

AR-V5403FL

Installation Guide

| Revision | Description | Date |
|----------|----------------------------|------------|
| 1.0 | Release | 2010/08/07 |
| 1.1 | Modify Wifi+Bluetooth data | 2011/5/24 |
| | | |

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1 Introduction to AR-V5403FL

AR-V5403FL is a Fan-less system product mainly for vehicles industry PC applications. With powerful Intel CPU core & diverse memory card extension (according to CF card, SO-DIM), AR-V5403FL can satisfy the users requirements in any vehicles industry applications environment, especially in vehicles computer fields. AR-V5403FL has diverse physical interface in the front panel, such as GPIO's terminal, 2*(10/100/1000Base-T) LANs, VGA connectors, build-in LEDs, 4 USB Ports, 2 COM ports, SIM card functions and FUSE, ATX Power Switch & Remote Switch/ Microphone/Speaker, DC inlet. In addition, the system provides the capacity for extending I/O device by options adding GPS/3.5G/WiFi Bluetooth depends on users needs.

1.1 Specifications

| Item | Description |
|---|-----------------|
| System | AR-V5403FL |
| CPU Board | AR-B5403 series |
| System Dimensions (uncluclung bracket) | 285x190x67(mm) |

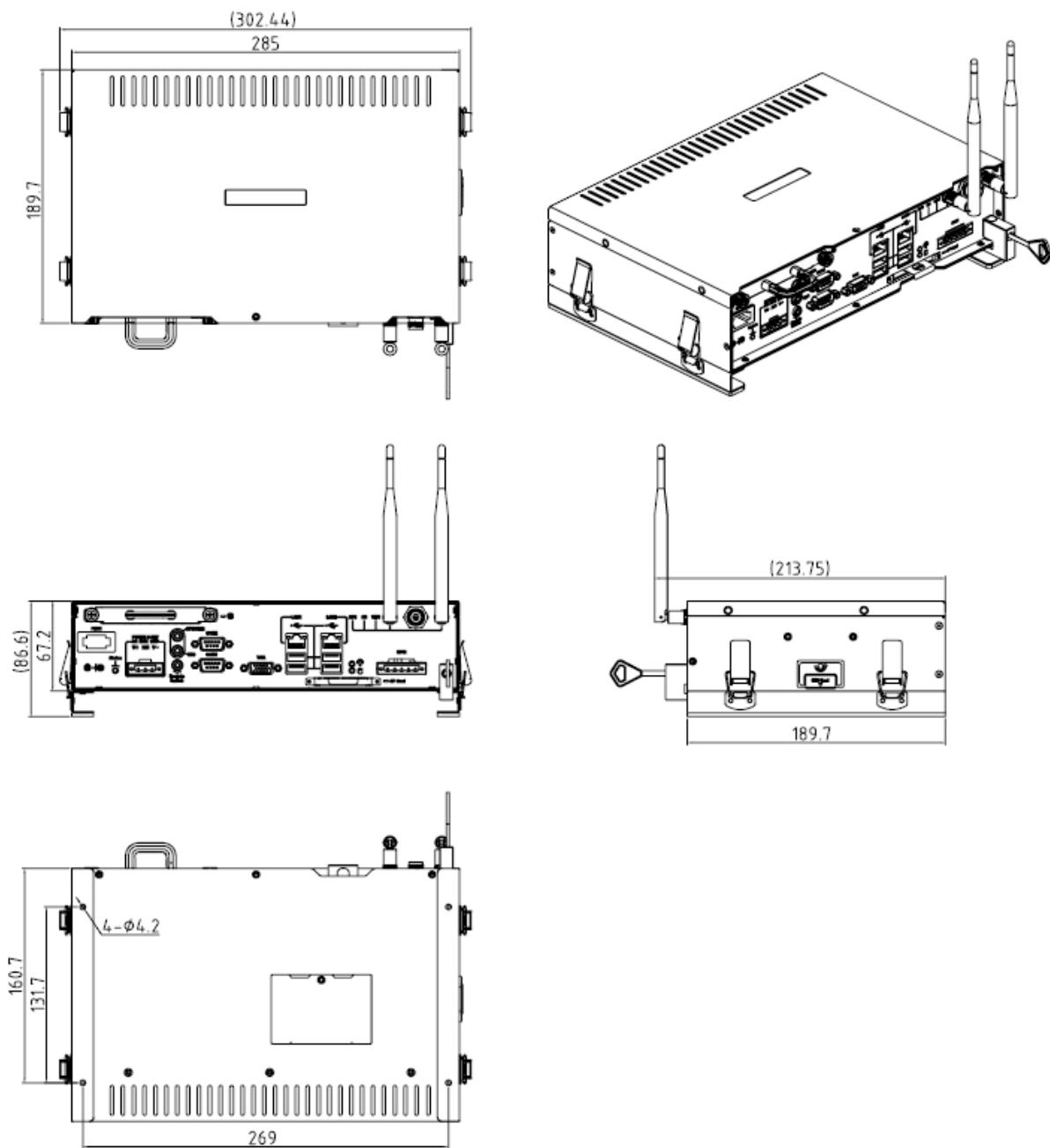
1.2 Packing List

| Description | Quantity |
|---|----------|
| AR-V5403FL | 1 |
| Terminal block (Plug-DC connecter) | 1 |
| Terminal block (Plug-GPIO connecter) | 1 |
| Wall Mount Bracket(Including label for isolation) | 2 |
| Compact Disk | 1 |
| KB/MS Y Cable | 1 |
| Remote Switch Cable | 1 |
| 2.5"HDD Bracket (Screws-4PCS) | 1 |
| Antenna for GPS external cable (Option) | 1 |
| Antenna for 3.5G external cable (Option) | 1 |
| Antenna for Wi-Fi + Bluetooth external cable (Option) | 1 |
| Fuse 7.5A for 24V vehicles | 1 |

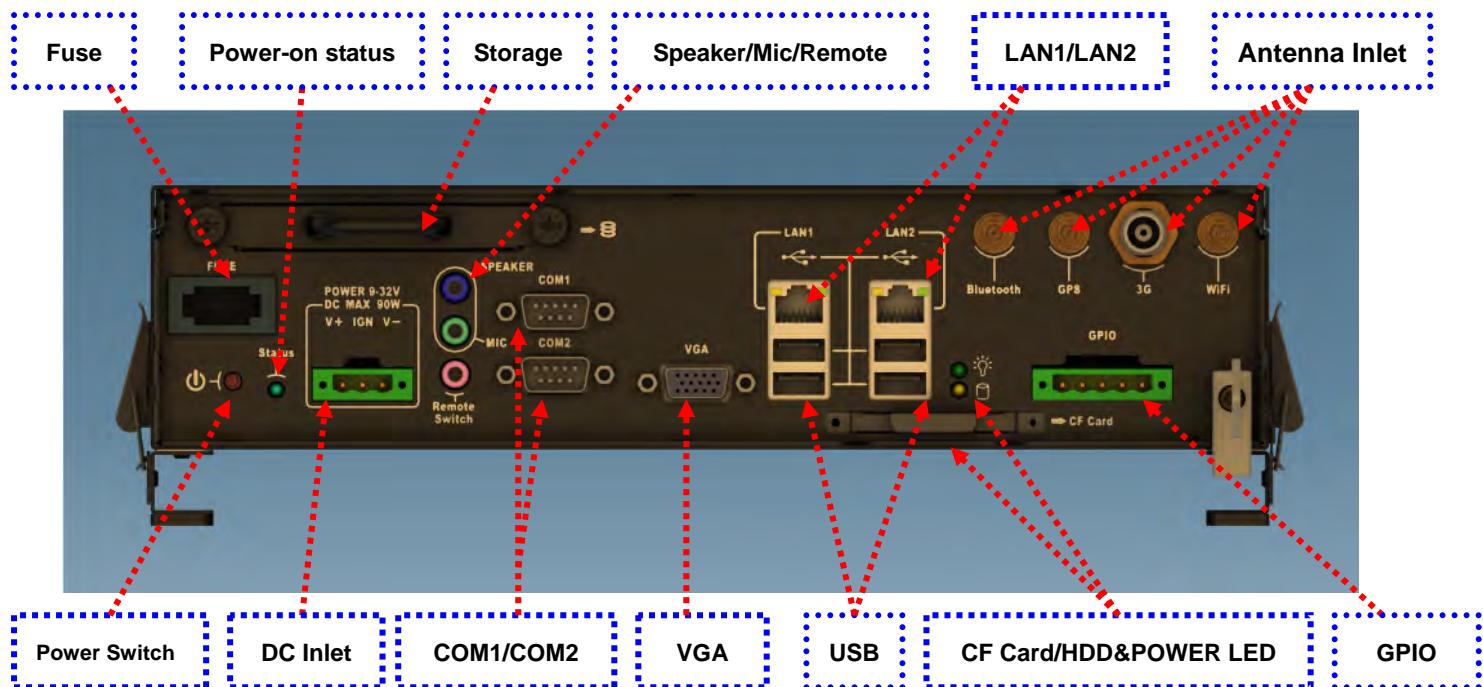
System Dissection

(1) Dimensions

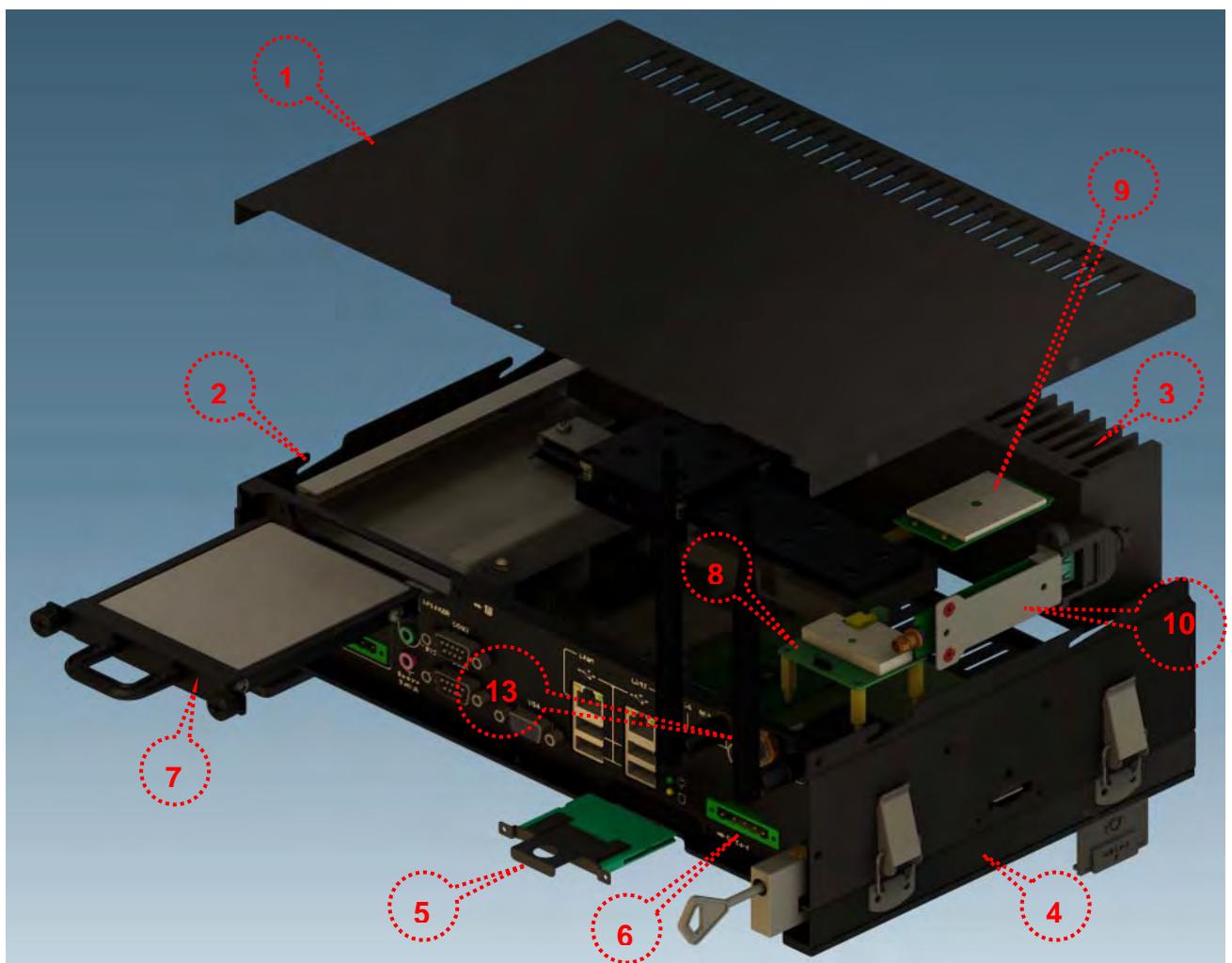
AR-V5403FL's System assembly

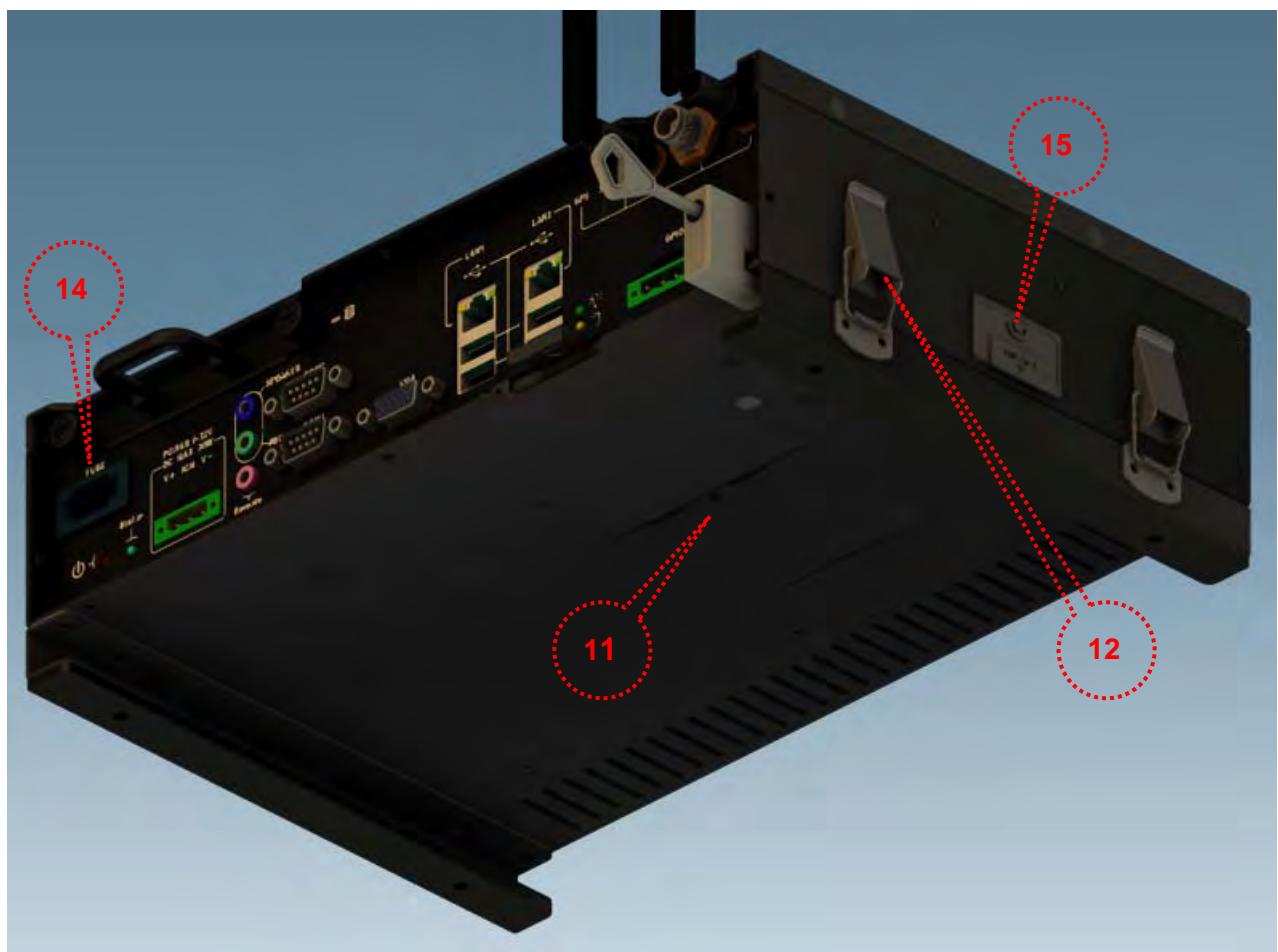


(2) Front Panel "I/O"



