

VDX/VSX Embedded CPU Board Series

AMI BIOS Brief Reference Manual

(Version1.0)

```
AMIBIOS(C)2008 American Megatrends, Inc.  
BIOS Date: 11/25/2008 VSX-6390 A4  
CPU : Vortex A9120  
Speed : 800MHz
```

```
Press DEL to run Setup (F4 on Remote Keyboard)  
Press F11 for BBS POPUP (F3 on Remote Keyboard)  
Initializing USB Controllers .. Done.  
256MB OK
```

```
(C) American Megatrends, Inc.  
62-0100-000001-00101111-112508-A9100-1ADSV000-Y2KC
```

603C

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Introduction

This manual is for the AMI BIOS Setup built with DX SBCs. The program allows users to modify the basic input/output system configuration and preserve settings into a battery-backed CMOS RAM which retains settings during AC power-off.

When a SBC is powered on with in few seconds, users are allowed to press "Delete" key to enter the setup program (F4 for console redirection).

```
AMIBIOS(C)2008 American Megatrends, Inc.  
BIOS Date: 11/25/2008 VSK-6390 A4  
CPU : Vortex A9120  
Speed : 800MHz
```

```
Press DEL to run Setup (F4 on Remote Keyboard)  
Press F11 for BBS POPUP (F3 on Remote Keyboard)  
Initializing USB Controllers .. Done.  
256MB OK
```

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```

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The following sections will explicitly depict every settings of the setup program.

1. Main menu

```

Main  Advanced  PCIPnP  Boot  Security  Chipset  Exit
*****
* System Overview *
* ***** *
* AMIBIOS *
* Version :08.00.14 *
* Build Date:11/25/08 *
* ID :1ADSV000 *
* *
* Processor *
* Vortex A9120 *
* Speed :800MHz *
* *
* System Memory *
* Size :256MB *
* Speed :300MHz *
* *
* System Time [09:43:13] *
* System Date [Thu 02/19/2009] *
* *
* CPU MTBF :64739 Hours Remaining *
* System Fault :0 Times *
* ***** *
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```

1.1 MTBF

MTBF, Mean Time Before Failure, the remaining MTBF time of onboard Vortex86DX CPU is calculated by hour. MTBF is the average life time of electronic devices. The board might keep working even the MTBF time is expired, but it's highly recommended to replace a new board when it's expired. This is to ensure the stability of whole system.

1.2 System Fault

This function is to calculate the times of system fault during the operating. The system fault includes the external system fails and invalid OP codes. Please be aware when this number increased abnormally, for example one time per week, this means the whole system has experienced hardware/software unstable or compatible problem.

2. Advanced

2.1 Board Configuration

It shows the board-related information including Chip Serial Number, Model Name, PCB Version, Shipment Date, and the Date Codes of key components.

```

Advanced
*****
* Chip Serial Number      :B2 00 00 00 01 26      *
* Model Name             :VDX-6354                *
* PCB Version            :DM84G                  *
* Shipment Date          :Year ** Week **         *
* Customer Serial Number :D8 E9 FA 0B 1C 2D 3E 4F  *
*
* PCB      0845 Vortex86SK 0837                  *
* RTC OSC  0837 14.3180SC 0845                  *
* DDR2     0845 ADM213   0832                  *
* DC/DC PWM 0835 Tantalum 0823                  *
* Transform 0751 SPI Memory 0809                *
* VGA Chip  0834 Video Mem 740A                  *
* ADM485    0829
*
*                                     **      Select Screen
*                                     **      Select Item
*                                     F1      General Help
*                                     F10     Save and Exit
*                                     ESC     Exit
*
*           K-9710280005
*           *
* VDX-6354   6354A4.ROM
*
*****
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```

2.2 CPU Configuration

```

Main  Advanced  PCIPnP  Boot  Security  Chipset  Exit
*****
* Advanced Settings
*
* WARNING: Setting wrong values in below sections
*          may cause system to malfunction.
*
* * Board Configuration
* * CPU Configuration
* * IDE Configuration
* * Floppy Configuration
* * SuperIO Configuration
* * Remote Access Configuration
* * USB Configuration
*
* SB LAN [Enabled]
* MAC Address 00 1B EB 69 02 24
*
*                                     **      Select Screen
*                                     **      Select Item
*                                     Enter  Go to Sub Screen
*                                     F1      General Help
*                                     F10     Save and Exit
*                                     ESC     Exit
*
*****
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```


2.2.1 CPU Speed

Default core speed, 800MHz, can be divided by 1 to 8. For example, if divided by 8, the core will be 100MHz.

```

Advanced
*****
* CPU Configuration                               * Options *
* Module Version - 00.01                         *       *
* *****                                       * Divide By 1 *
* Manufacturer: DMP                             * Divide By 2 *
* Brand String: Vortex A9120                    * Divide By 3 *
* Frequency : 800MHz                            * Divide By 4 *
* CPU Speed Setting By                          * Divide By 5 *
* L1 Cache                                     * Divide By 6 *
* Cache L1 : 16 KB                             * Divide By 7 *
* L2 Cache                                     * Divide By 8 *
* Cache L2 : 256 KB                            *       *
*       *                                     * ** Select Screen *
*       *                                     * ** Select Item *
*       *                                     * +- Change Option *
*       *                                     * F1 General Help *
*       *                                     * F10 Save and Exit *
*       *                                     * ESC Exit *
*       *                                     *       *
*****
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```

2.3 IDE Configuration

2.3.1 On-board PCI IDE Controller

This option specifies the channel used by IDE controller on a motherboard.

Option	Description
Disabled	Set this value to prevent the computer system from using the onboard IDE controller.
Primary	Set this value to allow the computer system to detect only the Primary IDE channel. This includes both the Primary Master and the Primary Slave.
Secondary	Set this value to allow the computer system to detect only the Secondary IDE channel. This includes both the Secondary Master and the Secondary Slave.
Both	Set this value to allow the computer system to detect the Primary and Secondary IDE channels. This includes both the Primary Master, Primary Slave, Secondary Master, and Secondary Slave. This is the default setting.

