function is used to set a specific time for the system to resume.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the system from resuming on RTC alarm.
Enabled	Use this setting to specify a time for the system to resume on RTC alarm.

Optimal and Fail-Safe default settings: Disabled



## EVENT LOG CONFIGURATION SCREEN

This screen provides functions for specifying the event log configuration settings.

```

Advanced
*****
* Event Logging details                               * View all unread events *
* *****                                         * on the Event Log.    *
* View Event Log                                     *                      *
* Mark all events as read                             *                      *
* Clear Event Log                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
*                                                     *                      *
* *          Select Screen                           *                      *
* **         Select Item                             *                      *
* Enter      Go to Sub Screen                         *                      *
* F1        General Help                             *                      *
* F10       Save and Exit                            *                      *
* ESC       Exit                                     *                      *
*           *                                         *                      *
*           *                                         *                      *
*****
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```

### View Event Log

This function is used to display a pop-up window which contains all unread events (for example “01/01/02 13:12:56” or “CMOS time not set”, etc.).

### Mark all events as read

This function is used to mark all unread events as read.

### Clear Event Log

This function is used to remove all events from the event log.





## MPS CONFIGURATION SCREEN

This screen provides the function for selecting the revision of the MultiProcessor Specification (MPS).

```

Advanced
*****
* MPS Configuration                               * Select MPS
* *****                                         * Revision.
* MPS Revision [1.4]                               *
*                                                 *
*                                                 *
*                                                 *
*                                                 *
*                                                 *
*                                                 *
*                                                 *
* * Select Screen                                *
* ** Select Item                                 *
* +- Change Option                              *
* F1 General Help                               *
* F10 Save and Exit                             *
* ESC Exit                                       *
*
*****
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```

### MPS Revision

This function is used to select the revision of the MP Specification to be used for generating the MP table.

SETTING	DESCRIPTION
1.1	Use this setting to specify that the MP table complies with MPS Revision 1.1.
1.4	Use this setting to specify that the MP table complies with MPS Revision 1.4.

Optimal default setting: 1.4  
 Fail-Safe default setting: 1.1



## PCI EXPRESS CONFIGURATION SCREEN

This screen provides functions for specifying the PCI Express configuration.

```

Advanced
*****
* PCI Express Configuration                               * Enable/Disable *
* *****                                              * PCI Express L0s and *
* Active State Power-Management [Disabled]             * L1 link power   *
* * SB PCIE Ports Configuration                       * states.         *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* *                                                    *                  *
* * * Select Screen                                     *
* * ** Select Item                                     *
* * +- Change Option                                   *
* * F1 General Help                                    *
* * F10 Save and Exit                                  *
* * ESC Exit                                           *
* *                                                    *
* *                                                    *
*****
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```

### Active State Power Management

This function is used to enable the PCI Express Active State Power Management on the A0, A1, and B0 links.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the PCI Express Active State Power Management on the A0, A1 and B0 links.
Enabled	Use this setting to enable the PCI Express Active State Power Management on the A0, A1 and B0 links.

Optimal and Fail-Safe default settings: Disabled







## SB PCIe Ports Configuration Screen

This screen provides information for specifying the SouthBridge PCI Express Ports configuration settings.

```

Advanced
*****
* PCIE Ports Configuration                                * Options *
*   PCIE Port 0                                     [Enabled] *
*   PCIE Port 1                                     [Enabled] *
*   PCIE High Priority Port                         [Disabled] *
*                                                                 *
*   PCIE Port 0 IOxAPIC Enable [Disabled]           *
*   PCIE Port 1 IOxAPIC Enable [Disabled]           *
*                                                                 *
*                                                                 *
*                                                                 *
*                                                                 *
*                                                                 *
*                                                                 *
* *   Select Screen                                     *
* **  Select Item                                       *
* +-  Change Option                                     *
* F1  General Help                                       *
* F10 Save and Exit                                     *
* ESC Exit                                              *
*                                                                 *
*****
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```

### PCIe Port 0

This function is used to enable or disable the PCI Express Port 0.

SETTING	DESCRIPTION
Disabled	Use this setting to disable PCIe Port 0 and all devices behind it.
Enabled	Use this setting to enable PCIe Port 0.

Optimal and Fail-Safe default settings: Enabled

### PCIe Port 1

This function is used to enable or disable the PCI Express Port 1.

SETTING	DESCRIPTION
Disabled	Use this setting to disable PCIe Port 1 and all devices behind it.
Enabled	Use this setting to enable PCIe Port 1.

Optimal and Fail-Safe default settings: Enabled



### PCIe High Priority Port

This function is used to select a PCIe port as high priority port. Transaction on this port have higher priority than on other ports.

SETTING	DESCRIPTION
Disabled	Use this setting to specify that both PCIe ports have the same priority.
Port 0	Use this setting to select port 0 as the high priority port.
Port 1	Use this setting to select port 1 as the high priority port.

Optimal and Fail-Safe default settings: Disabled

### PCIe Port 0 IOxAPIC Enable

This function is used to control the availability of the PCIe Port 0 IOxAPIC.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the OS from detecting Port 0 IOxAPIC.
Enabled	Use this setting to make Port 0 IOxAPIC available for OS usage.

Optimal and Fail-Safe default settings: Disabled

### PCIe Port 1 IOxAPIC Enable

This function is used to control the availability of the PCIe Port 1 IOxAPIC.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the OS from detecting Port 1 IOxAPIC.
Enabled	Use this setting to make Port 1 IOxAPIC available for OS usage.

Optimal and Fail-Safe default settings: Disabled



## SMBIOS CONFIGURATION SCREEN

This screen provides the function for specifying the SMBIOS configuration.

```

Advanced
*****
* Smbios Configuration                               * SMBIOS SMI Wrapper *
*                                                    * support for PnP Func *
* Smbios Smi Support [Enabled]                     * 50h-54h *
*                                                    * *
*                                                    * *
*                                                    * *
*                                                    * *
*                                                    * *
*                                                    * *
*                                                    * *
*                                                    * *
* * Select Screen *
* ** Select Item *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* *
*****
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```

### SMBIOS SMI Support

This function is used to enable the SMBIOS SMI support.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the SMBIOS SMI Support.
Enabled	Use this setting to enable the SMBIOS SMI Support for the PNP Function 50 h – 54 h.

Optimal and Fail-Safe default settings: Enabled



## REMOTE ACCESS CONFIGURATION SCREEN

This screen provides functions for specifying remote access configuration settings.

```

Advanced
*****
* Configure Remote Access type and parameters          * Select Remote Access *
* *****                                             * type.                *
* Remote Access           [Enabled]                  *                   *
* *                       *                       *                   *
* *                       *                       *                   *
* Serial port number      [COM1]                     *                   *
*   Base Address, IRQ     [3F8h, 4]                  *                   *
* Serial Port Mode        [115200 8,n,1]            *                   *
* Flow Control            [None]                     *                   *
* Redirection After BIOS POST [Always]              *                   *
* Terminal Type           [ANSI]                     *                   *
* VT-UTF8 Combo Key Support [Enabled]                *                   *
* Sredir Memory Display Delay [No Delay]             *                   *
* *                       * * Select Screen         *                   *
* *                       * ** Select Item          *                   *
* *                       * +- Change Option        *                   *
* *                       * F1 General Help          *                   *
* *                       * F10 Save and Exit        *                   *
* *                       * ESC Exit                *                   *
* *                       * *                       *                   *
* *                       * *                       *                   *
*****
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```

### Remote Access <sup>SDO</sup>

This function is used to enable the BIOS remote access feature.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the BIOS from using Remote Access.
Enabled	Use this setting to allow the system to use the remote access feature. The remote access feature requires a dedicated serial port connection.

Optimal and Fail-Safe default settings: Disabled

### Serial Port Number <sup>SDO</sup>

This function is used to select the serial port for console redirection.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
COM1	Use this setting to select COM1 (Communication port 1) as the remote access interface.
COM2	Use this setting to select COM2 (Communication port 2) for the remote access interface.

Optimal and Fail-Safe default settings: COM1



### Serial Port Mode <sup>SDO</sup>

This function is used to select the baud rate (transmitted bits per second) of the serial port for console redirection.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
115200 8,n,1	Use this setting to select 115200 as the baud rate of the serial port.
57600 8,n,1	Use this setting to select 57600 as the baud rate of the serial port.
38400 8,n,1	Use this setting to select 38400 as the baud rate of the serial port.
19200 8,n,1	Use this setting to select 19200 as the baud rate of the serial port.
09600 8,n,1	Use this setting to select 09600 as the baud rate of the serial port.

Optimal and Fail-Safe default settings: 115200 8,n,1

### Flow Control <sup>SDO</sup>

This function is used to select the flow control for console redirection.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
None	Use this setting to deactivate flow control.
Hardware	Use this setting to select the flow control by hardware.
Software	Use this setting to select the flow control by software.

Optimal and Fail-Safe default settings: None

### Redirection After BIOS POST <sup>SDO</sup>

This function is used to select redirection after BIOS POST.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
Disabled	Use this setting to turn off the redirection after POST.
BootLoader	Use this setting to activate the redirection during POST and during BootLoader.
Always	Use this setting to specify that the redirection is always active.

Optimal and Fail-Safe default settings: Always



### Terminal Type <sup>SDO</sup>

This function is used to select the target terminal type.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
ANSI	Use this setting to specify that the target terminal type is ANSI.
VT100	Use this setting to specify that the target terminal type is VT100.
VT-UTF8	Use this setting to specify that the target terminal type is VT-UTF8.

Optimal and Fail-Safe default settings: ANSI

### VT-UTF8 Combo Key Support

This function is used to enable or disable the VT-UTF8 combo key support.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the VT-UTF8 combination key support for the ANSI/VT100 terminals.
Enabled	Use this setting to enable the VT-UTF8 combination key support for the ANSI/VT100 terminals.

