# PL-80330

**And Board-level MB-80330**

# User Manual

## AMD® eOntario Processor-based Gaming System, DirectX 11, OpenGL 4, 10 x COM, 2nd RTC and NVRAM

**Version 0.1d**

# Table of Contents

Chapter 1. General Information ..... 3
1.1 Introduction ..... 3
1.2 Specifications ..... 5
1.3 Precautions ..... 11
1.4 Layout..... ..... 12
1.5 Dimensions ..... 15
Chapter 2. Connector and Jumper Settings ..... 17
Chapter 3. BIOS Setup ..... 34
3.1 Quick Setup ..... 34
3.2 Entering the CMOS Setup Program ..... 35
3.3 Main ..... 37
3.4 Advanced ..... 38
3.5 Chipset ..... 39
3.6 Boot ..... 40
3.7 Security ..... 41
3.9 Save and Exit Setup ..... 42

# Chapter 1. General Information

## 1.1 Introduction

PL-80330 is a graphic-enhanced mainstream gaming system. Built with AMD eOntario chipsets, PL-80330 provides superior integrated graphic performance and reaches a 2,500 score while running 3DMark 2006 under 1024 x 768 x 32bits.

With UVD 3.0, PL-80330 can offload video decode dramatically reducing CPU loading during video play. It supports full bit-stream decoding of H.264/MPEG-4 AVC, VC-1, DivX, Xvid, MPEG2.

**Key features:**

- GLI compliant
- Onboard graphic 3DMark 06 up to 2,500 score
- Support Directx 11 and OpenGL 4
- Support full bitstream decoding of H.264/MPEG-4 AVC, VC-1, DivX, Xvid, MPEG2, as well as Blu-ray 3D
- AC Power Fail Detection w/ interrupt
- Instant ON/OFF in 500ms
- Battery Low-Charge Detection
- 10 x COM, 2 x LAN, NVRAM, TPM, 2nd RTC

PL-80330 provides various security mechanisms, including physical security, data security and software security. AC Power Fail Detection is one of the important features of data security the unit offers. With this function, PL-80330 can write data into NVRAM while experiencing unpredictable AC Power Failures, and make sure the data is secured under any circumstance.

As a result, PL-80330 is the perfect platform for slot machines, amusement/arcade games with prizes (AWP) and for use as a video lottery terminal (VLT).

For more product information visit our website www.win-ent.com or contact a sales representative at sales@win-ent.com.

## 1.2 Specifications

**PL-80330**

| | |
|---|---|
| ■ ***System*** | |
| CPU | AMD® T56N Dual Core 1.65GHz<br>AMD® T40R Single Core 1.0GHz |
| BIOS | AMI® BIOS |
| Chipset | AMD® A55E chipset |
| System Memory | 2 x DDR3 SODIMM socket support up to 8GB |
| Watchdog Timer | 255 levels timer interval, (1sec. to 255min.), setup by software. |
| ■ ***Display*** | |
| Video Chipset | AMD® T56N w/ ATI® Radeon™ HD6320<br>AMD® T40R w/ ATI® Radeon™ HD6250<br><br>- Microsoft® DirectX® 11<br>- OpenGL 4.0<br>- OpenCL 1.0<br>- UVD (Universal Video Decoder) 3.0; Full bitstream decoding of<br>H.264/MPEG-4 AVC, VC-1, DivX, Xvid, MPEG2, as well as Blu-ray 3D |
| Video Interface | up to 2560 x 1600 |
| ■ ***Audio*** | |
| Audio Chipset | HDA 5.1 Channel |
| Power amp. | N/A |
| Audio Interface | Front, Surround, CEN/SUB |
| ■ ***Ethernet*** | |
| Ethernet Interface | 2 x PCIe x1 Gigabit Ethernet |
| ■ ***Storage*** | |
| SSD | 2 x CFast<br>2GB NANDrive (Optional 8GB) |
| HDD | Two SATA connectors |
| ■ ***Security*** | |
| Physical Security | Intrusion Detection<br>Onboard Storage |
| Software Security | Boot ROM<br>TPM 1.2<br>FPGA |

| | |
|---|---|
| | WIN ENTERPRISES Locking |
| Data Security | Non-Volatile SRAM<br>H/W Data Mirror Backup<br>AC Power Fail detection w/ interrupt |
| ■ ***Gaming*** | |
| NVRAM | On-board Battery Backup SRAM (battery-less FRAM optional) |
| Timers | Programmable timer with timeout interrupt |
| Intrusion Detection | By battery powered single chip microcontroller<br>Operates with and without system power<br>6x Intrusion detection inputs<br>Logs date/time of latest 100 events<br>Events include door status, system resets/brownouts, NVRAM battery low, …<br>On-chip EEPROM backup |
| Digital I/O | 16 x ESD Protected Input<br>16 x Photo-coupler Protected Input<br>28 x 500mA current sink output<br>4 x 3A current sink output<br>Optional 64 x I/O by request |
| ■ ***Expansion*** | |
| Expansion slot | One PCIe x16 slots |
| ***Mechanical*** | |
| Front I/O | - 1 x DVI, 1 x DVI-D<br>- 2 x RS-232<br>- 2 x LAN<br>- 4 x USB<br>- 5.1 channel audio |
| Rear I/O | - 16 x ESD Protected Input; 16 x Photo-coupler Protected Input<br>- 28 x 500mA current sink output; 4 x 3A current sink output<br>- 2 x RS-232, 1 x RS-485, 2 x ccTalk, 3 x Simple RS-232(Tx, Rx)<br>- 8 x Intrusion Detection |
| ■ ***Power Supply*** | |
| Power input | ATX compliant |
| Power consumption | TBD |
| ■ ***Software*** | |
| O/S | Windows XP(e)<br>Linux |
| ■ ***Mechanical Environment*** | |
| Environmental | Operating Temperature: 0 – 40 ºC (32 ºF – 140 ºF) |

| | |
|---|---|
| | Storage Temperature: -20 – 85 ºC (-4 ºF – 185 ºF)<br>Relative Humidity: 10-85 % RH, non-condensing |
| Compliant | CE/FCC Class A<br>GLI |
| Dimension | 280mm (W) x 175mm (D) x 96mm (H) |
| ***Applications*** | |
| Main Application | Video slot machines (Class II/III)<br>Video lottery terminals<br>Amusement game machines<br>Master unit of roulette machine<br>Downloadable gaming terminal<br>Multi player gaming machines |

| **Order Information** | |
|---|---|
| Standard | |
| PL-80330A | AMD T56N Dual Core 1.65GHz based Gaming System with 10x COM, 2x GbE, 2MB NVRAM, 2MB Boot ROM and TPM |
| PL-80330C | AMD T40R Single Core 1.0GHz based Gaming System with 2 x COM, 1 x GbE, 512KB NVRAM |
| Optional | |
| DK-GA2200 | Development Kit<br>- R217A Gaming I/O testing board<br>- CB-G00010-02 Cable of R217A of MB-80330<br>- CB-SATA07-00 S-ATA cable<br>- CB-IPS200-00 KB/MS cable<br>- CB-IUSB01-00 USB cable<br>- CB-COM007-00; COM cable |

**MB-80330**

| | |
|---|---|
| ■ ***System*** | |
| CPU | AMD® T56N Dual Core 1.65GHz<br>AMD® T40R Single Core 1.0GHz |
| BIOS | AMI® BIOS |
| Chipset | AMD® A55E chipset |
| System Memory | 2 x DDR3 SODIMM socket support up to 8GB |
| Watchdog Timer | 255 levels timer interval, (1sec. to 255min.), setup by software. |
| ■ ***Display*** | |
| Video Chipset | AMD® T56N w/ ATI® Radeon™ HD6320<br>AMD® T40R w/ ATI® Radeon™ HD6250<br><br>- Microsoft® DirectX® 11<br>- OpenGL 4.0<br>- OpenCL 1.0<br>- UVD (Universal Video Decoder) 3.0; Full bitstream decoding of H.264/MPEG-4 AVC, VC-1, DivX, Xvid, MPEG2, as well as Blu-ray 3D |
| Video Interface | T56N<br>1st display Single-link DVI 1920 × 1200 at 60 Hz<br>2nd display Single-link DVI 1920 × 1200 at 60 Hz OR<br>2nd display VGA 2048 × 1536 at 60 Hz<br><br>T40R<br>1st Single-link DVI 1920 × 1200 at 60 Hz<br>2nd Single-link DVI 1920 × 1200 at 60 Hz OR<br>2nd VGA 1920 × 1200 at 60 Hz |
| ■ ***Audio*** | |
| Audio Chipset | HDA 5.1 Channel |
| Power amp. | N/A |
| Audio Interface | Front, Surround, CEN/SUB |
| ■ ***Ethernet*** | |
| Ethernet Interface | 2 x PCIe x1 Gigabit Ethernet |
| ■ ***Storage*** | |
| SSD | 2 x CFast<br>2GB NANDrive (Optional 8GB) |
| HDD | Two SATA connectors |
| ■ ***Security*** | |