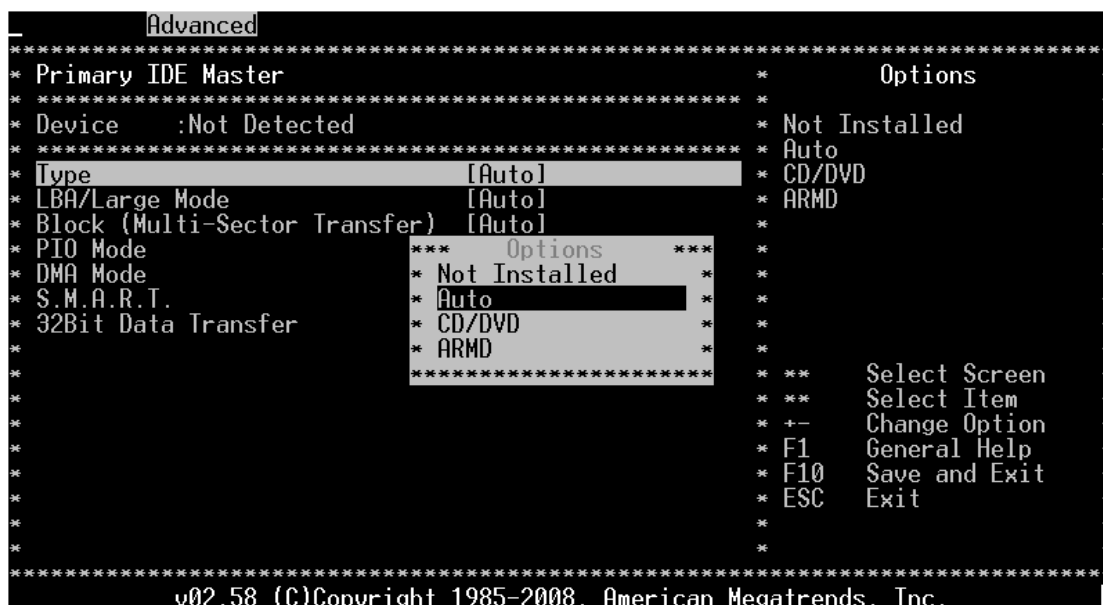
```

Advanced
*****
* IDE Configuration                               * Options
* *****
* OnBoard PCI IDE Controller [Primary]           * Disabled
* * Primary IDE Master [Not Detected]           * Primary
* * Primary IDE Slave [Not Detected]           * Secondary
* * Secondary IDE Master [Not Detected]         * Both
* * Secondary IDE Slave                        *
* * * * Options * * * *
* * Disabled * *
* * Primary * *
* * Secondary * *
* * Both * *
* * * * * * * * * * * * * * * * * * * * * * * *
* Hard Disk Write Protect                        * ** Select Screen
* IDE Detect Time Out (Sec)                     * ** Select Item
* ATA(PI) 80Pin Cable Detecti                   * +- Change Option
* Hard Disk Delay                               * * F1 General Help
* OnBoard IDE Operate Mode [Legacy Mode]        * * F10 Save and Exit
* Not Program PIO mode [Disabled]              * * ESC Exit
* Primary IDE Pin Select [Parallel IDE]
*
*
*
*****
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```

2.3.2 Primary/Secondary IDE Master/Slave

When you entered the IDE devices, the bios auto-detects and shows the detail information of connected IDE devices. If changes are needed to the IDE configuration, simply select the item and press "Enter" to configure.



Type [Auto]

Option	Description
Not Installed	Set this value to prevent the BIOS from searching for an IDE disk drive on the specified channel.
Auto	Set this value to allow the BIOS 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. This is the default setting.
CDROM	This option specifies 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	This option specifies an ATAPI Removable Media Device. This includes, but is not limited to: <ul style="list-style-type: none"> • ZIP • LS-120

LBA/Large Mode [Auto]

Option	Description
Disabled	Set this value to prevent the BIOS from using Large Block Addressing mode control on the specified channel.
Auto	Set this value to allow the BIOS to auto detect the Large Block Addressing mode control on the specified channel. This is the default setting.

Block (Multi-sector Transfer) [Auto]

Option	Description
Disabled	Set this value 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	Set this value to allow the BIOS to auto detect device support for Multi-Sector Transfers on the specified channel. If supported, Set this value 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. This is the default setting.

PIO Mode [Auto]

Option	Description
Auto	Set this value to allow the BIOS to auto detect the PIO mode. Use this value if the IDE disk drive support cannot be determined. This is the default setting.
0	Set this value to allow the BIOS to use PIO mode 0. It has a data transfer rate of 3.3 MBs.
1	Set this value to allow the BIOS to use PIO mode 1. It has a data transfer rate of 5.2 MBs.
2	Set this value to allow the BIOS to use PIO mode 2. It has a data transfer rate of 8.3 MBs.
3	Set this value to allow the BIOS to use PIO mode 3. It has a data transfer rate of 11.1 MBs.
4	Set this value to allow the BIOS to use PIO mode 4. It has a data transfer rate of 16.6 MBs. 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.

DMA Mode [Auto]

The default setting is auto, it is fixed by default for better transmitting efficiency.

SMART [Auto]

S.M.A.R.T. stands for Smart Monitoring, Analysis, and Reporting Technology. It allows AMI BIOS to use the S.M.A.R.T. protocol to report server over a network.

Option	Description
Auto	Set this value to allow the BIOS to auto detect hard disk drive support. Use this setting if the IDE disk drive support cannot be determined. This is the default setting.
Disabled	Set this value to prevent the BIOS from using the SMART feature.
Enabled	Set this value to allow the BIOS to use the SMART feature on support hard disk drives.

32Bit Data Transfer [Enabled]

Option	Description
Disabled	Set this value to prevent the BIOS from using 32-bit data transfers.
Enabled	Set this value to allow the BIOS to use 32-bit data transfers on support hard disk drives. This is the default setting.

2.3.3 Hard Disk Write Protect

Option	Description
Disabled	Set this value to allow the hard disk drive to be used normally. Read, write, and erase functions can be performed to the hard disk drive. This is the default setting.
Enabled	Set this value to prevent the hard disk drive from being erased.

```

Advanced
*****
* IDE Configuration                               * Options
* *****
* OnBoard PCI IDE Controller [Primary]           * Disabled
*                                                         * Enabled
* * Primary IDE Master [Not Detected]           *
* * Primary IDE Slave [Not Detected]           *
* * Secondary IDE Master [Not Detected]         *
* * Secondary IDE Slave [Not Detected]         *
* *
* Hard Disk Write Protect [Disabled]          *
* IDE Detect Time Out (Sec) [35]                *
* ATA(PI) 80Pin Cable Detection [Host & Device] *
* Hard Disk Delay [2 Second]                    * ** Select Screen
* OnBoard IDE Operate Mode [Legacy Mode]         * ** Select Item
* Not Program PIO mode [Disabled]               * +- Change Option
* Primary IDE Pin Select [Parallel IDE]          * F1 General Help
*                                                         * F10 Save and Exit
*                                                         * ESC Exit
*
*****
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```

2.3.4 IDE Detect Time Out (Sec)

Option	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	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in five seconds. A large majority of ultra ATA hard disk drives can be detected well within five seconds.
10	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in 10 seconds.
15	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in 15 seconds.
20	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in 20 seconds.
25	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in 25 seconds.
30	Set this value to stop the AMIBIOS from searching the IDE bus for IDE disk drives in 30 seconds.
35	35 is the default value. It is the recommended setting when all IDE connectors are set to <i>AUTO</i> in the AMIBIOS setting.

```

Advanced
*****
* IDE Configuration                                     * Options
* *****
* OnBoard PCI IDE Controller [Primary]                 * 0
*                                                         * 5
* * Primary IDE Master [Not Detected]                 * 10
* * Primary IDE Slave **** Options ****              * 15
* * Secondary IDE Master * 0 *                       * 20
* * Secondary IDE Slave * 5 *                       * 25
*                                                         * 10
*                                                         * 30
* Hard Disk Write Protect * 15 *                     * 35
* IDE Detect Time Out (Sec) * 20 *
* ATA(PI) 80Pin Cable Detecti * 25 *
* Hard Disk Delay * 30 *
* OnBoard IDE Operate Mode * 35 *
* Not Program PIO mode *****
* Primary IDE Pin Select [Parallel IDE] * F1
*                                                         * F10
*                                                         * ESC
*                                                         *
*                                                         *
*****
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```


2.3.6 Hard Disk Delay

Delays in seconds before a HDD ready.

```

**** Advanced ****
*****
* IDE Configuration                               * Options *
*****
* OnBoard PCI IDE Controller   [Primary]         * Disabled *
*                               *               *
* * Primary IDE Master         [Not Detected]    * 1 Second *
* * Primary IDE Slave         [Not Detected]    * 2 Second *
* * Secondary IDE Master      *               *
* * Secondary IDE Slave      *               *
*                               *               *
*                               * 8 Second *
*                               *               *
*                               *         *
* Hard Disk Write Protect    * 2 Second *
* IDE Detect Time Out (Sec)  * 4 Second *
* ATA(PI) 80Pin Cable Detecti * 8 Second *
* Hard Disk Delay            *****           * * *
* OnBoard IDE Operate Mode   [Legacy Mode]      * * *
* Not Program PIO mode      [Disabled]          * +-
* Primary IDE Pin Select     [Parallel IDE]      * F1
*                               *               *
*                               * F10
*                               * ESC
*                               * Exit
*                               *
*                               *
*                               *
*****
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```

2.3.7 On-board IDE Operate Mode

Option	Description
Disabled	Set this value to prevent the computer system from using the onboard IDE controller.
Primary	Set this value to allow the computer system to detect only the Primary IDE channel. This includes both the Primary Master and the Primary Slave.
Secondary	Set this value to allow the computer system to detect only the Secondary IDE channel. This includes both the Secondary Master and the Secondary Slave.
Both	Set this value to allow the computer system to detect the Primary and Secondary IDE channels. This includes both the Primary Master, Primary Slave, Secondary Master, and Secondary Slave. This is the default setting.

```

**** Advanced ****
*****
* IDE Configuration                               * Options *
*****
* OnBoard PCI IDE Controller   [Primary]         * Legacy Mode *
*                               *               *
*                               * Native Mode *
* * Primary IDE Master         [Not Detected]    *               *
* * Primary IDE Slave         [Not Detected]    *               *
* * Secondary IDE Master      [Not Detected]    *               *
* * Secondary IDE Slave      [Not Detected]    *               *
*                               *               *
*                               *         *
*                               *         *
*                               *         *
*                               *         *
*                               *         *
* Hard Disk Write Protect    * Legacy Mode *
* IDE Detect Time Out (Sec)  * Native Mode *
* ATA(PI) 80Pin Cable Detecti *****           * * *
* Hard Disk Delay            [2 Second]         * * *
* OnBoard IDE Operate Mode   [Legacy Mode]      * * *
* Not Program PIO mode      [Disabled]          * +-
* Primary IDE Pin Select     [Parallel IDE]      * F1
*                               *               *
*                               * F10
*                               * ESC
*                               * Exit
*                               *
*                               *
*                               *
*****
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```


2.3.8 Not Program PIO mode

This option allows you to assign the CF or IDE card to Primary Channel or Secondary Channel.