Optimal and Fail-Safe default settings: Enabled

### Sredir Memory Display Delay

This function is used to select the time during which the serial redirection memory usage information is displayed on the serial console at start of POST.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
No Delay	Use this setting to specify that the memory display does not pause during redirection.
Delay 1 sec	Use this setting to set the delay to display memory information to one second.
Delay 2 sec	Use this setting to set the delay to display memory information to two seconds.
Delay 4 sec	Use this setting to set the delay to display memory information to four seconds.

Optimal and Fail-Safe default settings: No Delay

### EMS Support (SPCR)

This function is used to enable the EMS (Emergency Management Services) support via the ACPI SPCR (Serial Port Console Redirection) table if console redirection is enabled.

**Note:** This function is only available when the Remote Access function is set to Enabled.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the system from filling the SPCR table. No EMS will be available.
Enabled	Use this setting to fill the SPCR table if console redirection is enabled. EMS will be available.

Optimal and Fail-Safe default settings: Disabled



## USB CONFIGURATION SCREEN

This screen provides information about support for USB devices as well as functions for specifying the USB configuration settings.

```

Advanced
*****
* USB Configuration                               * Enables support for *
* *****                                       * legacy USB. AUTO  *
* Module Version - 2,24,3-13,4                 * option disables   *
*                                               * legacy support if *
* USB Devices Enabled :                        * no USB devices are *
*   1 Keyboard, 1 Mouse, 1 Hub, 1 Drive        * connected.        *
*                                               *                   *
* Legacy USB Support                           [Enabled]          *
* Port 64/60 Emulation                         [Disabled]        *
* USB 2.0 Controller Mode                     [HiSpeed]         *
* BIOS EHCI Hand-Off                         [Enabled]         *
* Hotplug USB FDD Support                    [Auto]           *
*                                               * *   Select Screen *
* * USB Mass Storage Device Configuration      * **  Select Item   *
*                                               * +-  Change Option *
*                                               * F1  General Help  *
*                                               * F10 Save and Exit *
*                                               * ESC  Exit          *
*                                               *                   *
*****
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```

### USB Devices Enabled

This is a display only function which indicates any USB devices connected to the CP307/CP307-V. If a USB device is connected, it is indicated with its own function below.

### Legacy USB Support

This function is used to allow the system to enable legacy USB support.

SETTING	DESCRIPTION
Disabled	Use this setting to disable legacy USB support.
Enabled	Use this setting to enable legacy USB support.
Auto	Use this setting to disable legacy USB support if no USB devices are connected.

Optimal and Fail-Safe default settings: Enabled

**Port 64/60 Emulation** <sup>SDO</sup>

This function is used to allow the system to enable the I/O Port 64/60 emulation support.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the I/O Port 64/60 emulation support.
Enabled	Use this setting to enable the I/O Port 64/60 emulation support.

Optimal and Fail-Safe default settings: Disabled

**USB 2.0 Controller Mode** <sup>SDO</sup>

This function is used to allow the system to configure the USB 2.0 controller.

SETTING	DESCRIPTION
Full Speed	Use this setting to configure the USB 2.0 controller in Full Speed (12 Mbit/s).
HiSpeed	Use this setting to configure the USB 2.0 controller in HiSpeed (480 Mbit/s).

Optimal and Fail-Safe default settings: HiSpeed

**BIOS EHCI Hand-Off** <sup>SDO</sup>

This function is used to enable a workaround for operating systems without EHCI hand-off support. The EHCI ownership change should be claimed by the ECHI driver.

SETTING	DESCRIPTION
Disabled	Use this setting to disable EHCI hand-off support.
Enabled	Use this setting to enable EHCI hand-off support.

Optimal and Fail-Safe default settings: Enabled

**Hotplug USB FDD Support**

This function is used to allow the system to create a dummy FDD device which will later be assigned to a hotplugged USB FDD device.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the system from creating a dummy FDD device.
Enabled	Use this setting to allow the system to create a dummy FDD device.
Auto	Use this setting to allow the system to create a dummy FDD device if no USB FDD device is present.

Optimal and Fail-Safe default settings: Auto





### USB Mass Storage Device Configuration Screen

This screen provides basic information concerning the USB mass storage device configuration and functions for specifying configuration settings.

**Note:** This function is only available when a USB Mass Storage Device is detected.

```

Advanced
*****
* USB Mass Storage Device Configuration                * Number of seconds                *
* *****                                           * POST waits for the                *
* USB Mass Storage Reset Delay   [20 Sec]           * USB mass storage                  *
*                                                                 * device after start                *
* Device #1          USB DISK 26X                   * unit command.                     *
* Emulation Type     [Auto]                          *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 *                                   *
*                                                                 * *   Select Screen                 *
*                                                                 * **  Select Item                   *
*                                                                 * +-  Change Option                 *
*                                                                 * F1  General Help                  *
*                                                                 * F10 Save and Exit                 *
*                                                                 * ESC Exit                           *
*                                                                 *                                   *
*                                                                 *                                   *
*****
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```

### USB Mass Storage Reset Delay

SETTING	DESCRIPTION
10 Sec 20 Sec 30 Sec 40 Sec	Use one of these settings to specify how long the POST will wait for the USB mass storage device after the start unit command.

Optimal and Fail-Safe default settings: 20 Sec

### Emulation Type

SETTING	DESCRIPTION
Auto Floppy Forced FDD Hard Disk CD-ROM	Use one of these settings to specify the type of device to emulate.

Optimal and Fail-Safe settings: Auto



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*Chapter* **4**

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# PCI/PnP Setup

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## 4. PCI/PnP Setup

Select the PCI/PnP tab to enter the PCI/PnP Setup screen. This screen provides functions for specifying various advanced PCI/PnP configuration settings.

```

Main   Advanced  PCI/PnP  Boot   Security  Chipset  OEM FEATURE
*****
* Advanced PCI/PnP Settings                               ** Clear NVRAM during *
* ***** System Boot.                                  *
* WARNING: Setting wrong values in below sections      **                *
*      may cause system to malfunction.                 **                *
*                                                        **                *
* Clear NVRAM                                           [No]                **                *
* Plug & Play O/S                                       [No]                **                *
* PCI Latency Timer                                     [64]                **                *
* Allocate IRQ to PCI VGA                              [Yes]               **                *
* Palette Snooping                                     [Disabled]          **                *
* PCI IDE BusMaster                                    [Enabled]           **                *
* OffBoard PCI/ISA IDE Card                            [Auto]              **                *
*                                                        ** *                *
* IRQ3                                                  [Available]         ** ** Select Screen *
* IRQ4                                                  [Available]         ** ** Select Item  *
* IRQ5                                                  [Available]         ** +- Change Option *
* IRQ7                                                  [Available]         ** F1 General Help *
* IRQ9                                                  [Available]         ** F10 Save and Exit *
* IRQ10                                                 [Available]         ** ESC Exit        *
* IRQ11                                                 [Available]         **                *
*****
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```

### Clear NVRAM

This function is used to force the BIOS to clear the Non-Volatile Random Access Memory (NVRAM).

SETTING	DESCRIPTION
No	Use this setting to prevent the BIOS from clearing the NVRAM.
Yes	Use this setting to allow the system to reset the NVRAM before the system is booted up. After booting, the system sets this function back to No automatically.

Optimal and Fail-Safe default settings: No



## Plug and Play O/S

This function is used to modify the settings for Plug and Play operating system support.

SETTING	DESCRIPTION
No	Use this setting to allow the BIOS to configure all the devices in the system if the operating systems do not meet the Plug and Play specifications.
Yes	Use this setting to allow the operating system to change the interrupt, I/O, and DMA settings if the system is running Plug and Play aware operating systems.

Optimal and Fail-Safe default settings: No

## PCI Latency Timer

This function is used to specify the PCI Latency Timer. It sets the latency of all PCI devices on the PCI bus.

SETTING	DESCRIPTION
32	Use this setting to set the number of PCI clocks for the latency timer.
64	
96	
128	
160	
192	
224	
248	

Optimal and Fail-Safe default settings: 64

## Allocate IRQ to PCI VGA

This function is used to allow or restrict the system from giving the VGA adapter card an interrupt address.

SETTING	DESCRIPTION
Yes	Use this setting to allow the allocation of an IRQ to a VGA adapter card that uses the PCI local bus.
No	Use this setting to prevent the allocation of an IRQ to a VGA adapter card that uses the PCI local bus.

Optimal and Fail-Safe default settings: Yes



## Palette Snooping

This function is used to allow the system to modify the Palette Snooping settings.

**Note:** Leave this function at Disabled unless the VGA card manufacturer requires Palette Snooping to be Enabled.

SETTING	DESCRIPTION
Disabled	Use this setting to inhibit palette snooping. Do not change this setting unless palette snooping is required by the graphics device.
Enabled	Use this setting to inform the PCI devices that an ISA based Graphics device is installed in the system. It does this so that the ISA based graphics card will function correctly. This does not necessarily indicate a physical ISA adapter card. The graphics chipset can be mounted on a PCI card. Always verify that palette snooping is required by the graphics device before using this setting.

Optimal and Fail-Safe default settings: Disabled

## PCI IDE BusMaster

This function is used to allow or prevent the use of PCI IDE busmastering.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent PCI busmastering.
Enabled	Use this setting to specify that the IDE controller on the PCI local bus has mastering capabilities.

Optimal and Fail-Safe default settings: Enabled



### OffBoard PCI/ISA IDE Card

This function is used to allow the OffBoard PCI/ISA IDE Card to be selected.

**Note:** It is recommended to leave this function at the default setting.

SETTING	DESCRIPTION
Auto	Use this setting to auto select the location of an OffBoard PCI IDE adapter card.
PCI Slot1	Use this setting to select PCI Slot 1 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 1.
PCI Slot2	Use this setting to select PCI Slot 2 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 2.
PCI Slot3	Use this setting to select PCI Slot 3 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 3. This setting is available even if the motherboard does not have a PCI Slot 3. If the motherboard does not have a PCI Slot 3, do not use this setting.
PCI Slot4	This setting will select PCI Slot 4 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 4. This setting is available even if the motherboard does not have a PCI Slot 4. If the motherboard does not have a PCI Slot 4, do not use this setting.
PCI Slot5	This setting will select PCI Slot 5 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 5. This setting is available even if the motherboard does not have a PCI Slot 5. If the motherboard does not have a PCI Slot 5, do not use this setting.
PCI Slot6	This setting will select PCI Slot 6 as the location of the OffBoard PCI IDE adapter card. This setting should only be used if there is an IDE adapter card installed in PCI Slot 6. This setting is available even if the motherboard does not have a PCI Slot 6. If the motherboard does not have a PCI Slot 6, do not use this setting.

Optimal and Fail-Safe default settings: Auto

### IRQs

This function is used to allow the IRQ settings to be modified. Each of these IRQs may be individually specified. To access IRQs that are not displayed, scroll the PCI/PnP Setup screen.

INTERRUPT	SETTING	DESCRIPTION
IRQ3 IRQ4 IRQ5 IRQ7 IRQ9	Reserved	Use this setting to allow the specified IRQ to be used by a legacy ISA device.
IRQ10 IRQ11 IRQ14 IRQ15	Available	Use this setting to allow the specified IRQ to be used by a PCI/PnP device.

Optimal and Fail-Safe default settings: Available





## DMA

This function is used to allow the DMA setting to be modified.

DMA CHANNEL	SETTING	DESCRIPTION
DMA Channel 0 DMA Channel 1 DMA Channel 3	Reserved	Use this setting to allow the specified DMA to be used by a legacy ISA device.
DMA Channel 5 DMA Channel 6 DMA Channel 7	Available	Use this setting to allow the specified DMA to be used by PCI/PnP device.

Optimal and Fail-Safe default settings: Available

## Reserved Memory Size

This function is used to allow the system to reserve memory that is used by ISA devices. Gaining access to this function normally requires scrolling of the PCI/PnP Setup screen.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent BIOS from reserving memory to ISA devices.
16K	Use this setting to allow the system to reserve 16K of the system memory to the ISA devices.
32K	Use this setting to allow the system to reserve 32K of the system memory to the ISA devices.
64K	Use this setting to allow the system to reserve 64K of the system memory to the ISA devices.

Optimal and Fail-Safe default settings: Disabled



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*Chapter*

**5**

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# Boot Setup

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## 5. Boot Setup

Select the Boot tab to enter the Boot Setup screen. This screen lists the sub-screens for boot configuration and boot device priority.

