IEI Integration Corp.

MODEL:

AFL3-W10A/12A/W15A-BT

Flat Bezel Panel PC with Intel® Celeron® J1900 Quad-Core CPU, Touchscreen, Dual USB 3.0, Dual GbE LAN, RS-232, HD Audio, Wi-Fi 802.11a/b/g/n/ac and RoHS

User Manual

Rev. 1.30 - December 11, 2018

RoHS Lead Free

Revision

Date	Version	Changes
December 11, 2018	1.30	Updated for R13 version – upgraded to anti-glare touch screen Added E-Window module support list for AFL3-12A-BT and AFL3-W15A-BT
June 5, 2018	1.08	Modified Pin 1 location of Table 6-24 (RS-232 RJ-45 Serial Port (COM1) Pinouts)
January 18, 2018	1.07	Added a note regarding P-CAP touch driver in Section 3.16.
March 1, 2017	1.06	Modified the brightness specification of the AFL3-W15A-BT
June 27, 2016	1.05	Added Section 3.15: OS Installation Updated Chapter 4: BIOS Setup
March 7, 2016	1.04	Added a note in Section 1.6 Updated AFL3-W10A-BT specifications in Section 1.7
September 10, 2015	1.03	Added AFL3-W10A-BT model
July 23, 2015	1.02	Updated the following tables: Table 6-16: USB 2.0 Connector (HUB_USB1) Pinouts Table 6-17: USB 2.0 Connector (HUB_USB2) Pinouts Table 6-19: USB Connector (CAM_USB2) Pinouts Table 6-20: Webcam Connector (CAM_USB1) Pinouts
June 30, 2015	1.01	Updated the following sections: Section 3.12.2: Panel Mounting Section 3.12.3: Cabinet and Rack Installation
June 2, 2015	1.00	Initial release

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Manual Conventions

WARNING

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously.

CAUTION

Cautionary messages should be heeded to help reduce the chance of losing data or damaging the product.

NOTE

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes.

HOT SURFACE

This symbol indicates a hot surface that should not be touched without taking care.

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Introduction

1.1 Overview

Figure 1-1: AFL3-W10A/12A/W15A-BT Flat Bezel Panel PC

The AFL3-W10A/12A/W15A-BT series is a quad-core Intel® Celeron® processor J1900 powered flat bezel panel PC with a rich variety of functions and peripherals. The flat-bezel design is ideal for easy and simplified integration into various applications.

The Intel® Celeron® J1900 is a SoC (System-on-Chip) that ensures optimal memory, graphics, and peripheral I/O support. The system comes with 2.0 GB of DDR3L SO-DIMM memory ensuring smooth data throughputs with reduced bottlenecks and fast system access.

Two serial ports, two external USB 3.0 ports and two external USB 2.0 ports ensure simplified connectivity to a variety of external peripheral devices. Wi-Fi capabilities and two RJ-45 Ethernet connectors provide the system with smooth connection to an external LAN.

1.2 Model Variations

There are five models in the AFL3-W10A/12A/W15A-BT series. The model numbers and model variations are listed below.

Model	Size	Brightness	Touchscreen
AFL3-W10A-BT-J1/PC/2G	10.1”	350 cd/m^2	Projected capacitive type
AFL3-12A-BT-J1/PC/2G	12.1”	500 cd/m^2	Projected capacitive type
AFL3-12A-BT-J1/R/2G	12.1”	500 cd/m^2	5-wire resistive type
AFL3-W15A-BT-J1/PC/2G	15.6”	400 cd/m^2	Projected capacitive type
AFL3-W15A-BT-J1/R/2G	15.6”	400 cd/m^2	5-wire resistive type

Table 1-1: Model Variations

1.3 Features

The AFL3-W10A/12A/W15A-BT features are listed below:

- Flat-bezel LCD with LED backlight
- Intel® Celeron® processor J1900 (2.0 GHz, quad-core)
- Preinstalled with 2 GB of DDR3L memory (system max. 4 GB)
- Anti-glare 5-wire resistive type touchscreen or anti-glare/anti-UV projected capacitive type touchscreen
- Wi-Fi 802.11a/b/g/n/ac high speed wireless
- Two PCIe GbE RJ-45 connectors
- Two internal speakers
- Two USB 2.0 ports and two USB 3.0 ports
- One RS-232/422/485 serial port by D-sub 9 connector
- One RS-232 serial port by RJ-45 connector
- Optional RFID reader
- Optional magnetic stripe card reader
- 9 V–30 V wide range DC power input
- IP 65 compliant front panel

1.4 Front Panel

The front side of the AFL3-W10A/12A/W15A-BT is a flat-bezel panel with a TFT LCD screen surrounded by a PC/ABS plastic frame (**Figure 1-2**).

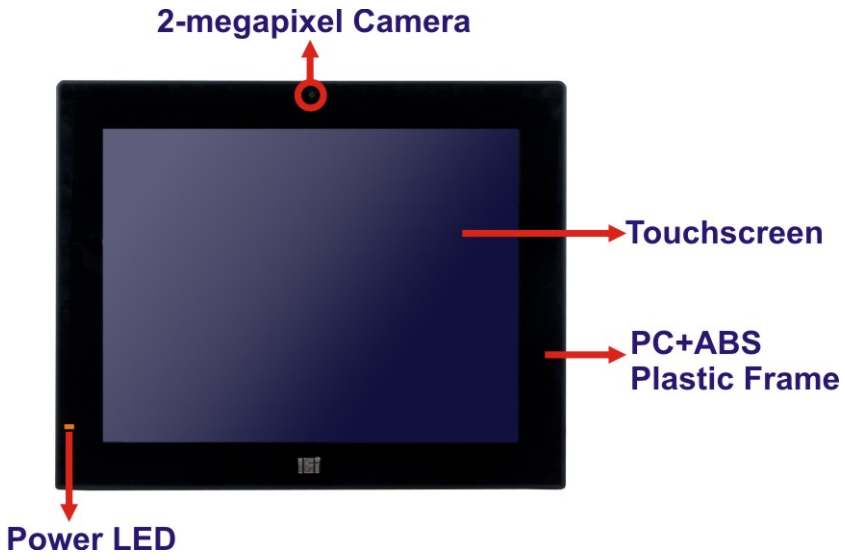


Figure 1-2: Front View

There is a power LED indicator located on the front panel. The status descriptions of the power LED indicator are listed below.

- **Off:** power cord not attached or power supply failure
- **Solid amber:** the system is connected to a power source and is ready to be turned on.
- **Solid green:** the system is turned on.

1.5 Rear Panel

The rear panel provides access to retention screw holes that support VESA mounting. See **Figure 1-3** and **Figure 1-4**.

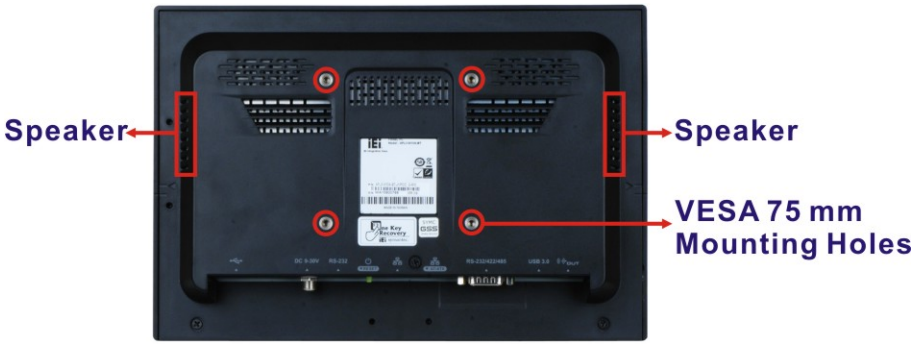


Figure 1-3: AFL3-W10A-BT Rear View

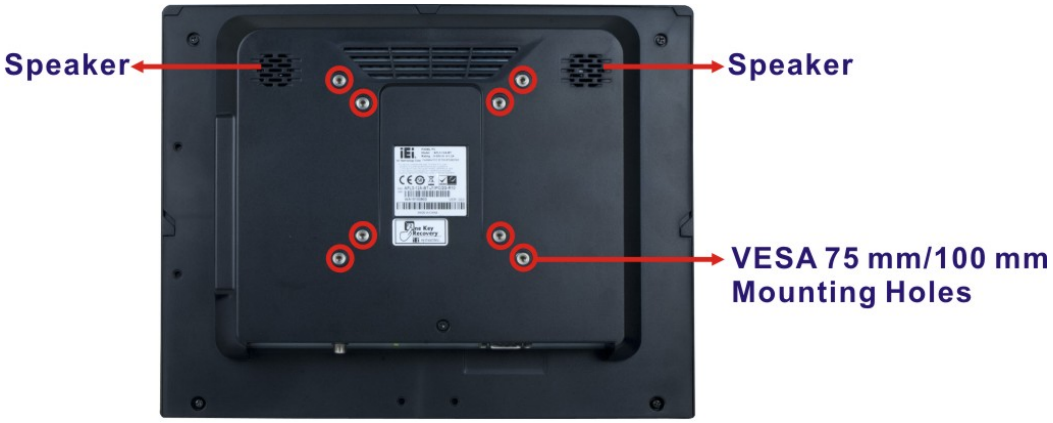


Figure 1-4: AFL3-12A/W15A-BT Rear View

1.6 Bottom Panel

The bottom panel of the AFL3-W10A/12A/W15A-BT has the following connectors and switches (**Figure 1-5**).

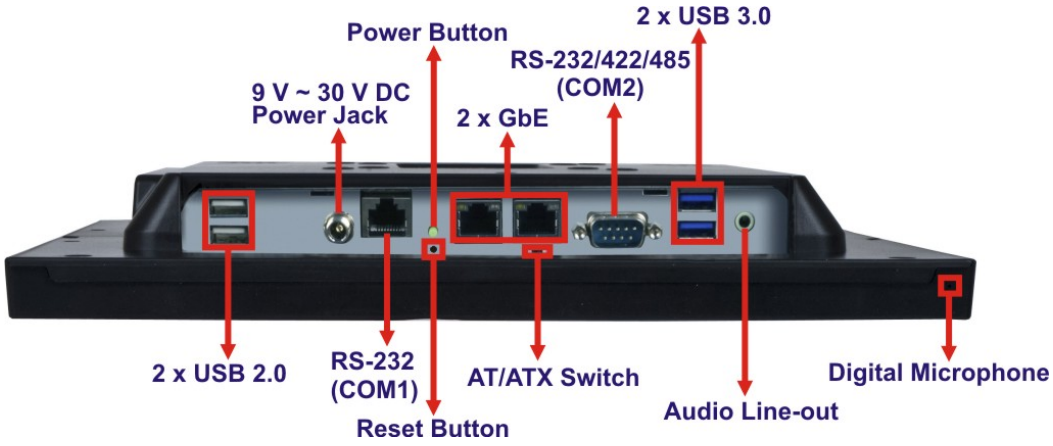


Figure 1-5: Bottom Panel

NOTE:

1. The two USB 2.0 connectors on the bottom panel do not support wake-up function.

2. Before installing the operating system, the user must enter the **Boot** BIOS menu first and choose which operating system will be installed. Otherwise the USB 2.0 and USB 3.0 ports cannot be used for OS installation. Please refer to **Section 4.6**.

1.7 Side Panel

The left side panels of the AFL3-12A-BT and the AFL3-W15A-BT have one E-Window that supports a variety of IEI modules to provide additional connector interface.

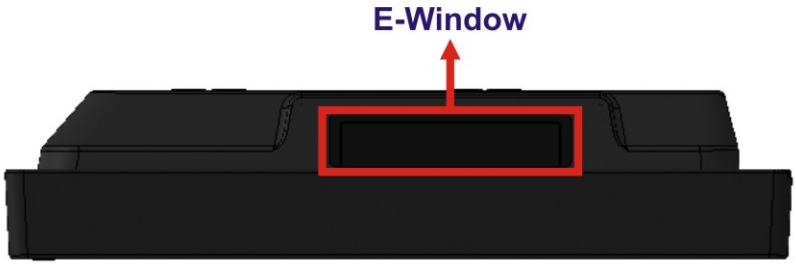


Figure 1-6: AFL3-12A-BT/AFL3-W15A-BT Side View

The E-Window modules supported by the AFL3-12A-BT/AFL3-W15A-BT are listed below. All listed E-Window modules are for ATO (assembly-to-order) only.

Part No.	Description
E-MPCIE-LAN	PCIe Mini card supports one GbE port with Realtek RTL8111E controller, PMS 194C I/O bracket and 250 mm cable
E-MPCIE-DLAN	PCIe Mini card supports two GbE ports with Intel® I211 controller, PMS 194C I/O bracket and 250mm cable
E-MPCIE-3G	PCIe Mini card supports 3G WWAN, with PMS 130C I/O bracket, RF antenna 300mm cable and GSM antenna cable

Table 1-2: Supported E-Window Modules

NOTE:

The two USB 2.0 ports on the bottom panel must be removed in order to install the E-Window module listed above.

1.8 System Specifications

The technical specifications for the AFL3-W10A/12A/W15A-BT systems are listed in **Table 1-3**.