```

Advanced
*****
* IDE Configuration
* *****
* OnBoard PCI IDE Controller      [Primary]
*
* * Primary IDE Master           [Not Detected]
* * Primary IDE Slave            [Not Detected]
* * Secondary IDE Master         [Not Detected]
* * Secondary IDE Slave
*
* ***** Options *****
* Disabled
* Primary Channel
* Secondary Channel
*
* Hard Disk Write Protect
* IDE Detect Time Out (Sec)
* ATA(PI) 80Pin Cable Detecti
* Hard Disk Delay                [2 Second]
* OnBoard IDE Operate Mode       [Legacy Mode]
* Not Program PIO mode           [Disabled]
* Primary IDE Pin Select         [Parallel IDE]
*
* ***** Options *****
* Disabled
* Primary Channel
* Secondary Channel
*
* ** Select Screen
* ** Select Item
* +- Change Option
* * F1 General Help
* * F10 Save and Exit
* * ESC Exit
*
*****
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```

2.3.9 Primary IDE Pin Select

To enable SD-to-IDE on primary IDE without an extra controller, please select SD Card. Otherwise, Parallel IDE should be chosen for utmost IDE supports.

```

Advanced
*****
* IDE Configuration
* *****
* OnBoard PCI IDE Controller      [Primary]
*
* * Primary IDE Master           [Not Detected]
* * Primary IDE Slave            [Not Detected]
* * Secondary IDE Master         [Not Detected]
* * Secondary IDE Slave         [Not Detected]
*
* ***** Options *****
* Parallel IDE
* SD Card
*
* Hard Disk Write Protect
* IDE Detect Time Out (Sec)
* ATA(PI) 80Pin Cable Detecti
* Hard Disk Delay                [2 Second]
* OnBoard IDE Operate Mode       [Legacy Mode]
* Not Program PIO mode           [Disabled]
* Primary IDE Pin Select         [Parallel IDE]
*
* ***** Options *****
* Parallel IDE
* SD Card
*
* ** Select Screen
* ** Select Item
* +- Change Option
* * F1 General Help
* * F10 Save and Exit
* * ESC Exit
*
*****
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```


2.4 Super IO Configuration

2.4.1 On-board Floppy Controller

To enable/disable the extra floppy controller of the super I/O chip of SBC.

```
Advanced
*****
* Configure WIN697UF Super IO Chipset * Options *
* ***** *
* OnBoard Floppy Controller [Disabled] * Disabled *
* Floppy Drive Swap [Disabled] * Enabled *
* Serial Port5 Address [Disabled] * * *
* Serial Port6 Address [Disabled] * * *
* Serial Port7 Address [Disabled] * * *
* Serial Port8 Address [Disabled] * * *
* Parallel Port Address [Disabled] * * *
* OnBoard Game Port [Disabled] * * *
* OnBoard MIDI Port [Disabled] * * *
* OnBoard Smart Card Reader [Disabled] * * *
* * * * *
* * * Select Screen *
* * * Select Item *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* * * * *
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```

2.4.2 Serials Port Address

This option specifies the “base I/O address” and “interrupt request address” of serial ports. Options of COM5/6 can be “Disabled”, 338/IRQ4, 238/IRQ3, 228/IRQ10, and 220/IRQ11. COM7/8 has no IRQ and their addresses can be assigned to 338/238/228/220

2.4.3 Parallel Port

Address

Option	Description
Disabled	Set this value to prevent the parallel port from accessing any system resources. When the value of this option is set to <i>Disabled</i> , the printer port becomes unavailable.
378	Set this value to allow the parallel port to use 378 as its I/O port address. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.
278	Set this value to allow the parallel port to use 278 as its I/O port address.
3BC	Set this value to allow the parallel port to use 3BC as its I/O port address.

Mode

This option specifies the parallel port mode. The Optimal setting is Normal. The Fail-Safe setting is Disabled.

Option	Description
Normal	Set this value to allow the standard parallel port mode to be used. This is the default setting.
Bi-Directional	Set this value to allow data to be sent to and received from the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bi-directional communication.

IRQ

This option specifies the IRQ to the parallel port. The Optimal and Fail-Safe default setting is 7.

Option	Description
5	Set this value to allow the serial port to use Interrupt 3.
7	Set this value to allow the serial port to use Interrupt 7. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

2.4.4 On-board Smart Card Reader

On-board smart card reader cab be assigned to address 3E8/2E8 or disabled.

2.5 Remote Access Configuration

This menu allows you to enable or disable remote access.

```

Advanced
*****
* Configure Remote Access type and parameters * Options
* *****
* Remote Access [Enabled] * Disabled
* * Enabled
* Serial port number [COM1] *
* Base Address, IRQ [3F8h, 4] *
* Serial Port Mode [115200 8,n,1] *
* Flow Control [None] *
* Redirection After BIOS POST *** Options ***
* * Terminal Type * Disabled *
* * VT-UTF8 Combo Key Support * Enabled *
* * Sredir Memory Display Delay *****
* *
* * Select Screen
* * Select Item
* +- Change Option
* F1 General Help
* F10 Save and Exit
* ESC Exit
*
*
*****
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```

Redirection After BIOS POST:
 “Boot Loader” sets the redirection to be active during POST and Boot Loader.

```

Advanced
*****
* Configure Remote Access type and parameters * Options
* *****
* Remote Access [Enabled] * Disabled
* * Boot Loader
* * Always
* Serial port number [COM1] *
* Base Address, IRQ [3F8h, 4] *
* Serial Port Mode [115200 8,n,1] *
* Flow Control *** Options ***
* * Redirection After BIOS POST * Disabled *
* * * Terminal Type * Boot Loader *
* * * VT-UTF8 Combo Key Support * Always *
* * * Sredir Memory Display Delay *****
* *
* * Select Screen
* * Select Item
* +- Change Option
* F1 General Help
* F10 Save and Exit
* ESC Exit
*
*
*****
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```

Sredir Memory Display Delay

This allows you to indicate the length of time in seconds to the Memory Display Delay

```

Advanced
*****
* Configure Remote Access type and parameters * Options *
* ***** *
* Remote Access [Enabled] * No Delay *
* * Delay 1 Sec *
* Serial port number [COM1] * Delay 2 Sec *
* Base Address, IRQ [3F8h, 4] * Delay 4 Sec *
* Serial Port Mode [115200 8,n,1] * *
* Flow Control ***** Options ***** *
* Redirection After BIOS POST * No Delay *
* Terminal Type * Delay 1 Sec *
* VT-UTF8 Combo Key Support * Delay 2 Sec *
* Sredir Memory Display Delay * Delay 4 Sec *
* * *
* * Select Screen *
* ** Select Item *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* *
*****
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```

2.6 USB Configuration

2.6.1 USB Ports

Set this value to allow the system to enable or disable the onboard USB ports. The Optimal and Fail-Safe default setting is Enabled.

Option	Description
Disabled	This setting makes the onboard USB ports unavailable.
Enabled	This setting allows the use of the USB ports. This is the default setting.

```

Advanced
*****
* USB Configuration * Options *
* ***** *
* Module Version - 2.24.2-13.4 * Enabled *
* * Disabled *
* USB Devices Enabled : *
* 1 Drive *
* *
* [USB Port 0,1] [Enabled] *
* USB Port 2,3 [Enabled] *
* USB Device [Disabled] *
* Legacy USB Support [Enabled] *
* USB 2.0 Controller Mode [HiSpeed] *
* BIOS EHCI Hand-Off [Enabled] *
* USB Beep Message [Enabled] *
* * *
* * USB Mass Storage Device Configuration *
* * *
* * Select Screen *
* ** Select Item *
* +- Change Option *
* F1 General Help *
* F10 Save and Exit *
* ESC Exit *
* *
*****
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```

2.6.2 USB Device

Drivers are needed to enable the full functionality of USB device, if it is enabled.

```

Advanced
*****
* USB Configuration                               * Options
* *****
* Module Version - 2.24.2-13.4                   * Enabled
*                                               * Disabled
* USB Devices Enabled :                          *
*   1 Drive                                       *
*                                               *
* USB Port 0,1                                   * [Enabled]
* USB Port 2,3                                   *
* USB Device                                     * *** Options ***
* Legacy USB Support                             * Enabled
* USB 2.0 Controller Mode                       * Disabled
* *****
* BIOS EHCI Hand-Off                             * [Enabled]
* USB Beep Message                               * [Enabled]
*                                               * ** Select Screen
*                                               * ** Select Item
*                                               * +- Change Option
* * USB Mass Storage Device Configuration        * F1 General Help
*                                               * F10 Save and Exit
*                                               * ESC Exit
*                                               *
*                                               *
*****
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```

2.6.3 Legacy USB Support

Legacy USB Support refers to the USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard will not become available until a USB compatible operating system is fully loaded with USB drivers. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB drivers loaded on the system. Set this value to enable or disable the Legacy USB Support. The Optimal and Fail-Safe default setting is Disabled.

Option	Description
Disabled	Set this value to prevent the use of any USB device in DOS or during system boot. This is the default setting.
Enabled	Set this value to allow the use of USB devices during boot and while using DOS.
Auto	This option auto detects USB Keyboards or Mice and if found, allows them to be utilized during boot and while using DOS.