```

Main   Advanced  PCIPnP  Boot   Security  Chipset  OEM FEATURE
*****
* Boot Settings                                     * Configure Settings *
* *****                                         * during System Boot.*
* * Boot Settings Configuration                    *                 *
* *                                               *                 *
* * Boot Device Priority                          *                 *
* * Hard Disk Drives                             *                 *
* * Removable Drives                             *                 *
* * CD/DVD Drives                                *                 *
* * USB Drives                                    *                 *
* * Network Drives                               *                 *
* * Other Drives                                 *                 *
* *                                               *                 *
* *                                               * *   Select Screen *
* *                                               *                 *
* *                                               * Enter Go to Sub Screen *
* *                                               * F1   General Help   *
* *                                               * F10  Save and Exit  *
* *                                               * ESC  Exit           *
* *                                               *                 *
* *                                               *                 *
*****
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```



## BOOT SETTINGS CONFIGURATION SCREEN

This screen provides functions for specifying various boot settings. Use the up and down <Arrow> keys to select a function. Use the <Plus> and <Minus> keys to change the value of the selected functions.

```

Boot
*****
* Boot Settings Configuration          * Allows BIOS to skip *
* *****                            * certain tests while *
* Quick Boot [Enabled]                * booting. This will *
* Quiet Boot [Disabled]               * decrease the time *
* AddOn ROM Display Mode [Force BIOS] * needed to boot the *
* Bootup Num-Lock [On]                * system.            *
* PS/2 Mouse Support [Auto]          *                    *
* Wait For 'F1' If Error [Disabled]   *                    *
* Hit 'DEL' Message Display [Enabled] *                    *
* Interrupt 19 Capture [Disabled]     *                    *
* Retry Boot Sequence [Enabled]       *                    *
*                                     *                    *
*                                     * *   Select Screen *
*                                     *                    *
*                                     * +-   Change Option *
*                                     * F1   General Help  *
*                                     * F10  Save and Exit *
*                                     * ESC  Exit          *
*                                     *                    *
*                                     *                    *
*****
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```

### Quick Boot <sup>SDO</sup>

This function is used to skip certain POST tests to speed-up the boot process.

SETTING	DESCRIPTION
Disabled	Use this setting to allow the BIOS to perform all POST tests.
Enabled	Use this setting to allow the BIOS to skip certain POST tests to boot faster.

Optimal and Fail-Safe default settings: Enabled

### Quiet Boot <sup>SDO</sup>

This function is used to allow the boot-up screen options to be modified between POST messages or OEM logo.

SETTING	DESCRIPTION
Disabled	Use this setting to allow the system to display the POST messages during boot-up.
Enabled	Use this setting to allow the system to display the OEM logo during boot-up.

Optimal and Fail-Safe default settings: Disabled



### Add-On ROM Display Mode

This function is used to display add-on ROM (read-only memory) messages such as SCSI BIOS or VGA BIOS in addition to CP307/CP307-V-specific information.

SETTING	DESCRIPTION
Force BIOS	Use this setting to allow the system to display third party BIOS messages during boot-up as well.
Keep Current	Use this setting to allow the system to display only CP307/CP307-V information during system boot.

Optimal and Fail-Safe default settings: Force BIOS

### Boot-Up Num-Lock

This function is used to allow the Number Lock setting to be modified during boot-up.

SETTING	DESCRIPTION
Off	Use this setting to prevent the system from automatically enabling the keyboard Number Lock during boot-up.  To use the 10-key numeric keypad on the keyboard, press the Number Lock key located on the upper left-hand corner of the numeric keypad. The Number Lock LED on the keyboard will light up when the Number Lock is active.
On	Use this setting to allow the Number Lock on the keyboard to be enabled automatically during boot-up. This allows the immediate use of 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard will be lit.

Optimal and Fail-Safe default settings: On

### PS/2 Mouse Support

This function is used to allow the PS/2 mouse support to be adjusted.

**Note:** When a serial mouse is installed, use the setting Disabled.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the PS/2 mouse port from using system resources and becoming active.
Enabled	Use this setting to allow the system to use a PS/2 mouse.
Auto	Use this setting to allow the system to automatically use a PS/2 mouse if a PS/2 mouse is connected.

Optimal and Fail-Safe default settings: Auto



**Wait for ‘F1’ If Error** <sup>SDO</sup>

This function is used to allow the Wait for ‘F1’ Error setting to be modified.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the CP307/CP307-V from waiting on an error for user intervention. If this setting is used, the system will continue to boot up the operating system. If ‘F1’ is enabled, the system will wait until the BIOS setup is entered.  This setting should be used if there is a known reason for a BIOS error to occur. An example would be a system administrator must remote boot the system. The computer system does not have a keyboard currently attached.
Enabled	Use this setting to allow the BIOS to wait for any error. If an error is detected, pressing <F1> will enter Setup and the BIOS setting can be adjusted to fix the problem. This normally happens when upgrading the hardware and not setting the BIOS to recognize it.

Optimal and Fail-Safe default settings: Disabled

**Hit ‘DEL’ Message Display**

This function is used to allow the Hit ‘DEL’ to enter Setup Message Display to be modified.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the display of the message Hit Del to enter Setup during memory initialization.  If Quiet Boot is enabled, the Hit ‘DEL’ message will not be displayed.
Enabled	Use this setting to allow the display of the message Hit Del to enter Setup during memory initialization.

Optimal and Fail-Safe default settings: Enabled

**Interrupt 19 Capture**

This function is used to allow option ROMs such as network controllers to trap BIOS interrupt 19.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent option ROMs from trapping interrupt 19.
Enabled	Use this setting to allow option ROMs to trap interrupt 19.

Optimal and Fail-Safe default settings: Disabled

**Retry Boot Sequence** <sup>SDO</sup>

This function is used to specify how the system is to respond to a boot error.

SETTING	DESCRIPTION
Disabled	Use this setting to finish booting and show error message in case of boot failure.
Enabled	Use this setting to specify that booting should be attempted again until a boot device is found. To interrupt retrying, the system must be reset.  Use this setting when booting from a network drive.

Optimal and Fail-Safe default settings: Enabled





## BOOT DEVICE PRIORITY SCREEN

This screen provides functions for specifying the category of boot devices as well as the boot category sequence.

```

Boot
*****
* Boot Device Priority                               * Specifies the boot *
* *****                                         * sequence from the *
* 1st Boot Device [Removable Dev.]                * available devices. *
* 2nd Boot Device [CD/DVD]                         *                   *
* 3rd Boot Device [USB]                            * A device enclosed in *
* 4th Boot Device [Hard Drive]                     * parenthesis has been *
* 5th Boot Device [Network]                        * disabled in the      *
* 6th Boot Device [Disabled]                       * corresponding type   *
*                                                   * menu.                *
*                                                   *                   *
*                                                   *                   *
* * Select Screen                                 *                   *
* * + - Change Option                            *                   *
* * F1 General Help                             *                   *
* * F10 Save and Exit                           *                   *
* * ESC Exit                                     *                   *
* *                                             *                   *
*****
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```

### 1<sup>st</sup> - 6<sup>th</sup> Boot Device <sup>SDO</sup>

These functions are used to specify the boot device category sequence.