Specification	AFL3-W10A-BT	AFL3-12A-BT	AFL3-W15A-BT
LCD Size	10.1"	12.1"	15.6” (16:9)
Max. Resolution	1280 (W) x 800 (H)	1024 (W) x 768 (H)	1366 (W) x 768 (H)
Brightness (cd/m^2)	350	500	400
Contrast Ratio	800:1	700:1	700:1
LCD Color	16.7M	262K	262K
Pixel Pitch (H x V) (mm)	0.1695 x 0.1695	0.240 x 0.240	0.240 x 0.240
Viewing Angle (H-V)	170° / 170°	160° / 160°	160° / 160°
Backlight MTBF	15,000 hrs	50,000 hrs	50,000 hrs
Backlight	LED	LED	LED
Touchscreen	Anti-glare/Anti-UV projected capacitive	Anti-glare 5-wire resistive or Anti-glare/Anti-UV projected capacitive	Anti-glare 5-wire resistive or Anti-glare/Anti-UV projected capacitive
Touch Controller	EETI EXC 3146	Resistive type: PenMount DMC9000 Capacitive type: EETI EXC 7200	
CPU (SoC)	Intel® Celeron® processor J1900 (2.0 GHz, quad-core)		
Memory	One 204-pin 1333 MHz single-channel DDR3L SO-DIMM slot preinstalled with 2 GB SDRAM (system max. 4 GB)		
Ethernet	Two Realtek RTL8111E PCIe GbE controllers		
Storage	One PCIe Mini card slot for mSATA module installation One 2.5” SATA 3Gb/s HDD bay (12.1” and 15.6” models only)		

Audio	Realtek ALC892 HD Audio codec		
Internal Speaker	Two 2 W	Two 3 W	Two 3 W
Camera	2-megapixel with low light function		
Wireless	One 802.11a/b/g/n/ac wireless LAN module (half-size PCIe Mini card)		
RFID Reader	MIFARE 13.56 MHz card reader (optional)		
Card Reader	Magnetic stripe card reader (optional)		
OSD Function	Controlled by OSD software		
Construction Material	PC+ABS plastic		
VESA Mount	75 mm x 75 mm	75 mm x 75 mm 100 mm x 100 mm	75 mm x 75 mm 100 mm x 100 mm
Mounting	Panel, wall, rack, stand or arm mounting		
Front Panel Color	Black C		
Net Weight	1.0 kg	1.9 kg	3.0 kg
Dimensions (W x H x D) (mm)	262 x 181 x 42	304 x 244 x 45	396 x 251 x 53
Operating Temperature	-20ºC ~ 45ºC	-20ºC ~ 50ºC	-20ºC ~ 50ºC
Storage Temperature	-20ºC ~ 60ºC		
Humidity	10% ~ 95% (non-condensing)		
IP Level	IP 65 compliant front panel		
Safety/EMC	CE, FCC		
Power Supply	36 W power adapter	60 W power adapter	60 W power adapter
Input:	100 V ~ 240 V AC, 50 Hz ~ 60 Hz		
Output:	12 V DC, 3 A	12 V DC, 5 A	12 V DC, 5 A

Power Requirement	9 V ~ 30 V DC		
Power Consumption	27 W, 12 V @ 2.25 A	43 W, 12 V @ 3.5 A	50 W, 12 V @ 4.16 A
	(with Intel® Celeron® J1900 CPU and 2 GB 1333 MHz DDR3L memory)		
I/O Ports and Switches	1 x Audio line-out port 1 x RS-232/422/485 serial port (DB-9 connector) 1 x RS-232 serial port (RJ-45 connector) 2 x GbE LAN (RJ-45 connector) 2 x USB 3.0 connectors 2 x USB 2.0 connectors 1 x Power button 1 x AT/ATX switch 1 x Reset button 1 x 9 V ~ 30 V DC input jack		

Table 1-3: System Specifications

1.9 Dimensions

The following sections list the dimensions of each model.

1.9.1 AFL3-W10A-BT Dimensions

The AFL3-W10A-BT dimensions are shown below.

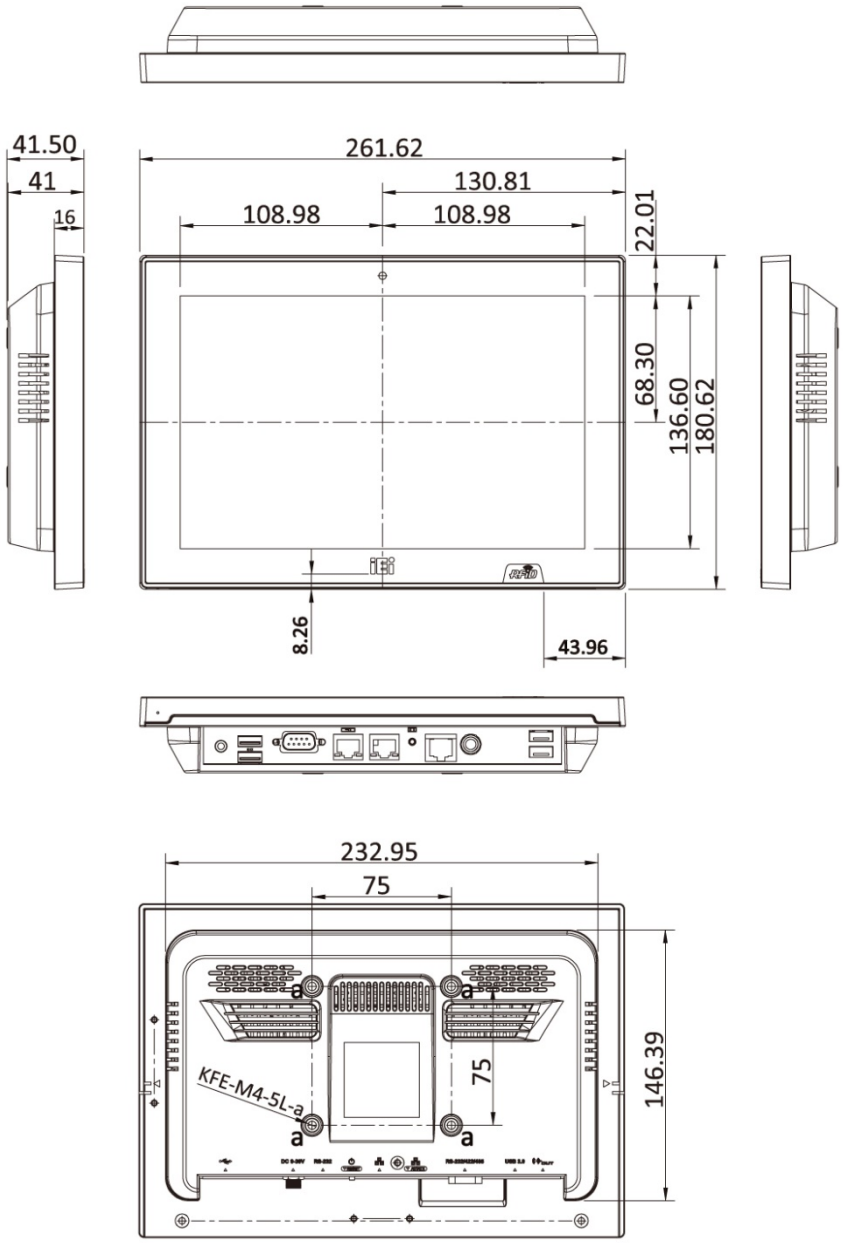


Figure 1-7: AFL3-W10A-BT Dimensions (mm)

1.9.2 AFL3-12A-BT Dimensions

The AFL3-12A-BT dimensions are shown below.

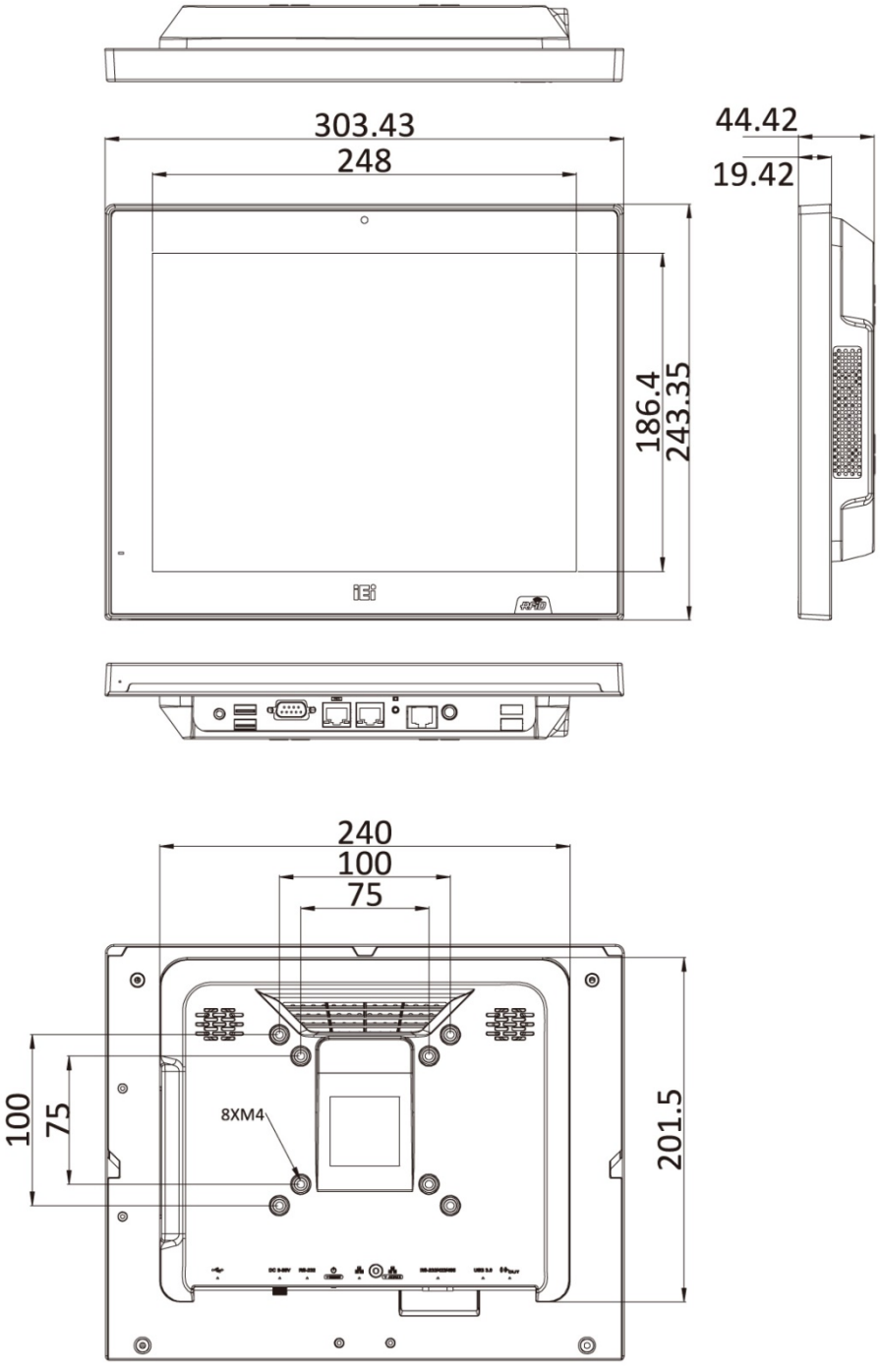


Figure 1-8: AFL3-12A-BT Dimensions (mm)

1.9.3 AFL3-W15A-BT Dimensions

The AFL3-W15A-BT dimensions are shown below.

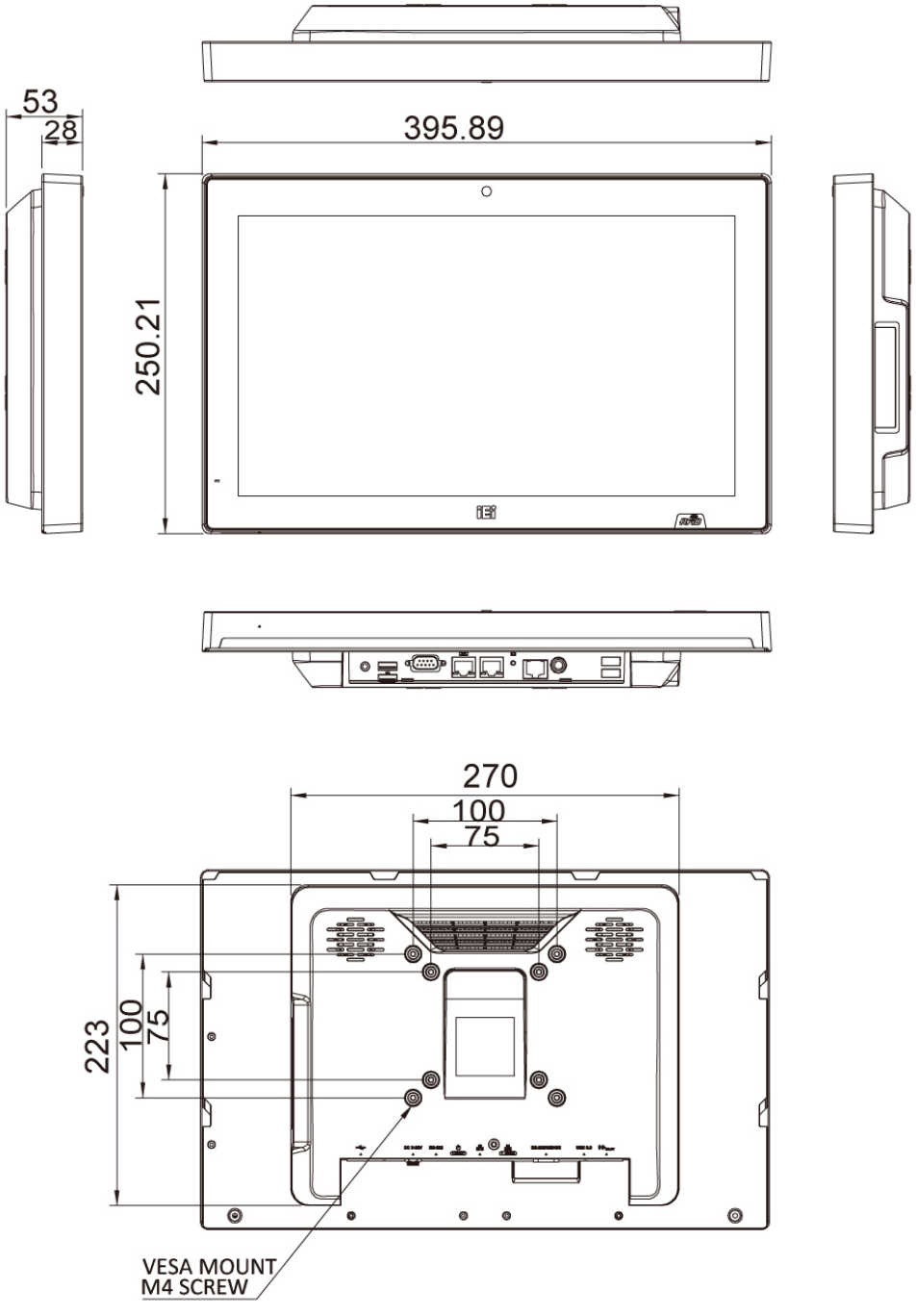


Figure 1-9: AFL3-W15A-BT Dimensions (mm)

Chapter

2

Unpacking

2.1 Unpacking

To unpack the flat bezel panel PC, follow the steps below:

WARNING!