```

Advanced
*****
* USB Configuration                               * Options
* *****                                       *
* Module Version - 2.24.2-13.4                   * Disabled
*                                               * Enabled
* USB Devices Enabled :                          * Auto
*   1 Drive                                       *
*                                               *
* USB Port 0,1                                   *** Options ***
* USB Port 2,3                                   * Disabled
* USB Device                                     * Enabled
* Legacy USB Support                             * Auto
* USB 2.0 Controller Mode                       [Enabled]
* BIOS EHCI Hand-Off                            [Enabled]
* USB Beep Message
* * USB Mass Storage Device Configuration
*
*
*
*****
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```

2.6.4 USB 2.0 Controller Mode

Allow you configure the USB 2.0 controller in HiSpeed or Full Speed.

```

Advanced
*****
* USB Configuration                               * Options
* ****
* Module Version - 2.24.2-13.4                   * FullSpeed
* ****                                           * HiSpeed
* USB Devices Enabled :                          *
*   1 Drive                                       *
* ****                                           *
* USB Port 0,1                                   * [Enabled]
* USB Port 2,3                                   *
* USB Device                                     * *** Options ***
* Legacy USB Support                             * FullSpeed
* USB 2.0 Controller Mode                        * HiSpeed
* BIOS EHCI Hand-Off                             * [Enabled]
* USB Beep Message                               * [Enabled]
*
* * USB Mass Storage Device Configuration
*
*
*
*
*****
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```

2.6.5 BIOS EHCI Hand-Off

Allow you to enable or disable support for the operating system without an EHCI hand-off feature.

```

Advanced
*****
* USB Configuration                               * Options
* ****
* Module Version - 2.24.2-13.4                   * Disabled
* ****                                           * Enabled
* USB Devices Enabled :                          *
*   1 Drive                                       *
* ****                                           *
* USB Port 0,1                                   * [Enabled]
* USB Port 2,3                                   *
* USB Device                                     * *** Options ***
* Legacy USB Support                             * Disabled
* USB 2.0 Controller Mode                        * Enabled
* BIOS EHCI Hand-Off                             * [Enabled]
* USB Beep Message                               * [Enabled]
*
* * USB Mass Storage Device Configuration
*
*
*
*
*****
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```

2.6.6 USB Beep Message

To play a beep sound when plug in a USB device, please enable it.

```

Advanced
*****
* USB Configuration                               * Options
* Module Version - 2.24.2-13.4                    * Disabled
* USB Devices Enabled :                          * Enabled
*   1 Drive
* USB Port 0,1 [Enabled]
* USB Port 2,3
* USB Device
* Legacy USB Support
* USB 2.0 Controller Mode
* BIOS EHCI Hand-Off [Enabled]
* USB Beep Message [Enabled]
*
* * USB Mass Storage Device Configuration
*
*****
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```

2.6.7 USB Mass Storage Device Configuration

USB Mass Storage Reset Delay

```

Advanced
*****
* USB Mass Storage Device Configuration           * Options
* USB Mass Storage Reset Delay [20 Sec]          * 10 Sec
* Device #1 USB2.0 Flash Disk                    * 20 Sec
* Emulation Type [Auto]                          * 30 Sec
*                                                * 40 Sec
*
* * USB Mass Storage Device Configuration
*
* * USB Mass Storage Reset Delay [20 Sec]
* Device #1 USB2.0 Flash Disk
* Emulation Type [Auto]
*
* * USB Mass Storage Device Configuration
*
* * USB Mass Storage Reset Delay [20 Sec]
* Device #1 USB2.0 Flash Disk
* Emulation Type [Auto]
*
*****
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```


Emulation Type

Emulation a USB device to floppy/forced FDD/HDD/CDROM

```

*****
***** Advanced *****
*****
* USB Mass Storage Device Configuration * Options *
*****
* USB Mass Storage Reset Delay [20 Sec] * Auto *
* * Floppy *
* Device #1 USB2.0 Flash Disk * Forced FDD *
* Emulation Type [Auto] * Hard Disk *
* * CDROM *
* * *
* * Options * *
* * Auto * *
* * Floppy * *
* * Forced FDD * *
* * Hard Disk * *
* * CDROM * *
* * *
* * * * Select Screen *
* * * * Select Item *
* * +- * Change Option *
* * F1 * General Help *
* * F10 * Save and Exit *
* * ESC * Exit *
* * *
*****
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```

2.7 SB LAN

Allow you to enable or disable internal LAN. MAC address is as followings.

```

Main Advanced PCIPnP Boot Security Chipset Exit
*****
* Advanced Settings * Options *
*****
* WARNING: Setting wrong values in below sections * Enabled *
* may cause system to malfunction. * Disabled *
* * *
* * Board Configuration *
* * IDE Configuration *
* * Floppy Configuration *
* * Remote Access Configuration *** Options ***
* * USB Configuration * Enabled *
* * * Disabled *
* SB LAN *****
* MAC Address 00 1B EB 74 00 54 *
* * *
* * * * Select Screen *
* * * * Select Item *
* * +- * Change Option *
* * F1 * General Help *
* * F10 * Save and Exit *
* * ESC * Exit *
* * *
*****
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```

3. PCI PnP

3.1 PCI Latency Timer

It allows you to select the value of PCI clocks for all of the PCI device latency timing register, in which it decides how long a PCI device can hog the PCI bus. Lower the values lets go quicker but some devices like PCI sound cards may crackle. Default is 64.

Option	Description
32	This option sets the PCI latency to 32 PCI clock cycles.
64	This option sets the PCI latency to 64 PCI clock cycles. This is the default setting.
96	This option sets the PCI latency to 96 PCI clock cycles.
128	This option sets the PCI latency to 128 PCI clock cycles.
160	This option sets the PCI latency to 160 PCI clock cycles.
192	This option sets the PCI latency to 192 PCI clock cycles.
224	This option sets the PCI latency to 224 PCI clock cycles.
248	This option sets the PCI latency to 248 PCI clock cycles.

```

Main  Advanced  PCI PnP  Boot  Security  Chipset  Exit
*****
* Advanced PCI/PnP Settings                               **      Options
* *****
* WARNING: Setting wrong values in below sections      ** 32
*   may cause system to malfunction.                   ** 64
*                                                       ** 96
* Clear NVRAM                                           ***  Options ***
* Plug & Play O/S                                       * 32
* PCI Latency Timer                                     * 64
* Allocate IRQ to PCI VGA                               * 96
* Palette Snooping                                     * 128
* PCI IDE BusMaster                                   * 160
* OffBoard PCI/ISA IDE Card                           * 192
*                                                       * 224
* IRQ3                                                 * 248
* IRQ4
* IRQ5
* IRQ6
* IRQ7
* IRQ9
* IRQ10
* IRQ10
*****
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```

3.2 Allocate IRQ to PCI VGA

Set this value to allow or restrict the system from giving addresses to PCI VGA. The Optimal and Fail-Safe default setting is yes.

Option	Description
Yes	Set this value to allow the allocation of an IRQ to a VGA adapter card that uses the PCI local bus. This is the default setting.
No	Set this value to prevent the allocation of an IRQ to a VGA adapter card that uses the PCI local bus.

```

Main      Advanced  PCIPnP    Boot      Security  Chipset   Exit
*****
* Advanced PCI/PnP Settings                               **      Options
*
* WARNING: Setting wrong values in below sections      ** Yes
*           may cause system to malfunction.           ** No
*
* Clear NVRAM                                           [No]
* Plug & Play O/S                                       [No]
* PCI Latency Timer                                     [64]
* Allocate IRQ to PCI VGA *** Options ***
* Palette Snooping                                     * Yes *
* PCI IDE BusMaster                                    * No *
* OffBoard PCI/ISA IDE Card *****
*
* IR03 [Reserved] ** * Select Screen
* IR04 [Reserved] ** +- Select Item
* IR05 [Available] ** F1 Change Option
* IR06 [Available] ** F10 General Help
* IR07 [Available] ** ESC Save and Exit
* IR09 [Available] **
* IR10 [Available] **
*****
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```

3.3 Palette Snooping

When set to "Enabled", the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled, Enabled].