SETTING	DESCRIPTION
Removable Device CD/DVD USB Hard Drive Network Other/Disabled	Use one of these settings to specify the boot device category for the selected function.

Optimal and Fail-Safe default settings:

- 1<sup>st</sup> Boot Device: Removable Device
- 2<sup>nd</sup> Boot Device: CD/DVD
- 3<sup>rd</sup> Boot Device: USB
- 4<sup>th</sup> Boot Device: Hard Drive
- 5<sup>th</sup> Boot Device: Network
- 6<sup>th</sup> Boot Device: Other/Disabled

To establish the boot category sequence, select for each boot device (1<sup>st</sup>, 2<sup>nd</sup>, etc.) a boot category.

When a boot category is selected, a list of devices in that category appears. For example, if the system has three hard disk drives connected, then the list will show all three hard disk drives. The order in which the drives appear is also the boot order within the category.

The selection of the physical device boot order within a category is done via the Drives sub-screen accessible from the Boot Setup screen.

## HARD DISK DRIVES SCREEN

This screen will provide a list of hard disk drives if drives are installed in the system. If more than one drive is installed, this screen also indicates the boot sequence of the drives. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* Hard Disk Drives                               * Specifies the boot   *
* *****                                       * sequence from the   *
* 1st Drive [SATA:PM-ST3160812A]                * available devices.  *
* 2nd Drive [HDD:SM-TOSHIBA THN]                *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
*                                               *                    *
* *      Select Screen                          *                    *
* +-     Change Option                          *                    *
* F1     General Help                          *                    *
* F10    Save and Exit                         *                    *
* ESC    Exit                                  *                    *
*                                               *                    *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected drive if a drive is installed. If more than one drive is installed, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective hard disk drives are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.



## REMOVABLE DRIVES SCREEN

This screen will provide a list of removable drives if drives are installed in the system. If more than one drive is installed, this screen also indicates the boot sequence of the drives. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* Removable Drives                               * Specifies the boot *
* *****                                       * sequence from the *
* 1st Drive [Not Installed]                     * available devices. *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* *                                             *                   *
* * * Select Screen                             *                   *
* * *                                           *                   *
* * +- Change Option                           *                   *
* * F1 General Help                             *                   *
* * F10 Save and Exit                           *                   *
* * ESC Exit                                    *                   *
* *                                             *                   *
* *                                             *                   *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected drive if a drive is installed. If more than one drive is installed, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective removable disk drives are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.

## CD/DVD DRIVES SCREEN

This screen will provide a list of CD/DVD drives if drives are installed in the system. If more than one drive is installed, this screen also indicates the boot sequence of the drives. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* CD/DVD Drives                               * Specifies the boot *
* *****                                   * sequence from the *
* 1st Drive [Not Installed]                   * available devices. *
*                                             *
*                                             *
*                                             *
*                                             *
*                                             *
*                                             *
*                                             *
*                                             *
* *      Select Screen                       *
*                                             *
* +-     Change Option                       *
* F1     General Help                       *
* F10    Save and Exit                      *
* ESC    Exit                               *
*                                             *
*                                             *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected drive if a drive is installed. If more than one drive is installed, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective CD/DVD drives are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.



## USB DRIVES SCREEN

This screen will provide a list of USB drives if drives are installed in the system. If more than one drive is installed, this screen also indicates the boot sequence of the drives. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* USB Drives                               * Specifies the boot *
* *****                               * sequence from the *
* 1st Drive [USB: USB DISK 25X]           * available devices, *
* 2nd Drive [USB:USB Hotplug FD]         *                   *
*                                         *                   *
*                                         *                   *
*                                         *                   *
*                                         *                   *
*                                         *                   *
*                                         *                   *
*                                         *                   *
*                                         * *   Select Screen *
*                                         *                   *
*                                         * +-   Change Option *
*                                         * F1   General Help  *
*                                         * F10  Save and Exit *
*                                         * ESC  Exit          *
*                                         *                   *
*                                         *                   *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected drive if a drive is installed. If more than one drive is installed, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective USB drives are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.

## NETWORK DRIVES SCREEN

This screen will provide a list of network devices detected by BIOS which may provide the possibility of booting from a network drive via PXE. If more than one device is available, this screen also shows the boot sequence of the devices. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* Network Drives                               * Specifies the boot   *
* *****                                     * sequence from the   *
* 1st Drive [Not Installed]                   * available devices.  *
*                                             *                    *
*                                             *                    *
*                                             *                    *
*                                             *                    *
*                                             *                    *
*                                             *                    *
*                                             *                    *
*                                             *                    *
* *      Select Screen                        *                    *
* + -    Change Option                       *                    *
* F1     General Help                       *                    *
* F10    Save and Exit                      *                    *
* ESC    Exit                               *                    *
*                                             *                    *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected device if available. If more than one device is available, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective network devices are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.



## OTHER DRIVES SCREEN

This screen will provide a list of other drives if drives are installed in the system. If more than one drive is installed, this screen also indicates the boot sequence of the drives. Furthermore, this screen provides functions for specifying the BIOS boot order of the drives when more than one drive is installed.

```

Boot
*****
* Other Drives                               * Specifies the boot *
* *****                                  * sequence from the *
* 1st Drive [Not Installed]                 * available devices.*
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
*                                           *
* * Select Screen                          *
*                                           *
* +- Change Option                         *
* F1 General Help                         *
* F10 Save and Exit                       *
* ESC Exit                                *
*                                           *
*                                           *
*****
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```

### 1<sup>st</sup> Drive, 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc.

The function 1<sup>st</sup> Drive is used to provide generic information about the currently selected drive if a drive is installed. If more than one drive is installed, a list of the installed drives is provided, which allows the selection of one of the listed drives as the 1<sup>st</sup> Drive.

The functions 2<sup>nd</sup> Drive, 3<sup>rd</sup> Drive, etc. are only available when the respective drives are installed.

SETTING	DESCRIPTION
Not installed	When displayed, indicates that there are no drives installed.
<generic_drive_info>	When displayed, indicates generic drive information of the 1st Drive.
<generic_drive_info_1> ⋮ <generic_drive_info_n>	When displayed, indicates the drives installed and their current boot order. Use this setting to select a new 1st Drive.



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*Chapter*

**6**

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# Security Setup

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## 6. Security Setup

Select the Security tab to enter the Security Setup screen. This screen provides information about the passwords and functions for specifying the security settings. To access a submenu, select the respective function and press <Enter>.

```

Main   Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  *
*****
* Security Settings                                     * Install or Change the *
* *****                                             * password.             *
* Supervisor Password :Not Installed                   *                   *
* User Password       :Not Installed                   *                   *
*                   *                   *                   *
* Change Supervisor Password                           *                   *
* Change User Password                                 *                   *
*                   *                   *                   *
* Boot Sector Virus Protection [Disabled]              *                   *
*                   *                   *                   *
* Hard Disk Security                                   *                   *
* *****                                             *                   *
* Primary Master HDD User Password                    * *   Select Screen    *
*                   *                   *                   *
*                   * Enter Change          *                   *
*                   * F1   General Help     *                   *
*                   * F10  Save and Exit    *                   *
*                   * ESC  Exit              *                   *
*                   *                   *                   *
*                   *                   *                   *
*****
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```

### Supervisor Password <sup>SDO</sup>

This is a display only function indicating whether a Supervisor password has been assigned or not.

### User Password <sup>SDO</sup>

This is a display only function indicating whether a User password has been assigned or not.



## Change Supervisor Password

This function is used to specify the Supervisor password. To set or change this password perform the following:

1. Select Change Supervisor Password and press <Enter>  
A popup display appears requesting entry the new password.  
There is a six character limit for the password.
2. Type the password and press <Enter> to set or change the password.  
A popup display appears again requesting password confirmation.
3. Type the password again and press <Enter>  
A popup display appears confirming the installation of the password.  
The following two new functions appear on the screen:
  - User Access Level
  - Password CheckThese functions are used to specify the type of accessibility the user has within the BIOS Setup program as well as the password requirements for system booting and starting the BIOS Setup program.
4. Record the Supervisor password for future reference.

## Change User Password

This function is used to specify the User password. To set or change this password perform the following:

1. Select Change User Password and press <Enter>  
A popup display appears requesting entry the new password.  
There is a six character limit for the password.
2. Type the password and press <Enter>  
A popup display appears again requesting password confirmation.
3. Type the password again and press <Enter>  
A popup display appears confirming the installation of the password.  
The following new function appears on the screen:
  - Password CheckThis function is used to specify the password usage requirements for the user when booting the system or attempting to start the BIOS Setup program.
4. Record the Supervisor password for future reference.



## Clearing a Supervisor/User Password

Use the following procedure to clear a Supervisor/User password.

1. Select Change Supervisor/User Password and press <Enter>  
A popup display appears requesting entry the new password.
2. Press <Enter> again without making any entries  
A popup display appears again requesting password confirmation.
3. Press <Enter> again without making any entries  
A popup display appears confirming the deinstallation of the password.  
The password has now been cleared.

## User Access Level

This function is used to specify the type of usage restrictions) that a system supervisor may impose upon a user for the BIOS Setup program.

SETTING	DESCRIPTION
No Access	Use this setting to prevent a user from having access to the BIOS Setup program.
View Only	Use this setting to allow a user to only view the BIOS settings.
Limited	Use this setting to allow a user limited access to the BIOS Setup program. This setting allows only certain setting changes such as date and time.
Full Access	Use this setting to allow the user to have full access to the BIOS Setup program except for changing the Supervisor password.

Optimal and Fail-Safe default settings: Full Access

## Password Check <sup>SDO</sup>

This function is used to specify the password usage requirements for the user when booting the system or attempting to start the BIOS Setup program.