| | |
|---|---|
| Physical Security | Intrusion Detection<br>Onboard Storage |
| Software Security | Boot ROM<br>TPM 1.2<br>FPGA<br>WIN ENTERPRISES Locking |
| Data Security | Non-Volatile SRAM<br>H/W Data Mirror Backup<br>AC Power Fail detection w/ interrupt |
| ■ ***Gaming*** | |
| NVRAM | On-board Battery Backup SRAM (battery-less FRAM optional) |
| Timers | Programmable timer with timeout interrupt |
| Intrusion Detection | By battery powered single chip microcontroller<br>Operates with and without system power<br>8x Intrusion detection inputs<br>Logs date/time of latest 100 events<br>Events include door status, system resets/brownouts, NVRAM battery low, …<br>On-chip EEPROM backup |
| Digital I/O | 16 x ESD Protected Input<br>16 x Photo-coupler Protected Input<br>28 x 500mA current sink output<br>4 x 3A current sink output<br>Optional 64 x I/O by request |
| ■ ***Expansion*** | |
| Expansion slot | One PCIe x16 slots |
| ■ ***System I/O*** | |
| COM | 10 x COM (9 bits)<br>• COM1, COM2 support RS-232 at Rear I/O<br>• COM3 support RS-232<br>• COM4 support RS-485<br>• COM5, COM6 support ccTalk<br>• COM7, COM8, COM9 support simple RS-232<br>• COM10 support 1x RS-232 |
| USB | 8 x USB2.0<br>- 4 x USB 2.0 port at rear I/O<br>- 4 x USB 2.0 (pin header) |
| I/O | 1 x PS2 KB/MS (pin header) |
| ■ ***Power Supply*** | |

| | |
|---|---|
| Voltage | ATX12V 2.2 compliant |
| ■ ***Software*** | |
| O/S | Windows XP Embedded<br>Linux |
| ■ ***Mechanical and Environment*** | |
| System Health Monitoring | Measurement of CPU core and system temperature with thermal trip.<br>Speed monitoring for CPU fan and two system fans |
| Environmental | Operating Temperature: 0 – 60 ºC (32 ºF – 140 ºF)<br>Storage Temperature: -20 – 85 ºC (-4 ºF – 185 ºF)<br>Relative Humidity: 10-85 % RH, non-condensing |
| Compliant | FCC/CE Class A<br>GLI |
| Dimension | 170mm (L) x 200mm (W)<br>(8.7” L x 11.6” W) |
| ■ ***Applications*** | |
| Main Application | Video slot machines (Class II/III)<br>Video lottery terminals<br>Amusement game machines<br>Master unit of roulette machine<br>Downloadable gaming terminal<br>Multi player gaming machines |

| **Ordering Information** | |
|---|---|
| Standard | |
| MB-8033A | AMD T56N Dual Core 1.65GHz based Gaming Board with 10 x COM, 2 x GbE |
| MB-8033B | AMD T40R Single Core 1.0GHz based Gaming Board with 2 x COM, 1 x GbE |
| Optional | |
| DK-GA2200 | Development Kit<br>- R217A Gaming I/O testing board<br>- CB-G00010-02 Cable of R217A of MB-80330<br>- CB-SATA07-00 S-ATA cable<br>- CB-IPS200-00 KB/MS cable<br>- CB-IUSB01-00 USB cable<br>- CB-COM007-00; COM cable |

* Note: All specifications are subject to change without prior notice

## 1.3 Precautions

Please make sure you properly ground yourself before handling the MB-80330 board or other system components. Electrostatic discharge can be easily damage the MB-80330 board.

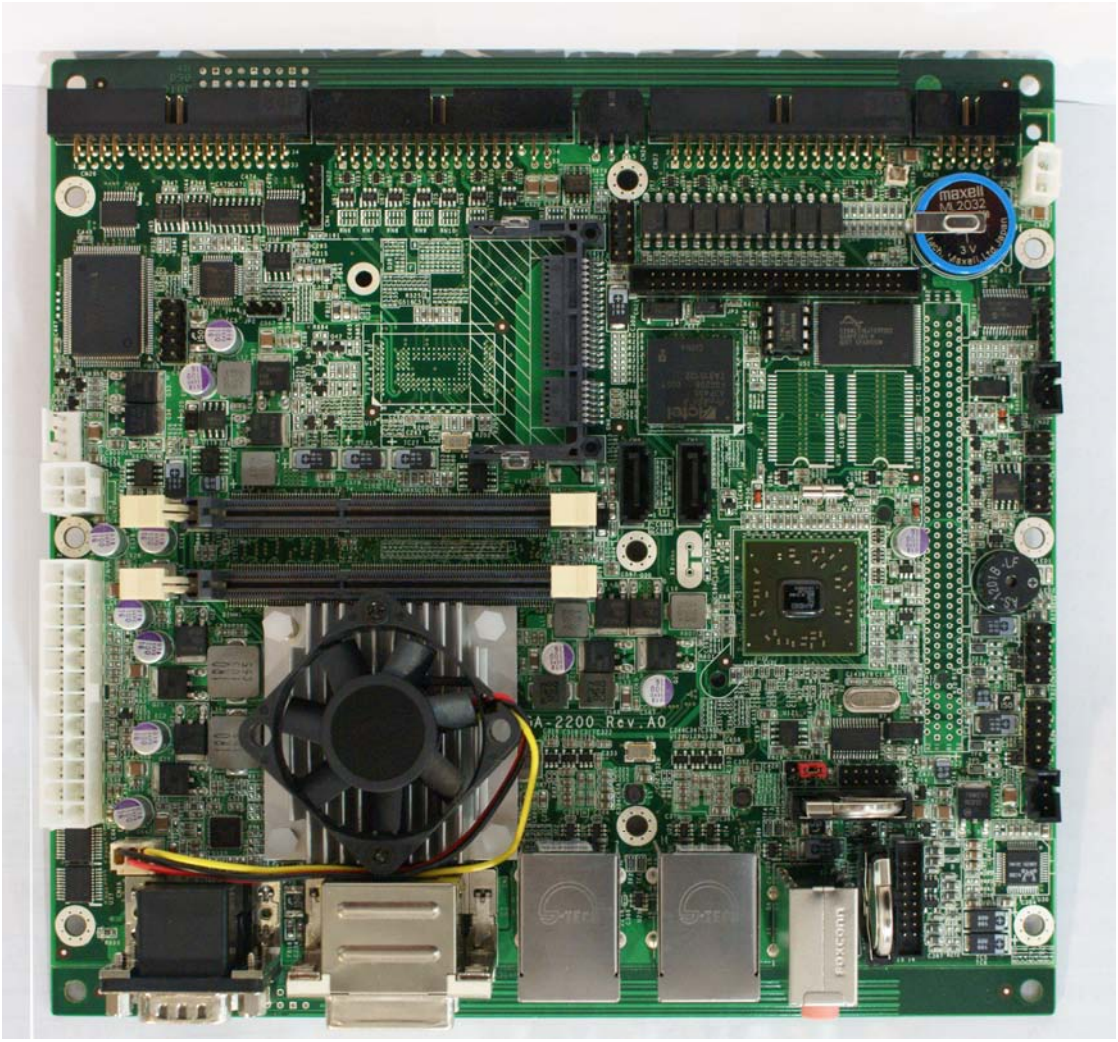
Do not remove the anti-static packing until you are ready to install the MB-80330 board.

Ground yourself before removing any system component from it protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the MB-80330 board by its edges and avoid touching its component.