Option	Description
Disabled	This is the default setting and should not be changed unless the VGA card manufacturer requires Palette Snooping to be Enabled.
Enabled	This setting informs the PCI devices that an ISA based Graphics device is installed in the system. It does this so 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 check with your adapter card's manuals first, before modifying the default settings in the BIOS.

```

Main      Advanced  PCIPnP      Boot      Security    Chipset    Exit
*****
* Advanced PCI/PnP Settings                               **          Options          **
* *****
* WARNING: Setting wrong values in below sections      ** Disabled          **
*               may cause system to malfunction.       ** Enabled           **
* *****
* Clear NVRAM                                           [No]                **
* Plug & Play O/S                                       [No]                **
* PCI Latency Timer                                     [64]                **
* Allocate IRQ to PCI VGA                               *** Options ***    **
* Palette Snooping                                     * Disabled *       **
* PCI IDE BusMaster                                    * Enabled *         **
* OffBoard PCI/ISA IDE Card                            *****
*
* IRQ3                                                  [Reserved]         **
* IRQ4                                                  [Reserved]         **
* IRQ5                                                  [Available]        **
* IRQ6                                                  [Available]        **
* IRQ7                                                  [Available]        **
* IRQ9                                                  [Available]        **
* IRQ10                                                 [Available]        **
* *****
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```

3.4 PCI IDE BusMaster.

Sets this value to allow or prevent the use of PCI IDE bus mastering.

Option	Description
Disabled	Set this value to prevent PCI busmastering. This is the default setting.
Enabled	This option specifies that the IDE controller on the PCI local bus has mastering capabilities.

```

Main      Advanced  PCI/PnP  Boot      Security  Chipset  Exit
*****
* Advanced PCI/PnP Settings                               **      Options
* *****
* WARNING: Setting wrong values in below sections      ** Disabled
*              may cause system to malfunction.        ** Enabled
*
* Clear NVRAM                                           [No]
* Plug & Play O/S                                       [No]
* PCI Latency Timer                                     [64]
* Allocate IRQ to PCI VGA                               *** Options ***
* Palette Snooping                                     * Disabled *
* PCI IDE BusMaster                                    * Enabled *
* OffBoard PCI/ISA IDE Card                             *****
*
* IRQ3                                                  [Reserved]
* IRQ4                                                  [Reserved]
* IRQ5                                                  [Available]
* IRQ6                                                  [Available]
* IRQ7                                                  [Available]
* IRQ9                                                  [Available]
* IRQ10                                                 [Available]
*****
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```

3.5 Off-board PCI /ISA IDE Card

Set this value to allow the off-board PCI/ISA IDE Card to be selected. The Optimal and Fail-Safe default setting is auto.

Option	Description
Auto	This setting will auto select the location of an OffBoard PCI IDE adapter card. This is the default setting.
PCI Slot1	This setting will select PCI Slot 1 as the location of the OffBoard PCI IDE adapter card. Use this setting only if there is an IDE adapter card installed in PCI Slot 1.
PCI Slot2	This setting will select PCI Slot 2 as the location of the OffBoard PCI IDE adapter card. Use this setting only if there is an IDE adapter card installed in PCI Slot 2.
PCI Slot3	This setting will select PCI Slot 3 as the location of the OffBoard PCI IDE adapter card. Use this setting only if there is an IDE adapter card installed in PCI Slot 3. This option 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. Use this setting only if there is an IDE adapter card installed in PCI Slot 4. This option 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. Use this setting only if there is an IDE adapter card installed in PCI Slot 5. This option 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. Use this setting only if there is an IDE adapter card installed in PCI Slot 6. This option 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.

```

Main   Advanced   PCIPnP   Boot   Security   Chipset   Exit
*****
* Advanced PCI/PnP Settings                 **          Options         **
*
* WARNING: Setting wrong values in below sections
*            may cause system to malfunction.
*
* Clear NVRAM                               **          Options         **
* Plug & Play O/S                           * Auto
* PCI Latency Timer                          * PCI Slot1
* Allocate IRQ to PCI VGA                    * PCI Slot2
* Palette Snooping                           * PCI Slot3
* PCI IDE BusMaster                           * PCI Slot4
* OffBoard PCI/ISA IDE Card                  * PCI Slot5
*                                             * PCI Slot6
*
* IRQ3                                         *
* IRQ4                                         *
* IRQ5                                         *
* IRQ6                                         *
* IRQ7                                         *
* IRQ9                                         *
* IRQ10                                        *
*
*          [Reserved]
*          [Available]
*          [Available]
*          [Available]
*          [Available]
*
*****
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```

3.6 IRQ

This item can select the IRQ with available or reserved. The default settings of IRQ3, 4 are reserved while others are set available. When you set available, the specified IRQ is to be used by a PCI/PnP device; as you set reserved, the IRQ will reserved for legacy ISA devices.

Interrupt	Option	Description
IRQ3 IRQ4 IRQ5 IRQ7 IRQ9 IRQ10 IRQ11 IRQ14 IRQ15	Available	This setting allows the specified IRQ to be used by a PCI/PnP device. This is the default setting.
	Reserved	This setting allows the specified IRQ to be used by a legacy ISA device.

```

Main      Advanced  PCIPnP    Boot      Security  Chipset   Exit
*****
* Allocate IRQ to PCI VGA      [No]          **          Options
* Palette Snooping            [Disabled]   **
* PCI IDE BusMaster           [Disabled]   ** Yes
* OffBoard PCI/ISA IDE Card    [Auto]       ** No
*                               **
* IRQ3                        [Reserved]   **
* IRQ4                        [Reserved]   **
* IRQ5                        [Available]  **
* IRQ6                        [Available]  **
* IRQ7                        [Available]  **
* IRQ9                        [Available]  **
* IRQ10                       [Available]  **
* IRQ11                       [Available]  ** *
* IRQ12                       [Available]  ** **  Select Screen
* IRQ14                       [Available]  ** +-  Select Item
* IRQ15                       [Available]  ** F1   Change Option
*                               ** F10  General Help
*                               ** ESC  Save and Exit
*                               **
* DMA Channel 0               [Available]  **
* DMA Channel 1               [Available]  **
* DMA Channel 3               [Available]  **
*****
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```

3.7 DMA Channel

This item can select the DMA Channel with available or reserved. When set to available, the specified DMA is available to be used by PCI/PnP devices; when set to reserved, the specified DMA to be used by a legacy ISA device.

DMA Channel	Option	Description
DMA Channel 0 DMA Channel 1 DMA Channel 3	Available	This setting allows the specified DMA to be used by PCI/PnP device. This is the default setting.
DMA Channel 5 DMA Channel 6 DMA Channel 7	Reserved	This setting allows the specified DMA to be used by a legacy ISA device.

```

Main      Advanced  PCIPnP    Boot      Security  Chipset    Exit
*****
* IRQ3          [Reserved]      **          Options  *
* IRQ4          [Reserved]      **          *
* IRQ5          [Available]     ** Disabled *
* IRQ6          [Available]     ** 16k      *
* IRQ7          [Available]     ** 32k      *
* IRQ9          [Available]     ** 64k      *
* IRQ10         [Available]     **          *
* IRQ11         [Available]     **          *
* IRQ12         [Available]     **          *
* IRQ14         [Available]     **          *
* IRQ15         [Available]     **          *
*
* DMA Channel 0 [Available]     ** *      Select Screen *
* DMA Channel 1 [Available]     ** **     Select Item   *
* DMA Channel 3 [Available]     ** +-     Change Option *
* DMA Channel 5 [Available]     ** F1     General Help *
* DMA Channel 6 [Available]     ** F10    Save and Exit *
* DMA Channel 7 [Available]     ** ESC    Exit         *
*
* [Reserved Memory Size] [Disabled] **
*****
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```


3.8 Reserved Memory Size

Set this value to allow the system to reserve memory that is used by ISA devices. The optimal and Fail-Safe default setting is disabled.

Option	Description
Disabled	Set this value to prevent BIOS from reserving memory to ISA devices.
16K	Set this value to allow the system to reserve 16K of the system memory to the ISA devices.
32K	Set this value to allow the system to reserve 32K of the system memory to the ISA devices.
64K	Set this value to allow the system to reserve 64K of the system memory to the ISA devices.