SETTING	DESCRIPTION
Setup	Use this setting to require the user or the system supervisor to enter the appropriate password when accessing the BIOS Setup program.
Always	Use this setting to require the user or the system supervisor to enter the appropriate password when accessing the BIOS Setup program or booting the system.

Optimal and Fail-Safe default settings: Setup



## Boot Sector Virus Protection

This function is used to enable or disable the boot sector virus protection.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent Boot Sector Virus Protection.
Enabled	<p>Use this setting to enable boot sector protection.</p> <p>CP307/CP307-V displays a warning when any program (or virus) issues a disk format command or attempts to write to the boot sector of the hard disk drive.</p> <p>If enabled, the following appears when a write is attempted to the boot sector. It may be necessary to type N several times to prevent the boot sector write.</p> <p>Boot Sector Write! Possible VIRUS: Continue (Y/N)? _</p> <p>The following appears after any attempt to format any cylinder, head, or sector of any hard disk drive via the BIOS INT 13 Hard disk drive Service:</p> <p>Format!!! Possible VIRUS: Continue (Y/N)? _</p>

Optimal and Fail-Safe default settings: Disabled

## Primary Master HDD User Password

This function is only available if a hard disk is detected.

**Warning!** Before using this function, contact Kontron's Technical Support for assistance. Failure to comply with the instruction above may result in an irreparable hard disk lockout.

## CP307/CP307-V Password Support

### Two Levels of Password Protection

CP307/CP307-V provides both a Supervisor and a User password. If both passwords are used, the Supervisor password must be set first.

The system can be configured so that all users must enter a password every time the system boots or when starting the BIOS Setup program, using either the Supervisor password or User password.

The Supervisor and User passwords activate two different levels of password security.

### Remember the Password

It is highly recommended to keep a record of all passwords in a safe place. Forgotten passwords may lead to being completely locked out of the system. Booting may not be possible, and in worst case the BIOS setup program will also not be accessible.

If the system cannot be booted because neither the User password nor the Supervisor password are known, refer to the respective chapter about clearing the BIOS CMOS setup in the CP307 User Guide or the CP307-V User Guide respectively, or contact Kontron's Technical Support for further assistance.



*Chapter*



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# Chipset Setup

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## 7. Chipset Setup

Select the Chipset tab to enter the Chipset Setup screen. This screen lists the chipset configuration sub-screens. To display a sub-screen, select it using the <Arrow> keys and press <Enter>.

```

Main   Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  *
*****
* Advanced Chipset Settings                                * Configure North Bridge *
* *****                                                * features.              *
* WARNING: Setting wrong values in below sections        *                          *
*     may cause system to malfunction.                    *                          *
* * North Bridge Configuration                            *                          *
* * South Bridge Configuration                            *                          *
* *                                                        *                          *
* *                                                        *                          *
* *                                                        *                          *
* *                                                        *                          *
* *                                                        *                          *
* * Select Screen                                         *                          *
* *                                                        *                          *
* * Enter Go to Sub Screen *                              *                          *
* * F1   General Help   *                                *                          *
* * F10  Save and Exit  *                                *                          *
* * ESC  Exit            *                                *                          *
* *                                                        *                          *
* *                                                        *                          *
*****
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```



## NORTHBRIDGE CONFIGURATION SCREEN

This screen provides functions for specifying the NorthBridge configuration settings.

**Note:** The NorthBridge Configuration setup screen varies depending on the supported NorthBridge chipset.

```

Chipset
*****
* North Bridge Chipset Configuration * Options *
* ***** *
* DRAM Frequency [Auto] * Auto *
* Memory Hole [Disabled] * 400 MHz *
* * 533 MHz *
* Boots Graphic Adapter Priority [PCI/IGD] * 667 MHz *
* Internal Graphics Mode Select [Enabled, 8MB] * *
* * *
* * *
* * *
* * Video Function Configuration * *
* * *
* * * Select Screen *
* * *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* *
* *
*****
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```

### DRAM Frequency

This function is used to set the DRAM frequency.

**Note:** It is not possible to raise the DRAM frequency above the maximum value allowed by the SPD data, even if higher frequency settings are available.

SETTING	DESCRIPTION
Auto	Use this setting to allow the BIOS to determine the highest possible DRAM frequency using the SPD data.
400 MHz	Use this setting to limit the DRAM frequency to 400 MHz.
533 MHz	Use this setting to limit the DRAM frequency to 533 MHz.
667 MHz	Use this setting to limit the DRAM frequency to 667 MHz.

Optimal and Fail-Safe default settings: Auto





## Memory Hole

This function is used to allocate the memory hole between the 15<sup>th</sup> and 16<sup>th</sup> megabyte.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the system from allocating a memory hole.
15 MB - 16 MB	Use this setting to allocate a memory hole between the 15 <sup>th</sup> and 16 <sup>th</sup> megabyte. This setting is normally only required for the OS/2 operating system.

Optimal and Fail-Safe default settings: Disabled

## Boots Graphic Adapter Priority <sup>SDO</sup>

This function is used to select the VGA adapter to be used to display the POST messages.

SETTING	DESCRIPTION
PCI/IGD	Use this setting to specify that if a PCI VGA adapter is available, it is used to display the POST messages. If no PCI/ VGA adapter is available, the internal graphics device is used to display the POST codes.
IGD	Use this setting to specify that the internal graphics device is always used to display the POST messages.

Optimal and Fail-Safe default settings: PCI/IGD

## Internal Graphics Mode Select

This function is used to select the amount of the main memory to share with the graphics controller.

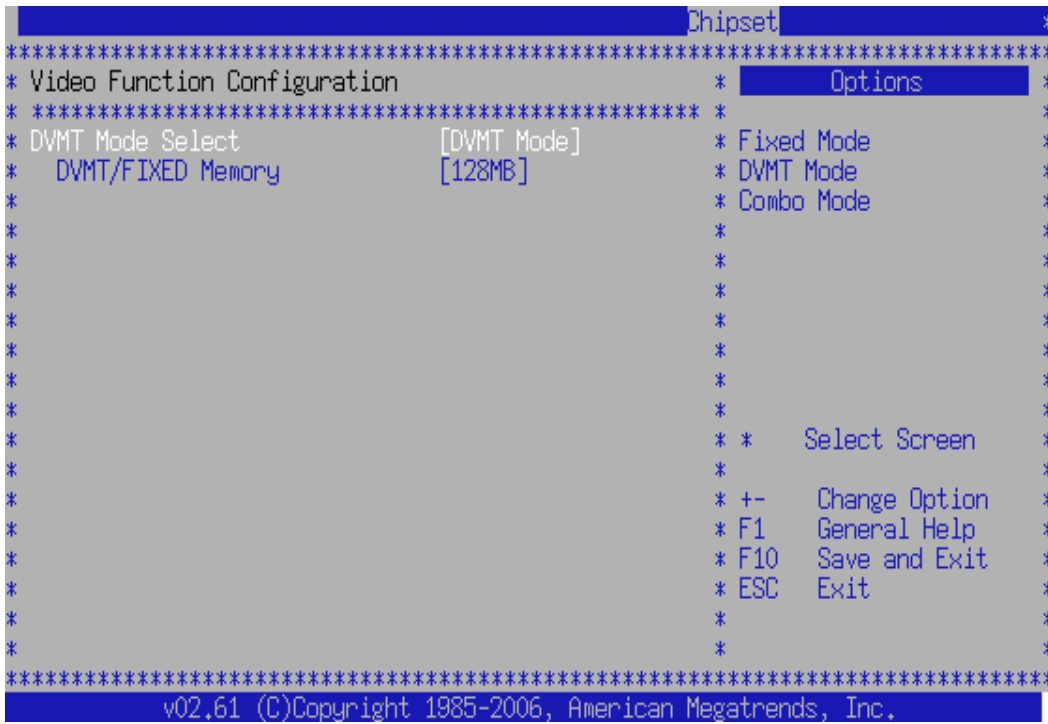
SETTING	DESCRIPTION
Enabled, 1 MB	Use this setting to specify that 1 MB of main memory is used for the graphics controller.
Enabled, 8 MB	Use this setting to specify that 8 MB of main memory is used for the graphics controller.
Disabled	Use this setting to disable the Internal Graphics Controller.

Optimal and Fail-Safe default settings: Enabled, 8 MB



### Video Function Configuration Screen

This screen provides functions for specifying the video function configuration settings.



### DVMT Mode Select

This function is used to select the DMVT operating mode. The Dynamic Video Memory Technology (DMVT) allows the system to dynamically allocate memory resources according to the demands of the system.

SETTING	DESCRIPTION
DVMT Mode	Use this setting to allocate the graphics memory on demand. The size selected via the DVMT/FIXED function is the maximum amount of memory the driver may allocate.
FIXED Mode	Use this setting to allocate a fixed amount of graphics memory via the DVMT/FIXED function.
Combo Mode	This setting has no effect on the CP307/CP307-V.

Optimal and Fail-Safe default settings: DVMT Mode

### DVMT/FIXED Memory

This function is used to set the maximum amount of system memory that can be allocated as graphics memory for the DVMT Mode and the Fixed Mode.