(3) System Configuration





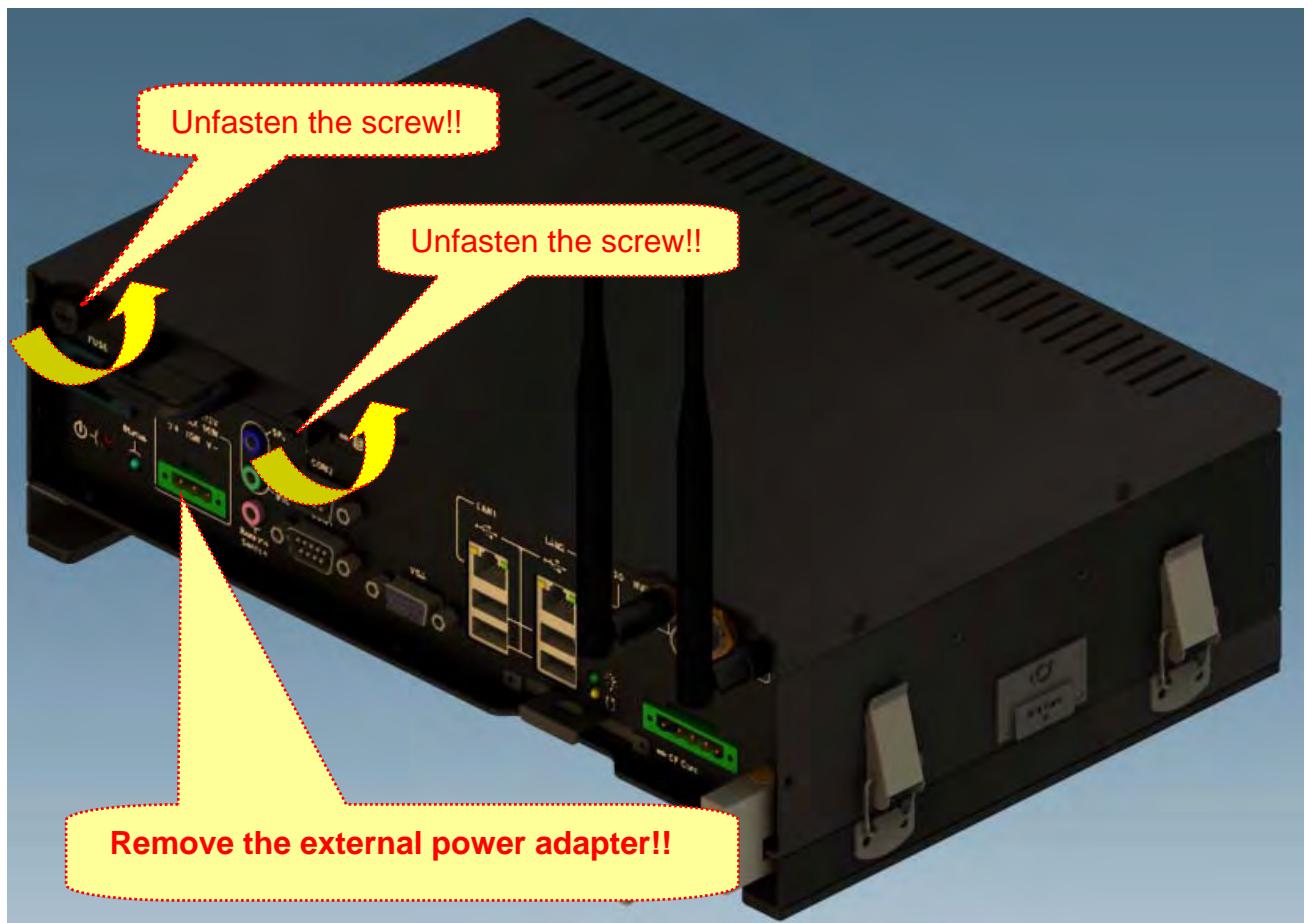
| Item | Description | Quantity |
|------|---|----------|
| 1 | Upper Cover | 1 |
| 2 | Bottom Case | 1 |
| 3 | Thermal Module | 1 |
| 4 | Mounting Bracket | 2 |
| 5 | CF Card Bracket | 1 |
| 6 | Mother board + GPIO board | 1 |
| 7 | HDD/SSD Module | 1 |
| 8 | GPS Module | 1 |
| 9 | 3.5G Module | 1 |
| 10 | Wi-Fi Module, Bluetooth Module | 2 |
| 11 | DDRII Lid | 1 |
| 12 | Hook modules of bracket | 4 |
| 13 | Antennas of GPS/3.5G/WiFi | 1 |
| 14 | Fuse 7A for 12V vehicles (default value) | 1 |
| 15 | SIM Card cover | 1 |

2 Procedure of Assembly/Disassembly

2.1 2.5" Hard Disk Installation

The following instructions will guide you to install HDD step-by-step:

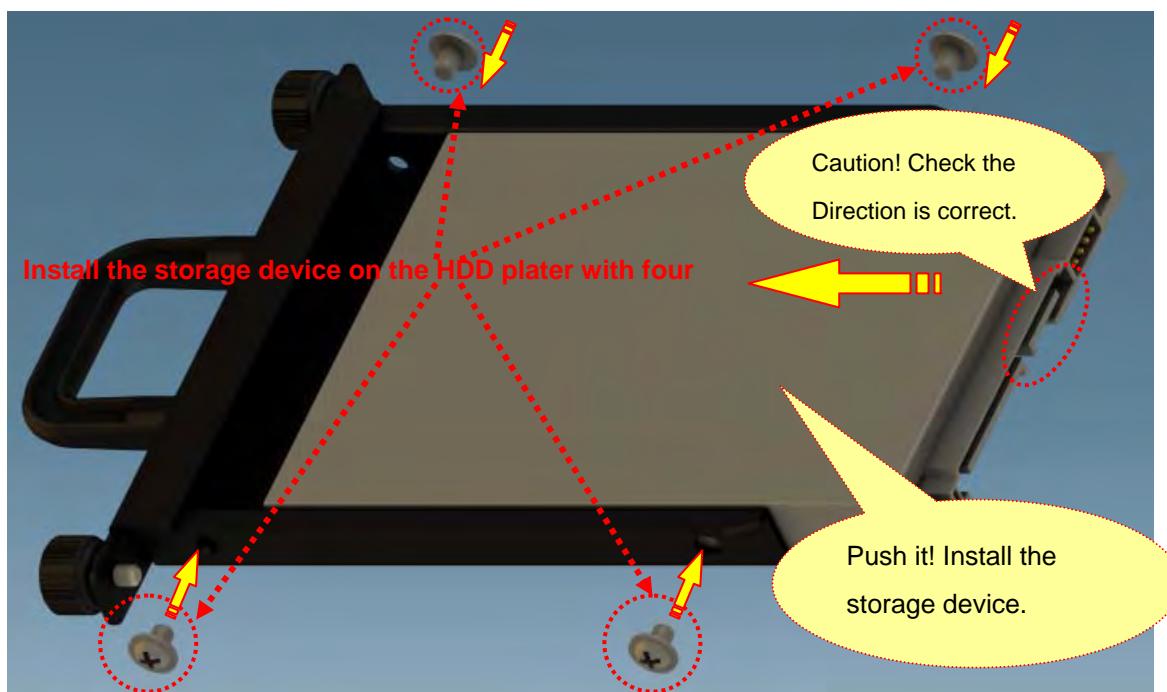
1. Remove the terminal plug from the AR-V5403FL.
2. Unfasten the screws from storage plate of AR-V5403FL.



3. Pulled the storage plate by below photo direction.



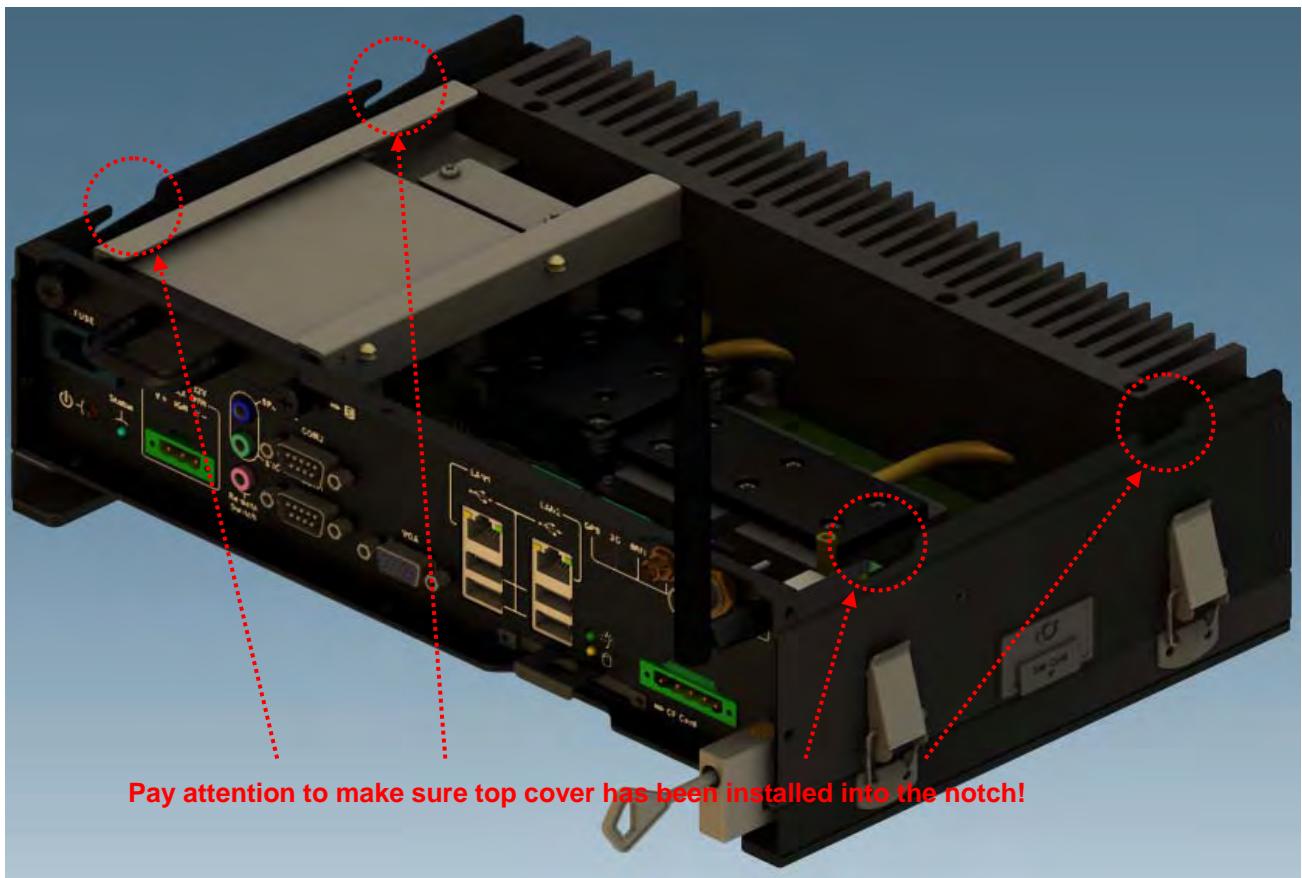
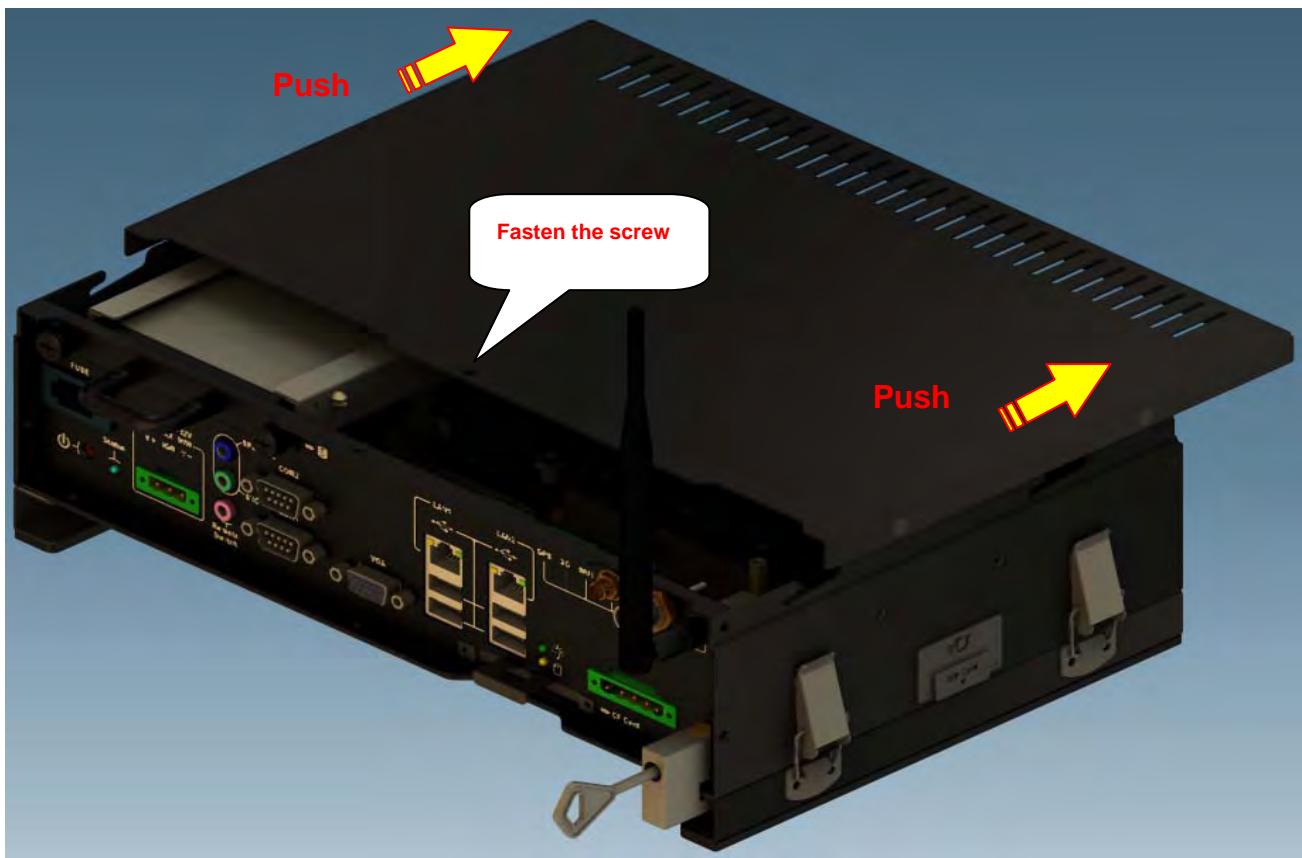
4. Inserted the storage device into the HDD plater.