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the flat bezel panel PC has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.

Step 4: Lift the monitor out of the boxes.

Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the flat bezel panel PC.

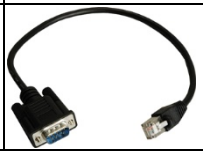
Step 7: Make sure all the components listed in the packing list are present.

2.2 Packing List

NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the AFL3-W10A/12A/W15A-BT was purchased from or contact an IEI sales representative directly by sending an email to sales@ieiworld.com.

The AFL3-W10A/12A/W15A-BT flat bezel panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL3-W10A/12A/W15A-BT panel PC	
1	36 W power adapter for AFL3-W10A-BT (**P/N**: 63040-010036-121-RS)	
1	60 W power adapter for AFL3-12A-BT and AFL3-W15A-BT (**P/N**: 63040-010060-120-RS)	
1	Power cord (**P/N**: 32702-000200-100-RS)	
1	RJ-45 to DB-9 COM port cable (**P/N**: 32005-000200-200-RS)	

4	Screws for VESA mounting	
4	Screws for HDD installation	
2	Screws for PCIe Mini card installation	

2.3 Optional Items

The following are optional components which may be separately purchased:

Item and Part Number	Image
VESA 75 wall mount kit (**P/N**: AFLWK-12)	
VESA 100 wall mount kit (**P/N**: AFLWK-19B)	
Panel mounting kit (**P/N**: AFL3PK-W07A-R10)	
Rack mounting kit	 

Item and Part Number	Image
Arm (**P/N**: ARM-11-RS)	
Arm (**P/N**: ARM-31-RS)	
Stand for VESA 100 (**P/N**: STAND-A12-RS) (**P/N**: STAND-A19-RS)	
Stand for VESA 75/VESA 100 (**P/N**: STAND-C12-R10)	
Stand for VESA 75/VESA 100 (**P/N**: STAND-C19-R10)	
LCD monitor stand with adjustable hinge (**P/N**: VSTAND-A110 or VSTAND-A12)	

If any of these items are missing or damaged, contact the distributor or sales representative immediately.

Chapter

3

Installation

3.1 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W10A/12A/W15A-BT may result in permanent damage to the AFL3-W10A/12A/W15A-BT and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W10A/12A/W15A-BT. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W10A/12A/W15A-BT is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding***: Before handling the board, touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring the AFL3-W10A/12A/W15A-BT, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W10A/12A/W15A-BT.
- ***Only handle the edges of the PCB***: When handling the PCB, hold the PCB by the edges.

3.2 Installation Precautions

When installing the flat bezel panel PC, please follow the precautions listed below:

- **Power turned off**: When installing the flat bezel panel PC, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers**: Only certified engineers should install and modify onboard functionalities.

- **Anti-static Discharge**: If a user open the rear panel of the flat bezel panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear an anti-static wristband.

3.3 Installation and Configuration Steps

The following installation steps must be followed.

Step 1: Unpack the flat bezel panel PC.

Step 2: Install an mSATA module or a HDD.

Step 3: Configure the system.

Step 4: Connect peripheral devices to the flat bezel panel PC.

Step 5: Mount the flat bezel panel PC.

3.4 Removing the Back Cover

To access the AFL3-W10A/12A/W15A-BT internally the back cover must be removed. To remove the back cover, please follow the steps below.

Step 1: Remove the retention screws from the back cover. Two types of screw are used for securing the back cover of the 12.1” and 15” models. See the following diagrams for detail. Be aware of this for reinstalling the back cover.

Figure 3-1: AFL3-W10A-BT Back Cover Retention Screws

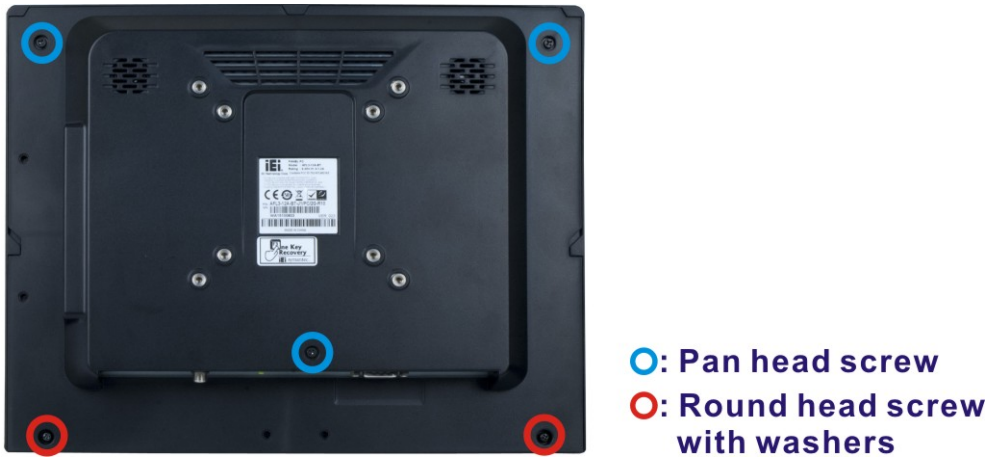


Figure 3-2: AFL3-12A-BT Back Cover Retention Screws

Figure 3-3: AFL3-W15A-BT Back Cover Retention Screws

Step 2: Slide the back cover toward the I/O panel until it is disengaged from the locking mechanism. Then, lift the back cover off the chassis. See **Figure 3-4**.

Figure 3-4: Remove the Back Cover

3.4.1 Reinstalling the Back Cover

To install the back cover, slide the back cover toward the top cover until the external and internal locking mechanisms are both clipped into place. Then, secure the back cover with the previously removed screws. Please be aware of the type of screws when fastening the back cover of the 12.1” and 15” models (refer to Figure 3-2 and Figure 3-3).

WARNING:

Over-tightening back cover screws will crack the plastic frame. Maximum torque for cover screws is 5 kg-cm (0.36 lb-ft/0.49 Nm).

The following diagram shows the differences of the internal locking mechanism of the two models.

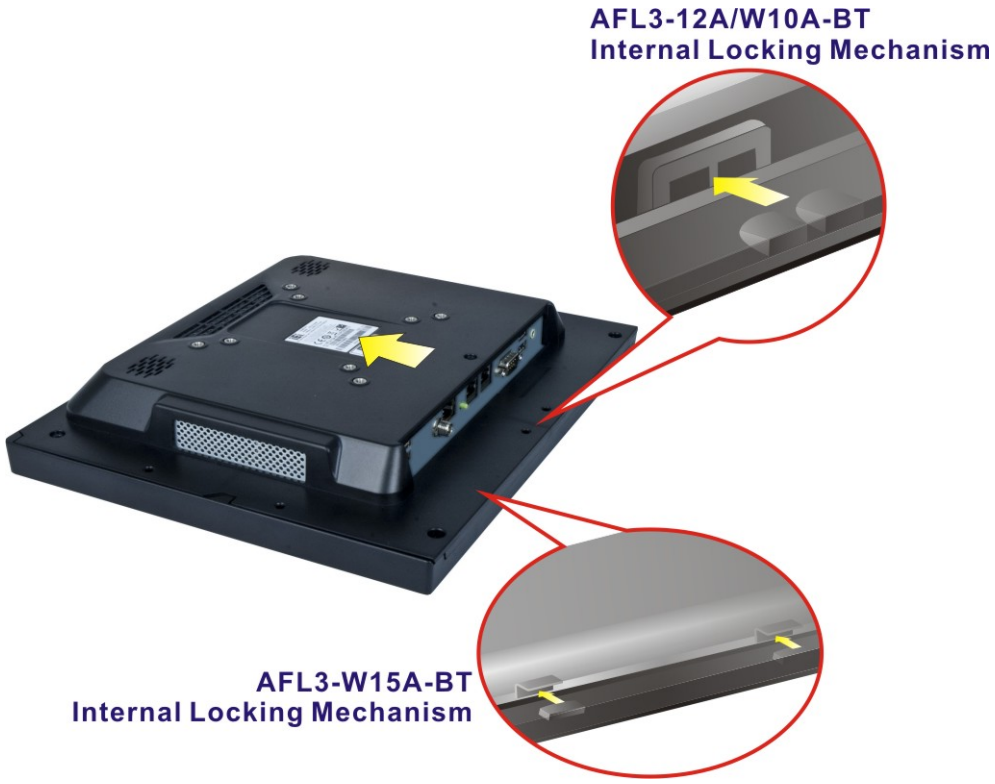


Figure 3-5: Internal Locking Mechanism

3.5 mSATA Module Installation

To install an mSATA module into the AFL3-W10A/12A/W15A-BT, please follow the steps below:

Step 1: Remove the plastic back cover. See **Section 3.4** above.

Step 2: Locate the full-size PCIe Mini card slot. Remove the preinstalled retention screw on the screw pillar of the PCIe Mini card slot as shown in **Figure 3-6**.

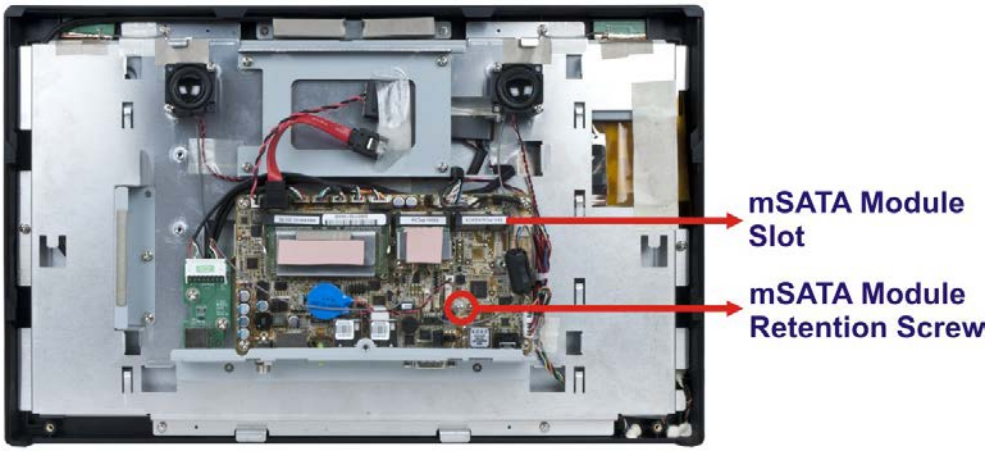


Figure 3-6: mSATA Module Slot Location

Step 3: Line up the notch on the mSATA module with the notch on the connector. Slide the PCIe Mini card into the socket at an angle of about 20º.

Step 4: Secure the mSATA module with the retention screw. Push the other end of the mSATA module down and secure the module with the previously removed retention screw (**Figure 3-7**).

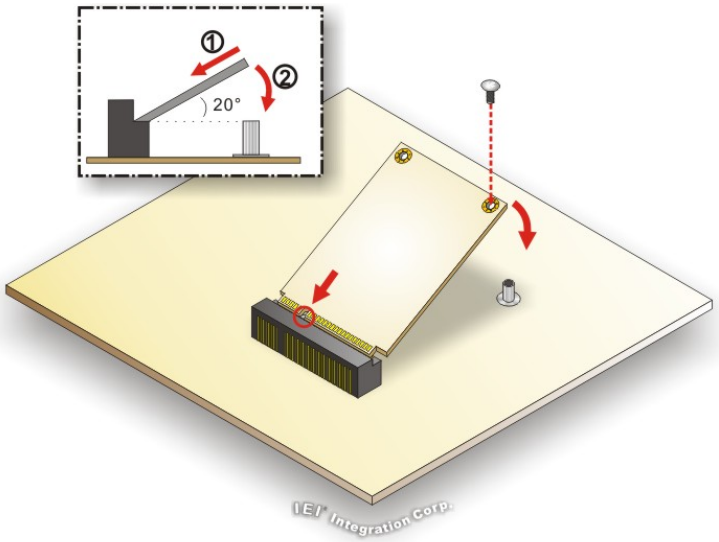


Figure 3-7: mSATA Module Installation

Step 5: Replace the back cover and secure it using two (2) retention screws.