## 1.4 Layout

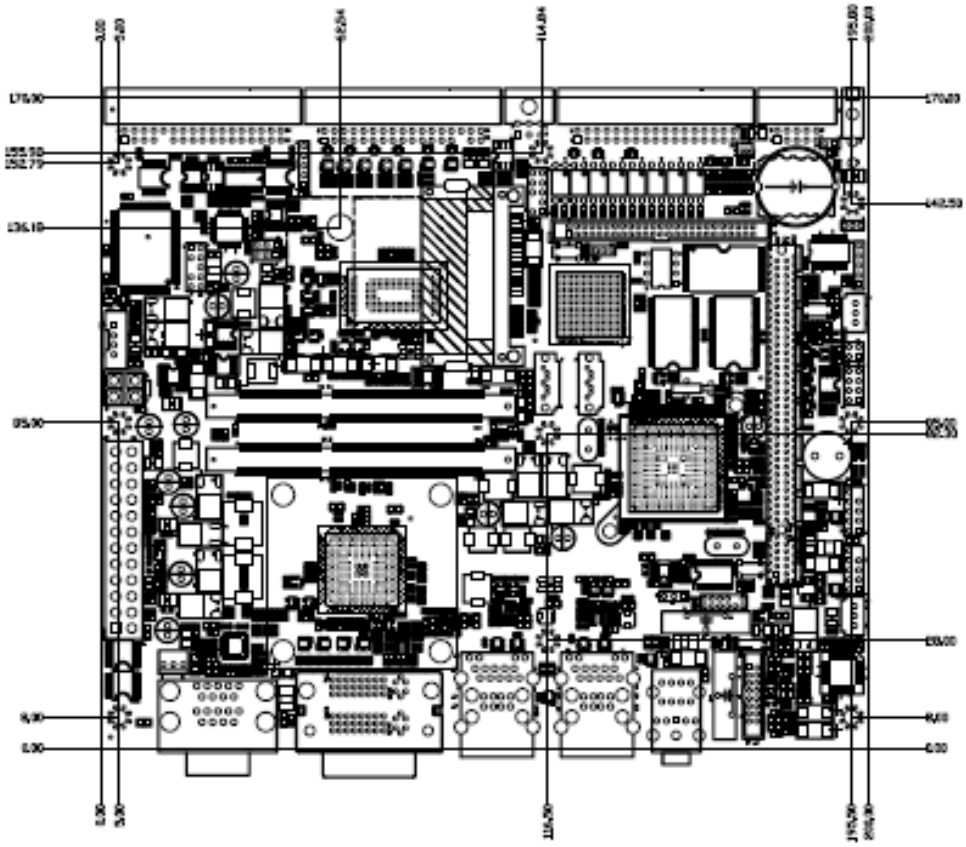
**MB-80330**



**PL-80330**

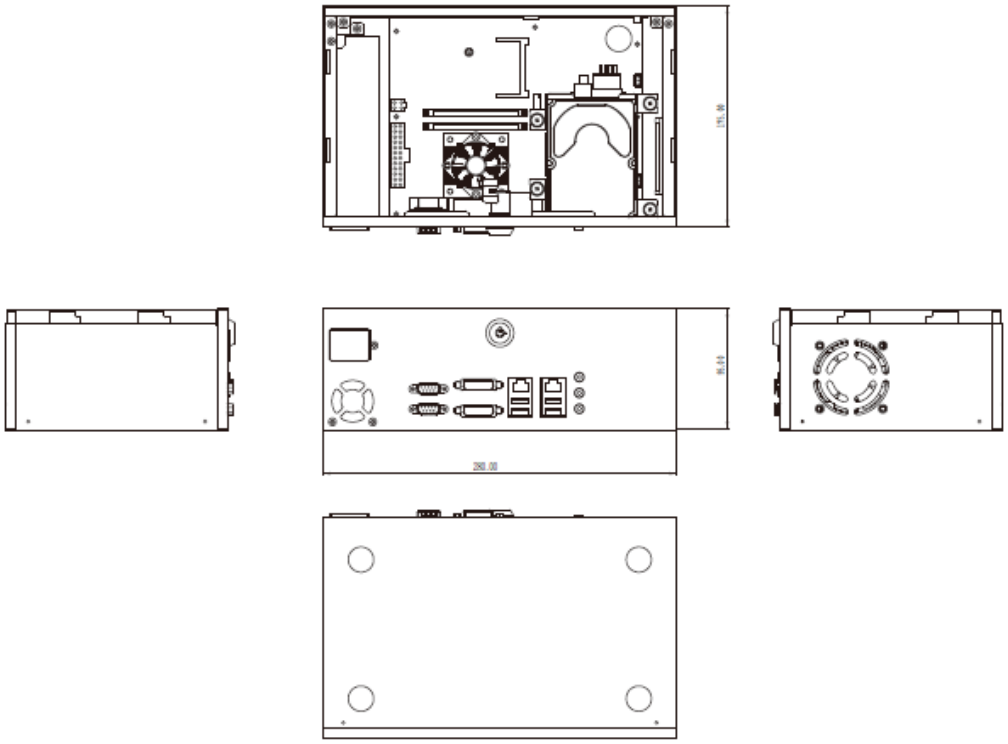
## 1.5 Dimensions

**MB-80330**



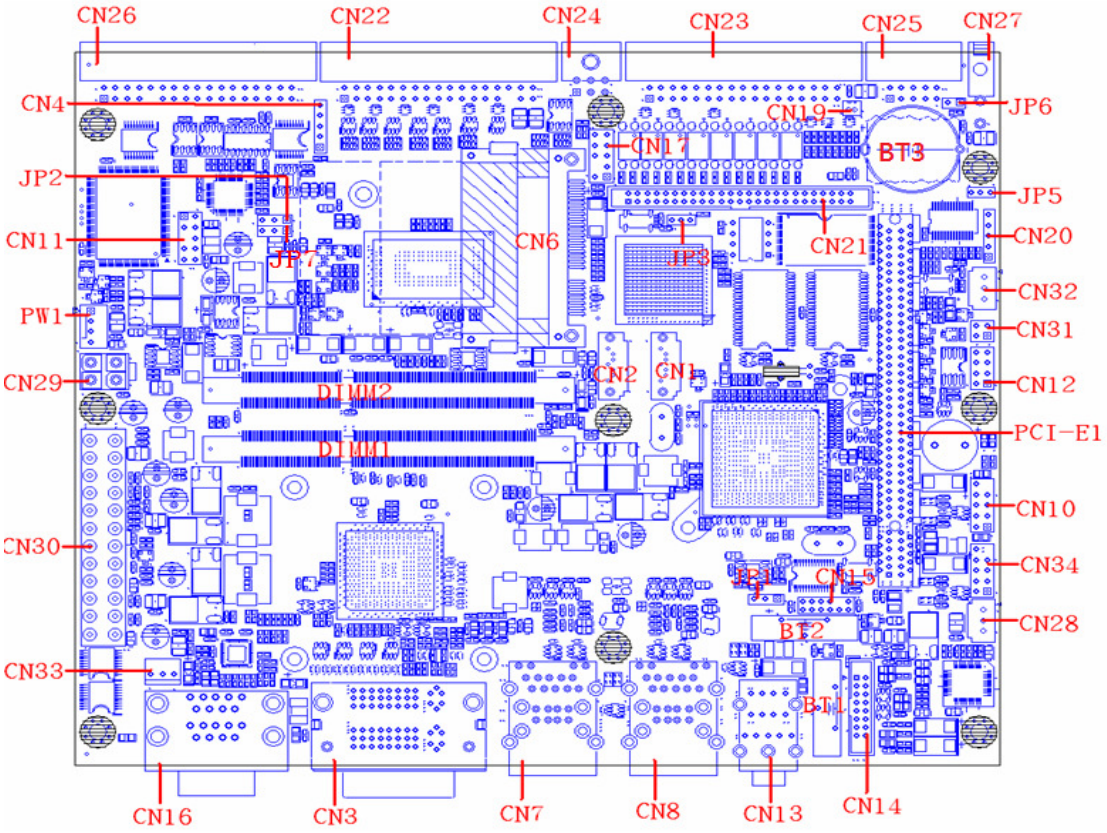
Board Dimensions (mm) Component Side

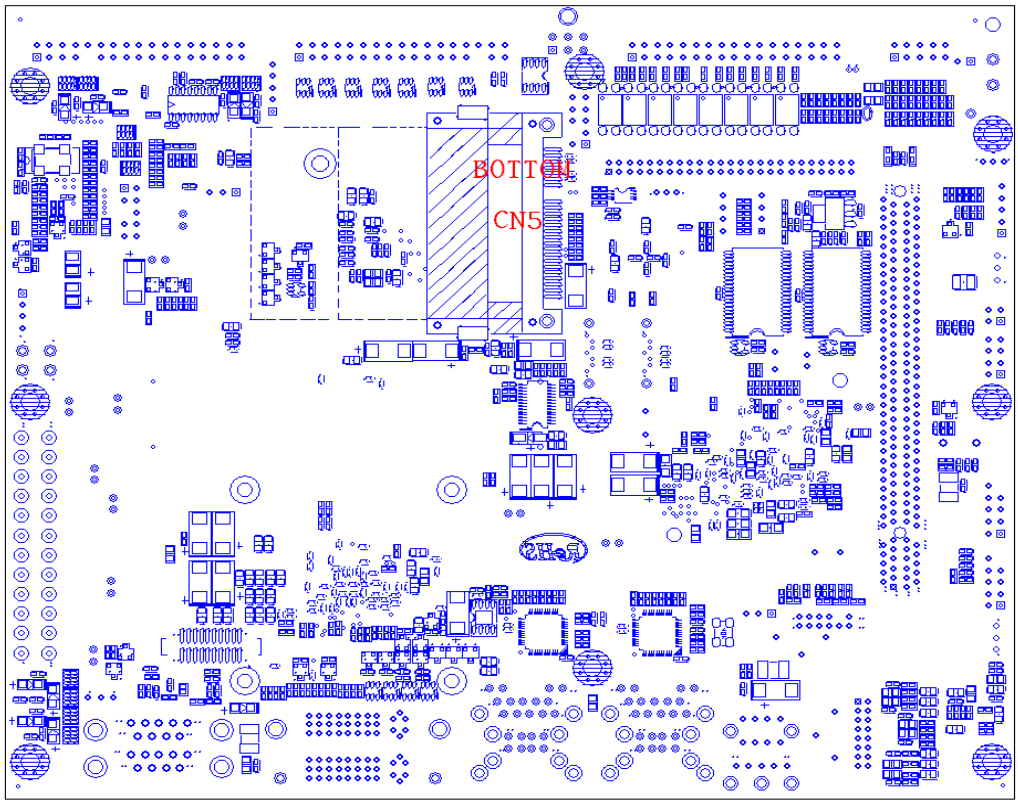
**PL-80330**



# Chapter 2. Connector and Jumper Settings

## Board Connector





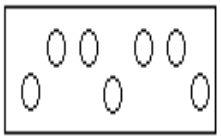

## Connector List

| Connector | Description | Connector | Description |
|---|---|---|---|
| CN1 | SATA Connector | CN12 | Test Pin Header |
| CN2 | SATA Connector | CN13 | Audio Connector |
| CN3 | Dual DVI Connector<br>*DVI-D(up); DVI-I(down)* | CN14 | Audio5.1 Pin Header |
| CN4 | Test Pin Header | CN15 | LPC Port80 Pin Header |
| CN5 | Cfast Connector | CN16 | COM1/COM2 Connector |
| CN6 | Cfast Connector | CN17 | FPGA Update Pin Header |
| CN7 | RJ45+USB Connector | CN18 | None |
| CN8 | RJ45+USB Connector | CN19 | Intrusion Battery Connector |
| CN9 | None | CN20 | Intrusion Update Pin Header |
| CN10 | USB Pin Header | CN21 | GPIO Extend Connector |
| CN11 | PS2 KB/MS Pin Header | CN22 | GPO Connector<br>(OUT0~OUT27 500mA) |
| CN23 | GPI Connector(IN0~IN31) | CN24 | GPO Connector<br>(OUT28~OUT31 2A) |
| CN25 | DOOR Connector | CN26 | COM Port Connector |