```

Main      Advanced  PCIPnP    Boot      Security  Chipset   Exit
*****
* IRQ3    [Reserved]  **          Options
* IRQ4    [Reserved]  **
* IRQ5    [Available] ** Disabled
* IRQ6    [Available] ** 16k
* IRQ7    [Available] ** 32k
* IRQ9    [Available] ** 64k
* IRQ10   [Available] **
* IRQ11   **** Options **** **
* IRQ12   * Disabled * **
* IRQ14   * 16k * **
* IRQ15   * 32k * **
*         * 64k * **
*         ****
* DMA Channel 0 [Available] ** * Select Screen
* DMA Channel 1 [Available] ** ** Select Item
* DMA Channel 3 [Available] ** +- Change Option
* DMA Channel 5 [Available] ** F1 General Help
* DMA Channel 6 [Available] ** F10 Save and Exit
* DMA Channel 7 [Available] ** ESC Exit
*
* Reserved Memory Size [Disabled] **
*****
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```

4 Boot Settings Configuration

```

Boot
*****
* Boot Settings Configuration * Options *
* Quick Boot [Enabled] * Disabled *
* Quiet Boot [Disabled] * Enabled *
* Add On ROM Display Mode [Force BIOS] * *
* Bootup Num-Lock [On] * *
* PS/2 Mouse Support [Auto] * *
* Wait For 'F1' If Error [Disabled] * *
* Hit 'DEL' Message Display [Enabled] * *
* Interrupt 19 Capture [Enabled] * *
* Boot From LAN [Disabled] * *
* OnBoard PCI VGA [Enabled] * *
* Primary Display [VGA/EGA] * ** Select Screen *
* Beep Function [Disabled] * ** Select Item *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* * *
*****
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```

4.1 Quick Boot

Set the value to enable to allow the BIOS to skip some Power On Self Tests (POST) while booting. When you set the value to disable the BIOS will performs all the POST items.

Option	Description
Disabled	Set this value to allow the BIOS to perform all POST tests.
Enabled	Set this value to allow the BIOS to skip certain POST tests to boot faster.

```

Boot
*****
* Boot Settings Configuration * Options *
* Quick Boot [Enabled] * Disabled *
* Quiet Boot [Disabled] * Enabled *
* Add On ROM Display Mode [Force BIOS] * *
* Bootup Num-Lock [On] * *
* PS/2 Mouse Support [Auto] * *
* Wait For 'F1' If Error [Disabled] * *
* Hit 'DEL' Message Display *** Options *** *
* Interrupt 19 Capture * Disabled * *
* Boot From LAN * Enabled * *
* OnBoard PCI VGA ***** *
* Primary Display [VGA/EGA] * ** Select Screen *
* Beep Function [Disabled] * ** Select Item *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* * *
*****
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```

4.2 Quiet Boot

Set this value to allow the boot up screen options to be modified between POST messages or OEM logo. The Optimal and Fail-Safe default setting is enabled.

Option	Description
Disabled	Set this value to allow the computer system to display the POST messages.
Enabled	Set this value to allow the computer system to display the OEM logo. This is the default setting.

```

-
                                Boot
*****
* Boot Settings Configuration                                     * Options
* *****
* Quick Boot [Enabled]                                         * Disabled
* Quiet Boot [Disabled]                                        * Enabled
* Add On ROM Display Mode [Force BIOS]
* Bootup Num-Lock [On]
* PS/2 Mouse Support [Auto]
* Wait For 'F1' If Error [Disabled]
* Hit 'DEL' Message Display *** Options ***
* Interrupt 19 Capture * Disabled *
* Boot From LAN * Enabled *
* OnBoard PCI VGA *****
* Primary Display [VGA/EGA] * ** Select Screen
* Beep Function [Disabled] * ** Select Item
* OnBoard Virtual Flash FDD * +- Change Option
* * * F1 General Help
* * * F10 Save and Exit
* * * ESC Exit
*
*
*****
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```

4.3 Add-on ROM Display Mode

Set this option to display add-on ROM (read-only memory) messages. The Optimal and Fail-Safe default setting is Force BIOS. An example of this is a SCSI BIOS or VGA BIOS.

Option	Description
Force BIOS	Set this value to allow the computer system to force a third party BIOS to display during system boot. This is the default setting.
Keep Current	Set this value to allow the computer system to display the ezPORT information during system boot.

```

*****
***                                     Boot                                     ***
*****
* Boot Settings Configuration                                     * Options *
*****
* Quick Boot [Enabled] * Force BIOS *
* Quiet Boot [Disabled] * Keep Current *
* Add On ROM Display Mode [Force BIOS] *
* Bootup Num-Lock [On] *
* PS/2 Mouse Support [Auto] *
* Wait For 'F1' If Error [Disabled] *
* Hit 'DEL' Message Display *** Options *** *
* Interrupt 19 Capture * Force BIOS *
* Boot From LAN * Keep Current *
* OnBoard PCI VGA *****
* Primary Display [VGA/EGA] * ** Select Screen *
* Beep Function [Disabled] * ** Select Item *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * F1 General Help *
* * F10 Save and Exit *
* * ESC Exit *
* *
*****
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```

4.4 Bootup Num-Lock

Option	Description
Off	This option does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard will light up when the Number Lock is engaged.
On	Set this value to allow the Number Lock on the keyboard to be enabled automatically when the computer system is boot up. This allows the immediate use of 10-keys numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard will be lit. This is the default setting.

```

Boot
*****
* Boot Settings Configuration                               * Options *
* *****                                                 * *****
* Quick Boot [Enabled] * Off *
* Quiet Boot [Disabled] * On *
* Add On ROM Display Mode [Force BIOS] * *
* Bootup Num-Lock [On] * *
* PS/2 Mouse Support [Auto] * *
* Wait For 'F1' If Error [Disabled] * *
* Hit 'DEL' Message Display *** Options *** *
* Interrupt 19 Capture * Off *
* Boot From LAN * On *
* OnBoard PCI VGA ***** *
* Primary Display [VGA/EGA] * * Select Screen *
* Beep Function [Disabled] * * Select Item *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* * * *
*****
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```

4.5 Wait For "F1" If Error

Option	Description
Disabled	This prevents the ezPORT to wait on an error for user intervention. This setting should be used if there is a known reason for a BIOS error to appear. An example would be a system administrator must remote boot the system. The computer system does not have a keyboard currently attached. If this setting is set, the system will continue to boot up in to the operating system. If 'F1' is enabled, the system will wait until the BIOS setup is entered.
Enabled	Set this value to allow the system 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. This is the default setting.

```

*****
                               Boot
*****
* Boot Settings Configuration                                     * Options
* *****
* Quick Boot [Enabled] * Disabled
* Quiet Boot [Disabled] * Enabled
* Add On ROM Display Mode [Force BIOS]
* Bootup Num-Lock [On]
* PS/2 Mouse Support [Auto]
* Wait For 'F1' If Error [Disabled]
* Hit 'DEL' Message Display [Enabled]
* Interrupt 19 Capture [Enabled]
* Boot From LAN [Disabled]
* OnBoard PCI VGA [Enabled]
* Primary Display [VGA/EGA] * * Select Screen
* Beep Function [Disabled] * * Select Item
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option
* * F1 General Help
* * F10 Save and Exit
* * ESC Exit
*
*****
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```

4.6 Hit "DEL" Message Display

Option	Description
Disabled	This prevents the ezPORT to display Hit Del to enter Setup during memory initialization. If Quiet Boot is enabled, the Hit 'DEL' message will not display.
Enabled	This allows the ezPORT to display Hit Del to enter Setup during memory initialization. This is the default setting.

```

*****
                          Boot
*****
* Boot Settings Configuration                               * Options
* *****
* Quick Boot [Enabled] * Disabled
* Quiet Boot [Disabled] * Enabled
* Add On ROM Display Mode [Force BIOS]
* Bootup Num-Lock [On]
* PS/2 Mouse Support [Auto]
* Wait For 'F1' If Error [Disabled]
* Hit 'DEL' Message Display *** Options ***
* Interrupt 19 Capture * Disabled
* Boot From LAN * Enabled
* OnBoard PCI VGA *****
* Primary Display [VGA/EGA] ** Select Screen
* Beep Function [Disabled] ** Select Item
* OnBoard Virtual Flash FDD [Disabled] +- Change Option
* * F1 General Help
* * F10 Save and Exit
* * ESC Exit
*
*****
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```

4.7 Interrupt 19 Capture

Set this value to allow option ROMs such as network controllers to trap BIOS interrupt 19.

Option	Description
Disabled	The BIOS prevents option ROMs from trapping interrupt 19.
Enabled	The BIOS allows option ROMs to trap interrupt 19.