3.6 HDD Installation

NOTE:

The HDD drive bay is only available in the 12.1” and 15.6” models. For the 10.1” model, please install mSATA module as the storage device.

To install the HDD into the system, please follow the steps below:

Step 1: Remove the plastic back cover. See **Section 3.4** above.

Step 2: Remove the four HDD bracket retention screws and lift the HDD bracket off the panel PC.

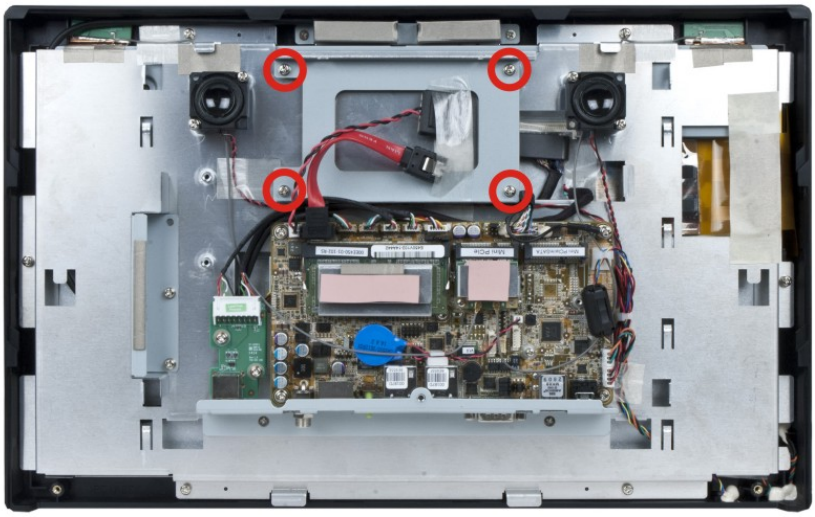


Figure 3-8: HDD Bracket Retention Screws

Step 3: Attach the HDD brackets to the HDD. To do this, align the four retention screw holes in the both sides of the HDD bracket with the retention screw holes on the sides of the HDD. Insert four retention screws into the HDD bracket (**Figure 3-9**).

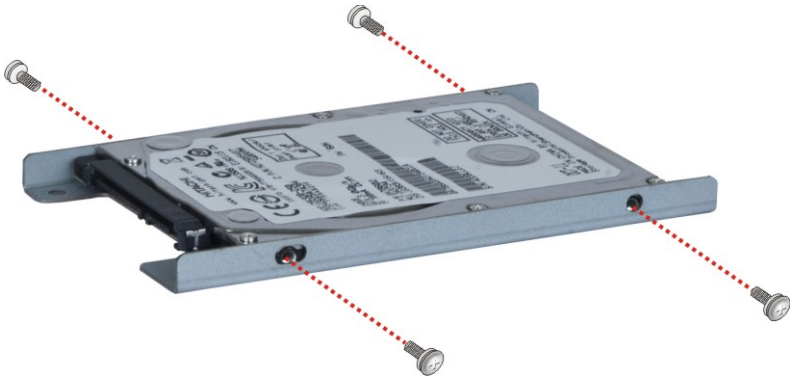


Figure 3-9: HDD Retention Screws

Step 4: Connect the SATA cable and the SATA power cable to the rear of HDD from the motherboard.

Step 5: Install the HDD into the AFL3-W10A/12A/W15A-BT by aligning the retention screw holes in the HDD brackets with the retention screw holes on the chassis. Insert the four retention screws.

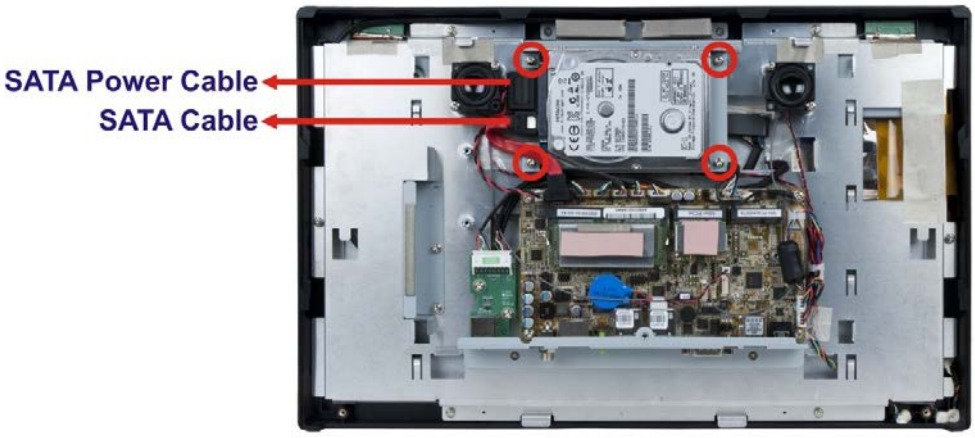


Figure 3-10: HDD Installation

Step 6: Replace the plastic back cover.

3.7 DB-9 Serial Port Pin 9 Selection

The JP5 jumper configures pin 9 on the DB-9 serial port. Pin 9 on the COM2 DB-9 connector can be set as the ring (RI) signal, +5 V or +12 V. The jumper selection options are shown in **Table 3-1**.

JP5	Description
Short 1-2	COM2 RI Pin use +12 V
Short 3-4	COM2 RI Pin use RI (Default)
Short 5-6	COM2 RI Pin use +5 V

Table 3-1: DB-9 Serial Port Pin 9 Setting Jumper Settings

The DB-9 Serial Port Pin 9 Setting jumper location is shown in **Figure 3-11** below.

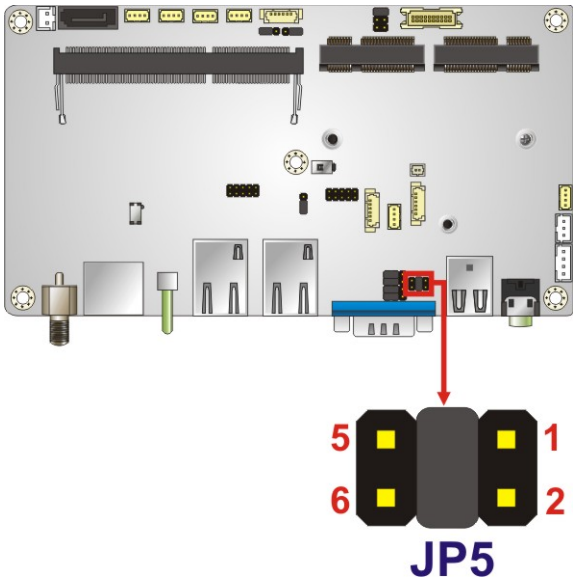


Figure 3-11: DB-9 Serial Port Pin 9 Setting Jumper Location

3.8 RS-232/422/485 Serial Port Selection

The JP4 jumper sets the communication protocol used by the DB-9 serial communication port as RS-232, RS-422 or RS-485. Please note that when the DB-9 serial port is set to RS-422/485, the DB-9 port becomes COM3. The RS-232/422/485 serial port selection settings are shown in **Table 3-2**.

JP4	Description	DB-9 Serial Port Number
Short 1-2	RS-232 (Default)	COM2
Short 4-5	RS-232 (Default)	COM2
Short 7-8	RS-232 (Default)	COM2
Short 10-11	RS-232 (Default)	COM2
Short 2-3	RS-422/485	COM3
Short 5-6	RS-422/485	COM3
Short 8-9	RS-422/485	COM3
Short 11-12	RS-422/485	COM3

Table 3-2: RS-232/422/485 Selection Jumper Settings

The RS-232/422/485 selection jumper location is shown in **Figure 3-12**.

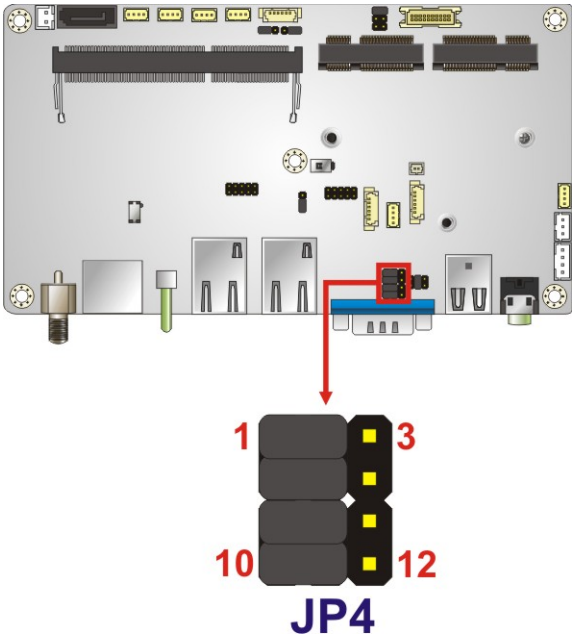


Figure 3-12: RS-232/422/485 Selection Jumper Location

3.8.1 COM3 RS-422 and RS-485 Pinouts

The pinouts for RS-422 and RS-485 operation of external serial port COM 1 and COM2 are detailed below.

COM 3	RS-422 Description
Pin 1	TX-
Pin 2	TX+
Pin 6	RX-
Pin 7	RX+

Table 3-3: RS-422 Pinouts

COM 3	RS-485 Description
Pin 1	Data-
Pin 2	Data+

Table 3-4: RS-485 Pinouts

3.9 Clear CMOS

If the AFL3-W10A/12A/W15A-BT fails to boot due to improper BIOS settings, the clear CMOS jumper clears the CMOS data and resets the system BIOS information. To do this, push the clear CMOS button for three seconds, then restart the system. The clear CMOS button location is shown in **Figure 3-13**.

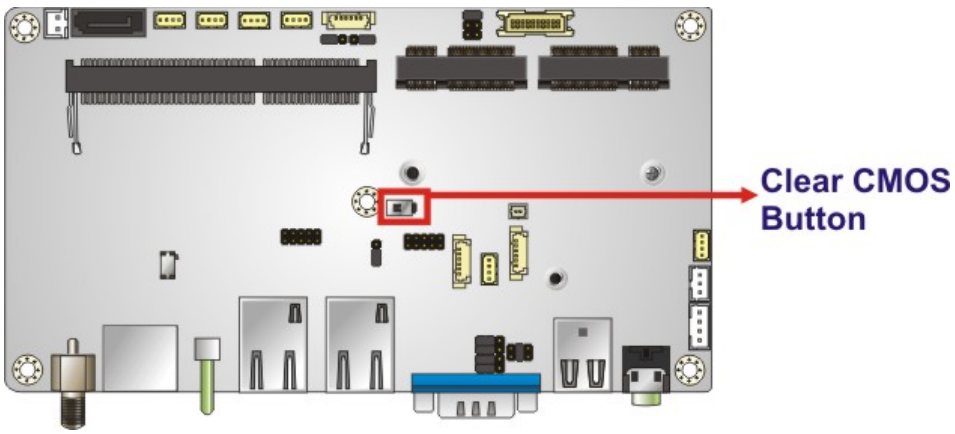


Figure 3-13: Clear CMOS Button Location

3.10 AT/ATX Mode Selection

AT or ATX power mode can be used on the AFL3-W10A/12A/W15A-BT. The selection is made through an AT/ATX switch located on the bottom panel (**Figure 3-14**).

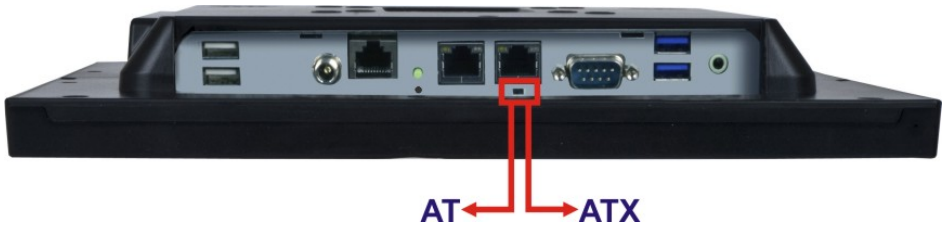


Figure 3-14: AT/ATX Switch Location

3.10.1 AT Power Mode

With the AT mode selected, the power is controlled by a central power unit rather than a power switch. The AFL3-W10A/12A/W15A-BT panel PC turns on automatically when the power is connected. The AT mode benefits a production line to control multiple panel PCs from a central management center and other applications including:

- ATM
- Self-service kiosk
- Plant environment monitoring system
- Factory automation platform
- Manufacturing shop flow

3.10.2 ATX Power Mode

With the ATX mode selected, the AFL3-W10A/12A/W15A-BT panel PC goes in a standby mode when it is turned off. The panel PC can be easily turned on via network or a power switch in standby mode. Remote power control is perfect for advertising applications since the broadcasting time for each panel PC can be set individually and controlled remotely. Other possible application includes

- Security surveillance
- Point-of-Sale (POS)
- Advertising terminal

3.11 COM1 Connection

The COM1 port is a RJ-45 serial device connector on the bottom panel. The COM1 port connects to a cable with a standard D-sub 9 connector at the other end (cables included). Follow the steps below to connect a serial device to the AFL3-W10A/12A/W15A-BT panel PC.