| | | | |
|---|---|---|---|
| | (DOOR0~DOOR6) | | (COM3~COM10) |
| CN27 | DCIN Connector(+12V) | CN28 | FAN Connector |
| CN29 | ATX 4Pin Connector | CN30 | ATX 24Pin Connector |
| CN31 | Power Button/System Reset Pin Header | CN32 | FAN Connector |
| CN33 | FAN Connector | CN34 | USB Pin Header |
| DIMM1 | DDR3 Slot | DIMM2 | DDR3 Slot |
| PW1 | HDD Power Connector | PCI-E1 | PCI-E x16 slot(x4 singel) |
| JP1 | CMOS Hold / Clear Select | JP2 | None |
| JP3 | FPGA EEPROM Write Protect Select | JP4 | None |
| JP5 | Intrusion Update Voltage Select | JP6 | DOOR7 Select |
| JP7 | SATA NANDrive Write Protect Select | | |

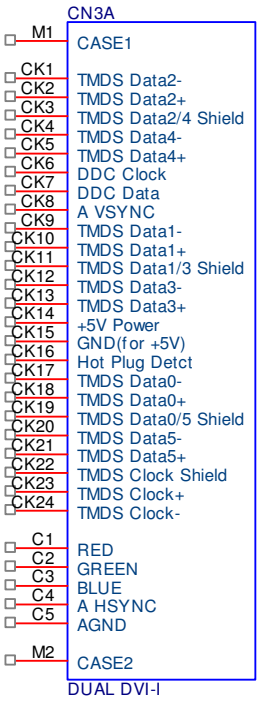
## Connector/Jumper Setting

### CN1/CN2: SATA Connector



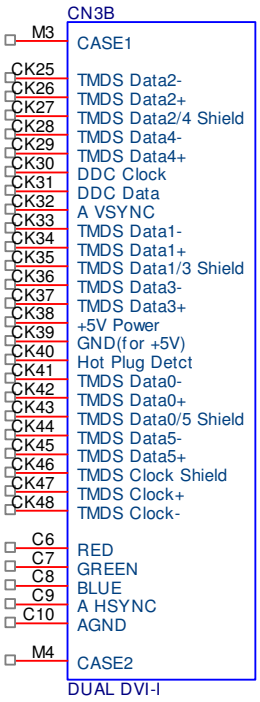
| Pin | Signal |
|---|---|
| 1 | Ground |
| 2 | TXP |
| 3 | TXN |
| 4 | Ground |
| 5 | RXN |
| 6 | RXP |
| 7 | Ground |

### CN3A: DVI Connector *(DVI-D)*



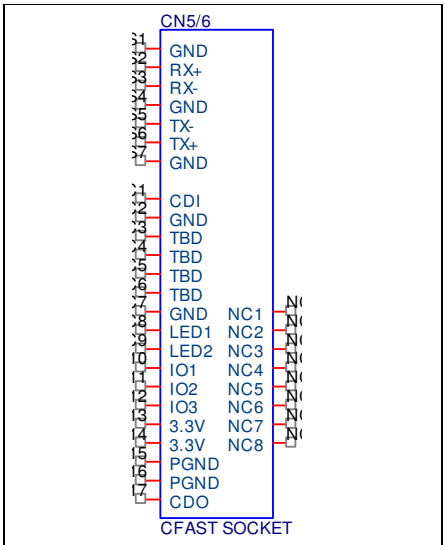

| Pin | Define | Pin | Define |
|---|---|---|---|
| M1 | CASE GND | M2 | CASE GND |
| CK1 | DP0_TX0_N | CK2 | DP0_TX0_P |
| CK3 | GND | CK4 | - |
| CK5 | - | CK6 | DP0_AUX_P |
| CK7 | DP0_AUX_N | CK8 | - |
| CK9 | DP0_TX1_N | CK10 | DP0_TX1_P |
| CK11 | GND | CK12 | - |
| CK13 | - | CK14 | +5V |
| CK15 | GND | CK16 | DVID_HPD |
| CK17 | DP0_TX2_N | CK18 | DP0_TX2_P |
| CK19 | GND | CK20 | - |
| CK21 | - | CK22 | GND |
| CK23 | DP0_TX3_N | CK24 | DP0_TX3_P |
| C1 | Analog_R | C2 | Analog_G |
| C3 | - | C4 | - |
| C5 | Analog GND | - | |

## CN3B: DVI Connector *(DVI-I)*



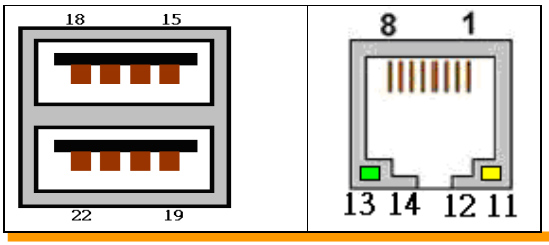

| Pin | Define | Pin | Define |
|---|---|---|---|
| M3 | CASE GND | M4 | CASE GND |
| CK25 | DP1_TX0_N | CK26 | DP1_TX0_P |
| CK27 | GND | CK28 | - |
| CK29 | - | CK30 | DP1_AUX_P |
| CK31 | DP1_AUX_N | CK32 | Analog_VSY |
| CK33 | DP1_TX1_N | CK34 | DP1_TX1_P |
| CK35 | GND | CK36 | - |
| CK37 | - | CK38 | +5V |
| CK39 | GND | CK40 | DVII_HPD |
| CK41 | DP1_TX2_N | CK42 | DP1_TX2_P |
| CK43 | GND | CK44 | - |
| CK45 | - | CK46 | GND |
| CK47 | DP1_TX3_N | CK48 | DP1_TX3_P |
| C6 | Analog_R | C7 | Analog_G |
| C8 | Analog_B | C9 | Analog_HSY |
| C10 | Analog GND | - | |

## CN5/6:CFast Connector



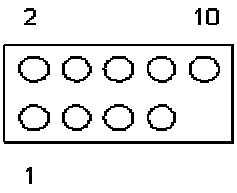

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| S1 | GND | S2 | SATA_TX_P |
| S3 | SATA_TX_N | S4 | GND |
| S5 | SATA_RX_N | S6 | SATA_RX_P |
| S7 | GND | S8 | |
| PC1 | - | PC2 | GND |
| PC3 | Test Pin | PC4 | Test Pin |
| PC5 | Test Pin | PC6 | Test Pin |
| PC7 | GND | PC8 | - |
| PC9 | - | PC10 | - |
| PC11 | - | PC12 | - |
| PC13 | +3.3V | PC14 | +3.3V |
| PC15 | GND | PC16 | GND |
| PC17 | - | | |
| NC1 | - | NC2 | - |
| NC3 | - | NC4 | - |
| NC5 | - | NC6 | - |
| NC7 | - | NC8 | - |

## CN7/CN8:USB and LAN RJ45



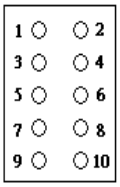
| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 15 | 5VUSB | 1 | NC |
| 16 | USBDT- | 2 | MDIP0 |
| 17 | USBDT+ | 3 | MDIN0 |
| 18 | Ground | 4 | MDIP1 |
| 19 | 5VUSB | 5 | MDIN1 |
| 20 | USBDT- | 6 | MDIP2 |
| 21 | USBDT+ | 7 | MDIN2 |
| 22 | Ground | 8 | MDIP3 |
| GND1 | Ground | 9 | MDIN3 |
| GND2 | Ground | 10 | Ground |
| GND3 | Ground | 11 | LINK LED |
| GND4 | Ground | 12 | ACT LED |
| GND5 | Ground | 13 | 1G LED |
| GND6 | Ground | 14 | 100 LED |

### CN10 & CN34: USB pin header



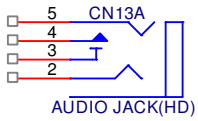

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +5V | 2 | +5V |
| 3 | USBDATA- | 4 | USBDATA- |
| 5 | USBDATA+ | 6 | USBDATA+ |
| 7 | GND | 8 | GND |
| 9 | Reserved | 10 | GND |