5. Place HDD module back into the case.
6. Fix HDD module to the chassis by two screws.



7. Slide the top cover into or take off the bottom chassis.



8. Finish the modules (3.5G/GPS/Wifi-Bluetooth) installation after fastening the screw.



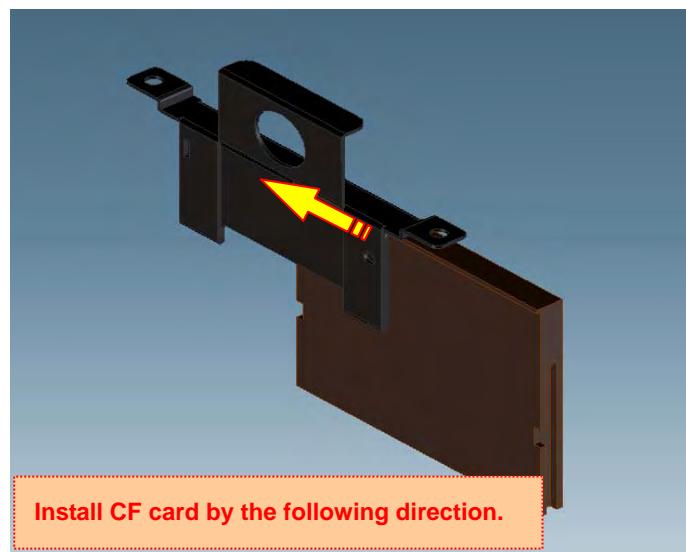
2.2 Accessory (CF card, 3.5G, GPS, Wi-Fi Bluetooth, SIM Card, Outline bracket) Installation

● Install CF Card

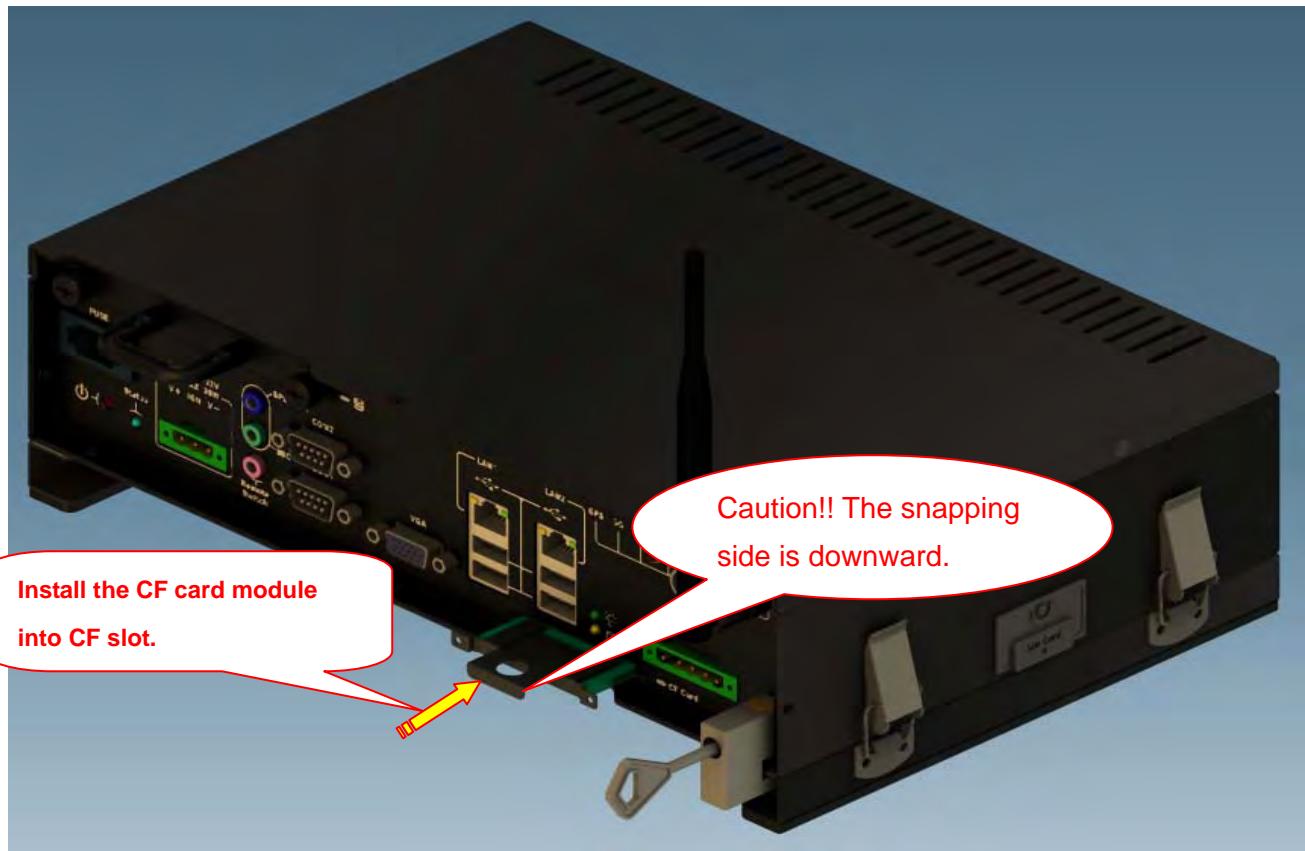
1. Remove the extending CF's bracket by unfastening the screws.



2. Install CF card into bracket.



3. Install CF card module back to CF socket.



- **Install SIM Card**



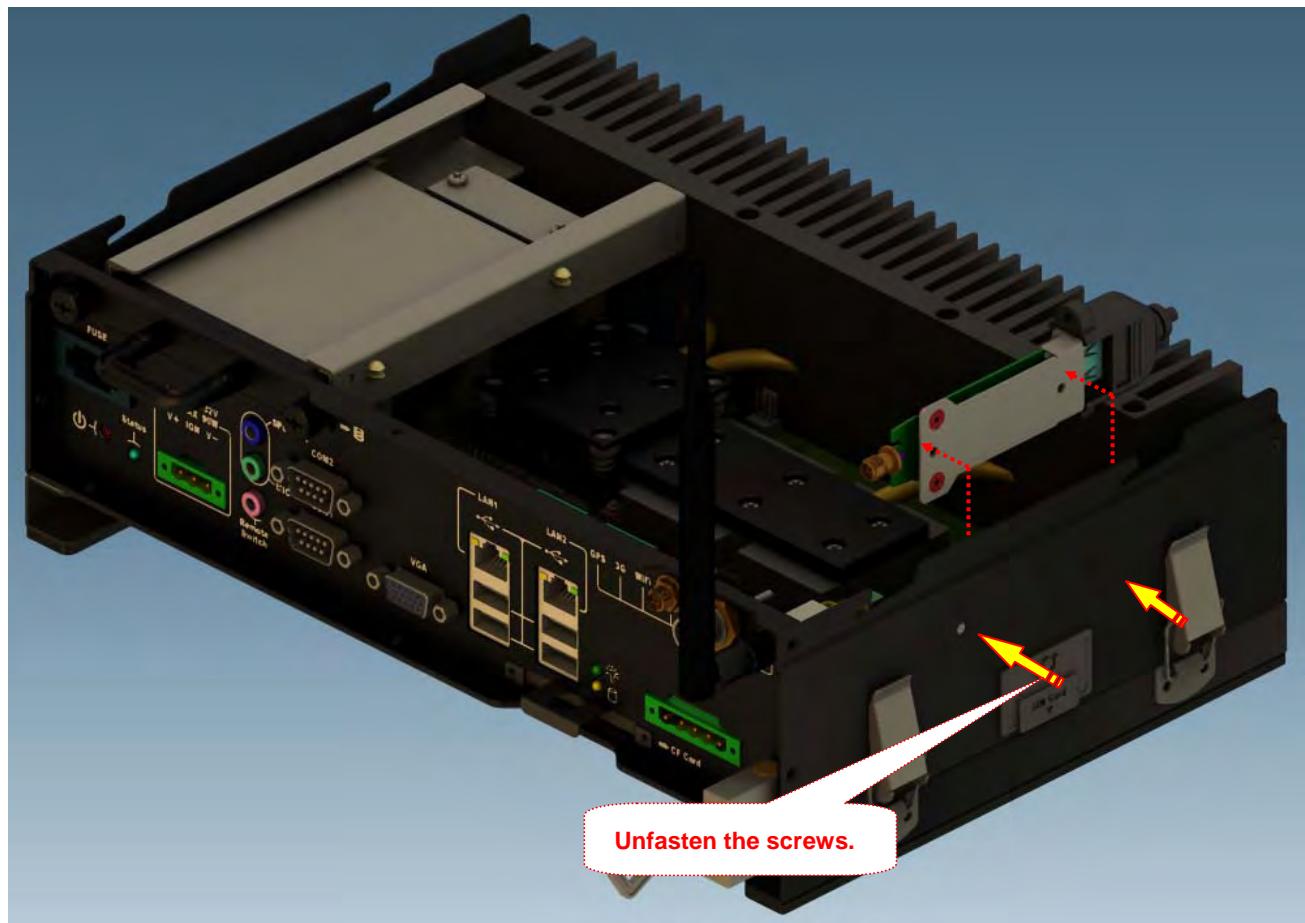
- **Install Outline Bracket**

1. Install fasteners with case by 4 screws.
2. Install fasteners' another side with Outline bracket by 4 screws.
3. Lock the fasteners.



2.3 GPS/3.5G/WiFi-Bluetooth Modules Installation

1. Unfasten 2 screws to release Wi-Fi Bluetooth bracket.



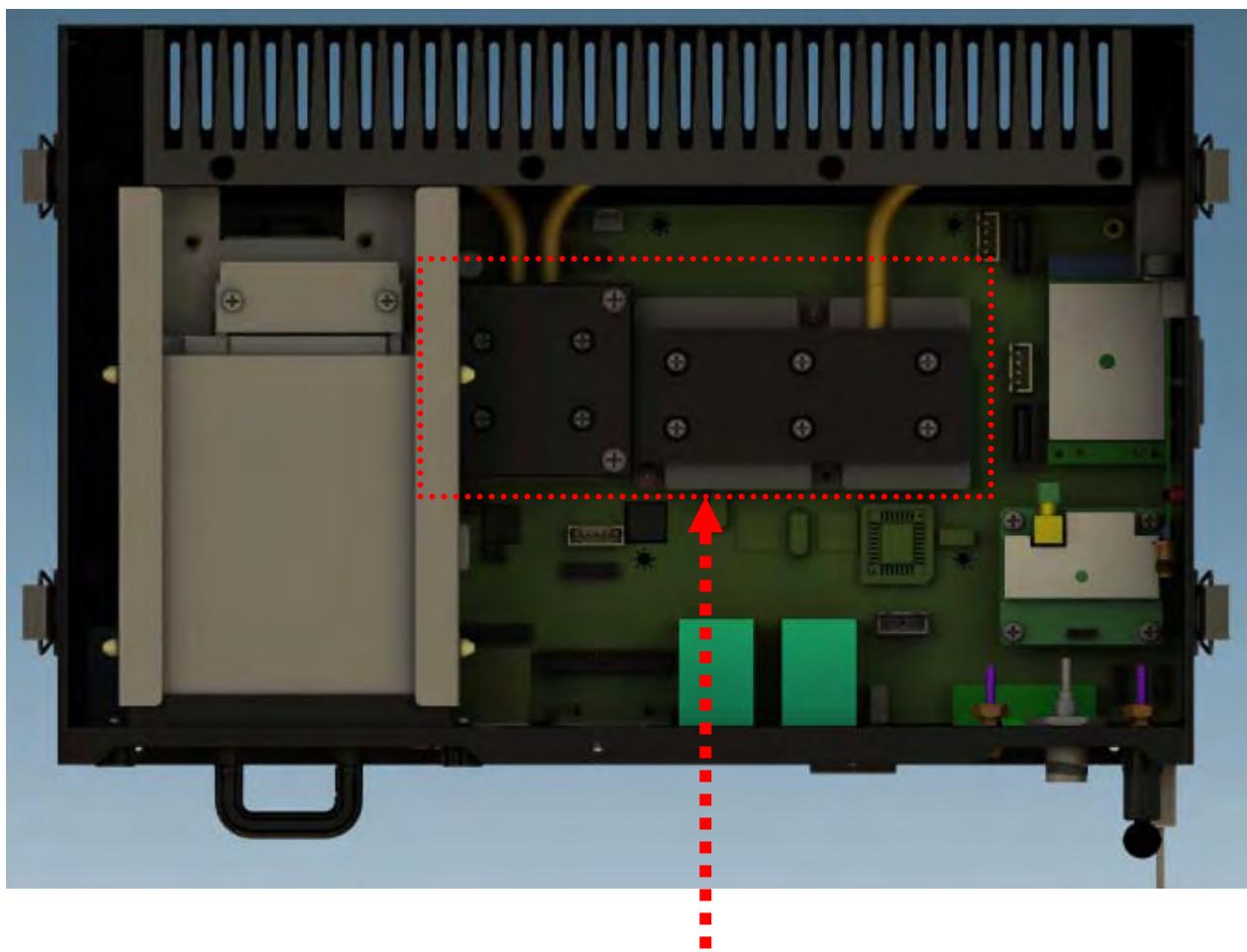
2. Install GPS/3.5G modules into chassis by fastening screws.