Step 1: **Locate the RJ-45 connector**. The location of the RJ-45 serial port connector is shown in **Chapter 1**. The RJ-45 connector for the serial port can be identified easily as the RJ-45 for the network has two LEDs on the port, while the connector for the serial cable don't.

Step 2: **Insert the RJ-45 to D-sub 9 cable.** See **Figure 3-15**.

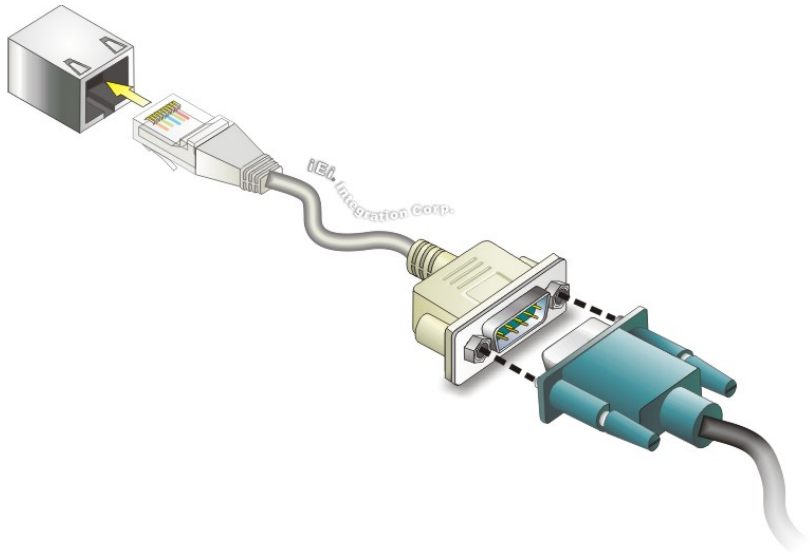


Figure 3-15: Serial Device Connector

Step 3: **Insert the serial connector**. Insert the D-sub 9 connector of a serial device into the D-sub 9 connector on the cable.

Step 4: **Secure the connector**. Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

The D-sub 9 connector pinouts of the RJ-45 to DB-9 cable are listed below.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	6	NDSR1
2	NRX1	7	NRTS1
3	NTX1	8	NCTS1
4	NDTR1	9	NRI1
5	GND		

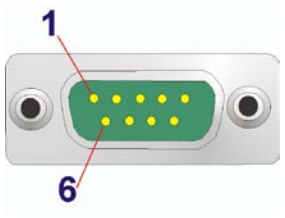


Table 3-5: DB-9 Serial Port (COM1) Pinouts

3.12 Mounting the System

The methods of mounting the AFL3-W10A/12A/W15A-BT are listed below.

- Wall mounting
- Panel mounting
- Rack mounting
- Arm mounting
- Stand mounting
- V-Stand mounting

The mounting methods are described below.

3.12.1 Wall Mounting

To mount the flat bezel panel PC onto the wall, please follow the steps below.

Step 1: Select the location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four screw holes in the bracket on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 3-16**).

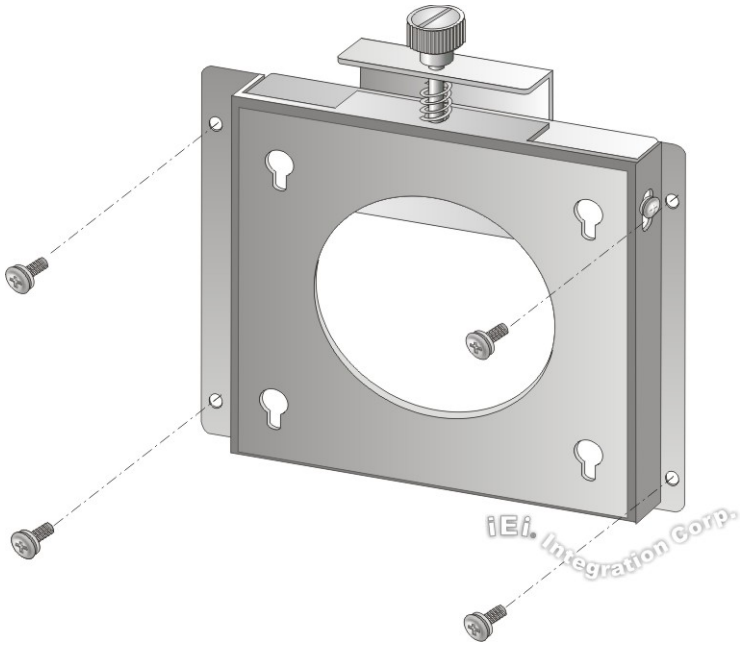
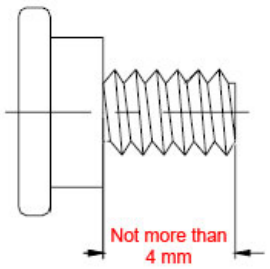


Figure 3-16: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mount kit into the four screw holes on the real panel of the flat bezel panel PC and tighten until the screw shank is secured against the rear panel (**Figure 3-17**).

WARNING:

Please use the M4 screws provided in the wall mount kit for the rear panel. If the screw is missing, the thread depth of the replacement screw should be not more than 4 mm.



Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 3-17**). Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

NOTE:

In the diagram below the bracket is already installed on the wall.

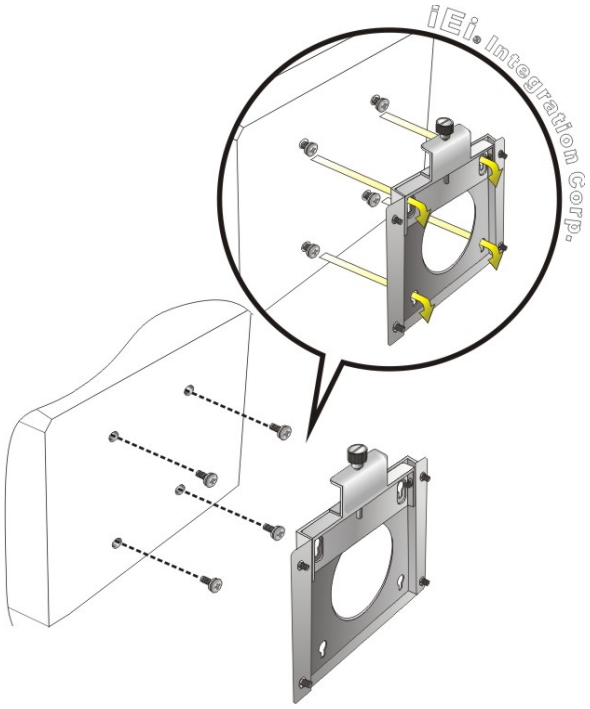


Figure 3-17: Chassis Support Screws

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket (**Figure 3-18**).

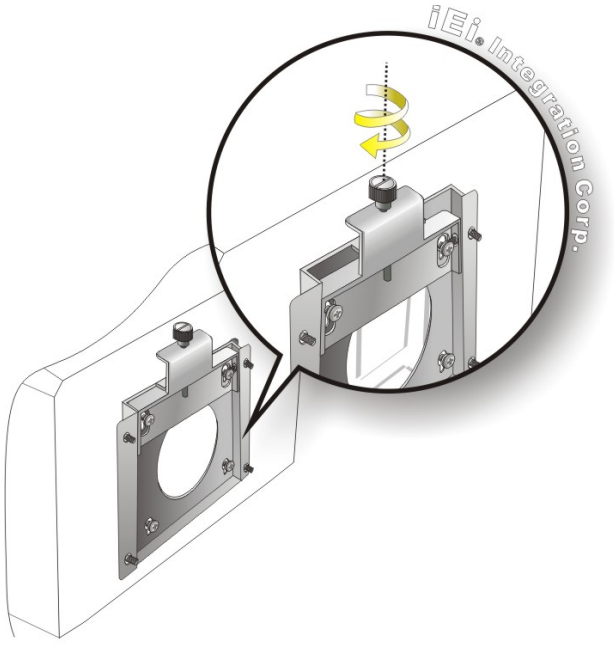


Figure 3-18: Secure the Panel PC

3.12.2 Panel Mounting

To mount the AFL3-W10A/12A/W15A-BT flat bezel panel PC into a panel, please follow the steps below.

Step 1: Select the position on the panel to mount the panel PC.

Step 2: Cut out a section corresponding to the size shown below. The size must be smaller then the outer edge.

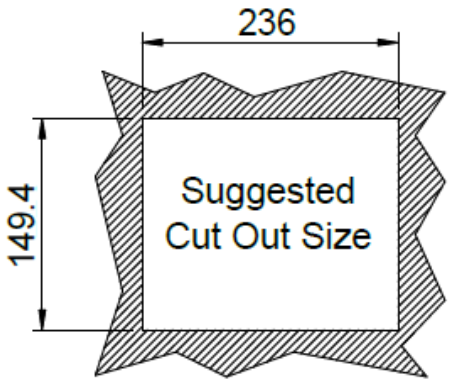


Figure 3-19: AFL-W10A-BT Cutout Dimensions

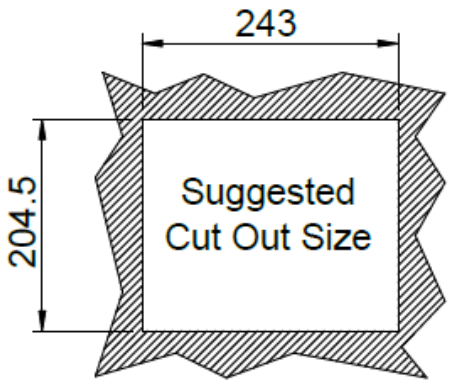


Figure 3-20: AFL-12A-BT Cutout Dimensions

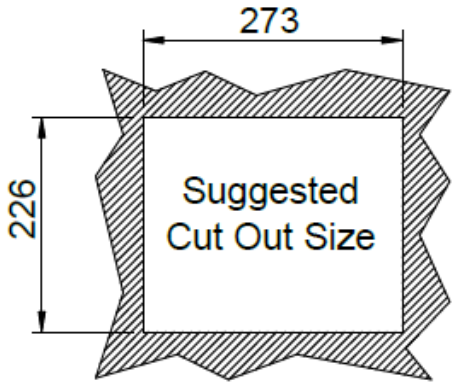


Figure 3-21: AFL-W15A-BT Cutout Dimensions

Step 3: Slide the panel PC through the hole until the frame is flush against the panel.

Step 4: Insert a M5*50 screw into the screw hole on the side of the panel mounting bracket. Then, install the following components onto the screw in sequence. See **Figure 3-22**.

Sequence	Item	Photo	Instruction
1	Spring		Install a spring onto the screw.
2	Nut		Tighten a nut until the spring is compressed enough for plastic cap.
3	Plastic cap		Tighten a plastic cap onto the end of screw thread.

Step 5: Repeat **Step 4** to install the other three screws into the sides of the two panel mounting brackets.

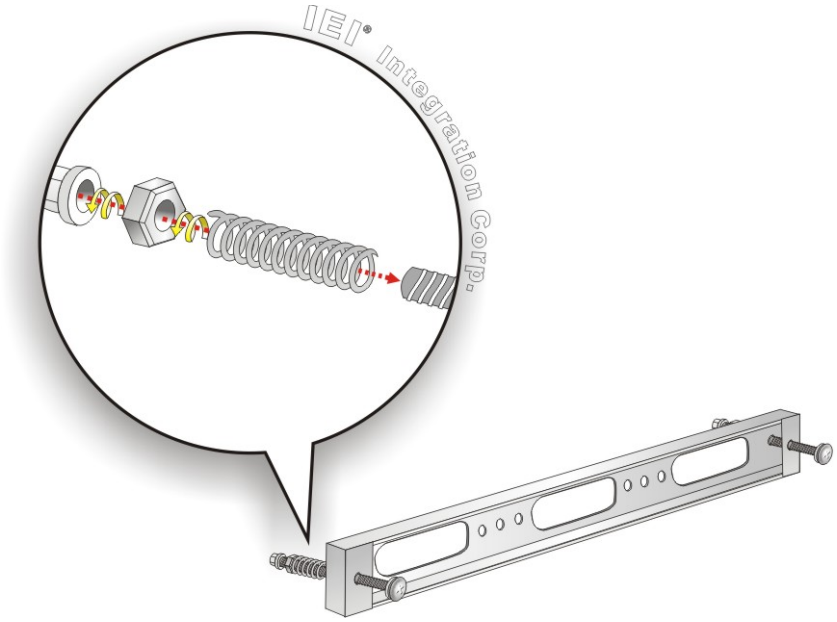


Figure 3-22: Panel Mounting Kit Installation

Step 6: Align the panel mounting bracket screw holes with the VESA mounting holes on the rear of the panel PC.

Step 7: Secure the two panel mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes and tightening them (**Figure 3-23**).

NOTE:

The panel mounting kit described in this section is an optional item. To purchase it, please contact an IEI sales representative.