Optimal and Fail-Safe default settings: 128 MB

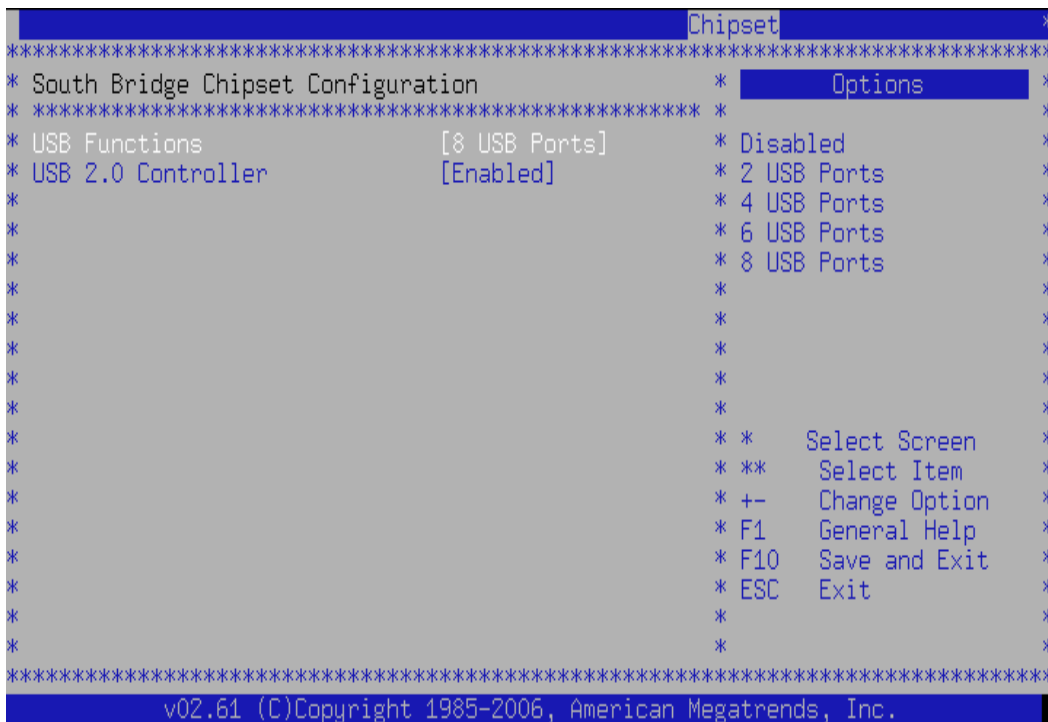




### SOUTHBRIDGE CONFIGURATION SCREEN

This screen provides functions for specifying the SouthBridge configuration settings.

**Note:** The SouthBridge Configuration setup screen varies depending on the supported SouthBridge chipset.



#### USB Functions

This function is used to specify the number of available USB ports.

SETTING	DESCRIPTION
Disabled	Use this setting to disable all USB ports.
2 USB Ports 4 USB Ports 6 USB Ports 8 USB Ports	Use this setting to specify the number of USB ports to be used.

Optimal and Fail-Safe default settings: 8 USB Ports

#### USB 2.0 Controller <sup>SDO</sup>

This function is used to enable or disable the USB 2.0 controller.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the USB 2.0 controller. When this setting is used, the USB 2.0 controller is removed from the PCI bus. Use this setting if installing an OS which is not supporting USB 2.0 (e.g. Windows 2000, early Windows XP).
Enabled	Use this setting to enable the USB 2.0 controller (EHCI).

Optimal and Fail-Safe default settings: Enabled



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*Chapter*

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8

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# OEM Feature

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## 8. OEM Feature

Select the OEM Feature tab to enter the OEM Feature Setup screen. This screen lists the OEM Feature configuration sub-screens. To display a sub-screen, select it using the <Arrow> keys and press <Enter>.

```

Main   Advanced  PCIPnP  Boot   Security  Chipset  OEM FEATURE
*****
* Kontron Features                                     * Enable clock spreading *
* *****                                           * Spread spectrum       *
* * Clock Spreading                                  * typically reduces    *
* * LAN Boot                                         * system EMI.         *
* * System INFO                                     *                      *
* * CP307 front / rear config                       *                      *
* * Setup Default Configuration                     *                      *
* * PCI                                              *                      *
* * Watchdog                                         *                      *
* * CP307 LED control                               *                      *
*                                                    *                      *
*                                                    * *   Select Screen   *
*                                                    * **  Select Item    *
*                                                    * Enter Go to Sub Screen *
*                                                    * F1   General Help   *
*                                                    * F10  Save and Exit  *
*                                                    * ESC  Exit            *
*                                                    *                      *
*                                                    *                      *
*****
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```



## CLOCK SPREADING SCREEN

This screen provides one function for specifying the clock spreading configuration settings.

```

*                               OEM FEATURE                               *
*****
* Enable clock spreading.        * Enable clock spreading *
* *****                      * Spread spectrum         *
* Spread Spectrum Modulation    [Disabled] * typically reduces     *
*                               * system EMI.              *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               *                               *
*                               * *   Select Screen         *
*                               * **  Select Item           *
*                               * +-  Change Option         *
*                               * F1  General Help          *
*                               * F10 Save and Exit         *
*                               * ESC  Exit                 *
*                               *                               *
*                               *                               *
*****
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```

### Spread Spectrum Modulation <sup>SDO</sup>

This function is used to enable or disable the spread spectrum modulation of the CPU clock.

SETTING	DESCRIPTION
Disabled	Use this setting to disable spread spectrum modulation of the CPU clock.
Enabled	Use this setting to enable spread spectrum modulation of the CPU clock. Spread spectrum modulation typically reduces system EMI.

Optimal and Fail-Safe default settings: Disabled





## CP307 REAR I/O GPIO SCREEN (only on Rear I/O Version)

This screen provides functions for specifying the CP307 Rear I/O GPIO configuration settings.

```

***** DEM FEATURE *****
* CP307 rear I/O GPIO * Options *
* ***** *
* GPI 0 status : High * Low *
* GPI 1 status : High * High *
* GPI 2 status : High * *
* GPI 3 status : High * *
* GPI 4 status : High * *
* ***** *
* GPO 0 [Low] *
* GPO 1 [Low] *
* GPO 2 [Low] *
* *
* * * Select Screen *
* * * Select Item *
* * * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* * *
*****
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```

### GPI0 - GPI4 Status

These functions are used to display the current signal level at the corresponding GPI pin. Possible settings are High and Low.

### GPO0 - GPO2

SETTING	DESCRIPTION
High	Use one of these settings to select the boot-up default level at the corresponding pin.
Low	

Optimal and Fail-Safe default settings: Low

**Note:** The GPOs may change from low to high and back during the boot-up phase.



## SYSTEM INFO SCREEN

This screen provides basic information about various system elements. All functions listed on this screen are display only functions and are not user-configurable.

```

* DEM FEATURE
*****
* System INFO *
* ***** *
* Board Version : A8h *
* Expected for CP307 = A8h *
* Logic Index : 6 *
* Hardware Index : 0 *
* *
* Serial Number : *
* Ident Number : *
* EKS Index : *
* ***** *
* CPU Micro Code : 0039h *
* CPU ID : 06E8h * * Select Screen *
* ***** * ** Select Item *
* Hardware Version : 0 * F1 General Help *
* ICH7 Version : 1 * F10 Save and Exit *
* Rear I/O config : Rear I/O disabled * ESC Exit *
* ***** *
* System Slot : YES *
* ***** *
*****
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```

### Board Version

This function provides information which reflects the value of an onboard register. This must always correspond with the CPU on which the BIOS is installed.

### Logic Index

This function provides information which reflects the value of an onboard register. It shows the index of the onboard logic.

### Hardware Index

This function provides information which reflects the value of an onboard register. It shows the index of the hardware.

### Serial Number

This function provides information which shows Kontron internal information about the board. The serial number is unique to each board produced by Kontron and identifies a specific board.

### Ident Number

This function provides information which shows Kontron internal information about the board.

**EKS Index**

This function provides Kontron internal information about the board.

**CPU Micro Code**

This function provides the current CPU microcode revision.

**CPU ID**

This function provides information which shows the ID of the current installed CPU.

**Hardware Version**

This function provides Kontron internal information about the board.

**ICH7 Version**

This function provides the chip revision of the onboard ICH7 SouthBridge.

**Rear I/O Config**

This function provides information which shows which Rear I/O board is installed.

**System Slot**

This function provides information which shows whether the board is in a system slot or not.



## CP307/CP307-V FRONT/REAR CONFIG SCREEN

This screen provides functions for specifying the CP307/CP307-V Front/Rear configuration settings.

```

* DEM FEATURE
*****
* CP307 front / rear config
* *****
* VGA connector [Front]
* *****
* Serial Port 1 [Front]
* *****
* Gig. Ethernet 1 [Front]
* Gig. Ethernet 2 [Front]
*
*
*
*
* * Select Screen
* ** Select Item
* +- Change Option
* F1 General Help
* F10 Save and Exit
* ESC Exit
*
*
*****
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```

### VGA Connector <sup>SDO</sup>

This function is used to select the VGA connector routing.

**Warning!** Do not route the VGA connector to rear I/O if there is no rear I/O module installed! Failure to comply with the instruction above will cause the monitor to display a blank screen and may result in damage to the board. If this occurs, contact Kontron’s Technical Support for further assistance.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the VGA connector. This does not include the VGA device.
Auto	Use this setting to allow the BIOS to automatically detect where a monitor is installed.
Front	Use this setting to specify that only the front connector is usable.
Rear	Use this setting to specify that VGA is routed to rear I/O.
<b>SEE WARNING ABOVE!</b>	

Optimal and Fail-Safe default settings: Front

**Serial Port 1** <sup>SDO</sup>

This function is used to select the Serial Port 1 routing.

**Note:** This function is only effective on the CP307 rear I/O version.

SETTING	DESCRIPTION
Front	Use this setting to specify that the Serial Port 1 is routed to the COM connector on the front panel of the 8HP CP307.
Rear	Use this setting to specify that the Serial Port 1 is routed to the rear I/O module.

Optimal and Fail-Safe default settings: Front

**Gig. Ethernet 1 / Gig. Ethernet 2** <sup>SDO</sup>

This function is used to select the appropriate Gigabit Ethernet channel routing.

**Note:** This function is only effective on the CP307 rear I/O version.

SETTING	DESCRIPTION
Front	Use this setting to specify that the front Gigabit Ethernet connector is active.
Rear	Use this setting to specify that the Gigabit Ethernet channel is routed to rear I/O.

Optimal and Fail-Safe default settings: Front





## SETUP DEFAULT CONFIGURATION SCREEN

This screen provides functions for specifying BIOS setup Optimal and Fail-Safe default override settings.