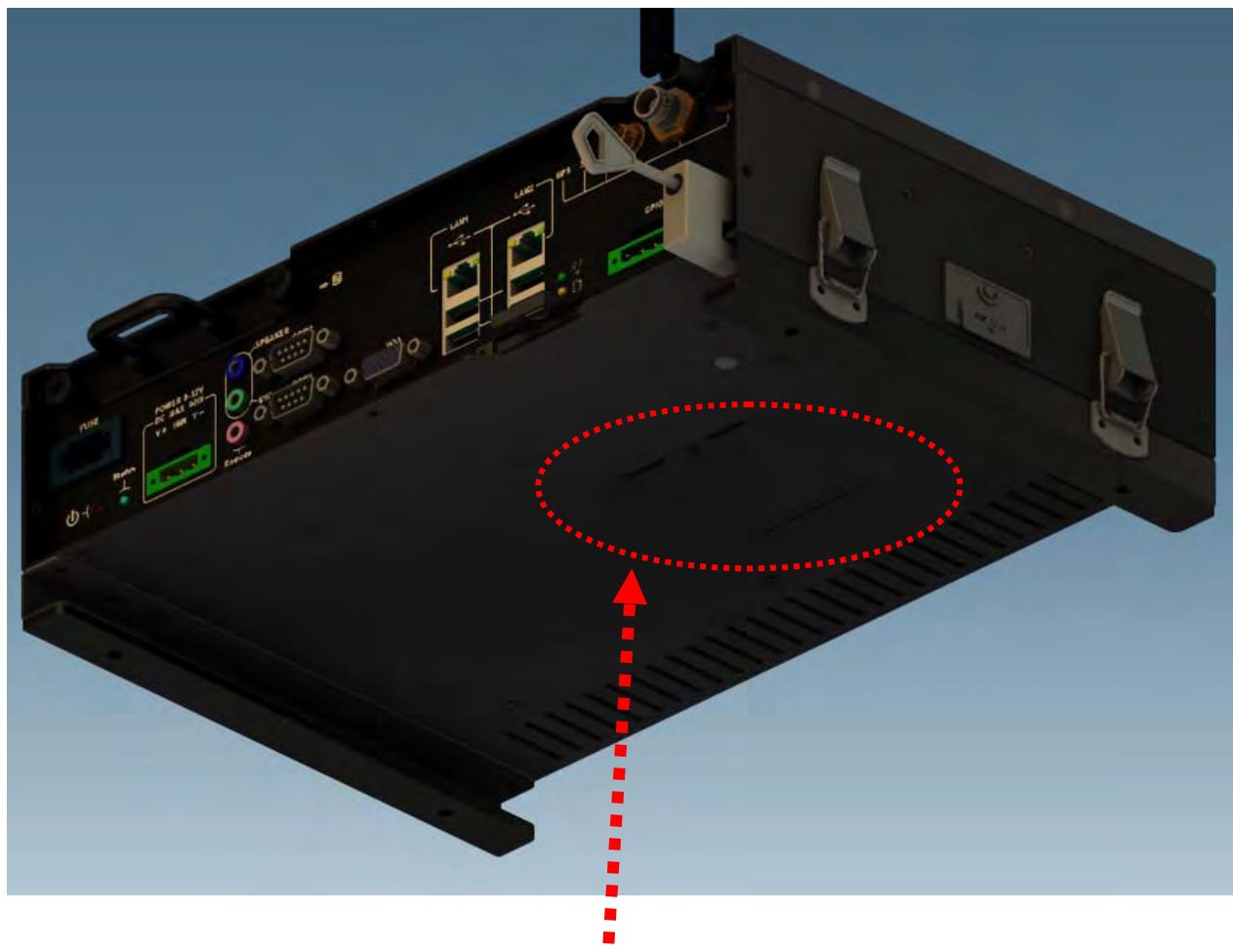
3 Appendix

Please do not change CPU by yourself. Any disassembly and assembly behavior for the CPU thermal module will causes unexpected damages.

Contact with Acrosser customer service center/FAE to change CPU.



Please NOT disassemble and assemble the thermal module by yourself



Please NOT disassemble and assemble the SO-DIMM module by yourself

4 Introductions of AR-B5403

Welcome to the AR-B5403 Computer. The AR-B5403 is an Intel Core 2 Duo EPIC single board computer provides variety of display outputs. In addition to VGA, DVI and LVDS display outputs, AR-B5403 supports S-Video, BNC, and component TV outputs.

4.1 Features

- Processor: Core 2 Duo, Core Duo and Celeron M
- Chipsets: 945GM + ICH7M
- Memory: DDR2 533/667MHz SO-DIMM, Maximum 2GB
- Display: VGA, DVI, LVDS, TV Out
- Storage: 1x CF, 2x SATA II,
- Audio: Line-out, Mic-in
- Communication: 2x Gbps Ethernet, 7x USB 2.0, 3x RS-232, 1x RS-232/422/485
- General: Watchdog timer, 8-bit GPIO, and PCI-104 expansion slot.

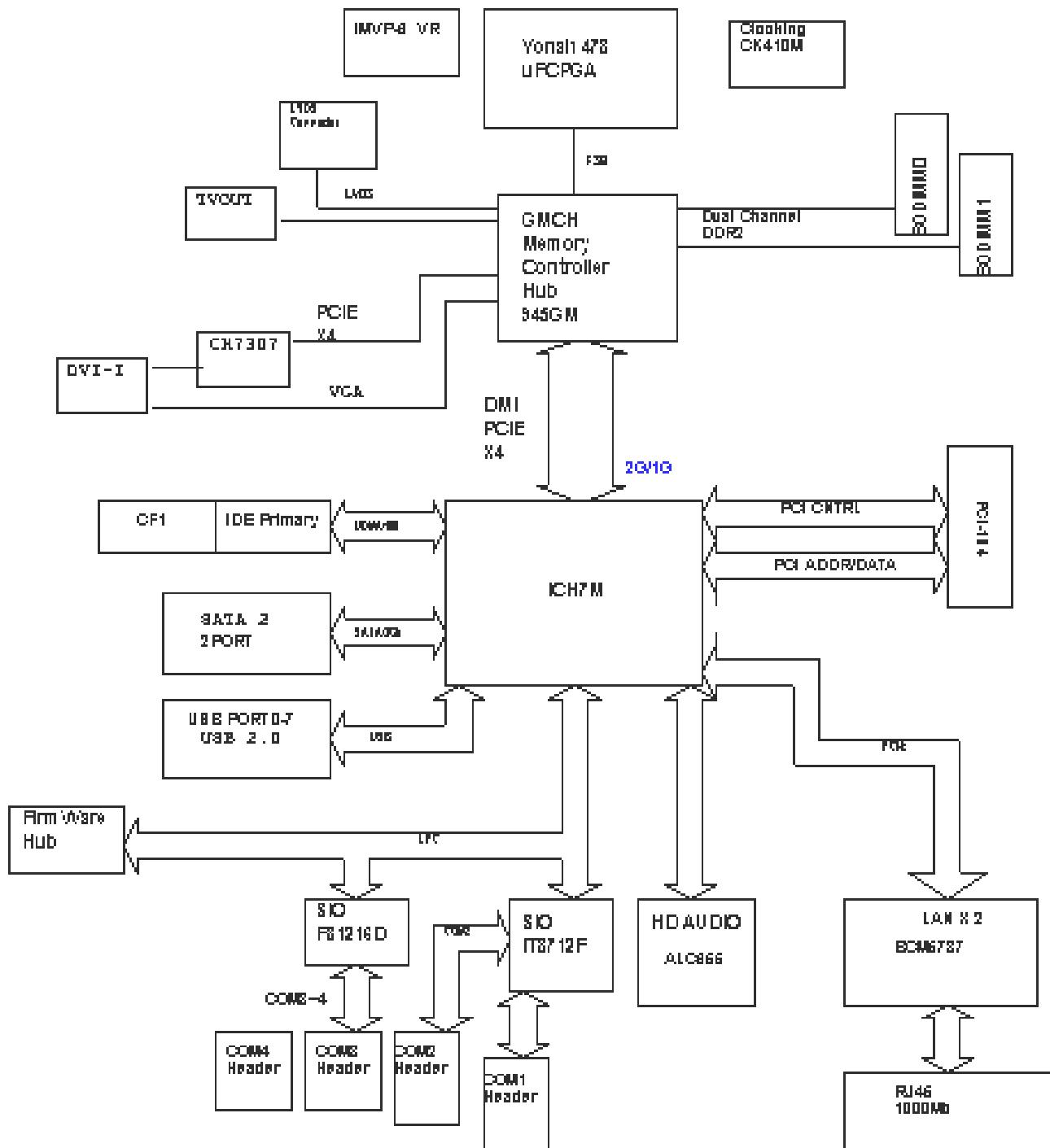
Specifications

| System | |
|--------------------|--|
| CPU | Support Intel Core 2 Duo/Core Duo/Core Solo/Celeron M CPU T7400 / T5500 / T2500 / CM440 CPU: L7400 |
| Chipset | Intel 945GME+ICH7M |
| FSB | 533/667MHz |
| Memory | One SO-DIMM socket support 667/533 MHz DDR2 SDRAM up to 2GB 1G Bytes 667MHz DDRII pre-installed |
| Video | |
| Graphic Controller | Intel 945GME integrated GMA 950 graphic controller |
| Video Memory | DVMT 3.0, Maximum 256MB shared |
| Video Interface | 1 x VGA port (DB15) |
| Storage | |

| | |
|----------------|---|
| SATA | 2 x SATA II port, |
| CF | 1 x External Compact Flash Type I/II socket |
| Disk Bay | 1 x Anti-shock 2.5" HDD bracket swappable without open case |
| I/O | |
| Ethernet | 2 x Gbps RJ45 with LED, Broadcom BCM5787 |
| Serial Port | 4 x RS-232 (2 x DB9, 2 x pin header, COM3 for reserve for PIC on power circuit, COM4 for GPS) |
| USB | 7 x USB2.0 (4 x external port, 3 x pin header) |
| GPIO | 4-bit GPIO (2 In, 2 Out) with 5 pin terminal block, 2-in/GND/2-out |
| Audio | IC: Realtek ALC655 Interface : MIC-In, SPK-Out |
| Remote control | 1 x Remote control |
| Fuse | 7.5A |
| Antenna Hole | 1 x SMA for GPS, 1 x TNC for 3.5G, 1 x SMA for WiFi, 1 x SMA for Bluetooth |
| miniPCIe | 1 x miniPCIe option for MC8790 |
| SIM | SIM slot x1, SIM card changeable without opening case, latch to protect SIM uncertainly touch |
| Expansion | |
| PCI-104 | Keep design, remove PCI-104 slot |
| Others | |
| GPS(option) | Globalsat ER-332 |
| 3.5G(option) | Sierra MC 8790/8790V, through miniPCIe slot on AR-B5403 |
| WiFi(option) | SparkLAN WUBR-170GN(M) support AP mode and Client mode |
| Bluetooth | Qcom Bluetooth module |
| Software | |
| OS support | Windows XP/ XP embedded, Linux FC 6 /7 |
| Power | Power onboard design(AR-B5403) <ul style="list-style-type: none"> ● Wide range input DC 9V~32V ● Fuse Design ● Smart ATX power function: <ol style="list-style-type: none"> a. Power on/off retry b. Adjustable delay time for system OFF by Switch on power module (Mode2~Mode7) c. System on/off by Vehicle ignition or Remote switch button d. Low Power input monitoring, Auto shutdown |

| | |
|-------------------------------------|--|
| | <ul style="list-style-type: none">● S/W configurable by COM3● Remote switch(audio jack)● System status LED(blue)● Embedded power local switch <p>AR-PW0932V default is Mode 2</p> |
| Mechanical & Environment | |
| Thermal Design | Heat pipe solution |
| Chassis Material | Metal steel |
| Bracket | Bracket with anti-thief function (Locker option) |
| Dimension | T.B.D. |
| Vibration | IEC 60068-2-64 5~500Hz, 3GRMS for SSD/CF, 1GRMS for 2.5" HDD, operating |
| Shock | IEC 60068-2-27 50G-500m/s -11ms, operating |
| Operating Temp. | -15~50°C with Industrial Grade CF or SSD |
| Storage Temp. | -40~80°C |
| Certification | CE/FCC class B |

4.3 Block Diagram

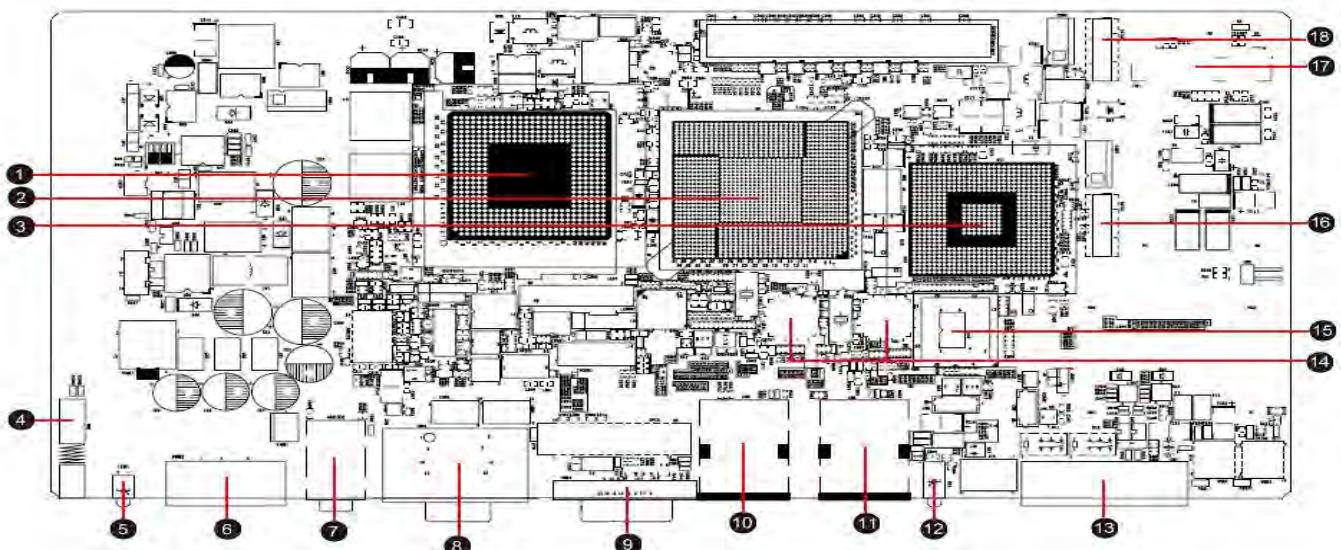


5 Hardware's Information

This chapter describes the installation of AR-B5403. At first, it shows the Function diagram and the layout of AR-B5403. It then describes the unpacking information which you should read carefully, as well as the jumper/switch settings for the AR-B5403 configuration.