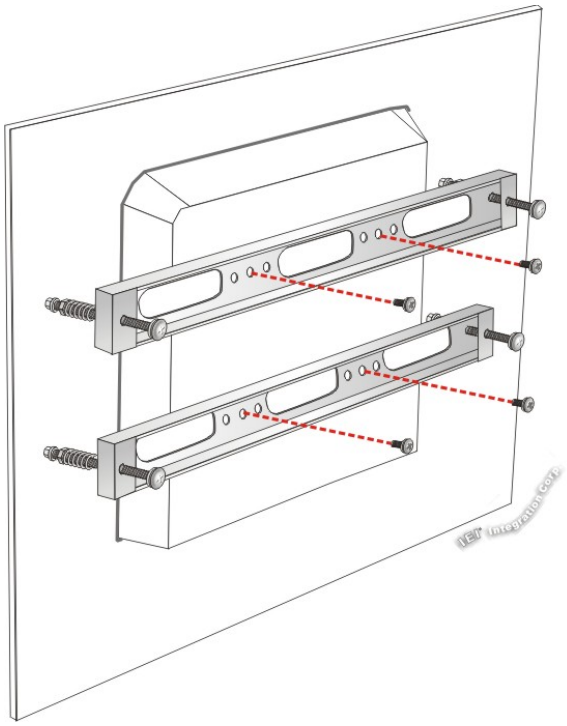


Figure 3-23: Securing Panel Mounting Brackets

3.12.3 Cabinet and Rack Installation

The AFL3-W10A/12A/W15A-BT flat bezel panel PC can be installed into a cabinet or rack. The installation procedures are similar to the panel mounting installation. To do this, please follow the steps below:

NOTE:

When purchasing the cabinet/rack installation bracket, make sure it is compatible with both the AFL3-W10A/12A/W15A-BT flat bezel panel PC and the rack/cabinet into which the AFL3-W10A/12A/W15A-BT is installed.

Step 1: Slide the rear chassis of the AFL3-W10A/12A/W15A-BT panel PC through the rack/cabinet bracket until the frame is flush against the front of the bracket (**Figure 3-24**).

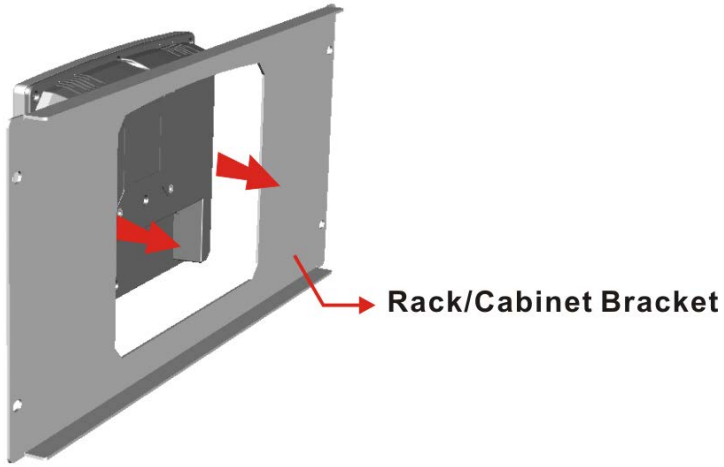


Figure 3-24: Rack/Cabinet Bracket Installation

Step 2: Insert a M5*50 screw into the screw hole on the side of the rack mounting bracket. Then, install the following components onto the screw in sequence. See **Figure 3-22**.

Sequence	Item	Photo	Instruction
1	Spring		Install a spring onto the screw.
2	Nut		Tighten a nut until the spring is compressed enough for plastic cap.
3	Plastic cap		Tighten a plastic cap onto the end of screw thread.

Step 3: Repeat **Step 4** to install the other three screws into the sides of the two rack mounting brackets.

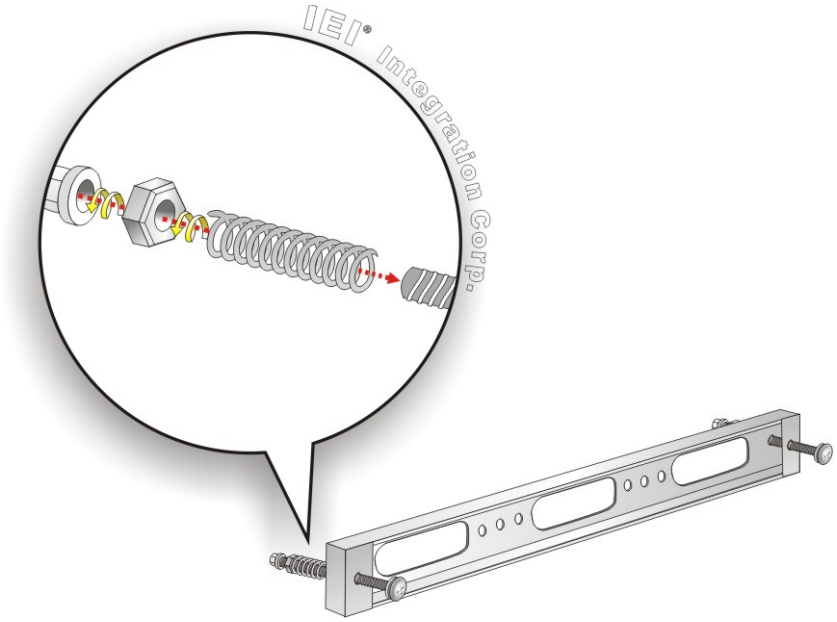


Figure 3-25: Rack Mounting Kit Installation

Step 4: Align the rack mounting bracket screw holes with the VESA mounting holes on the rear of the panel PC.

Step 5: Secure the two rack mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes and tightening them (**Figure 3-26**).

NOTE:

The rack mounting kit described in this section is an optional item. To purchase it, please contact an IEI sales representative.

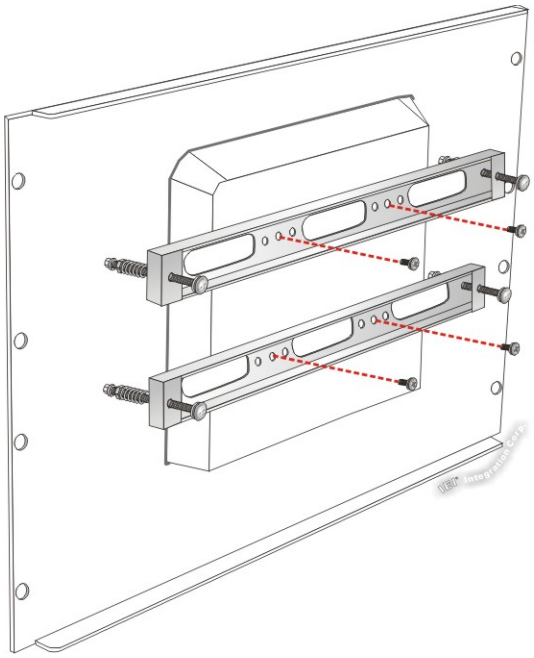


Figure 3-26: Securing Rack Mounting Brackets

Step 6: Slide the panel PC with the attached rack/cabinet bracket into a rack or cabinet (**Figure 3-27**).

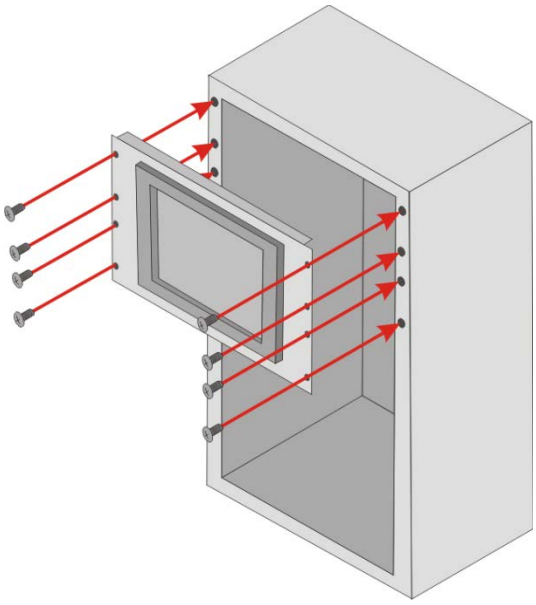


Figure 3-27: Install into a Rack/Cabinet

Step 7: Once the panel PC with the attached rack/cabinet bracket has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet (**Figure 3-27**).

3.12.4 Arm Mounting

The AFL3-W10A/12A/W15A-BT is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75 mm or a 100 mm interface pad. To mount the AFL3-W10A/12A/W15A-BT on an arm, please follow the steps below.

Step 1: The arm is a separately purchased item. Please correctly mount the arm onto the surface it uses as a base. To do this, refer to the installation documentation that came with the mounting arm.

NOTE:

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 75 mm or a 100 mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL3-W10A/12A/W15A-BT flat bezel panel PC.

Step 2: Once the mounting arm has been firmly attached to the surface, lift the flat bezel panel PC onto the interface pad of the mounting arm.

Step 3: Align the retention screw holes on the mounting arm interface with those in the flat bezel panel PC (**Figure 3-28** and **Figure 3-29**).

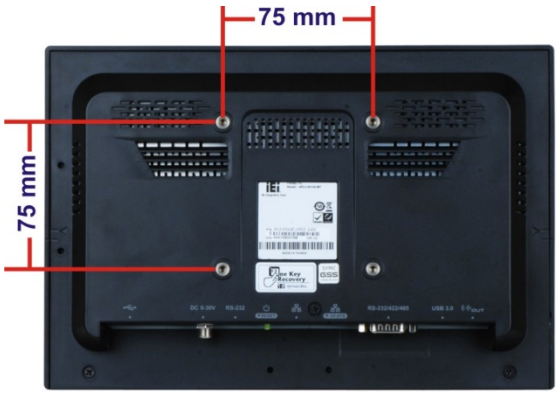


Figure 3-28: Arm Mounting Retention Screw Holes (10.1”)

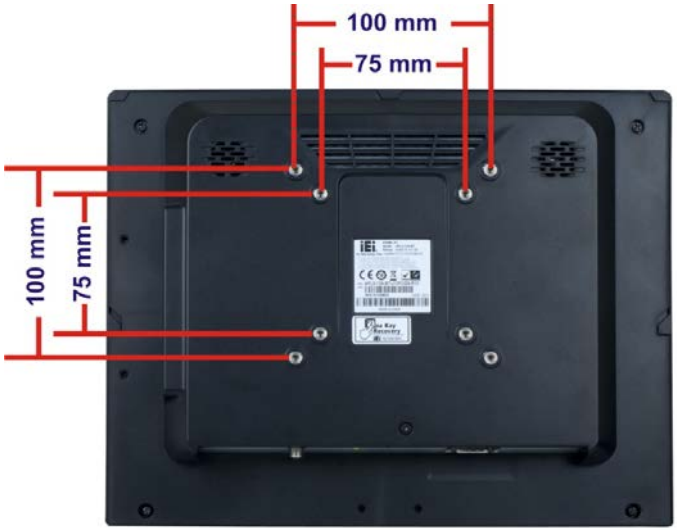


Figure 3-29: Arm Mounting Retention Screw Holes (12.1” & 15.6”)

Step 4: Secure the AFL3-W10A/12A/W15A-BT to the interface pad by inserting four retention screws through the mounting arm interface pad and into the AFL3-W10A/12A/W15A-BT.

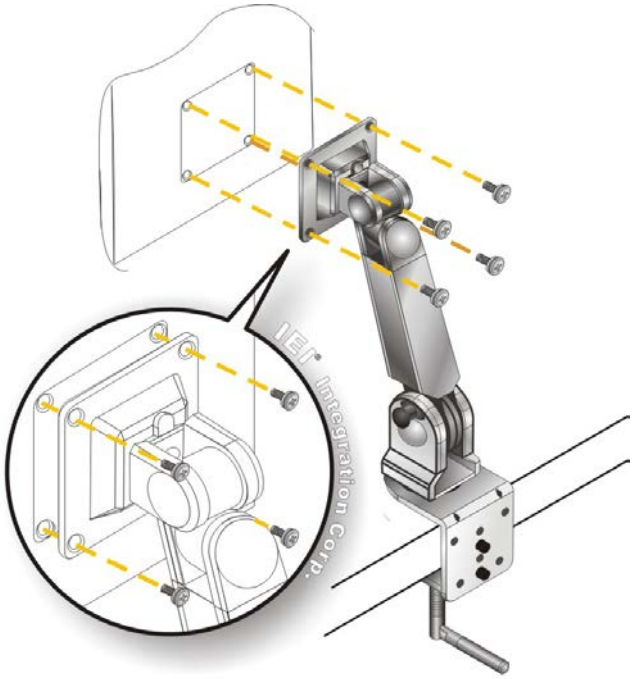


Figure 3-30: Arm Mounting

3.12.5 Stand Mounting

To mount the AFL3-W10A/12A/W15A-BT using the stand mounting kit, please follow the steps below.

Step 1: Locate the screw holes on the rear of the AFL3-W10A/12A/W15A-BT. This is where the bracket will be attached.

Step 2: Align the bracket with the screw holes.

Step 3: To secure the bracket to the AFL3-W10A/12A/W15A-BT insert the retention screws into the screw holes and tighten them.