### CN11: PS/2 KB/MS pin header



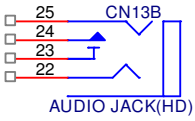

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | KCLK | 2 | MCLK |
| 3 | KDAT | 4 | MDAT |
| 5 | Reserved | 6 | NC |
| 7 | GND | 8 | GND |
| 9 | +5V | 10 | +5V |

### CN13A:AUDIO Connector



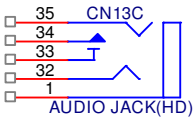

| Pin | Define | Pin | Define |
|---|---|---|---|
| 2 | MIC_L | 3 | GND |
| 4 | MIC_JD | 5 | MIC_R |

## CN13B:AUDIO Connector



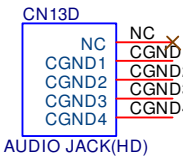

| Pin | Define | Pin | Define |
|---|---|---|---|
| 22 | SPKR_OUT_L | 23 | GND |
| 24 | FRONT_JD | 25 | SPKR_OUT_R |

## CN13C:AUDIO Connector



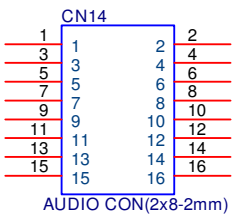

| Pin | Define | Pin | Define |
|---|---|---|---|
| 32 | LINE_L | 33 | GND |
| 34 | LINE_JD | 35 | LINE_R |

## CN13D:AUDIO Connector




| Pin | Define | Pin | Define |
|---|---|---|---|
| C1 | GND | C2 | GND |
| C3 | GND | C4 | GND |
| NC | - | | |

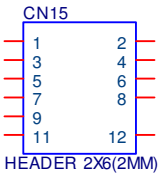
## CN14:AUDIO5.1 Connector




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | CEN-JD | 2 | SURR-JD |

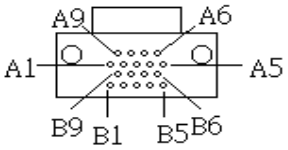
| | | | |
|---|---|---|---|
| 3 | CENTER OUT | 4 | SURR_L |
| 5 | LEF OUT | 6 | SURR_R |
| 7 | SIDESURR-JD | 8 | FRONT-JD |
| 9 | SURBACK_R | 10 | FRONT_R |
| 11 | SURBACK_L | 12 | FRONT_L |
| 13 | +12V | 14 | GNDAUD |
| 15 | +12V | 16 | GNDAUD |

### CN15: LPC 80 port pin header



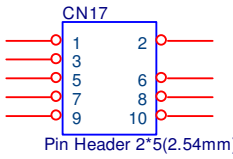

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +12V | 2 | LAD0 |
| 3 | LAD1 | 4 | LAD2 |
| 5 | LAD3 | 6 | LFRAME# |
| 7 | RST# | 8 | +5V |
| 9 | CLK | 10 | Reserved |
| 11 | Ground | 12 | Ground |

### CN16:COM1 and COM2 Connector



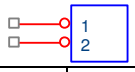

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| A1 | DCD1 | B1 | DCD2 |
| A2 | RXD1 | B2 | RXD2 |
| A3 | TXD1 | B3 | TXD2 |
| A4 | DTR1 | B4 | DTR2 |
| A5 | Ground | B5 | Ground |
| A6 | DSR1 | B6 | DSR2 |
| A7 | RTS1 | B7 | RTS2 |
| A8 | CTS1 | B8 | CTS2 |
| A9 | RI1 | B9 | RI2 |

### CN17: FPGA Update Pin Header



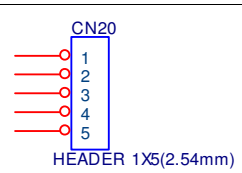

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | TCK | 2 | GND |
| 3 | TDO | 4 | NC |
| 5 | TMS | 6 | VJTAG |
| 7 | VPUMP | 8 | TRST |
| 9 | TDI | 10 | GND |

## CN19:BATTERY HEADER



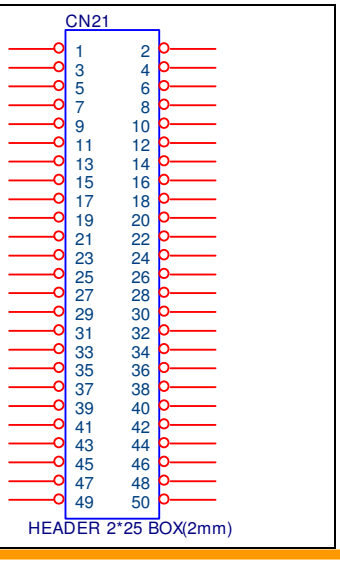

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +3.0V | 2 | GND |

## CN20: INTRUSION Update Pin Header




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | MCLR | 2 | PIC_VCC |
| 3 | GND | 4 | PGD |
| 5 | PGC | | |

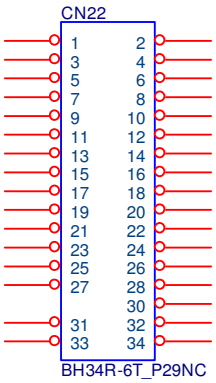
## CN21: GPIO Extend Connector



| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | EXT0 | 2 | DQ0 |
| 3 | EXT1 | 4 | DQ1 |
| 5 | EXT2 | 6 | DQ2 |
| 7 | EXT3 | 8 | DQ3 |
| 9 | EXT4 | 10 | DQ4 |
| 11 | EXT5 | 12 | DQ5 |
| 13 | EXT6 | 14 | DQ6 |
| 15 | EXT7 | 16 | DQ7 |
| 17 | EXT8 | 18 | RA0 |
| 19 | EXT9 | 20 | RA1 |
| 21 | EXT10 | 22 | RA2 |
| 23 | EXT11 | 24 | RA3 |
| 25 | EXT12 | 26 | RA4 |
| 27 | EXT13 | 28 | RA5 |
| 29 | EXT14 | 30 | RA6 |
| 31 | EXT15 | 32 | RA7 |
| 33 | IOSel* | 34 | RA8 |
| 35 | WE* | 36 | RA9 |
| 37 | OE* | 38 | RA10 |
| 39 | RA12 | 40 | RA11 |
| 41 | RA13 | 42 | GND |
| 43 | GND | 44 | GND |
| 45 | GND | 46 | GND |
| 47 | +5V | 48 | +5V |
| 49 | +5V | 50 | +5V |

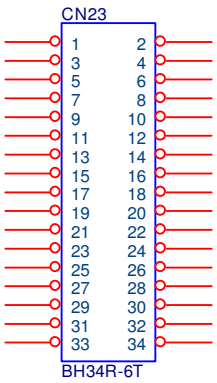
**CN22:GPO Connector(0~27)**

**Mosfet Open Drain 500mA Output**




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | OUT1 | 2 | OUT0 |
| 3 | OUT3 | 4 | OUT2 |
| 5 | OUT5 | 6 | OUT4 |
| 7 | OUT7 | 8 | OUT6 |
| 9 | OUT9 | 10 | OUT8 |
| 11 | OUT11 | 12 | OUT10 |
| 13 | OUT13 | 14 | OUT12 |
| 15 | OUT15 | 16 | OUT14 |
| 17 | OUT17 | 18 | OUT16 |
| 19 | OUT19 | 20 | OUT18 |
| 21 | OUT21 | 22 | OUT20 |
| 23 | OUT23 | 24 | OUT22 |
| 25 | OUT25 | 26 | OUT24 |
| 27 | OUT27 | 28 | OUT26 |
| 29 | Reserved | 30 | +12V |
| 31 | GND | 32 | +12V |
| 33 | GND | 34 | +12V |

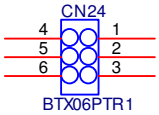
## CN23:GPI Connector(0~31)




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | Iso-IN1 | 2 | Iso-IN0 |
| 3 | Iso-IN3 | 4 | Iso-IN2 |
| 5 | Iso-IN5 | 6 | Iso-IN4 |
| 7 | Iso-IN7 | 8 | Iso-IN6 |
| 9 | Iso-IN9 | 10 | Iso-IN8 |
| 11 | Iso-IN11 | 12 | Iso-IN10 |
| 13 | Iso-IN13 | 14 | Iso-IN12 |
| 15 | Iso-IN15 | 16 | Iso-IN14 |
| 17 | TTL-IN17 | 18 | TTL-IN16 |
| 19 | TTL-IN119 | 20 | TTL-IN18 |
| 21 | TTL-IN21 | 22 | TTL-IN20 |
| 23 | TTL-IN23 | 24 | TTL-IN22 |
| 25 | TTL-IN25 | 26 | TTL-IN24 |
| 27 | TTL-IN27 | 28 | TTL-IN26 |
| 29 | TTL-IN29 | 30 | TTL-IN28 |
| 31 | TTL-IN31 | 32 | TTL-IN30 |
| 33 | GND | 34 | +12V |

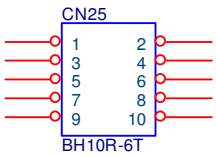
## CN24:GPO Connector(28~31)