```

Boot
*****
* Boot Settings Configuration                               * Options *
* *****                                                *
* Quick Boot [Enabled] * Disabled *
* Quiet Boot [Disabled] * Enabled *
* Add On ROM Display Mode [Force BIOS] *
* Bootup Num-Lock [On] *
* PS/2 Mouse Support [Auto] *
* Wait For 'F1' If Error [Disabled] *
* Hit 'DEL' Message Display *** Options *** *
* Interrupt 19 Capture * Disabled *
* Boot From LAN * Enabled *
* OnBoard PCI VGA *
* Primary Display [VGA/EGA] * ** Select Screen *
* Beep Function [Disabled] * ** Select Item *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* *
*
*****
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```

4.8 Boot From LAN

```

Boot
*****
* Boot Settings Configuration                               * Options *
* *****                                                *
* Quick Boot [Enabled] * Disabled *
* Quiet Boot [Disabled] * Used INT 18h *
* Add On ROM Display Mode [Force BIOS] * Used INT 19h *
* Bootup Num-Lock [On] * PnP/BEV(BBS) *
* PS/2 Mouse Support * RPL *
* Wait For 'F1' If Error * Disabled *
* Hit 'DEL' Message Display * Used INT 18h *
* Interrupt 19 Capture * Used INT 19h *
* Boot From LAN * PnP/BEV(BBS) *
* OnBoard PCI VGA * RPL *
* Primary Display *
* Beep Function [Disabled] * ** Select Screen *
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option *
* * * F1 General Help *
* * * F10 Save and Exit *
* * * ESC Exit *
* *
*
*****
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```


4.9 Beep Function

Set this value to allow the system to enable or disable generating a beep after a successful posting.

```

*****
* Boot Settings Configuration                                     * Options
* *****
* Quick Boot [Enabled] * Enabled
* Quiet Boot [Disabled] * Disabled
* Add On ROM Display Mode [Force BIOS] *
* Bootup Num-Lock [On] *
* PS/2 Mouse Support [Auto] *
* Wait For 'F1' If Error [Disabled] *
* Hit 'DEL' Message Display *** Options *** *
* Interrupt 19 Capture * Enabled *
* Boot From LAN * Disabled *
* OnBoard PCI VGA *****
* Primary Display [VGA/EGA] * ** Select Screen
* Beep Function [Disabled] * ** Select Item
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option
* * * F1 General Help
* * * F10 Save and Exit
* * * ESC Exit
*
*****
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```

4.10 OnBoard Virtual Flash FDD

This allows you to "Enable" or "Disable" the onboard SPI FLASH-DISK

```

*****
* Boot Settings Configuration                                     * Options
* *****
* Quick Boot [Enabled] * Disabled
* Quiet Boot [Disabled] * Enabled
* Add On ROM Display Mode [Force BIOS] * Diskette Write Protect
* Bootup Num-Lock [On] * USB Hot Swap
* PS/2 Mouse Support [Auto] *
* Wait For 'F1' If Error *** Options *** *
* Hit 'DEL' Message Display * Disabled *
* Interrupt 19 Capture * Enabled *
* Boot From LAN * Diskette Write Protect *
* OnBoard PCI VGA * USB Hot Swap *
* Primary Display *****
* Beep Function [Disabled] * ** Select Screen
* OnBoard Virtual Flash FDD [Disabled] * +- Change Option
* * * F1 General Help
* * * F10 Save and Exit
* * * ESC Exit
*
*****
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```


5.2 Change User Password

```

Main   Advanced  PCIPnP  Boot   Security  Chipset  Exit
*****
* Security Settings                                     *
* *****                                             *
* Supervisor Password :Not Installed                   *
* User Password       :Not Installed                   *
* *****                                             *
* Change Supervisor Password                           *
* Change User Password                                *
* *****                                             *
* Boot Sector Virus Protection                         *
* Enter New Password [ ]                             *
* *****                                             *
* *****                                             *
* * Select Screen                                     *
* ** Select Item                                     *
* Enter Change                                       *
* F1 General Help                                   *
* F10 Save and Exit                                 *
* ESC Exit                                          *
* *****                                             *
*****
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```

5.3 Boot Sector Virus Protection

Option	Description
Disabled	Set this value to prevent the Boot Sector Virus Protection. This is the default setting.
Enabled	Select Enabled to enable boot sector protection. ezPORT 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. If enabled, the following appears when a write is attempted to the boot sector. You may have to type N several times to prevent the boot sector write. Boot Sector Write! Possible VIRUS: Continue (Y/N)? _ 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: Format!!! Possible VIRUS: Continue (Y/N)? _

6 Chipset

```

Main    Advanced  PCIPnP  Boot    Security  Chipset  Exit
*****
* Advanced Chipset Settings                      * Options for NB
* *****
* WARNING: Setting wrong values in below sections *
*           may cause system to malfunction.
* *****
* * NorthBridge Configuration                    *
* * SouthBridge Configuration                   *
* *****
*
*
*
* * * Select Screen
* * * Select Item
* * * Enter Go to Sub Screen
* * * F1 General Help
* * * F10 Save and Exit
* * * ESC Exit
* *****
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```

6.1 NorthBridge Configuration

6.1.1 DRAM Timing Setting By

Allow you to set DRAM timing from BIOS or Manual

```

*****
* NorthBridge Chipset Configuration              * Options
* *****
* DRAM Timing Setting By [Manual]             * Manual
*   CAS Latency            [ 3 CLKs]           * BIOS
*   tWR                    [ 2 CLKs]
*   tRC                     [ 9 CLKs]
*   tRP                      [ 3 CLKs]
*   tRCD                     [ 3 CLKs]
*   Read/Write Reorder     [Disabled]
* *****
*   CAS Latency            [ 3 CLKs]
*   tWR                     [ 4 CLKs]
*   tRFC                     [ 38]
*   tRP                      [ 4 CLKs]
*   tRCD                     [ 4 CLKs]
* *****
* * * * * Select Screen
* * * * * Select Item
* * +- Change Option
* * * * * F1 General Help
* * * * * F10 Save and Exit
* * * * * ESC Exit
* *****
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```

6.2 SouthBridge Configuration

6.2.1 P.O.S.T. Forward, To

This allow you to set the P.O.S.T. Forward to COM1.

```

Chipset
*****
* South Bridge Chipset Configuration                               * Options *
* *****                                                         *
* P.O.S.T. Forward To [Disabled]                                * Disabled *
*                                                                * COM1    *
* * ISA Configuration                                           *         *
* * Serial/Parallel Port Configuration                          *         *
* * WatchDog Configuration                                      *         *
* * Multi-Function Port Configuration                           *         *
* * GPCS Configuration                                         *         *
* * Redundancy Control Configuration                            *         *
* *                                                               *         *
* * ** Select Screen                                           *         *
* * ** Select Item                                             *         *
* * +- Change Option                                           *         *
* * F1 General Help                                           *         *
* * F10 Save and Exit                                          *         *
* * ESC Exit                                                  *         *
* *                                                               *         *
*****
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```

6.2.2 ISA Configuration

This allows you to set the clocks to ISA I/O and Memory.

```

Chipset
*****
* ISA Clock [8.3MHz]                                           * Options *
* ISA 16bits I/O wait-state [1 clock]                          *         *
* ISA 8bits I/O wait-state [4 clock]                            * 8.3MHz  *
* ISA 16bits Memory wait-state [1 clock]                       * 16.6MHz *
* ISA 8bits Memory wait-state [4 clock]                        *         *
* *                                                               *         *
* * ** Select Screen                                           *         *
* * ** Select Item                                             *         *
* * +- Change Option                                           *         *
* * F1 General Help                                           *         *
* * F10 Save and Exit                                          *         *
* * ESC Exit                                                  *         *
* *                                                               *         *
*****
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```

6.2.3 Serial/Parallel Port Configuration

This option specifies the address/mode/IRQ for serial, parallel ports.

Option	Description
Disabled	Set this value to prevent the serial port from accessing any system resources. When this option is set to <i>Disabled</i> , the serial port physically becomes unavailable.
3F8/IRQ4	Set this value to allow the serial port to use 3F8 as its I/O port address and IRQ 4 for the interrupt address. This is the default setting. The majority of serial port 1 or COM1 ports on computer systems use IRQ4 and I/O Port 3F8 as the standard setting. The most common serial device connected to this port is a mouse. If the system will not use a serial device, it is best to set this port to <i>Disabled</i> .
2F8/IRQ3	Set this value to allow the serial port to use 2F8 as its I/O port address and IRQ 3 for the interrupt address. If the system will not use a serial device, it is best to set this port to <i>Disabled</i> .
3E8/IRQ4	Set this value to allow the serial port to use 3E8 as its I/O port address and IRQ 4 for the interrupt address. If the system will not use a serial device, it is best to set this port to <i>Disabled</i> .
2E8/IRQ3	Set this value to allow the serial port to use 2E8 as its I/O port address and IRQ 3 for the interrupt address. If the system will not use a serial device, it is best to set this port to <i>Disabled</i> .

Option	Description
Disabled	Set this value to prevent the parallel port from accessing any system resources. When the value of this option is set to <i>Disabled</i> , the printer port becomes unavailable.
378	Set this value to allow the parallel port to use 378 as its I/O port address. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.
278	Set this value to allow the parallel port to use 278 as its I/O port address.