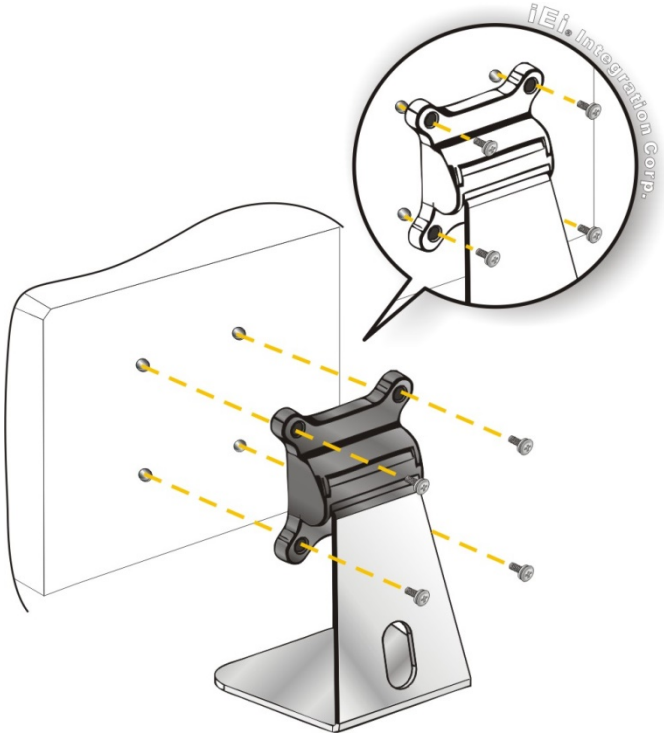


Figure 3-31: Stand Mounting (Stand-A/Bxx)

3.12.6 V-Stand Mounting (10.1” and 12.1” Models Only)

To mount the AFL3-W10A-BT or the AFL3-12A-BT using the optional V-Stand mounting kit, please follow the steps below.

Step 1: Carefully mark the locations of the four V-Stand screw holes on the mounting area. Drill four pilot holes at the marked locations for the V-Stand retention screws.

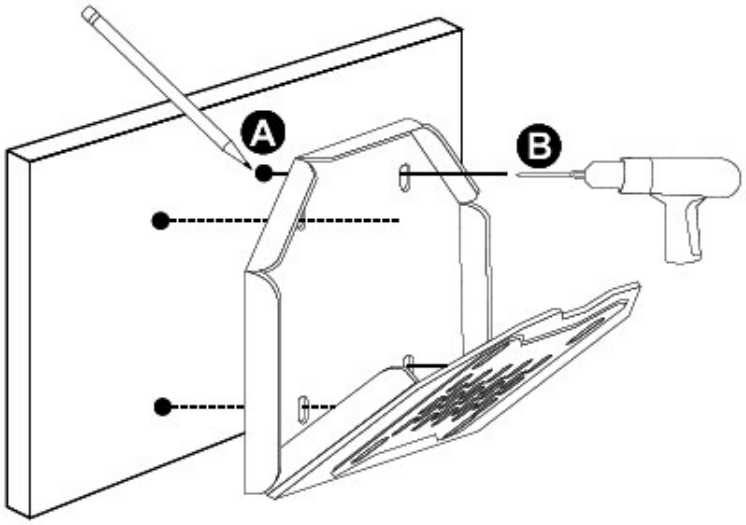


Figure 3-32: Drill Pilot Holes for V-Stand

Step 2: Align the screw holes on the V-Stand with the VESA mount screw holes on the system rear panel.

Step 3: Insert the four VESA mount screws into the four screw holes on the system rear panel. Adjust the V-Stand to a proper position.

Step 4: Tighten until the screw shank is secured against the rear panel.

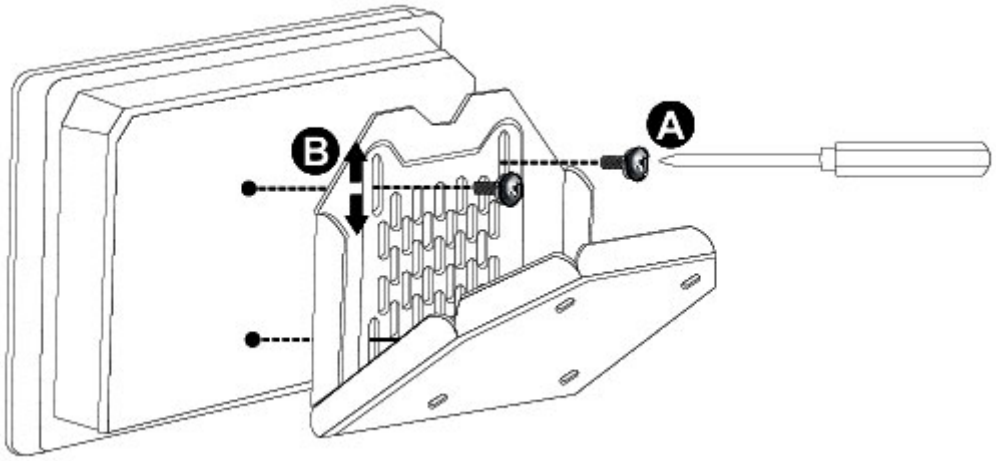


Figure 3-33: Secure V-Stand to System

Step 5: Align the V-Stand screw holes with the pilot holes on the mounting area. Mount the V-Stand by inserting the retention screws into the four pilot holes and tightening them.

Step 6: Adjust the V-Stand to have a best viewing angle to operate the system.

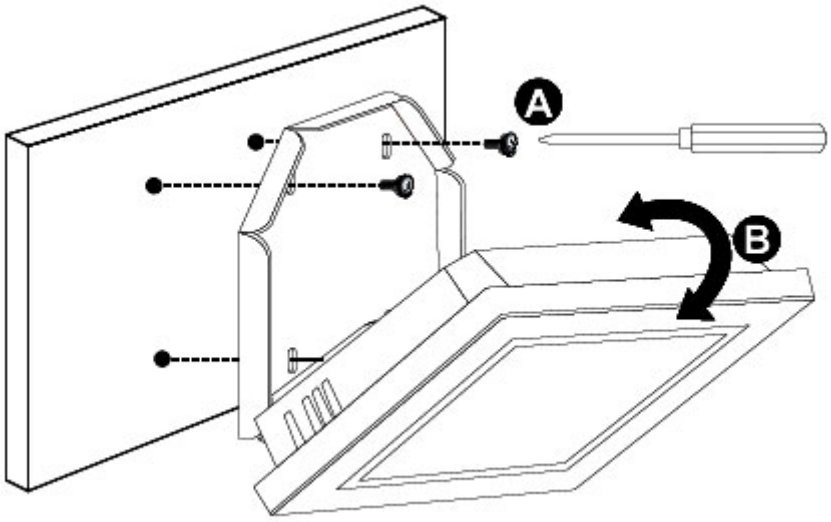


Figure 3-34: Secure V-Stand to Mounting Area

3.13 Powering On the System

To power on the system, follow the steps below:

Step 1: Connect the power cord to the power adapter. Connect the other end of the power cord to a power source.

Step 2: Connect the power adapter to the power connector of the AFL3-W10A/12A/W15A-BT.

Step 3: Locate the power button on the I/O panel.

Step 4: Hold down the power button until the power LED on the front panel turns on in green.

Figure 3-35: Powering On the System

3.14 Reset the System

The reset button enables user to reboot the system when the system is turned on. The reset button location is shown in **Figure 3-36**. Press the reset button to reboot the system.

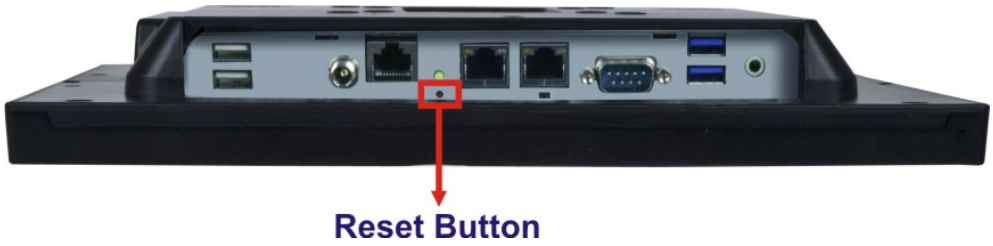


Figure 3-36: Reset Button Location

3.15 OS Installation

WARNING:

Before installing the operating system, the user must enter the **Boot** BIOS menu first and choose which operating system will be installed. Otherwise the OS installation may fail. Please refer to **Figure 3-37** and **Section 4.6**.

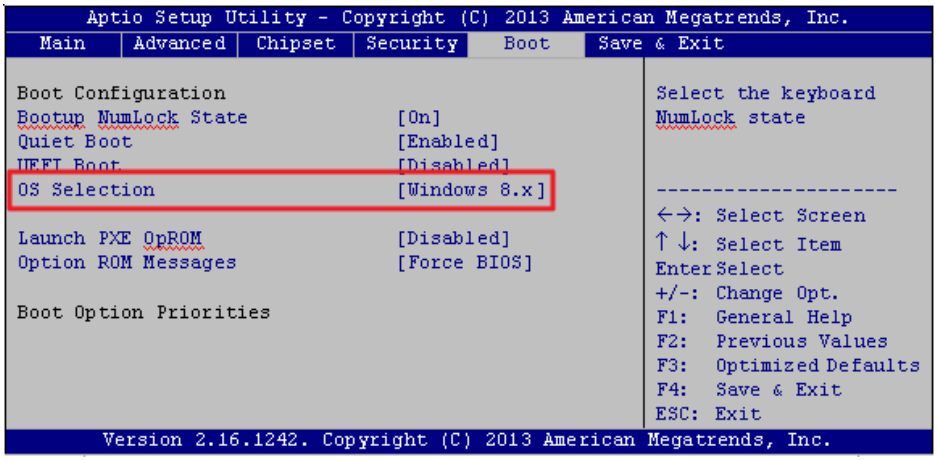


Figure 3-37: BIOS Option–OS Selection

3.16 Software Installation

All the drivers for the AFL3-W10A/12A/W15A-BT are available on IEI Resource Download Center (https://download.ieiworld.com). Type the model name and press **Enter** to find all the relevant software, utilities, and documentation.

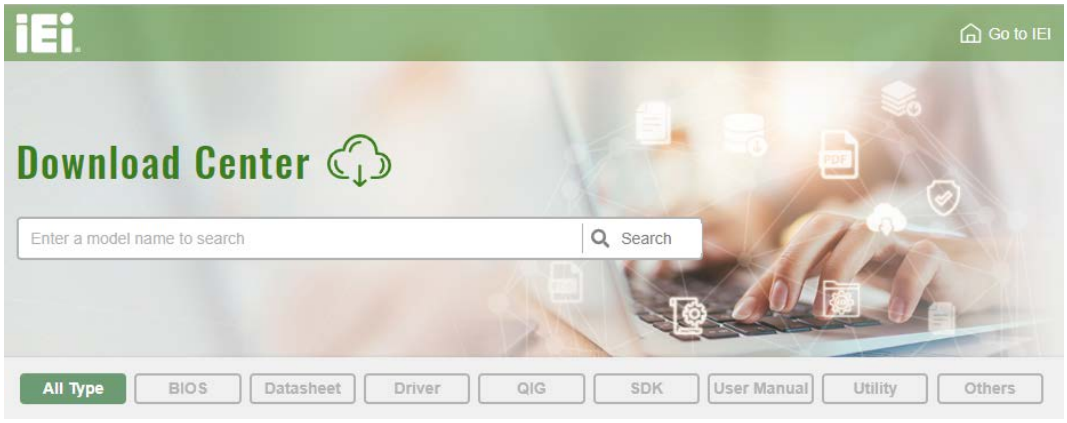


Figure 3-38: IEI Resource Download Center

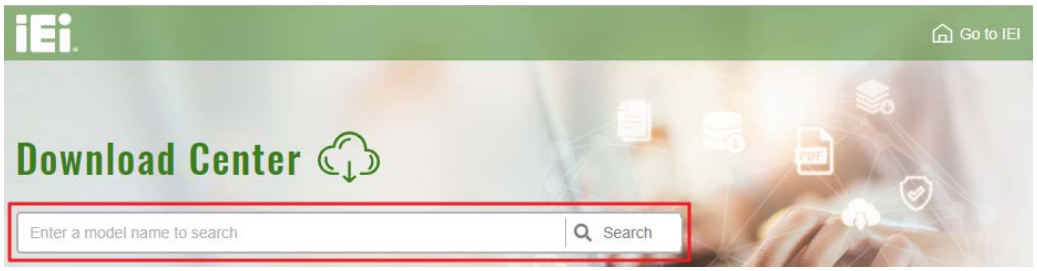
NOTE:

The panel PC with projected capacitive type touchscreen and Windows 7 (or later) OS does not require touch driver installation. This is because there is a HID touch digitizer built-in driver in Windows 7 or later.

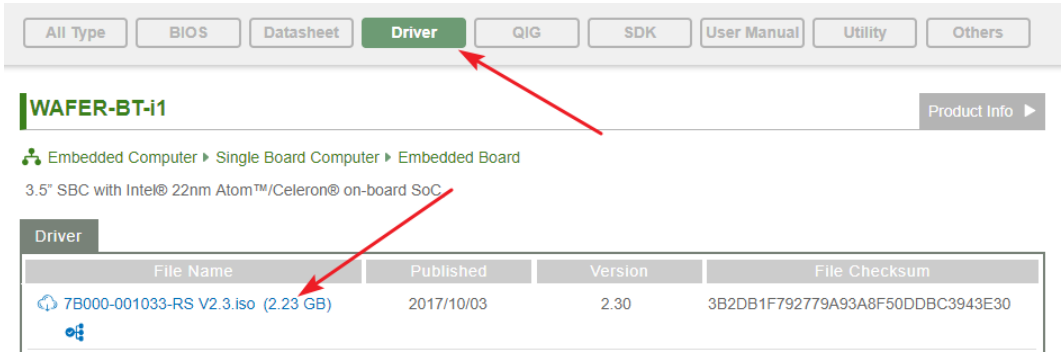
3.16.1 Driver Download

To download drivers from IEI Resource Download Center, follow the steps below.