### Mosfet Open Drain 2A Output



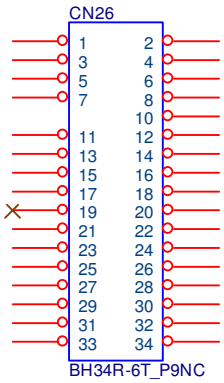

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | OUT28 | 2 | +12V |
| 3 | OUT30 | 4 | OUT29 |
| 5 | GND | 6 | OUT31 |

## CN25:DOOR Connector(0~6)




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | DOOR1 | 2 | DOOR0 |
| 3 | DOOR3 | 4 | DOOR2 |
| 5 | DOOR5 | 6 | DOOR4 |
| 7 | Reserved | 8 | DOOR6 |
| 9 | GND | 10 | GND |

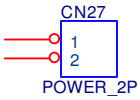
## CN26:COM PORT Connector(COM3~COM10)




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | DCD3#IN | 2 | DSR3#IN |
| 3 | RXD3IN | 4 | RTS3#OUT |
| 5 | TXD3OUT | 6 | CTS3#IN |
| 7 | DTR3#OUT | 8 | RI3#IN |
| 9 | Reserved | 10 | GND |
| 11 | 485RX- | 12 | 485TX- |
| 13 | 485RX+ | 14 | 485TX+ |
| 15 | GND | 16 | GND |
| 17 | CCTALK2 | 18 | CCTALK1 |
| 19 | Reserved | 20 | S_SIN7 |
| 21 | S_SIN8 | 22 | S_SOUT7 |
| 23 | S_SOUT8 | 24 | S_SIN9 |
| 25 | GND | 26 | S_SOUT9 |
| 27 | DCD10#IN | 28 | DSR10#IN |
| 29 | RXD10IN | 30 | RTS10#OUT |

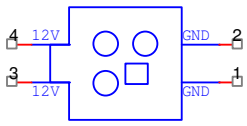
| | | | |
|---|---|---|---|
| 31 | TXD10OUT | 32 | CTS10#IN |
| 33 | DTR10#OUT | 34 | RI10#IN |

## CN27:+12V DC IN Connector



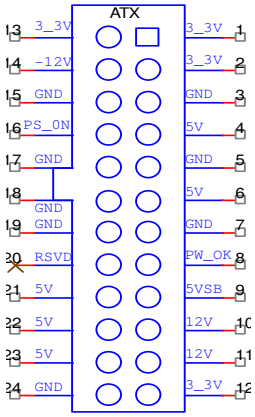

| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +12V | 2 | GND |

## CN29:4PIN ATX POWER CONNN




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | Ground | 2 | Ground |
| 3 | +12V | 4 | +12V |

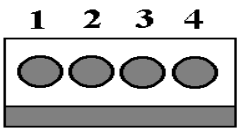
## CN30:24PIN ATX POWER CONNN




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +3.3V | 2 | +3.3V |
| 3 | Ground | 4 | +5V |
| 5 | Ground | 6 | +5V |
| 7 | Ground | 8 | PW_OK |
| 9 | 5VSB | 10 | +12V |
| 11 | +12V | 12 | +3.3V |
| 13 | +3.3V | 14 | +12V |
| 15 | Ground | 16 | PS_ON |
| 17 | Ground | 18 | Ground |

| | | | |
|---|---|---|---|
| 19 | Ground | 20 | RSVD |
| 21 | +5V | 22 | +5V |
| 23 | +5V | 24 | Ground |

### PW1:IDE Power Connector




| Pin | Define | Pin | Define |
|---|---|---|---|
| 1 | +12V | 2 | Ground |
| 3 | Ground | 4 | +5V |

### JP1:CLEAR CMOS

| Pin | | Setting |
|---|---|---|
|  | 1-2 | NORMAL (Default) |
|  | 2-3 | CLEAR CMOS |

### JP3: FPGA EEPROM Write Protect Select

| Pin | | Setting |
|---|---|---|
|  | 1-2 | Write Protect Enable |
|  | 2-3 | Write Protect Disable (Default) |

### JP5: Intrusion Voltage Select

| Pin | | Setting |
|---|---|---|
|  | 1-2 | +5V |
|  | 2-3 | +3.3V (Default) |

## JP6:DOOR7 Status

| Pin | | Setting |
|---|---|---|
|  | OPEN | DOOR7 OFF |
|  | CLOSE | DOOR7 ON |

## JP7:SATA NANDrive Write Protect Select

| Pin | | Setting |
|---|---|---|
|  | 1-2 | Write Protect Disable (Default) |
|  | 2-3 | Write Protect Enable |

# Chapter 3. BIOS Setup

The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics. It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system. It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on. The BIOS also includes CMOS Setup program, so no disk-based setup program is required CMOS RAM stores information for:

- Date and time
- Memory capacity of the main board
- Type of display adapter installed
- Number and type of disk drives

The CMOS memory is maintained by battery. By using the battery, all memory in CMOS can be retained when the system power switch is turned off. The system BIOS also supports easy way to reload the CMOS data when you replace the battery of the battery power lose.

## 3.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose “Load Optimized Defaults” from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose “Standard COS Features” from the main menu. This option lets you configure the date and time, hard disk type, floppy disk drive type, primary display and more.
3. In the main menu, press F10 (“Save & Exit Setup”) to save your changes and reboot the system.

## 3.2 Entering the CMOS Setup Program

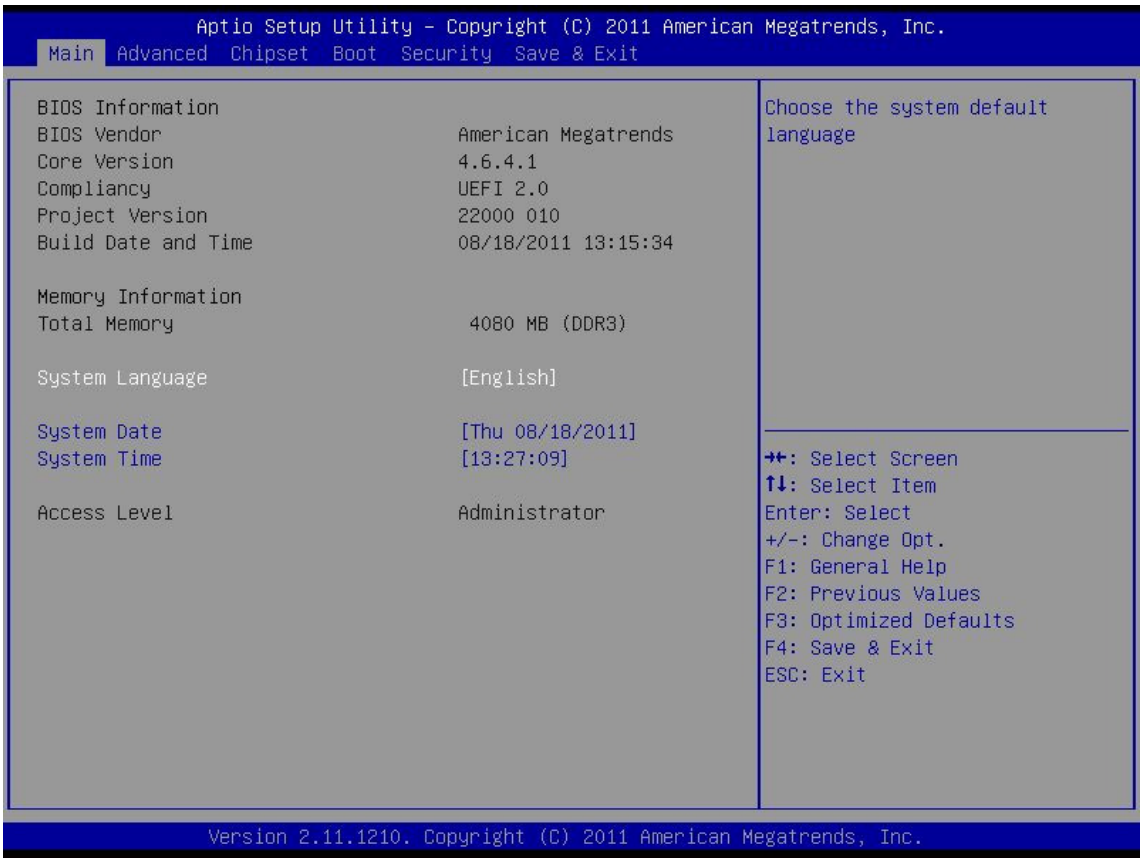
Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Received an error code at startup
- Install another disk drive
- Use your system after not having used it for a long time
- Find the original setup missing
- Replace the battery
- Change to a different type of CPU
- Run the Flash program to update the system BIOS

Run the CMOS Setup program after you turn on the system. On-screen instructions explain how to use the program.