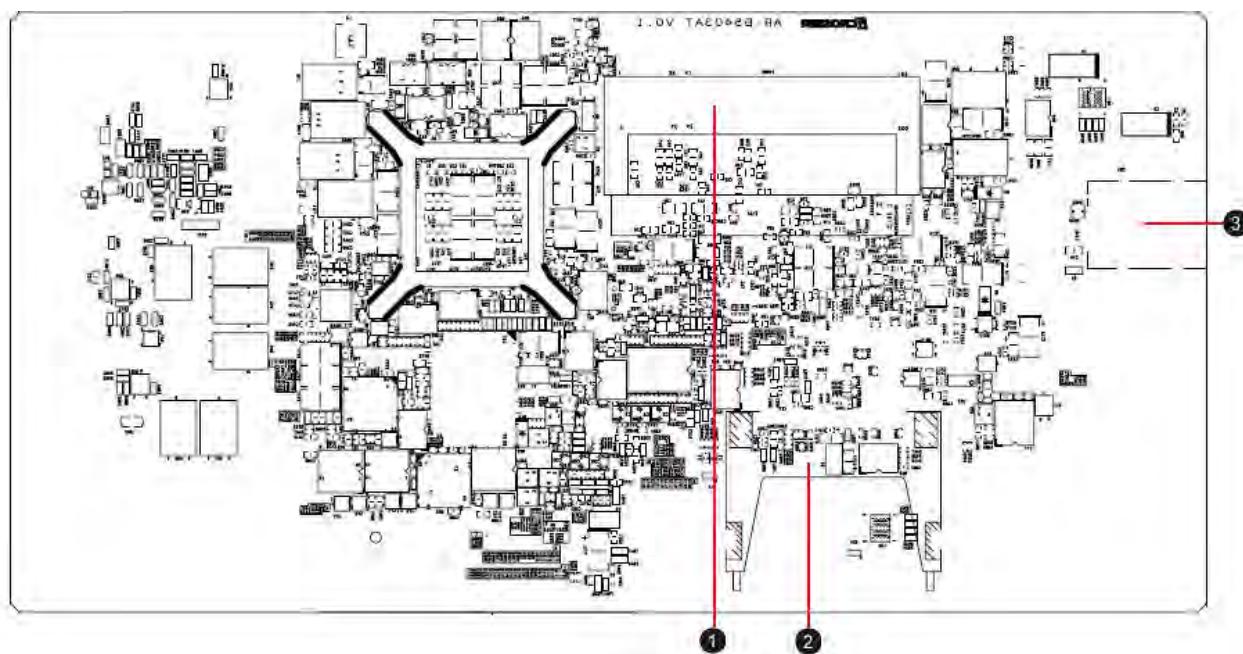
5.1 Locations

5.1.1 Top Side



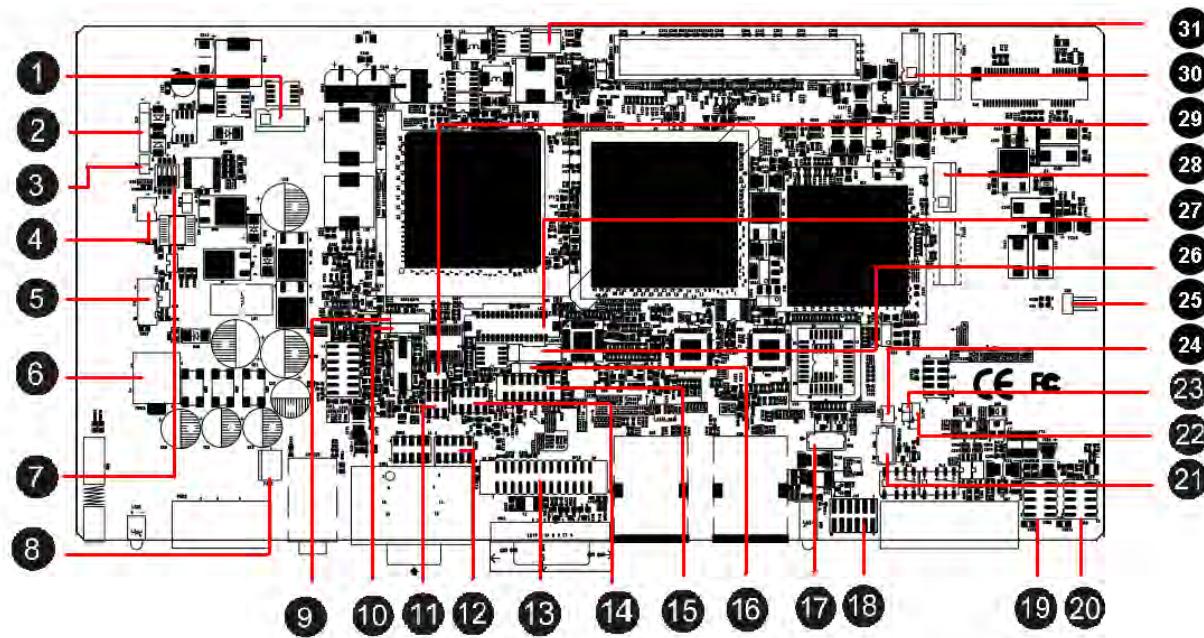
| | | | |
|---|--|----|---|
| 1 | CPU CPU Socket | 10 | USB Port and LAN 2 USB and 1 RJ-45 for LAN |
| 2 | GMCH Graphic Memory Control Hub Intel 945GME | 11 | USB Port and LAN 2 USB and 1 RJ-45 for LAN |
| 3 | ICH7M Graphic Memory Control Hub Intel GM45 | 12 | Power LED and HDD LED Power LED and HDD LED |
| 4 | Local Switch 12V Power Switch | 13 | GPIO Port User Defined GPIO Port |
| 5 | Status LED Machine Status LED | 14 | LAN Chip Broadcom BCM5787 Gigabit Ethernet |
| 6 | Power Connector 12V Power Connector | 15 | BIOS BIOS IC |
| 7 | Remote Switch and Audio Remote Power Control and Audio I/O | 16 | SATA1 SATA Data Connector |
| 8 | COM Port RS232 Serial Ports (COM1 & COM2) | 17 | Mini-PCIE for 3G module 3G Module slot with USB interface |
| 9 | VGA VGA Port | 18 | SATA2 SATA Data Connector |

5.1.2 Bottom Side



| | | | |
|----------|--|----------|---|
| 1 | SO-DIMM Socket SO-DIMM Socket for DDR2 | 3 | SIMM Card Socket SIMM Card Socket for 3G Module |
| 2 | CF Slot CF Slot for CF Card support IDE Mode | | |

5.1.3 Connector and Jumper Setting



| | | | | | |
|---|--|---|---|---|--|
| ① | PWR1 12V, 5V Output | ⑫ | COM4 Pin Header for COM4 Port | ⑬ | J6 CF Card Master setting |
| ② | J12 Connector for Programming PIC | ⑬ | DVI3 DVI Output Port | ⑭ | BAT1 Battery Input |
| ③ | JP4 Define KEY_SW, ENG_STS input type | ⑭ | GPIO1 Pin Header for User-Defined GPIOs | ⑮ | CN2 3.5G Carrier Board Status LED |
| ④ | CN10 Reserve Pin | ⑮ | TVCON1 TV Output Port | ⑯ | LCDPW1 Backlight Power and Control signal |
| ⑤ | J11 Front Panel Connector | ⑯ | J1 LVDS Panel Power Select | ⑰ | LCD1 LCD Signal Output |
| ⑥ | Fuse1 Fuse Connector | ⑰ | CN8 +5V, +12V for External Module | ⑱ | CON7 SATA Device Power |
| ⑦ | SW1 DIP Switch for Power Mode Select | ⑱ | J10 Jumper Select for GPIO Configuration | ⑲ | JP1 COM2 Transfer Protocol setting |
| ⑧ | FAN1 System Fan Connector | ⑲ | USB2 Pin Header for USB Ports | ⑳ | CON2 SATA Device Power |
| ⑨ | IR1 IR Port | ⑳ | USB3 Pin Header for USB Ports | ㉑ | FAN2 CPU FAN Connector |
| ⑩ | J5 COM2 RS-422,RS-485 Output | ㉑ | CN9 +5V, +12V for External Module | ㉒ | JBAT1 Pin Header for CMOS Clear |
| ⑪ | J9 Power SW, Reset, Buzzer Connector | ㉒ | | | |

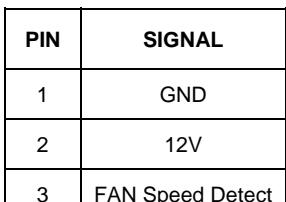
5.2 Connector and Jumper Setting Table

| 1. PWR1 (12V,5V Output) | | 2. J12 (Connector for PIC Programming) | | 3. JP4 (Define Key_SW, ENG_STS Input Type) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|--------|--|------|---|-----|----|--|-----|--------|-----|--|-----|-----------|-----|-------|----|---------|-----|--------|---|--------|----|-----|-----|--|----|--------|------|-------------|-------|------------|-----|--|-----|--------|-----|----------|-----|---------|---|----|-----|-----|-----|--|---|-----|--------|---|-----|---|-----|---|------------------|--|---|-----|--------|---|-----|---|----|---|-------|---|-----|---|-------|
| | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+12V</td></tr> <tr> <td>2</td><td>GND</td></tr> <tr> <td>3</td><td>GND</td></tr> <tr> <td>4</td><td>+5V</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +12V | 2 | GND | 3 | GND | 4 | +5V | | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+5VSB</td></tr> <tr> <td>2</td><td>ISPDATA</td></tr> <tr> <td>3</td><td>ISPCLK</td></tr> <tr> <td>4</td><td>ISPVPP</td></tr> <tr> <td>5</td><td>GND</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +5VSB | 2 | ISPDATA | 3 | ISPCLK | 4 | ISPVPP | 5 | GND | | <table border="1"> <thead> <tr> <th></th><th>Status</th></tr> </thead> <tbody> <tr> <td>Open</td><td>Active High</td></tr> <tr> <td>Short</td><td>Active Low</td></tr> </tbody> </table> | | Status | Open | Active High | Short | Active Low | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +5VSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ISPDATA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | ISPCLK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | ISPVPP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Open | Active High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Short | Active Low | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. CN10 (GPO reserve) | | 5. J11(Front Panel Connector) (Note1) | | 6. FUSE1 (Connect to Fuse) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>GPO</td></tr> <tr> <td>2</td><td>GND</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | GPO | 2 | GND | | <table border="1"> <thead> <tr> <th>PIN</th><th>Signal</th><th>PIN</th><th>Signal</th></tr> </thead> <tbody> <tr> <td>1</td><td>PWRBTN_IN</td><td>2</td><td>GND</td></tr> <tr> <td>3</td><td>LOC_SW</td><td>4</td><td>GND</td></tr> <tr> <td>5</td><td>KEY_SW</td><td>6</td><td>GND</td></tr> <tr> <td>7</td><td>ENG_STS</td><td>8</td><td>GND</td></tr> <tr> <td>9</td><td>STS_LED</td><td>10</td><td>GND</td></tr> </tbody> </table> | PIN | Signal | PIN | Signal | 1 | PWRBTN_IN | 2 | GND | 3 | LOC_SW | 4 | GND | 5 | KEY_SW | 6 | GND | 7 | ENG_STS | 8 | GND | 9 | STS_LED | 10 | GND | | <table border="1"> <thead> <tr> <th>PIN</th><th>Signal</th></tr> </thead> <tbody> <tr> <td>1,2</td><td>Fuse Out</td></tr> <tr> <td>3,4</td><td>Fuse In</td></tr> </tbody> </table> | PIN | Signal | 1,2 | Fuse Out | 3,4 | Fuse In | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GPO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Signal | PIN | Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | PWRBTN_IN | 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | LOC_SW | 4 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | KEY_SW | 6 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | ENG_STS | 8 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | STS_LED | 10 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2 | Fuse Out | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,4 | Fuse In | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. SW1 (DIP switch for power mode select)(Note2) | | 8. FAN1 (System FAN) | | 9. IR1 (IR Pin Header) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Mode</th><th>1</th><th>2</th><th>3</th><th>4</th></tr> </thead> <tbody> <tr> <td>0</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr> <td>1</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr> <tr> <td>2</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td></tr> <tr> <td>3</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td></tr> <tr> <td>4</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr> <tr> <td>5</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr> <tr> <td>6</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td></tr> <tr> <td>7</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </tbody> </table> | Mode | 1 | 2 | 3 | 4 | 0 | ON | ON | ON | ON | 1 | ON | ON | ON | OFF | 2 | ON | ON | OFF | ON | 3 | ON | ON | OFF | OFF | 4 | ON | OFF | ON | ON | 5 | ON | OFF | ON | OFF | 6 | ON | OFF | OFF | ON | 7 | ON | OFF | OFF | OFF | | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>GND</td></tr> <tr> <td>2</td><td>12V</td></tr> <tr> <td>3</td><td>FAN Speed Detect</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | GND | 2 | 12V | 3 | FAN Speed Detect | | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+5V</td></tr> <tr> <td>2</td><td>NC</td></tr> <tr> <td>3</td><td>IR_RX</td></tr> <tr> <td>4</td><td>GND</td></tr> <tr> <td>5</td><td>IR_TX</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +5V | 2 | NC | 3 | IR_RX | 4 | GND | 5 | IR_TX |
| Mode | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | ON | ON | ON | ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | ON | ON | ON | OFF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ON | ON | OFF | ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | ON | ON | OFF | OFF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | ON | OFF | ON | ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | ON | OFF | ON | OFF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | ON | OFF | OFF | ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | ON | OFF | OFF | OFF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | FAN Speed Detect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | IR_RX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | IR_TX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 10. J5 (COM2 RS-422,RS-485 Output) | | 11. J9 (Power Button & Reset & Buzzer) | | 12. COM4 (Pin Header for COM4) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|--|--|----------|---|--------|-----------|-------|---|--|-----|--------|---|--|-----|--------|-----|--------|---|-----|---|--|-----|--------|-----|-------------|-----|-----|-----|--------------|-----|---|------|--------|-------|--------|----|----------|----|-----|----|-----|----|-------|----|-----|----|------|----|-----|----|-------|----|-----|----|-------|----|-----|--|--|-----|--------|-----|--------|---|-------|---|----|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----|----|-------|--|--|-----|--------|-----|--------|---|-------------------|---|---------|---|-----|---|---------|---|------|---|----|---|-----|---|---------|---|---------------------|----|-----|----|-----|----|----|----|----|----|----|
| | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr><td>1</td><td>TX+</td></tr> <tr><td>2</td><td>TX-</td></tr> <tr><td>3</td><td>RX+</td></tr> <tr><td>4</td><td>RX-</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | TX+ | 2 | TX- | 3 | RX+ | 4 | RX- | | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr><td>1</td><td>5V</td><td>2</td><td>PCBEEP</td></tr> <tr><td>3</td><td>GND</td><td>4</td><td>RESET</td></tr> <tr><td>5</td><td>GND</td><td>6</td><td>PWRBTN</td></tr> </tbody> </table> <p>※PWRBTN for ATX mode only</p> | PIN | SIGNAL | PIN | SIGNAL | 1 | 5V | 2 | PCBEEP | 3 | GND | 4 | RESET | 5 | GND | 6 | PWRBTN | | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr><td>1</td><td>DCD</td><td>2</td><td>DSR</td></tr> <tr><td>3</td><td>RX</td><td>4</td><td>RTS</td></tr> <tr><td>5</td><td>TX</td><td>6</td><td>CTS</td></tr> <tr><td>7</td><td>DTR</td><td>8</td><td>RI</td></tr> <tr><td>9</td><td>GND</td><td>10</td><td>NC</td></tr> </tbody> </table> | PIN | SIGNAL | PIN | SIGNAL | 1 | DCD | 2 | DSR | 3 | RX | 4 | RTS | 5 | TX | 6 | CTS | 7 | DTR | 8 | RI | 9 | GND | 10 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | TX+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | TX- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | RX+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | RX- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 5V | 2 | PCBEEP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GND | 4 | RESET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | 6 | PWRBTN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | DCD | 2 | DSR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | RX | 4 | RTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | TX | 6 | CTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | DTR | 8 | RI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | GND | 10 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. DVI3 (DVI Port) | | 14. GPIO1(Pin Header for User-Defined GPIOs) | | 15. TVCON1 (TV Output Port) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr><td>1</td><td>GND</td><td>2</td><td>TD0</td></tr> <tr><td>3</td><td>TD0-</td><td>4</td><td>GND</td></tr> <tr><td>5</td><td>TD1</td><td>6</td><td>TD1-</td></tr> <tr><td>7</td><td>GND</td><td>8</td><td>TD2</td></tr> <tr><td>9</td><td>TD2-</td><td>10</td><td>GND</td></tr> <tr><td>11</td><td>TCK</td><td>12</td><td>TCK-</td></tr> <tr><td>13</td><td>HPD</td><td>14</td><td>DDCCLK</td></tr> <tr><td>15</td><td>VCC</td><td>16</td><td>DDC DATA</td></tr> <tr><td>17</td><td>RED</td><td>18</td><td>GND</td></tr> <tr><td>19</td><td>GREEN</td><td>20</td><td>GND</td></tr> <tr><td>21</td><td>BLUE</td><td>22</td><td>GND</td></tr> <tr><td>23</td><td>VSYNC</td><td>24</td><td>CRT</td></tr> <tr><td>25</td><td>HSYNC</td><td>26</td><td>CRT</td></tr> </tbody> </table> | PIN | SIGNAL | PIN | SIGNAL | 1 | GND | 2 | TD0 | 3 | TD0- | 4 | GND | 5 | TD1 | 6 | TD1- | 7 | GND | 8 | TD2 | 9 | TD2- | 10 | GND | 11 | TCK | 12 | TCK- | 13 | HPD | 14 | DDCCLK | 15 | VCC | 16 | DDC DATA | 17 | RED | 18 | GND | 19 | GREEN | 20 | GND | 21 | BLUE | 22 | GND | 23 | VSYNC | 24 | CRT | 25 | HSYNC | 26 | CRT | | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr><td>1</td><td>GPIO0</td><td>2</td><td>5V</td></tr> <tr><td>3</td><td>GPIO1</td><td>4</td><td>GPIO7</td></tr> <tr><td>5</td><td>GPIO2</td><td>6</td><td>GPIO6</td></tr> <tr><td>7</td><td>GPIO3</td><td>8</td><td>GPIO5</td></tr> <tr><td>9</td><td>GND</td><td>10</td><td>GPIO4</td></tr> </tbody> </table> | PIN | SIGNAL | PIN | SIGNAL | 1 | GPIO0 | 2 | 5V | 3 | GPIO1 | 4 | GPIO7 | 5 | GPIO2 | 6 | GPIO6 | 7 | GPIO3 | 8 | GPIO5 | 9 | GND | 10 | GPIO4 | | <table border="1"> <thead> <tr> <th>PIN</th><th>Signal</th><th>PIN</th><th>Signal</th></tr> </thead> <tbody> <tr><td>1</td><td>S-Video Luminance</td><td>2</td><td>Reserve</td></tr> <tr><td>3</td><td>GND</td><td>4</td><td>Reserve</td></tr> <tr><td>5</td><td>CVBS</td><td>6</td><td>NC</td></tr> <tr><td>7</td><td>GND</td><td>8</td><td>Reserve</td></tr> <tr><td>9</td><td>S-Video Chrominance</td><td>10</td><td>GND</td></tr> <tr><td>11</td><td>GND</td><td>12</td><td>NC</td></tr> <tr><td>13</td><td>NC</td><td>14</td><td>NC</td></tr> </tbody> </table> | PIN | Signal | PIN | Signal | 1 | S-Video Luminance | 2 | Reserve | 3 | GND | 4 | Reserve | 5 | CVBS | 6 | NC | 7 | GND | 8 | Reserve | 9 | S-Video Chrominance | 10 | GND | 11 | GND | 12 | NC | 13 | NC | 14 | NC |
| PIN | SIGNAL | PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GND | 2 | TD0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | TD0- | 4 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | TD1 | 6 | TD1- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | 8 | TD2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | TD2- | 10 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | TCK | 12 | TCK- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | HPD | 14 | DDCCLK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | VCC | 16 | DDC DATA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | RED | 18 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | GREEN | 20 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | BLUE | 22 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | VSYNC | 24 | CRT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | HSYNC | 26 | CRT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GPIO0 | 2 | 5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GPIO1 | 4 | GPIO7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GPIO2 | 6 | GPIO6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GPIO3 | 8 | GPIO5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | GND | 10 | GPIO4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Signal | PIN | Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | S-Video Luminance | 2 | Reserve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GND | 4 | Reserve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | CVBS | 6 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | 8 | Reserve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | S-Video Chrominance | 10 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | GND | 12 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | NC | 14 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 J1 (LCD Panel Power Select) | | 17 CN8 (Power Connect for +12V and +5V) | | 18 J10 (Jumper Select for GPIO configuration) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>STATUS</th><th>SETTING</th></tr> </thead> <tbody> <tr><td>1-2 close</td><td>+5V</td></tr> <tr><td>2-3 close</td><td>+3.3V</td></tr> </tbody> </table> | STATUS | SETTING | 1-2 close | +5V | 2-3 close | +3.3V | | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr><td>1</td><td>+12V</td></tr> <tr><td>2</td><td>GND</td></tr> <tr><td>3</td><td>GND</td></tr> <tr><td>4</td><td>+5V</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +12V | 2 | GND | 3 | GND | 4 | +5V | | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr><td>1-2</td><td>NC(DEFAULT)</td></tr> <tr><td>3-4</td><td>NO</td></tr> <tr><td>5-6</td><td>GND(DEFAULT)</td></tr> <tr><td>7-8</td><td>+5V</td></tr> <tr><td>9-10</td><td>+12V</td></tr> <tr><td>11-12</td><td>+EXT</td></tr> </tbody> </table> | PIN | DEFINE | 1-2 | NC(DEFAULT) | 3-4 | NO | 5-6 | GND(DEFAULT) | 7-8 | +5V | 9-10 | +12V | 11-12 | +EXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STATUS | SETTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2 close | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-3 close | +3.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2 | NC(DEFAULT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-4 | NO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5-6 | GND(DEFAULT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-8 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-10 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11-12 | +EXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 19. USB2 (USB Output Port) | | 20. USB3 (USB Output Port) | | 21. CN9 (Power Connect for +12V and +5V) | | | | | | | | | | | |
|---------------------------------------|--------|----------------------------|--|---|--|-----|--------|---|------|---|-----|---|-----|---|-----|
| | | | | | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+12V</td></tr> <tr> <td>2</td><td>GND</td></tr> <tr> <td>3</td><td>GND</td></tr> <tr> <td>4</td><td>+5V</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +12V | 2 | GND | 3 | GND | 4 | +5V |
| PIN | DEFINE | | | | | | | | | | | | | | |
| 1 | +12V | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | |
| 3 | GND | | | | | | | | | | | | | | |
| 4 | +5V | | | | | | | | | | | | | | |
| 22. JBAT1 (Pin Header for CMOS Clear) | | 23. J6 (CF Card status) | | 24. BAT1 (Battery Connector) | | | | | | | | | | | |
| | | | | | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>VBAT</td></tr> <tr> <td>2</td><td>GND</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | VBAT | 2 | GND | | | | |
| PIN | SIGNAL | | | | | | | | | | | | | | |
| 1 | VBAT | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | |

| 25. CN2 (3.5G Module Status) | 26. LCDPW1 (Backlight Output) | 27. LCD1 (LCD Signal Output) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|------------------------------|----------|-------|--------|---------------|--|-----|--------|--|------|--------|------|------|-----|-----|------------------|-------|-----|-----|-------------------|--|-----|--------|-----|--------|---|--------|---|-----|---|--------|---|--------|---|-----|---|----------|---|----------|---|-----|---|----------|----|----------|----|----|----|----|----|----------|----|----------|----|-----|----|--------|----|--------|----|-----|----|----------|----|----------|----|---------|----|----------|----|----------|----|----------|----|----------|----|----------|----|----|----|----|----|--------|----|--------|
| <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>+3.3V</td></tr> <tr> <td>2</td><td>Status Signal</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | +3.3V | 2 | Status Signal | <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+12V</td></tr> <tr> <td>2</td><td>+12V</td></tr> <tr> <td>3</td><td>GND</td></tr> <tr> <td>4</td><td>Backlight Enable</td></tr> <tr> <td>5</td><td>GND</td></tr> <tr> <td>6</td><td>Backlight Control</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +12V | 2 | +12V | 3 | GND | 4 | Backlight Enable | 5 | GND | 6 | Backlight Control | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>LCDVCC</td><td>2</td><td>GND</td></tr> <tr> <td>3</td><td>B CLK-</td><td>4</td><td>B CLK+</td></tr> <tr> <td>5</td><td>GND</td><td>6</td><td>B DATA2-</td></tr> <tr> <td>7</td><td>B DATA2+</td><td>8</td><td>GND</td></tr> <tr> <td>9</td><td>B DATA1-</td><td>10</td><td>B DATA1+</td></tr> <tr> <td>11</td><td>NC</td><td>12</td><td>NC</td></tr> <tr> <td>13</td><td>B DATA0+</td><td>14</td><td>B DATA0-</td></tr> <tr> <td>15</td><td>GND</td><td>16</td><td>A CLK+</td></tr> <tr> <td>17</td><td>A CLK-</td><td>18</td><td>GND</td></tr> <tr> <td>19</td><td>A DATA2+</td><td>20</td><td>A DATA2-</td></tr> <tr> <td>21</td><td>I2C CLK</td><td>22</td><td>A DATA1+</td></tr> <tr> <td>23</td><td>A DATA1-</td><td>24</td><td>I2C DATA</td></tr> <tr> <td>25</td><td>A DATA0+</td><td>26</td><td>A DATA0-</td></tr> <tr> <td>27</td><td>NC</td><td>28</td><td>NC</td></tr> <tr> <td>29</td><td>LCDVCC</td><td>30</td><td>LCDVCC</td></tr> </tbody> </table> | PIN | SIGNAL | PIN | SIGNAL | 1 | LCDVCC | 2 | GND | 3 | B CLK- | 4 | B CLK+ | 5 | GND | 6 | B DATA2- | 7 | B DATA2+ | 8 | GND | 9 | B DATA1- | 10 | B DATA1+ | 11 | NC | 12 | NC | 13 | B DATA0+ | 14 | B DATA0- | 15 | GND | 16 | A CLK+ | 17 | A CLK- | 18 | GND | 19 | A DATA2+ | 20 | A DATA2- | 21 | I2C CLK | 22 | A DATA1+ | 23 | A DATA1- | 24 | I2C DATA | 25 | A DATA0+ | 26 | A DATA0- | 27 | NC | 28 | NC | 29 | LCDVCC | 30 | LCDVCC |
| PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +3.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Status Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Backlight Enable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Backlight Control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | SIGNAL | PIN | SIGNAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | LCDVCC | 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | B CLK- | 4 | B CLK+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | 6 | B DATA2- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | B DATA2+ | 8 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | B DATA1- | 10 | B DATA1+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | NC | 12 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | B DATA0+ | 14 | B DATA0- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | GND | 16 | A CLK+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | A CLK- | 18 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | A DATA2+ | 20 | A DATA2- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | I2C CLK | 22 | A DATA1+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | A DATA1- | 24 | I2C DATA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | A DATA0+ | 26 | A DATA0- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | NC | 28 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | LCDVCC | 30 | LCDVCC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28. CON7 (+12V,+5V,+3.3V for SATA HDD Power) | 29. JP1 (COM2 Type Setting) <table border="1"> <thead> <tr> <th>STATUS</th><th>SETTING</th></tr> </thead> <tbody> <tr> <td>1-2</td><td>RS-232</td></tr> <tr> <td>3-4</td><td>RS-422</td></tr> <tr> <td>5-6</td><td>RS-485</td></tr> </tbody> </table> | STATUS | SETTING | 1-2 | RS-232 | 3-4 | RS-422 | 5-6 | RS-485 | 30. CON2 (+12V,+5V,+3.3V for SATA HDD Power) <table border="1"> <thead> <tr> <th>PIN</th><th>DEFINE</th></tr> </thead> <tbody> <tr> <td>1</td><td>+12V</td></tr> <tr> <td>2</td><td>GND</td></tr> <tr> <td>3</td><td>+3.3V</td></tr> <tr> <td>4</td><td>+5V</td></tr> </tbody> </table> | PIN | DEFINE | 1 | +12V | 2 | GND | 3 | +3.3V | 4 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STATUS | SETTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2 | RS-232 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-4 | RS-422 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5-6 | RS-485 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +12V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | +3.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 31 FAN2 (CPU Fan Connector) | | | | | | | | | | | | | |
|---|---|-----|--------|---|-----|---|-----|---|------------------|--|--|--|--|
|   | <table border="1"> <thead> <tr> <th>PIN</th><th>SIGNAL</th></tr> </thead> <tbody> <tr> <td>1</td><td>GND</td></tr> <tr> <td>2</td><td>12V</td></tr> <tr> <td>3</td><td>FAN Speed Detect</td></tr> </tbody> </table> | PIN | SIGNAL | 1 | GND | 2 | 12V | 3 | FAN Speed Detect | | | | |
| PIN | SIGNAL | | | | | | | | | | | | |
| 1 | GND | | | | | | | | | | | | |
| 2 | 12V | | | | | | | | | | | | |
| 3 | FAN Speed Detect | | | | | | | | | | | | |

Note1, 2 Power smart functions

Definition

1. Soft off cycle:

A period when received power off signal to generate a off signal (A 500mS pulse, High- Low –High or Low-High-Low depends on SIO configuration, to mother board's Power Button Pin)

2. Hard Off cycle:

A period when system off (S5) to stand by removed (G3). In another word, the A period of 5VSB on to off (when system already off)

Notes: S5 and G3 is follow by ACPI

Mode description

The main power-in is controlled by the switch on chassis.

Maximum 16 Modes adjusted by 4 switches. (Mode 8 to mode 15 are reserved for future use).

Mode 0: ATX mode.

- A. 5V Standby is always on.
- B. Input voltage is not monitored.
- C. Power on/off is controlled by remote switch
- D. Local Switch priority is higher than remote switch. This is controlled by hardware.

Mode 1: AT mode

- A. Power output immediately after input is present.
- B. Power can only be turned off by turning off local switch. The remote switch will be ignored by Power smart function. In this mode the BIOS shall be set to AT mode.

Smart Mode (Mode 2 to Mode 7)Mode 2: See Figure 1

- A. Power on is controlled by **ignition (remote switch does not make any action to power on)**.
- B. **Power on retry:** If the motherboard cannot be turned on normally (/PSON does not go to low), the Power smart function will turn off 5VSB, and then turn on 5VSB and retry. Send “on” pulse to motherboard again. The power board will re-try this procedure until successfully turn on motherboard.
- C. Power smart function sends “ON” pulse to motherboard when ignition is on for more than 2 seconds.
- D. Power smart function will ignore the status change of ignition after ON pulse is send to motherboard for 3 minutes. After this period, the Power smart function will start to check its status. This can avoid an improper “OFF” process before the OS is complete booted.
- E. Power off is controlled by **remote switch or ignition**. **Remote switch** has higher priority than ignition. (Remote switch is optional).
- F. Power smart function sends “off” pulse to motherboard **5 seconds** after ignition is turned off or remote switch is pressed. (Soft delay)
- G. Power smart function will ignore the status change of ignition and remote switch during the “OFF” pulse is sent out and the /PSON return to high. This will avoid an improper ON process before the motherboard is completely shot off.
- H. The **digital output (optional)** will go from high to low at the moment that “OFF” pulse is sent to motherboard. The low state will be kept until /PSON back to high. If the /PSON does not back to high within 3 minutes, the Power smart function will enter a retry cycle (described in next section).
- I. **Power off retry:** If the motherboard cannot be shouted down normally (/PSON does not go to high) within 3 minutes after “OFF” pulse is sent, the Power smart function will send off pulse to motherboard again. If the motherboard still cannot be shouted down normally, the power output will be turned off directly. (Figure 3)
- J. Hard off delay: **1 minutes**, During this period system can be turned on again if the off procedure already finished and power button is pushed again(or ignition on again)

Mode 3:

- A. Same as mode 2 except for soft/hard off delay time
- B. Soft off delay: **1 minute**

C. Hard off delay: **5 minutes**

Mode 4:

- A. Same as mode 2 except for soft/hard off delay time
- B. Soft off delay: **30 minute**
- C. Hard off delay: **2 Hours**

Mode 5: See Figure 2

Same as mode 2 except that the power on is controlled by **remote switch**.