```

OEM FEATURE *
*****
* Setup Default Configuration * Write current settings *
* ***** * to EEPROM *
* Store current settings [No] * configuration Block. *
* Clear Configuration Block [No] * *
* ***** * *
* Override Structure present : NO *
* Kontron EEPROM Release Version: 00FFh *
* OEM EEPROM Release Version : 00FFh *
* Config Block Activation Flag : 00FFh *
* *
* *
* * * Select Screen *
* * ** Select Item *
* * +- Change Option *
* * F1 General Help *
* * F10 Save and Exit *
* * ESC Exit *
* *
* *
*****
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```

**Note:** Function settings that are included in the setup default override are indicated by the letters SDO after the function: e.g. **Remote Access** <sup>SDO</sup>

### Store current settings

This function is used to specify that the current BIOS settings which are included in the setup default override are to be stored as override settings for Optimal and Fail-Safe defaults.

SETTING	DESCRIPTION
No	This is the BIOS default setting and is automatically set to “No” during the next boot operation.
Yes	Use this setting to enable storing of current settings during the next boot operation.

Optimal and Fail-Safe default settings: No



### Clear Configuration Block

This function is used to clear the previously stored settings in the setup default override configuration block. When cleared, the Optimal and Fail-Safe default settings are no longer overridden when used for booting. Clearing the configuration block does not affect the current settings in use.

SETTING	DESCRIPTION
No	This is the BIOS default setting and is automatically set to "No" after the configuration block is cleared.
Yes	Use this setting to enable clearing of the configuration block during the next boot operation.

Optimal and Fail-Safe default settings: No

### Override Structure present

This is a display-only function which indicates whether or not an override structure is available or valid.

SETTING	DESCRIPTION
No	This setting indicates that the override structure is not present.
Yes	This setting indicates that the override structure is present and valid.
INV	This setting indicates that the override structure is present, but is was previously invalidated by the command "Clear Configuration Block".

### Kontron EEPROM Release Version

This is a display-only function which indicates the Kontron release version of the current override structure. The setting of this function is only valid if the override structure was provided by Kontron.

### OEM EEPROM Release Version

This is a display-only function which indicates the OEM release version of the current override structure.

### Config. Block Activation Flag

This is a display-only function and is reserved for Kontron internal use.



### PCI SCREEN

This screen provides functions for specifying the PCI screen configuration settings.

```

* DEM FEATURE
*****
* PCI-Related Features                                * Add the delay if you *
* *****                                           * have initialization *
* Delay for PCI Config Cycle [Disabled]             * problems on slow PCI *
* Accept Class Code FF      [Yes]                   * devices               *
* PCI to PCI Bridge Reset   [Disabled]              *                       *
* cPCI signal to IRQ5       [Disabled]              *                       *
* cPCI signal to NMI        [Disabled]              *                       *
*                           *                       *
*                           *                       *
*                           *                       *
*                           *                       *
*                           * * Select Screen   *
*                           * **  Select Item    *
*                           * +-   Change Option  *
*                           * F1   General Help   *
*                           * F10  Save and Exit   *
*                           * ESC   Exit           *
*                           *                       *
*                           *                       *
*****
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```

#### Delay for PCI Config Cycle <sup>SDO</sup>

This function is used to specify a delay time if required for slower PCI devices.

SETTING	DESCRIPTION
Disabled	Use this setting to disable the Delay for PCI Config Cycle function.
250 ms 500 ms 1 s	Use one of these settings to specify a delay time for slower PCI devices.

Optimal and Fail-Safe default settings: Disabled

#### Accept Class Code FF <sup>SDO</sup>

This function is used to initialize all PCI devices with class code FF.

SETTING	DESCRIPTION
Yes	Use this setting to initialize all of the PCI devices.
No	Use this setting to prevent the PCI devices with class code FF from being initialized.

Optimal and Fail-Safe default settings: Yes



### PCI-to-PCI Bridge Reset <sup>SDO</sup>

This function is used to perform a PCI-to-PCI bridge reset using a software reset mechanism prior to configuring the PCI devices on the bus behind the PCI-to-PCI bridge.

SETTING	DESCRIPTION
Disabled	Use this setting to disable a PCI-to-PCI bridge reset.
Enabled	Use this setting to enable a PCI-to-PCI bridge reset.

Optimal and Fail-Safe default settings: Disabled

### cPCI Signal to IRQ5

This function allows the system to select which cPCI signal should be routed to IRQ5.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the cPCI signals from being routed to IRQ5.
cPCI DERATE	Use this setting to select the cPCI DERATE derate signal to be routed to IRQ5.
cPCI ENUM	Use this setting to select the cPCI ENUM derate signal to be routed to IRQ5.
cPCI FAIL	Use this setting to select the cPCI FAIL derate signal to be routed to IRQ5.

Optimal and Fail-Safe default settings: Disabled

### cPCI Signal to NMI

This function allows the system to select which cPCI signal should be routed to NMI.

**Note:** The cPCI Fail signal cannot be routed to IRQ5 and NMI at the same time. No cPCI signal can be routed to NMI if the Watchdog is selected to NMI.

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the cPCI signals from being routed to NMI.
cPCI FAIL	Use this setting to select the cPCI FAIL derate signal to be routed to NMI.

Optimal and Fail-Safe default settings: Disabled



## WATCHDOG SCREEN

This screen provides functions for specifying the Watchdog configuration settings.

```

* DEM FEATURE
*****
* Watchdog Config * Watchdog Config *
* ***** *
* Watchdog Configuration [Enabled] *
* Active for Boot [Disabled] *
* Watchdog Mode [Interrupt] *
* WD Active Time [125 ms] *
* Interrupt Config [Disabled] *
* *
* *
* *
* *
* * * Select Screen *
* ** Select Item *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* *
* *
*****
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```

### Watchdog Configuration

SETTING	DESCRIPTION
Disabled	Use this setting to prevent the Watchdog from being configured at end of POST.
Enabled	Use this setting to configure Watchdog at end of POST.

Optimal and Fail-Safe default settings: Disabled

### Active for Boot <sup>SDO</sup>

SETTING	DESCRIPTION
Disabled	Use this setting to specify that the Watchdog must be started from the OS.
Enabled	Use this setting if the Watchdog timer requires to be started before the operating system is booted from the BIOS.

Optimal and Fail-Safe default settings: Disabled



## Watchdog Mode

SETTING	DESCRIPTION
Timer Only	Use this setting to operate the Watchdog in Timer Only mode.
Reset	Use this setting to enable the Watchdog to reset the system if it is not retriggered within the selected time.
Interrupt	Use this setting to enable the Watchdog to generate an interrupt if it is not retriggered within the selected time.
Cascade (INT+Reset)	When this setting is used, the following applies: If the Watchdog is not retriggered within the selected time, then an interrupt is generated and the Watchdog is automatically retriggered. If the Watchdog subsequently times out again, the system will be reset. If the Watchdog was retriggered normally after the interrupt, the next timeout will result in the generation of an interrupt and the automatic retriggering of the Watchdog.

Optimal and Fail-Safe default settings: Timer Only

## WD Active Time <sup>SDO</sup>

SETTING	DESCRIPTION
125 ms 250 ms 500 ms 1 s 2 s 4 s 8 s 16 s 32 s 64 s 128 s 256 s	Use of these setting to select the time after which the action selected occurs if Watchdog timer is not retriggered.

Optimal and Fail-Safe default settings: 125 ms

## Interrupt Config

This function is used to select the Watchdog interrupt destination.

SETTING	DESCRIPTION
Disabled	Use this setting to specify that the Watchdog does not require an interrupt.
IRQ5	Use this setting to specify that the Watchdog requires IRQ5.
NMI	Use this setting to specify that the Watchdog requires NMI.

Optimal and Fail-Safe default settings: Disabled





## LED1 Mode for OS

This function is used to select the LED1 behavior for OS.

SETTING	DESCRIPTION
Overtemperature	Use this setting to allow the LED1 to indicate overtemperature.
General Purpose	Use this setting to specify that the LED1 is user-controllable.

Optimal and Fail-Safe default settings: Overtemperature





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*Chapter*

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**9**

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# Exit Menu

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## 9. Exit Menu

Select the Exit tab to enter the Exit menu screen. This screen provides functions for handling changes made to the BIOS settings and the exiting of the BIOS setup program. In addition, it provides functions for loading the Optimal and Fail-Safe default settings.

```

* Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  Exit
*****
* Exit Options                                     * Exit system setup *
* *****                                     * after saving the  *
* Save Changes and Exit                          * changes,         *
* Discard Changes and Exit                       *                 *
* Discard Changes                                * F10 key can be used *
*                                                 * for this operation, *
*                                                 *                 *
* Load Optimal Defaults                          *                 *
* Load Failsafe Defaults                        *                 *
*                                                 *                 *
*                                                 *                 *
*                                                 *                 *
*                                                 *                 *
* *      Select Screen                            *
* **     Select Item                             *
* Enter  Go to Sub Screen                        *
* F1     General Help                           *
* F10    Save and Exit                          *
* ESC    Exit                                    *
*                                                 *
*                                                 *
*****
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```

### Save Changes and Exit

Upon completion of the BIOS configuration changes, select this function to save the changes, exit the BIOS setup program, and reboot the computer so that the new configuration settings cant take effect.

To accomplish this, select this function from the Exit menu and press <Enter>. A popup display appears requesting confirmation of the changes. To confirm, select [OK] and then press <Enter>. To return to the BIOS setup program without saving changes, select [Cancel] and then press <Enter>.

### Discard Changes and Exit

This function is used to exit the BIOS setup program without making any permanent changes to the BIOS configuration.

To accomplish this, select this function from the Exit menu and press <Enter>. A popup display appears requesting confirmation of the discarding of changes and setup exit. To confirm, select [OK] and then press <Enter>. To return to the BIOS setup program without discarding the changes made, select [Cancel] and then press <Enter>.

## Discard Changes

In the course of making configuration changes, it may be necessary to revert back to the previously stored settings and start over again without leaving the BIOS configuration to the last stored setup configuration so that new changes may be made.

To accomplish this, select this function from the Exit menu and press <Enter>. A popup display appears requesting confirmation of the discarding of changes. To confirm, select [OK] and then press <Enter>. To return to the BIOS setup program without discarding the changes made, select [Cancel] and then press <Enter>.

### Discard Changes Screen