Option	Description
Normal	Set this value to allow the standard parallel port mode to be used. This is the default setting.
Bi-Directional	Set this value to allow data to be sent to and received from the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bi-directional communication.

Option	Description
5	Set this value to allow the serial port to use Interrupt 3.
7	Set this value to allow the serial port to use Interrupt 7. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

```

Chipset
*****
* SB Serial Port 1          [3F8]          * Options *
*   Serial Port IRQ 1      [IRQ4]          *
*   Serial Port Boud Rate  [115200 BPS]    * Disabled *
* PWM & COM2 Pin Select    [SB Serial Port 2] * 378 *
* SB Serial Port 2        [2F8]          * 278 *
*   Serial Port IRQ 2      [IRQ3]          *
*   Serial Port Boud Rate  [115200 BPS]    *
* SB Serial Port 3        [3E8]          *
*   Serial Port IRQ 3      [IRQ10]         *
*   Serial Port Boud Rate  [115200 BPS]    *
* SB Serial Port 4        [2E8]          *
*   Serial Port IRQ 4      [IRQ11]         *
*   Serial Port Boud Rate  [115200 BPS]    * * Select Screen *
* SB Parallel Port Address [378]          * ** Select Item *
*   Parallel Port Mode     [BPP]          * +- Change Option *
*   Parallel Port IRQ      [IRQ7]        * F1 General Help *
*                               * F10 Save and Exit *
*                               * ESC Exit *
*                               *
*****
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```


6.2.5 Multi-funtion Port Configuration

Generally, GPIO and PWM share the same outputs/ports routed from SoC. Thus, a pin-selecting function is built into BIOS settings to determine the physical modes of the ports.

Moreover, logically, VDX series supports 32 channels PWM and 40 channels GPIO. However, in real appliances, it depends whether these ports are physically routed from SoC to external connectors or not.

The I/O port sharing mechanism is as the below table.

Port	Sharing
PORT0 bit0~7	GPIO0~7/8051 P0/PWM0~7
PORT1 bit0~7	GPIO8~15/8051 P1/PWM8~15
PORT2 bit0~7	GPIO16~23/8051 P1/PWM16~23
PORT3 bit0~3	GPIO24~27/8051 P3/SPI
PORT3 bit4~5	GPIO28~29/I ² C
PORT3 bit6~7	GPIO30~31/I ² C
PORT4 bit0~7	GPIO32~40/PWM24~31/SB Serial Port 1
PORT5 bit0~7	SB Serial Port 2/8254 Timer Counter


```

Chipset
*****
***** Options *****
* Port0 Function [GPIO] **
* Port0 Bit0 Direction [IN] ** GPIO
* Port0 Bit1 Direction [IN] ** 8051 P0
* Port0 Bit2 Direction [IN] ** PWM00..PWM07
* Port0 Bit3 Direction [IN] **
* Port0 Bit4 Direction [IN] **
* Port0 Bit5 Direction *** Options *** **
* Port0 Bit6 Direction * GPIO * **
* Port0 Bit7 Direction * 8051 P0 * **
* ***** PWM00..PWM07 ***** **
* Port1 Function ***** **
* Port1 Bit0 Direction [IN] ** ** Select Screen
* Port1 Bit1 Direction [IN] ** ** Select Item
* Port1 Bit2 Direction [IN] ** +- Change Option
* Port1 Bit3 Direction [IN] ** F1 General Help
* Port1 Bit4 Direction [IN] ** F10 Save and Exit
* Port1 Bit5 Direction [IN] ** ESC Exit
* Port1 Bit6 Direction [IN] **
* Port1 Bit7 Direction [IN] **
*****
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```

```

Chipset
*****
***** Options *****
* Port3 Bit0 Function [GPIO] **
* Direction [IN] ** GPIO
* Port3 Bit1 Function [GPIO] ** 8051 P3
* Direction [IN] ** SPI
* Port3 Bit2 Function [GPIO] **
* Direction [IN] **
* Port3 Bit3 Function [GPIO] **
* Direction [IN] **
* *****
* Port3 Bit4 Function [I2C] **
* Port3 Bit5 Function [I2C] **
* *****
* Port3 Bit6 Function [I2C] ** ** Select Screen
* Port3 Bit7 Function [I2C] ** ** Select Item
* ***** +- Change Option
* ***** F1 General Help
* Port4 Function [SB Serial Port 1] ** F10 Save and Exit
* ***** ESC Exit
* Port5 Function [SB Serial Port 2] **
* *****
*****
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```

6.2.6 GPCS Configuration

This option allows you to set address for Flash Disk devices as below.

GPCS Start Address sets the beginning of GPCS address.

GPCS Mask Compare Bit allows you to set the address of the Flash Disk device.

```

Chipset
*****
* GPCS0 Function [Enabled] * Options *
* GPCS0 Command [MEMR/W 8bit] * *
* GPCS0 Start Address [000C8000] * MEMR 8bit *
* GPCS0 Mask Compare Bit *** Options *** * MEMR 16bit *
* GPCS1 Function * MEMR 8bit * * MEMW 8bit *
* * * MEMW 8bit * * MEMW 16bit *
* * * MEMW 16bit * * MEMR/W 8bit *
* * * MEMR/W 8bit * * MEMR/W 16bit *
* * * MEMR/W 16bit * * IOR 8bit *
* * * IOR 8bit * * IOR 16bit *
* * * IOR 16bit * * *
* * * IOW 8bit * * * Select Screen *
* * * IOW 16bit * * ** Select Item *
* * * IOR/W 8bit * * +- Change Option *
* * * IOR/W 16bit * * * F1 General Help *
* * * * * * * F10 Save and Exit *
* * * * * * * ESC Exit *
* * * * * * * *
*****
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```

6.2.7 Redundancy Control Configuration

The mechanism of redundancy can provide extraordinary reliability towards a computing environment where it may easily cause system failure. For example, a system which serves military purposes should never fail. Through a duplication/slave device to the master device below, the slave device can constantly backup vital runtime information from master device. Therefore, once the master is down, the slave shoulders the responsibility, continuously carries on the execution of application, and replaces the master device. Moreover, if the failure one is back to live, the wakened one, previously master, automatically becomes a slave device.

```

Chipset
*****
* Dual Port 4KB SRAM [Enabled] * Options *
* SRAM Command [MEMR/W 16bit] * *
* SRAM Start Address [000D0000] * Enabled *
* SRAM Mask Compare Bit [FFFFFF00] * Disabled *
* SB Serial Port 9 [2E8] * *
* Serial Port IRQ 9 [IRQ9] * *
* WatchDog0 Condition [Disabled] * *
* WatchDog1 Condition [Disabled] * *
* Invalid OPCODE Condition [Disabled] * *
* KB/MS System Fail [Normal] * *
* GPIO PORT0 System Fail [Normal] * *
* GPIO PORT1 System Fail [Normal] * *
* GPIO PORT2 System Fail [Normal] * ** Select Screen *
* LPT PORT System Fail [Normal] * ** Select Item *
* UART1 System Fail [Normal] * +- Change Option *
* UART2 System Fail [Normal] * F1 General Help *
* UART3 System Fail [Normal] * F10 Save and Exit *
* UART4 System Fail [Normal] * ESC Exit *
* *
*****
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```

Options	Description
WatchDog0 Condition	If mechanism of WatchDog0 is enable and this option, 'WatchDog0 Condition' is enable as well, any events occurred from WatchDog0 will trigger the mechanism of redundancy.
WatchDog1 Condition	Same as the description of 'WatchDog0 Condition'
Invalid OPCODE Condition	If CPU operates any invalid OPCode, it will trigger the mechanism of redundancy.
KB/MS System Fail	If Keyboard or mouse falls, it will trigger the mechanism of redundancy.
GPIO PORT0 System Fail	GPIO POR0 can be tri-state/floating, once the mechanism of redundancy is triggered.
GPIO PORT1 System Fail	Same as the description of 'GPIO PORT0 System Fail'
GPIO PORT2 System Fail	Same as the description of 'GPIO PORT0 System Fail'
LPT PORT System Fail	Same as the description of 'GPIO PORT0 System Fail'
UART1 System Fail	Same as the description of 'GPIO PORT0 System Fail'
UART2 System Fail	Same as the description of 'GPIO PORT0 System Fail'
UART3 System Fail	Same as the description of 'GPIO PORT0 System Fail'
UART4 System Fail	Same as the description of 'GPIO PORT0 System Fail'

7 Exit

```

_ Main      Advanced  PCIPnP    Boot     Security  Chipset  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                               * Enter  Go to Sub Screen *
* F1 General Help                                    * F1     General Help   *
* F10 Save and Exit                                  * F10    Save and Exit  *
* ESC Exit                                           * ESC     Exit           *
*                                                       *                 *
*                                                       *                 *
*****
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```

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