- A. Power on is controlled by **remote switch (ignition must be turned on 2 seconds before remote switch is pressed)**.
- B. AR-PW0932V sends off pulse to motherboard **5 seconds** after ignition is turned off or remote switch is pressed. (Soft delay)
- C. Hard off delay: **1 minutes**

Mode 6:

- A. Same as mode 5 except for soft/hard off and delay
- B. Soft off delay: **1 minute**
- C. Hard off delay: **5 minutes**

Mode 7:

- A. Same as mode 5 except for soft/hard off and delay
- B. Soft off delay: **30 minute**
- C. Hard off delay: **2 Hours**

Mode 15 (Software control mode):

- A. Setting by **AP**
- B. Software mode default as Hardware mode 2
- C. Soft off delay time can be set
- D. Hard off delay time can be set
- E. In-Vehicle system power on by ignition or Remote button can be set
- F. Show Ignition status / Voltage (for AP only)
- G. Create a button "Set default"

Plan AP screen→

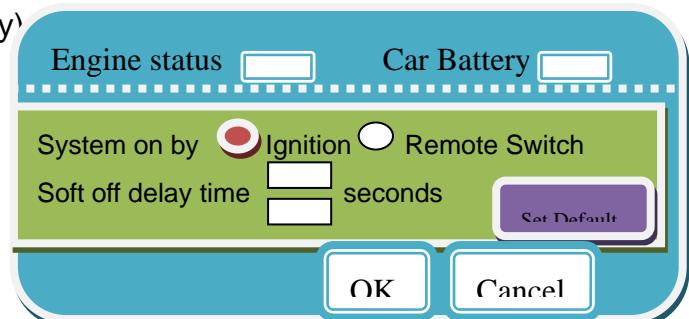


Table1. Control Mode

| Mode | Soft OFF Delay | Hard OFF delay | Power ON Control | Power OFF Control |
|------------------------------|-----------------|-----------------|------------------|--------------------------|
| 0 (ATX) | No | No | Remote Switch | Remote Switch |
| 1(AT) | No | No | Local Switch | Local Switch |
| 2 | 5 seconds | 1 minute | Ignition | Ignition / Remote Switch |
| 3 | 1 minute | 5 minutes | Ignition | Ignition / Remote Switch |
| 4 | 30 minutes | 2 hours | Ignition | Ignition / Remote Switch |
| 5 | 5 seconds | 1 minute | Remote Switch | Ignition / Remote Switch |
| 6 | 1 minute | 5 minutes | Remote Switch | Ignition / Remote Switch |
| 7 | 30 minutes | 2 hours | Remote Switch | Ignition / Remote Switch |
| 15 (Software control) | By user setting | By user setting | By user setting | Ignition / Remote Switch |

Another function of Smart Mode

1. If ignition turns back “ON” during “Off” Delay, Power smart function will stay in operation. “Off” signal will not be send to motherboard. The “Off” Delay will re-start after next ignition off.
2. Power input monitoring(before system boot on, during runtime, during soft off delay):
The Power smart function will constantly monitor the input voltage. If the input voltage is below **X Voltage (the standard might have 5% tolerance)**, the AR-PW0932V will not start the power on procedure. When Power smart function has ran in operation and the battery drops below **Y Voltage (with 5% tolerance)** more than 10 seconds the Power smart function will shut down the motherboard following the standard shut down procedure. If the input voltage recovers in 10 seconds over **Y Voltage (with 5% tolerance)** again, the Power smart function will continue to run. (Figure 4)if this happens, ignition shall be off and on again (Mode 2, 3, 4) or press the remote switch(Mode 5,6,7) if you want to turn on system again.

| | For 12V car battery | For 24V car battery |
|----------------|----------------------------|----------------------------|
| X value | 11.2 | 23 |
| Y value | 10.8 | 22.5 |
| | | |

6 BIOS Setting

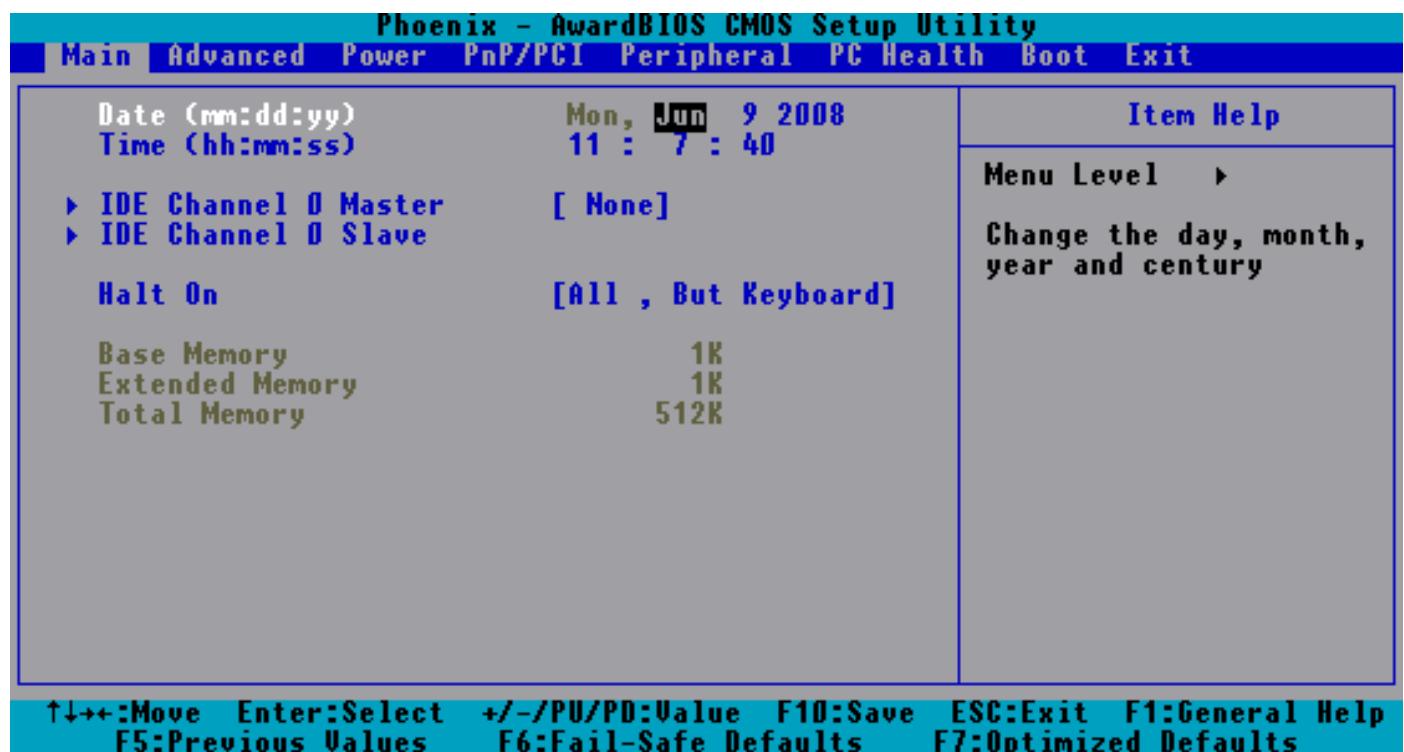
This chapter describes the BIOS menu displays and explains how to perform common tasks needed to get the system up and running. It also gives detailed explanation of the elements found in each of the BIOS menus. The following topics are covered:

- Main Setup
- Advanced Chipset Setup
- PnP/PCI Setup
- Peripherals Setup
- PC Health Setup
- Boot Setup
- Exit Setup

Once you enter the Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. Use the arrow keys to highlight the item and then use the <Pg Up> <Pg Dn> keys to select the value you want in each item.

6.1 Main Setup

The <Main Setup> choice allows you to record some basic hardware configuration in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run this Setup option, however, if you change your system hardware configuration, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.



Note: Listed at the bottom of the menu are the control keys. If you need any help with the item fields, you can press the <F1> key, and it will display the relevant information.

| Option | Choice | Description |
|-----------------------------------|--------|---|
| Date Setup | N/A | Set the system date. Note that the 'Day' automatically changes when you set the date |
| Time Setup | N/A | Set the system time |
| IDE Channel 0 Master/Slave | N/A | The onboard PCI IDE connectors provide 1 channel for connecting up to 2 IDE hard disks or other devices. The first is the "Master" and the second is "Slave", BIOS will auto-detect the IDE type. |

| | | |
|----------------|--|--|
| Halt On | All Errors, No Errors, All but keyboard. | Select the situation in which you want the BIOS to stop the POST process and notify you. |
|----------------|--|--|

6.2 Advanced Chipset Setup

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

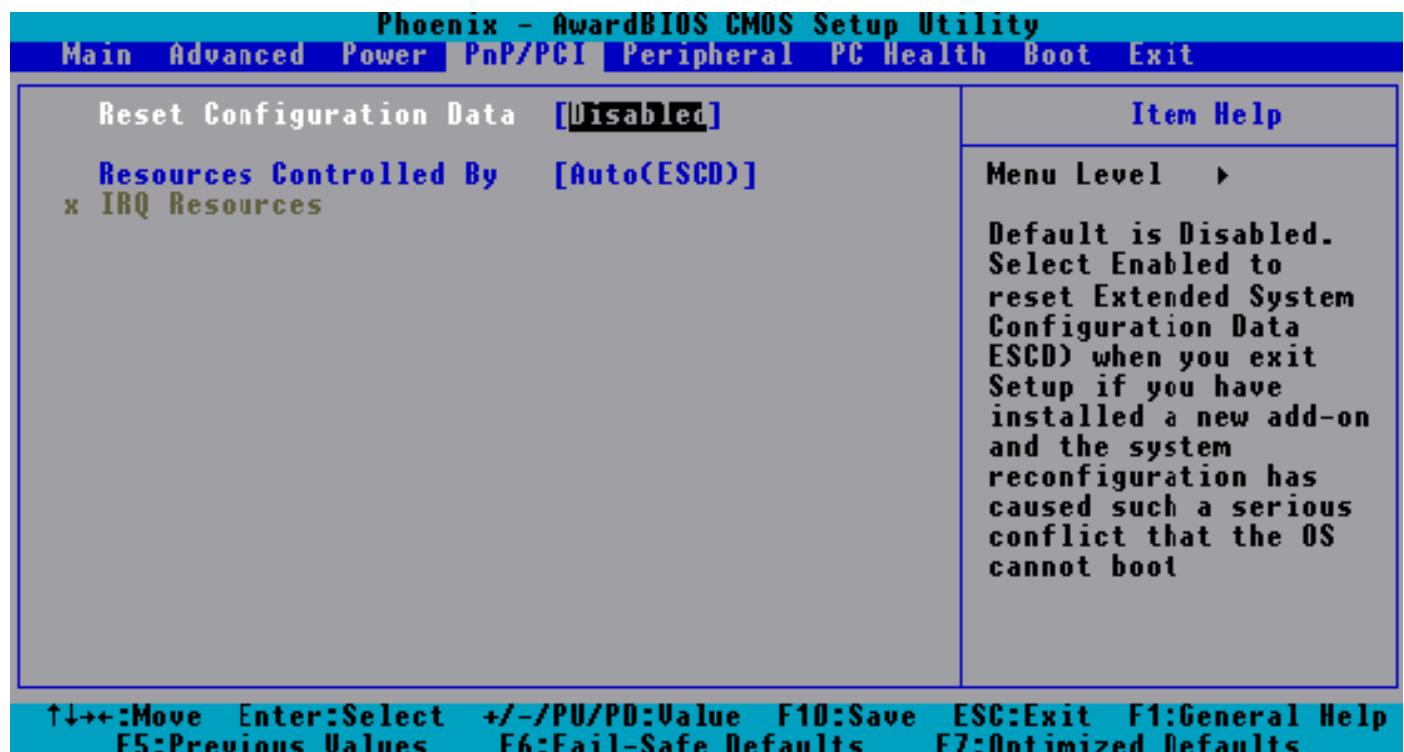


| Option | Choice | Description |
|---------------------------|-----------------------------|---|
| Quick Power On Self Test | Enabled Disabled | This category speeds up Power On Self Test (POST) after you have powered up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST. |
| Full Screen Logo Show | Enabled Disabled | Select Enabled to show the OEM full screen logo if you have add-in BIOS. |
| USB Keyboard Support | Enabled Disabled | Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. |
| On-Chip Frame Buffer Size | 1Mb 8Mb | This item is for setting the Frame Buffer (Share system memory as display memory). |
| Boot Display | CRT LCD CRT+LCD TV | This item is to set display device TV function only support on AR-B5230SD |

| | | |
|-----------------------------------|------------------------------------|---|
| Panel Type | 800x600, 1024x768, 1280x1024 | This Item cab Set the LVDS panel resolution that you want |
| DVWT mode | FIXED DVMT Both | This item sets the mode for dynamic video memory thechology (DVMT). |
| DVWT/FIXED Memory Size | 64Mb 128Mb | This item sets the DVMT size |