```

* Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  Exit
*****
* Exit Options                               * Exit system setup *
* *****                               * without saving any *
* Save Changes and Exit                       * changes.          *
* Discard Changes and Exit                    *                  *
* Discard Changes                             * ESC key can be used *
*                                             * for this operation. *
* Load Optimal Default*****
* Load Failsafe Defau*
*          * Discard changes and exit setup? *
*          *                               *
*          *****
*          * [Ok]      [Cancel] *
*          *****
*          * Select Screen *
*          * **          *
*          * Enter Go to Sub Screen *
*          * F1      General Help *
*          * F10   Save and Exit *
*          * ESC   Exit *
*          * * * * *
*          * * * * *
*****
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```



## Load Optimal Defaults

This function is used to reconfigure the BIOS settings to a predefined set of Optimal default settings. The Optimal settings are designed for maximum system performance, but may not work well for all computer applications. In particular, do not use the Optimal settings if configuration problems are being experienced with the system.

To load the Optimal default settings, select this function from the Exit menu and press <Enter>. A popup display appears requesting confirmation of the loading. To confirm, select [OK] and then press <Enter>. To return to the BIOS setup program without loading, select [Cancel] and then press <Enter>.

### Load Optimal Defaults Screen

```

* Advanced  PCIPnP  Boot  Security  Chipset  OEM FEATURE  Exit
*****
* Exit Options                                     * Load Optimal Default *
* ***** * values for all the *
* Save Changes and Exit                          * setup questions. *
* Discard Changes and Exit                       * *
* Discard Changes                                * F9 key can be used *
* *                                               * for this operation. *
* Load Optimal Defaults ***** *
* Load Failsafe Defaults * ** *
* * Load Optimal Defaults? * *
* * * * *
* * [Ok] [Cancel] * *
* ***** *
* * Select Screen *
* * ** Select Item *
* * Enter Go to Sub Screen *
* * F1 General Help *
* * F10 Save and Exit *
* * ESC Exit *
* * *
* * *
*****
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

```

## Load Fail-Safe Defaults

This function is used to reconfigure the BIOS settings to a predefined set of Fail-Safe default settings. The Fail-Safe default settings are designed for maximum system stability, but not maximum system performance. Select the Fail-Safe default settings if configuration problems are being experienced with the system.

To load the Fail-Safe default settings, select this function from the Exit menu and press <Enter>. A popup display appears requesting confirmation of the loading. To confirm, select [OK] and then press <Enter>. To return to the BIOS setup program without loading, select [Cancel] and then press <Enter>.



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*Chapter* **10**

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# POST Codes

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## 10. POST Codes

For information about the POST code display LEDs, refer to the section “General Purpose LED Output” in the CP307 User Guide, Doc. ID 34424, or the CP307-V User Guide, Doc. ID 35856.

### Bootblock Initialization Code Checkpoints

The Bootblock initialization code sets up the chipset, memory and other components before system memory is available. The following table describes the type of checkpoints that may occur during the bootblock initialization portion of the BIOS:

CHECKPOINT	DESCRIPTION
Before D1	Early chipset initialization is done. Early super I/O initialization is done including RTC and keyboard controller. NMI is disabled.
D1	Perform keyboard controller BAT test. Check if waking up from power management is in suspend state. Save power-on CPUID value in scratch CMOS.
D0	Go to flat mode with 4 GB limit and GA20 enabled. Verify the bootblock checksum.
D2	Disable CACHE before memory detection. Execute full memory sizing module. Verify that flat mode is enabled.
D3	If memory sizing module not executed, start memory refresh and do memory sizing in Bootblock code. Do additional chipset initialization. Re-enable CACHE. Verify that flat mode is enabled.
D4	Test base 512 KB memory. Adjust policies and cache first 8 MB. Set stack.
D5	Bootblock code is copied from ROM to lower system memory and control is given to it. BIOS now executes out of RAM.
D6	Both key sequence and OEM-specific method is checked to determine if BIOS recovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary, control flows to checkpoint E0. See <i>Bootblock Recovery Code Checkpoints</i> section of document for more information.
D7	Restore CPUID value back into register. The Bootblock-Runtime interface module is moved to system memory and control is given to it. Determine whether to execute serial flash.
D8	The Runtime module is uncompressed into memory. CPUID information is stored in memory.
D9	Store the uncompressed pointer for future use in PMM. Copying Main BIOS into memory. Leaves all RAM below 1 MB Read-Write including E000 and F000 shadow areas but closing SMRAM.
DA	Restore CPUID value back into register. Give control to BIOS POST (ExecutePOSTKernel). See <i>POST Code Checkpoints</i> section of document for more information.



## Bootblock Recovery Code Checkpoints

The Bootblock recovery code gets control when the BIOS determines that a BIOS recovery needs to occur because the user has forced the update or the BIOS checksum is corrupt. The following table describes the type of checkpoints that may occur during the Bootblock recovery portion of the BIOS:

CHECKPOINT	DESCRIPTION
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized. 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. Attempt to read from ARMD and ATAPI CDROM.
EB	Disable ATAPI hardware. Jump back to checkpoint E9.
EF	Read error occurred on media. Jump back to checkpoint EB.
E9 or EA	Determine information about root directory of recovery media.
F0	Search for pre-defined recovery file name in root directory.
F1	Recovery file not found.
F2	Start reading FAT table and analyze FAT to find the clusters occupied by the recovery file.
F3	Start reading the recovery file cluster by cluster.
F5	Disable L1 cache.
FA	Check the validity of the recovery file configuration to the current configuration of the flash part.
FB	Make flash write enabled through chipset and OEM-specific method. Detect proper flash part. Verify that the found flash part size equals the recovery file size.
F4	The recovery file size does not equal the found flash part size.
FC	Erase the flash part.
FD	Program the flash part.
FF	The flash has been updated successfully. Make flash write disabled. Disable ATAPI hardware. Restore CPUID value back into register. Give control to F000 ROM at F000:FFF0h.



## POST Code Checkpoints

The POST code checkpoints are the largest set of checkpoints during the BIOS pre-boot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS:

CHECKPOINT	DESCRIPTION
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialize CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with Fail-Safe default values and clear passwords. Initialize status register A. Initialize data variables that are based on CMOS setup questions. Initialize both the 8259-compatible PICs in the system
05	Initialize the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer. Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
08	Initialize the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
C0	Early CPU Init Start -- Disable Cache - Init Local APIC
C1	Set up boot strap processor Information
C2	Set up boot strap processor for POST
C5	Enumerate and set up application processors
C6	Re-enable cache for boot strap processor
C7	Early CPU Init Exit
0A	Initialize the 8042-compatible Key Board Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
24	Uncompress and initialize any platform-specific BIOS modules.
30	Initialize System Management Interrupt.
2A	Initialize different devices through DIM. See DIM Code Checkpoints section of document for more information.
2C	Initialize different devices. Detects and initializes the video adapter installed in the system that has optional ROMs.
2E	Initialize all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initialize the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM-specific information.

CHECKPOINT	DESCRIPTION
38	Initializes different devices through DIM. See DIM Code Checkpoints section of document for more information.
39	Initializes DMAC-1 & DMAC-2.
3A	Initialize RTC date/time.
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.
3C	Mid POST initialization of chipset registers.
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, etc.) successfully installed in the system and update the BDA, EBDA, etc.
50	Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory.
60	Initializes NUM-LOCK status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7A	Initializes remaining option ROMs.
7C	Generate and write contents of ESCD in NVRAM.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested.
8C	Late POST initialization of chipset registers.
8D	Build ACPI tables (if ACPI is supported)
8E	Program the peripheral parameters. Enable/Disable NMI as selected
90	Late POST initialization of system management interrupt.
A0	Check boot password if installed.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module.
A7	Displays the system configuration screen if enabled. Initialize the CPUs before boot, which includes the programming of the MTRRs.
A8	Prepare CPU for OS boot including final MTRR values.
A9	Wait for user input at config display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector. Deinitializes the ADM module.
AB	Prepare BBS for Int 19 boot.
AC	End of POST initialization of chipset registers.
B1	Save system context for ACPI.
00	Passes control to OS Loader (typically INT19h).



## DIM Code Checkpoints

The Device Initialization Manager module gets control at various times during BIOS POST to initialize different BUSES. The following table describes the main checkpoints where the DIM module is accessed:

CHECKPOINT	DESCRIPTION
2A	Initialize different buses and perform the following functions: Reset, Detect, and Disable (function 0); Static Device Initialization (function 1); Boot Output Device Initialization (function 2). Function 0 disables all device nodes, PCI devices, and PnP ISA cards. It also assigns PCI bus numbers. Function 1 initializes all static devices that include manual configured onboard peripherals, memory and I/O decode windows in PCI-PCI bridges, and noncompliant PCI devices. Static resources are also reserved. Function 2 searches for and initializes any PnP, PCI, or AGP video devices.
38	Initialize different buses and perform the following functions: Boot Input Device Initialization (function 3); IPL Device Initialization (function 4); General Device Initialization (function 5). Function 3 searches for and configures PCI input devices and detects if system has standard keyboard controller. Function 4 searches for and configures all PnP and PCI boot devices. Function 5 configures all onboard peripherals that are set to an automatic configuration and configures all remaining PnP and PCI devices.



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