⇩ **Enter the CMOS Setup program's main menu as follows:**

1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:
   "Press DEL to enter SETUP"
2. Press the <DEL> key to enter CMOS Setup program. The main menu appears:



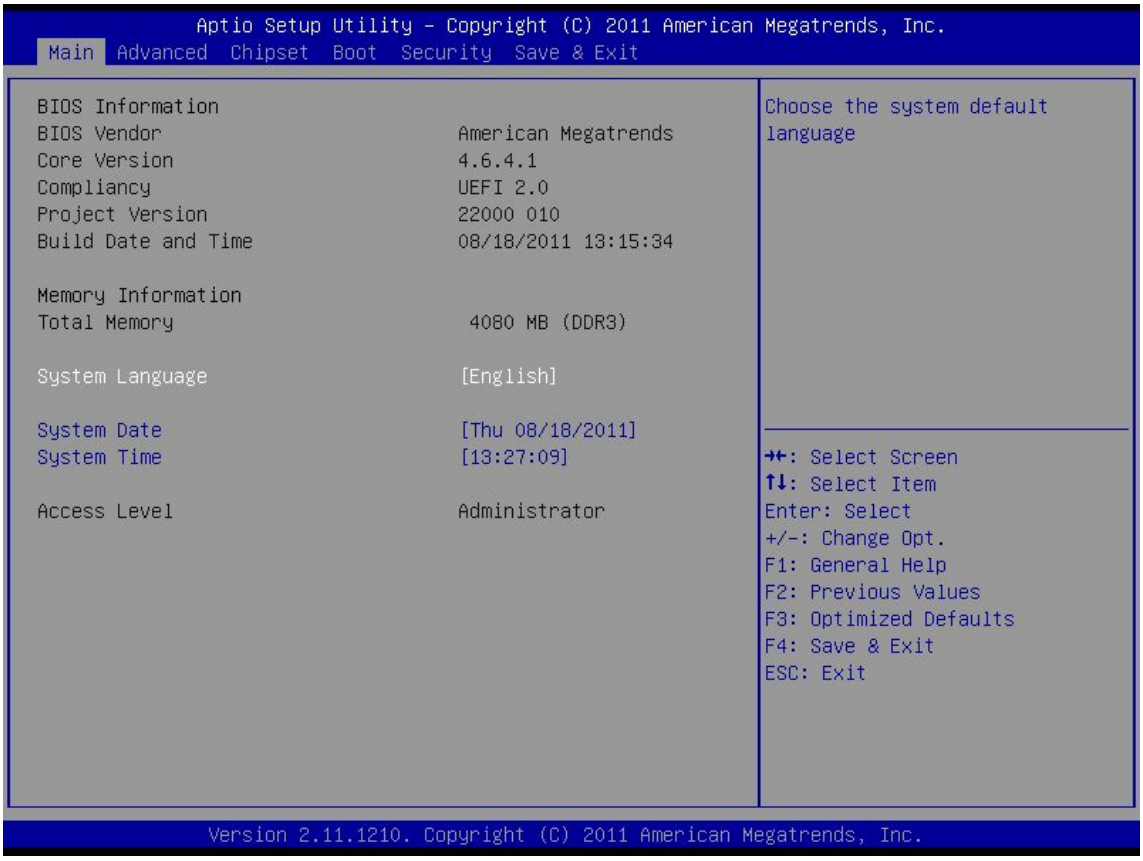
3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

In the main menu, press F10 (“Save & Exit Setup) to save your changes and reboot the system. Choosing “EXIT WITHOUT SAVING” ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

## 3.3 Main

**Use the Main Setup option as follows:**

1. Choose “Main” from the main menu. The following screen appears:




2. Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.

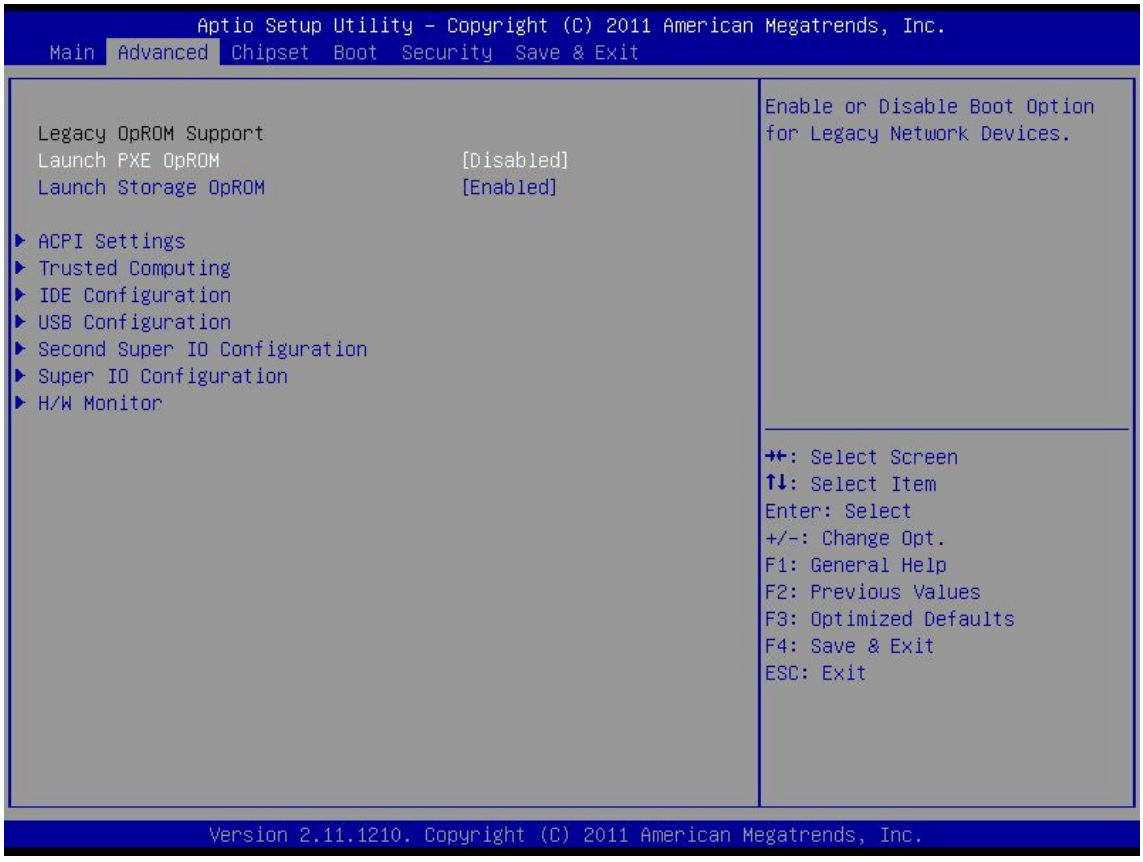
| Option | Description |
|---|---|
| Date (mm:dd:yy) | Type the current date |
| Time (hour:min:sec) | Type the current time (24-hour clock) |

3. After you have finished with the Standard CMOS Features program, press the <ESC> key to return to the main menu.

## 3.4 Advanced

**Use the Advanced option as follows:**

1. Choose “Advanced ” from the main menu. The following screen appears:



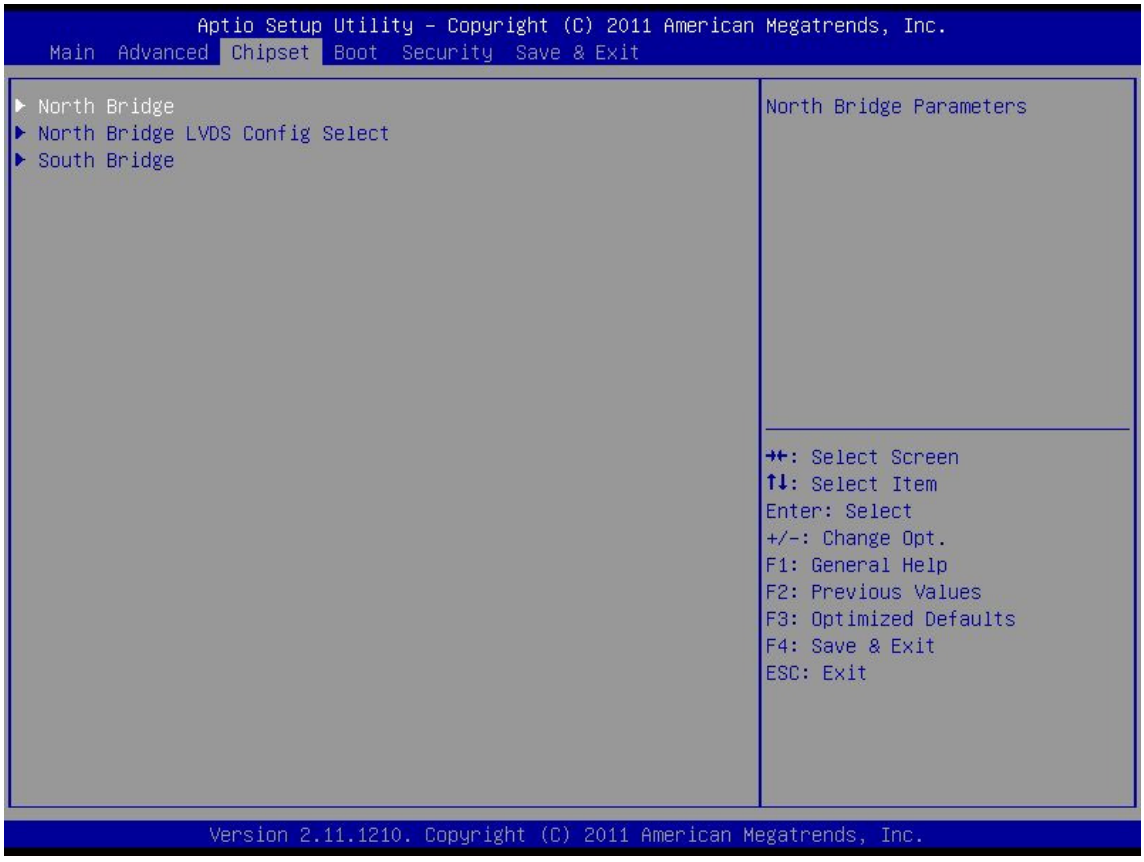

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUP/PgDN keys. Press the <F1> “Help” key for information on the available options:

| Option | Description |
|---|---|
| ACPI Configuration | It allows you to configure the parameter of ACPI, includes suspend, USB wakeup and etc... |
| Trusted Configuration | It allows you to configure the parameter of Trusted, includes TPM and etc... |
| IDE Configuration | It allows you to configure the parameter of IDE, includes PIO mode, DMA mode, LBA, SMART and etc... |
| USB Configuration | It allows you to configure the parameter of USB. |
| Second SuperIO Configuration | It allows you to configure the parameter of SuperIO, includes serial ports and watchdog. |
| SuperIO Configuration | It allows you to configure the parameter of SuperIO, includes serial ports and watchdog. |
| USB Configuration | It allows you to configure the parameter of USB. |

## 3.5 Chipset

### ⇩ Use the Chipset option as follows:

1. Choose “Chipset” from the main menu, the following screen appears.



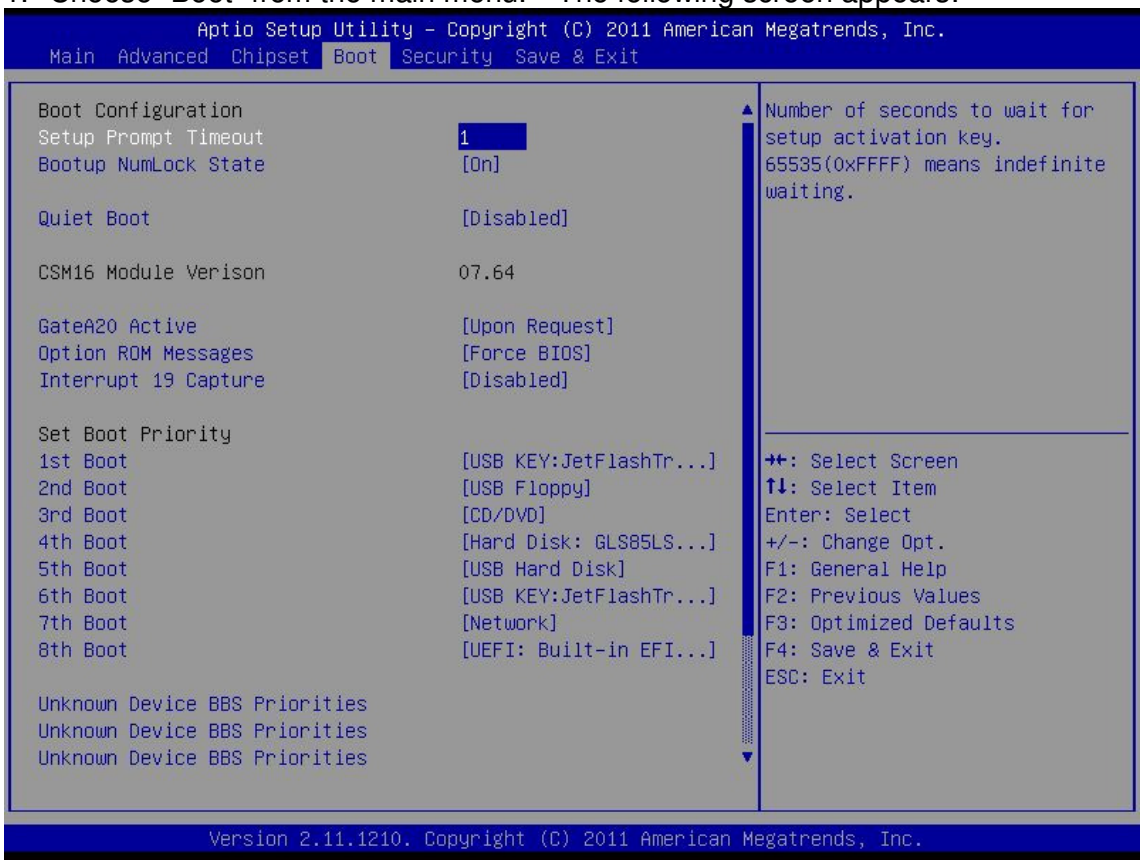

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. For information on the various options, please press <F1> key.

| Option | Description |
|---|---|
| NorthBridge | It allows you to configure the parameter of NorthBridge, includes clock, timing, VGA frame buffer and etc... |
| NorthBridge LVDS Config | It allows you to configure the parameter of LVDS |
| SouthBridge | It allows you to configure the parameter of SoughBridge, includes LAN, Audio and etc… |

## 3.6 Boot

### ⇩ Use the Boot option as follows:

1. Choose “Boot” from the main menu. The following screen appears:



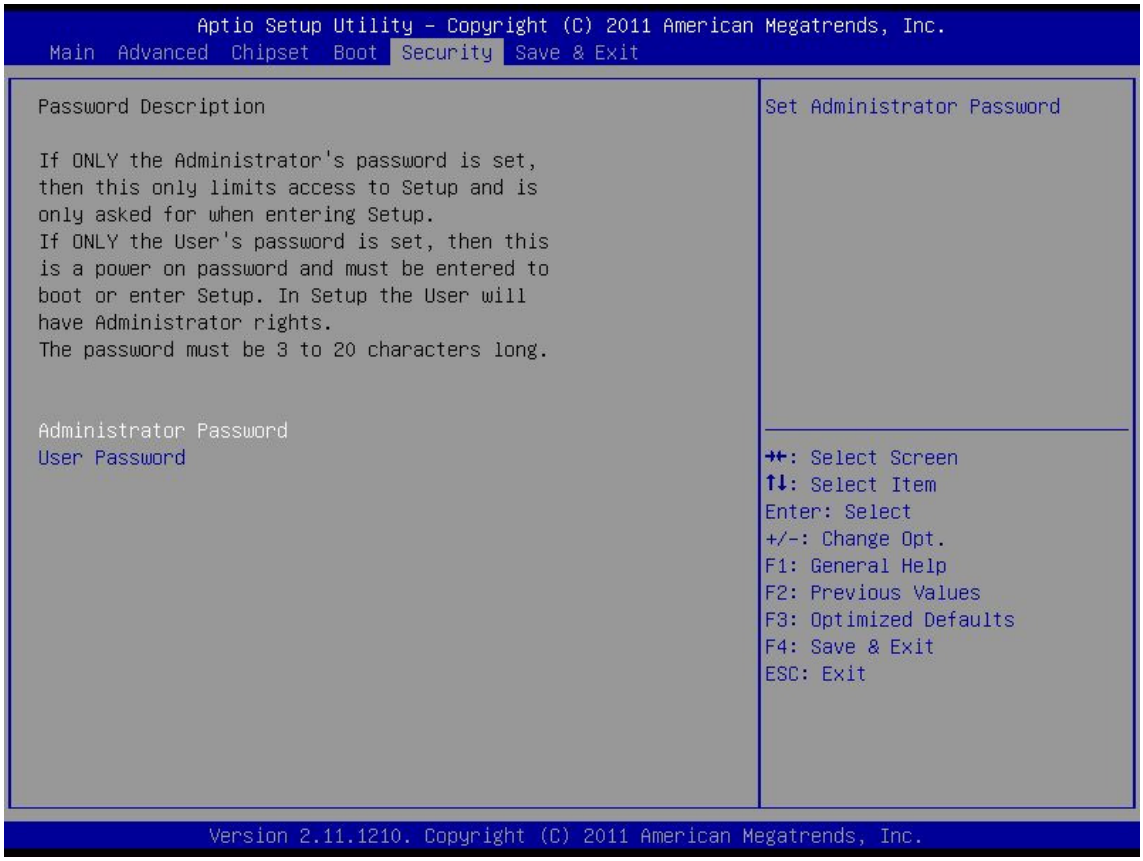

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.

| Option | Description |
|---|---|
| | |
| Boot Configuration | It allows you to configure the parameter of Boot, includes Bootup Num-Lock and etc.. |
| Set Boot Priority | It allows you to configure the sequence of Boot Device |

## 3.7 Security

### ⇩ Use the Security option as follows:

1. Choose “Security” from the main menu. The following screen appears.




This section allows change the password of the supervisor and user.

2. Move between items and select values by using the arrow keys. Modify the selected field the PgUP/PgDN keys. For information on the various options, press <F1> key.

## 3.9 Save and Exit Setup

This function automatically saves all CMOS values before exiting Setup.