6.3 PnP/PCI Setup

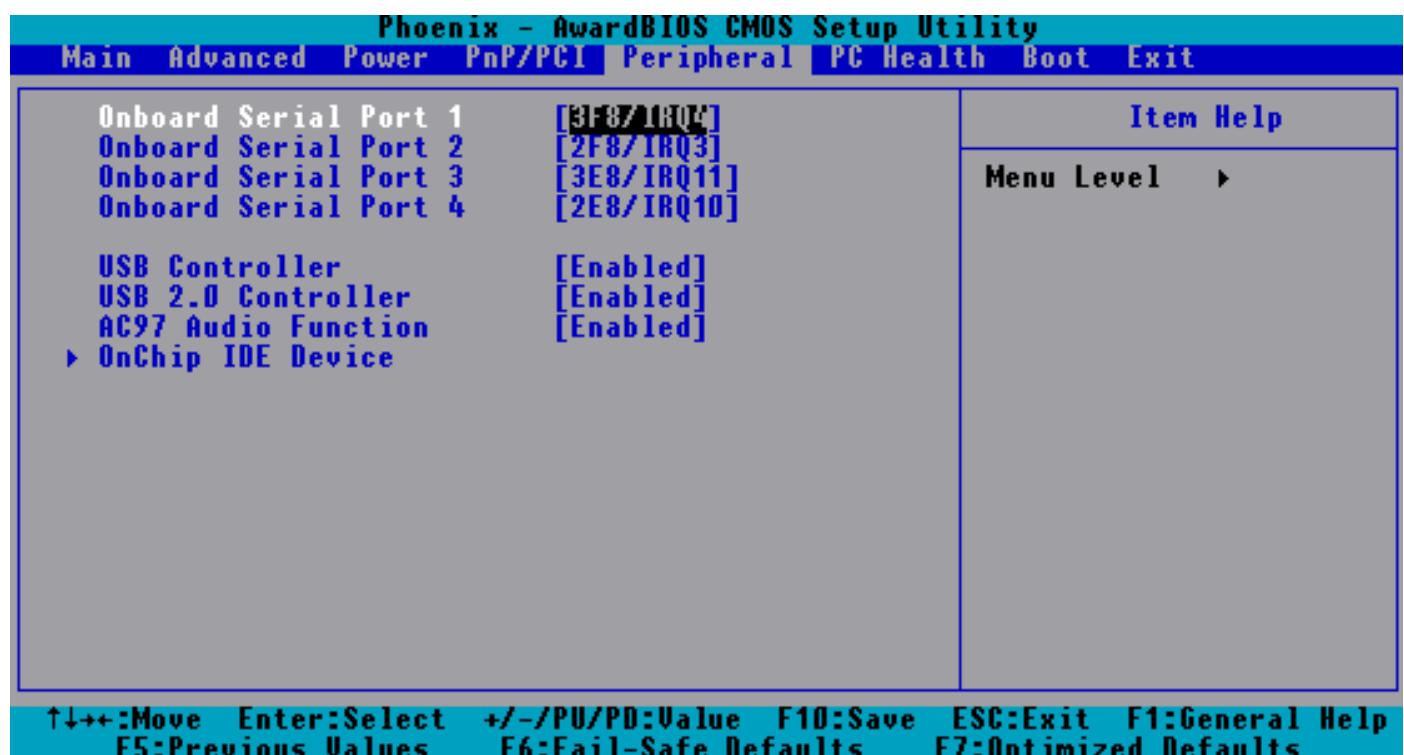
The option configures the PCI bus system. All PCI bus system on the system use INT#, thus all installed PCI cards must be set to this value.



| Option | Choice | Description |
|--------------------------|----------------------|--|
| Reset Configuration Data | Enabled Disabled | Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup. If you have installed a new add-on and the system reconfiguration has caused such a serious conflict, then the operating system cannot boot. |
| Resources Controlled By | Auto(ESCD) Manual | The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. If you set this field to "manual," then you may choose specific resources by going into each of the submenus. |
| IRQ Resources | N/A | When resources are controlled manually, assign a type to each system interrupt, depending on the type of the device that uses the interrupt |

6.4 Peripherals Setup

This option controls the configuration of the board's chipset. Control keys for this screen are the same as for the previous screen.

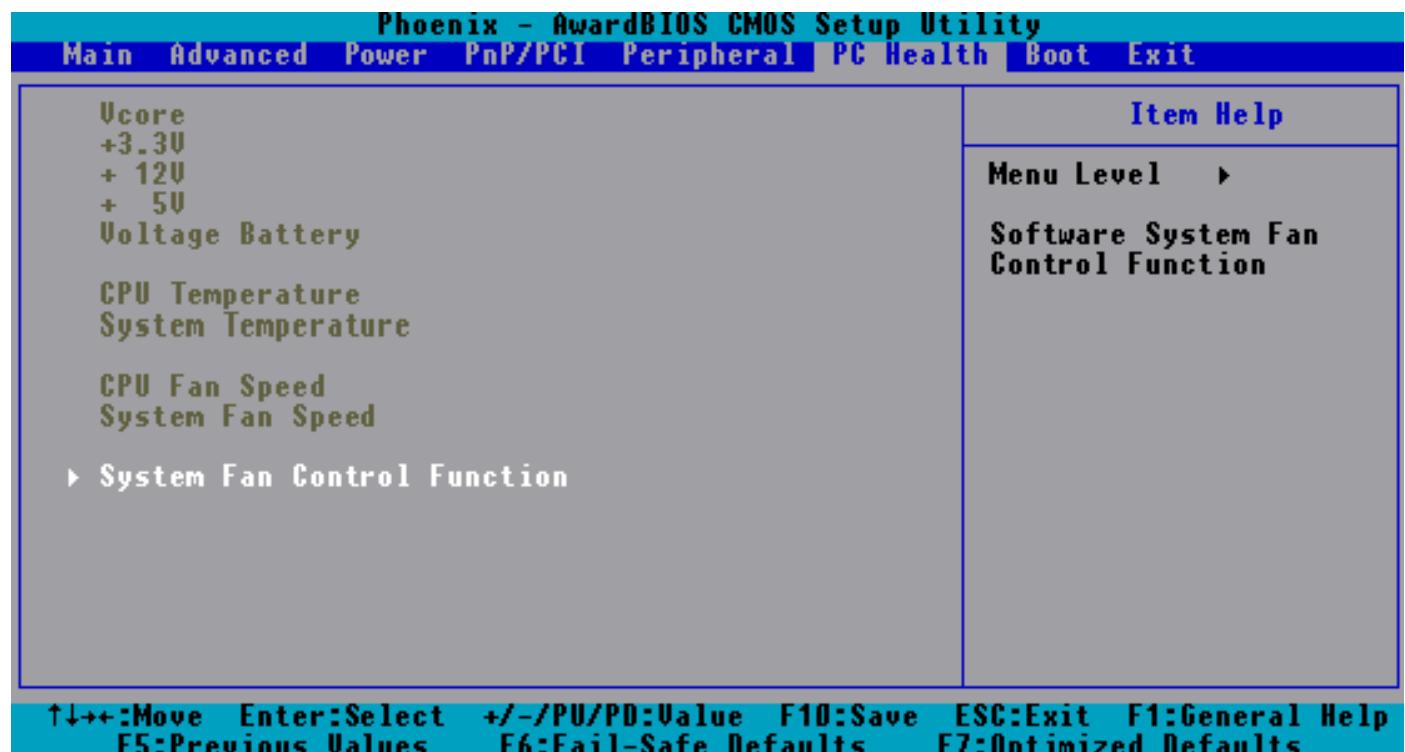


| Option | Choice | Description |
|-----------------------|----------------------------|---|
| Onboard Serial Port 1 | Serial Port 1: 3F8 / IRQ4 | |
| Onboard Serial Port 2 | Serial Port 2: 2F8 / IRQ3 | Select an address and the corresponding interrupt for each serial port. |
| Onboard Serial Port 3 | Serial Port 3: 3E8 / IRQ11 | |
| Onboard Serial Port 4 | Serial Port 4: 2E8 / IRQ10 | |
| USB Controller | Enabled Disabled | Select Enabled if your system contains a Universal Serial Bue (USB)controller and you have USB peripherals |
| USB 2.0 Controller | Enabled Disabled | Select Enabled if your system contains a Universal Serial Bue (USB) 2.0 controller and you have USB peripherals |

| | | |
|----------------------------|------------------------------------|---|
| AC97 Audio Function | Enabled Disabled Audio/Modem | This item allows you to decide to enable/disable AC97 Audio |
| On chip IDE DEVICE | Enabled Disabled | The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately. |

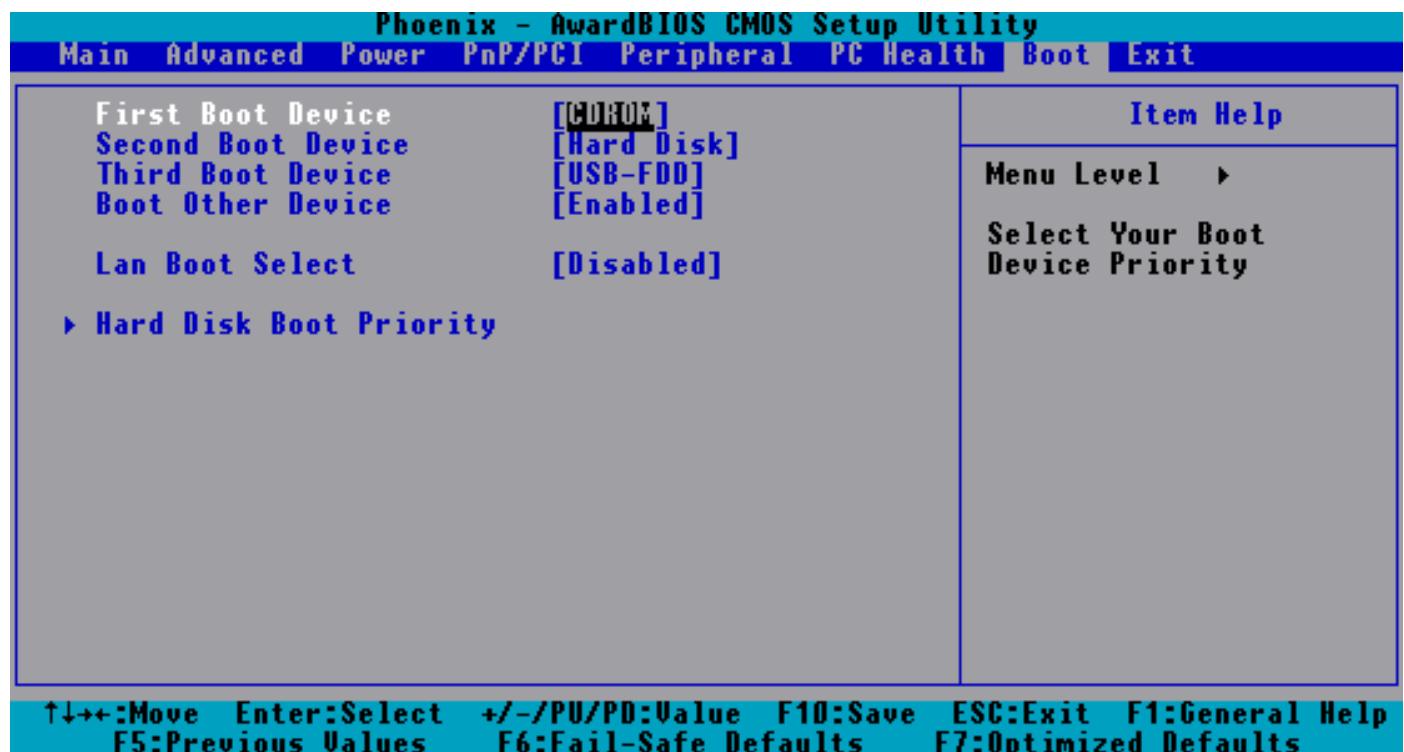
6.5 PC Health Setup

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds, and voltages.



6.6 Boot Setup

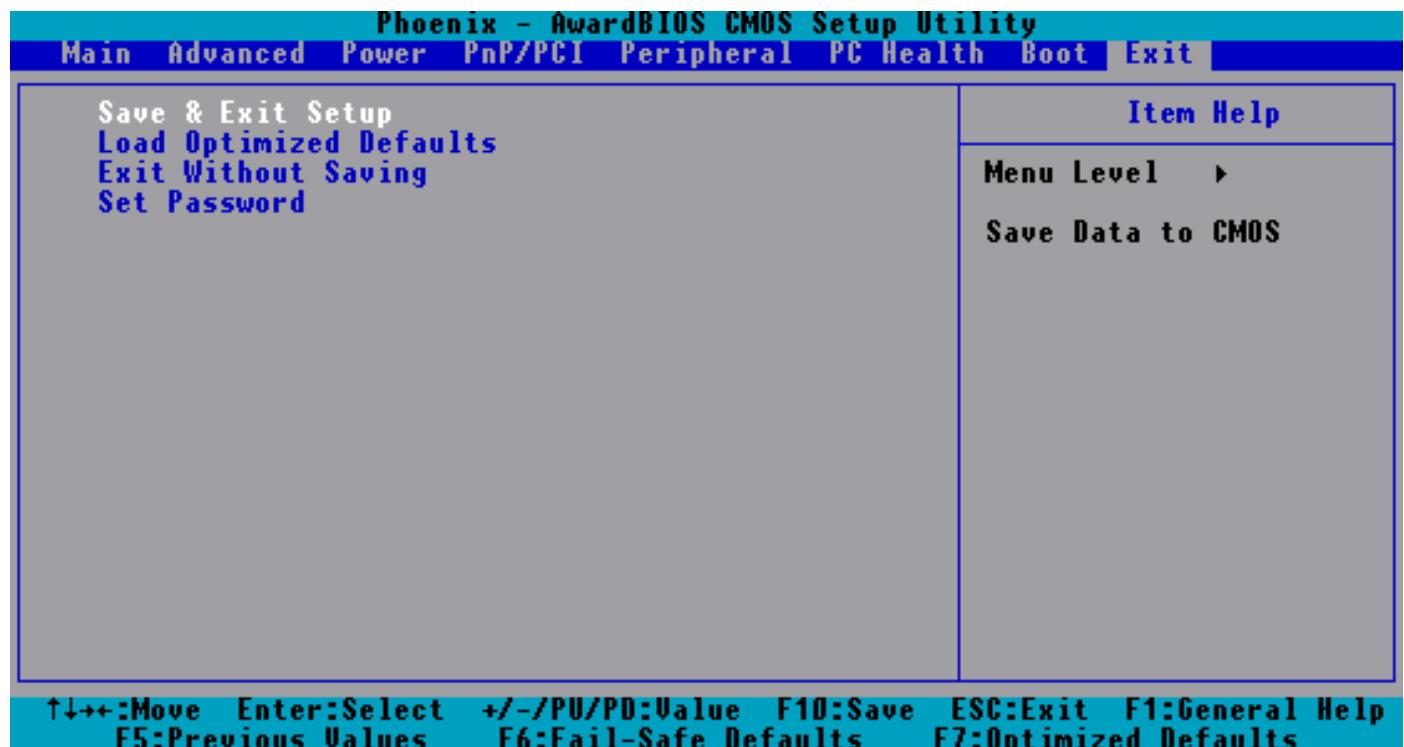
This section is used to exit the BIOS main menu. After making your changes, you can either save them or exit the BIOS menu and without saving the new values.



| Option | Choice | Description |
|--|---|--|
| First / Second / Third Boot Device/Other Boot Device | Hard Disk CDROM USB-FDD USB-CDROM LAN Disabled | The BIOS attempts to load the operating system from the devices in the sequence selected in these items. |
| LAN Boot Select | Enabled Disabled | These fields allow the system to search for an OS from LAN |
| Hard Disk Boot Priority | N/A | These fields set the Boot Priority for each Hard Disk |

6.7 Exit Setup

This section is used to configure exit mode.



| Option | Choice | Description |
|--------------------------------|--|---|
| Save & Exit Setup | Pressing <Enter> on this item for confirmation: Save to CMOS and EXIT (Y/N)? Y | Press "Y" to store the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again |
| Load Optimized Defaults | When you press <Enter> on this item you get a confirmation dialog box with a message like this: Load Optimized Defaults (Y/N)? N | Press 'Y' to load the default values that are factory-set for optimal-performance system operations. |

| | | |
|----------------------------|--|---|
| Exit Without Saving | Pressing <Enter> on this item for confirmation: Quit without saving (Y/N)? Y | This allows you to exit Setup without storing any changes in CMOS. The previous selections remain in effect. This shall exit the Setup utility and restart your computer. |
| Set Password | Pressing <Enter> on this item for confirmation: ENTER PASSWORD: | <p>When a password has been enabled, you will be prompted to enter your password every time you try to enter Setup. This prevents unauthorized persons from changing any part of your system configuration.</p> <p>Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previous password from the CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.</p> <p>To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.</p> |



Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate this equipment.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20cm** between the radiator & your body.