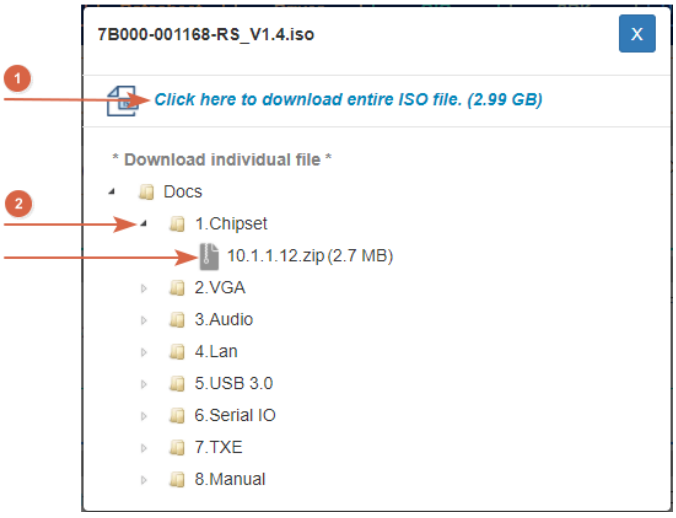
Step 1: Go to https://download.ieiworld.com. Type the model name and press Enter.



Step 2: All product-related software, utilities, and documentation will be listed. You can choose **Driver** to filter the result.



Step 3: Click the driver file name on the page and you will be prompted with the following window. You can download the entire ISO file (❶), or click the small arrow to find an individual driver and click the file name to download (❷).



NOTE:

To install software from the downloaded ISO image file in Windows 8, 8.1 or 10, double-click the ISO file to mount it as a virtual drive to view its content. On Windows 7 system, an additional tool (such as Virtual CD-ROM Control Panel from Microsoft) is needed to mount the file.

3.16.2 Keypad AP

Keypad AP is an OSD control tool developed by IEI. After the installation, the Keypad AP can be accessed by clicking the icon on the notification area. It allows users to control screen brightness and audio volume.

Figure 3-39: Keypad AP

Chapter

4

BIOS Setup

4.1 Introduction

A licensed copy of the BIOS is preprogrammed into the ROM BIOS. The BIOS setup program allows users to modify the basic system configuration. This chapter describes how to access the BIOS setup program and the configuration options that may be changed.

NOTE:

Some of the BIOS options may vary throughout the life cycle of the product and are subject to change without prior notice.

4.1.1 Starting Setup

The UEFI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the **DEL** key as soon as the system is turned on or
2. Press the **DEL** key when the "**Press DEL to enter SETUP**" message appears on the screen.

If the message disappears before the **DEL** key is pressed, restart the computer and try again.

4.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the PageUp and PageDown keys to change entries, press **F1** for help and press **ESC** to quit. Navigation keys are shown in the following table.

Key	Function
Up arrow	Move to the item above
Down arrow	Move to the item below

Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Load previous values.
F3 key	Load optimized defaults
F4 key	Save changes and Exit BIOS
Esc key	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu

Table 6-1: BIOS Navigation Keys

4.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

4.1.4 Unable to Reboot after Configuration Changes

If the computer cannot boot after changes to the system configuration are made, CMOS defaults.

4.1.5 BIOS Menu Bar

The **menu bar** on top of the BIOS screen has the following main items:

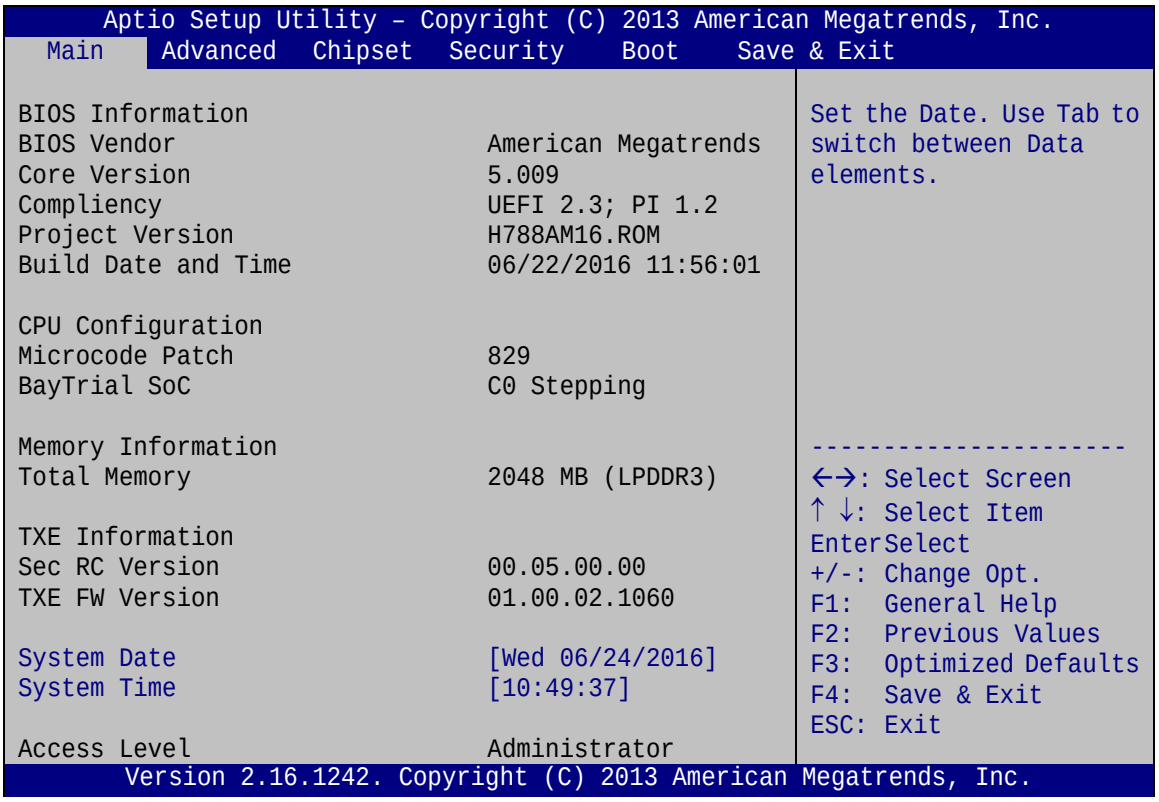
- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings.
- Chipset – Changes the chipset settings.
- Security – Sets User and Supervisor Passwords.
- Boot – Changes the system boot configuration.

- Save & Exit – Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

4.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered. The **Main** menu gives an overview of the basic system information.



BIOS Menu 1: Main

➔ BIOS Information

The **BIOS Information** lists a brief summary of the BIOS. The fields in **BIOS Information** cannot be changed. The items shown in the system overview include:

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version

- **Compliency:** Current compliant version
- **Project Version:** the board version
- **Build Date:** Date the current BIOS version was made

➔ **CPU Information**

The **CPU Information** lists a brief summary of the CPU. The fields in **CPU Information** cannot be changed. The items shown in the system overview include:

- **Microcode Patch:** Installed microcode patch
- **BayTrail SoC:** CPU stepping level

➔ **Memory Information**

The Memory Information lists the total memory of the system.

➔ **TXE Information**

The **TXE Information** lists a brief summary of Intel® Trusted Execution Engine (TXE). The fields in **TXE Information** cannot be changed. The items shown in the system overview include:

- **Sec RC Version:** Current sec reference code version
- **TXE FW Version:** Current Intel® TXE firmware version

➔ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

➔ **System Time [xx:xx:xx]**

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

4.3 Advanced

Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:

WARNING:

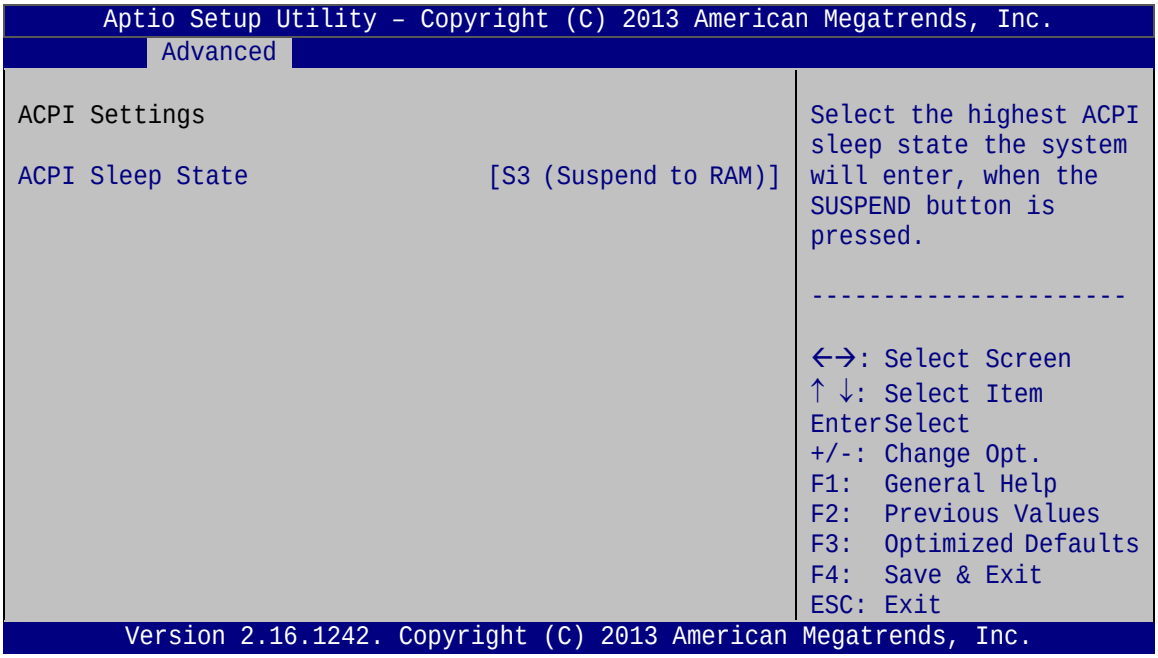
Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

```
      Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
  Main    Advanced   Chipset   Security    Boot    Save & Exit

> ACPI Settings                                   System ACPI Parameters.
> F81866 Super IO Configuration
> F81866 H/M Monitor
> RTC Wake Settings
> Serial Port Console Redirection                 ----------------------
> iEi Feature
> CPU Configuration                               ←→: Select Screen
> IDE Configuration                               ↑ ↓: Select Item
> USB Configuration                               EnterSelect
                                                  +/-: Change Opt.
                                                  F1:  General Help
                                                  F2:  Previous Values
                                                  F3:  Optimized Defaults
                                                  F4:  Save & Exit
                                                  ESC: Exit
       Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

BIOS Menu 2: Advanced

4.3.1 ACPI Settings

The **ACPI Settings** menu (**BIOS Menu 3**) configures the Advanced Configuration and Power Interface (ACPI) options.



BIOS Menu 3: ACPI Settings

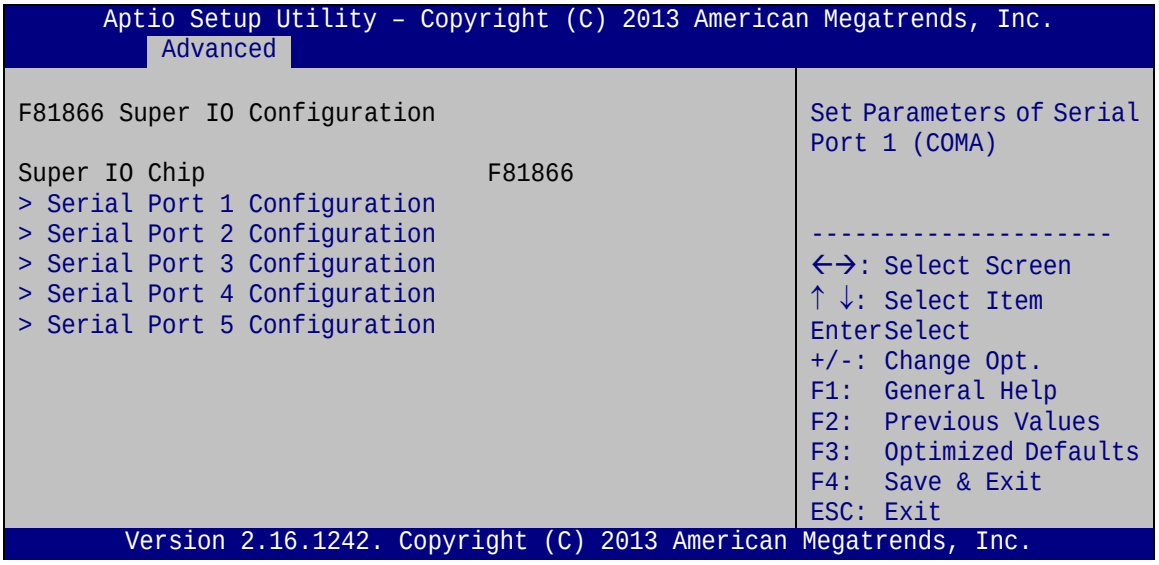
➔ **ACPI Sleep State [S3 (Suspend to RAM)]**

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

➔ **S3 (Suspend to RAM)** DEFAULT The caches are flushed and the CPU is powered off. Power to the RAM is maintained. The computer returns slower to a working state, but more power is saved.

4.3.2 F81866 Super IO Configuration

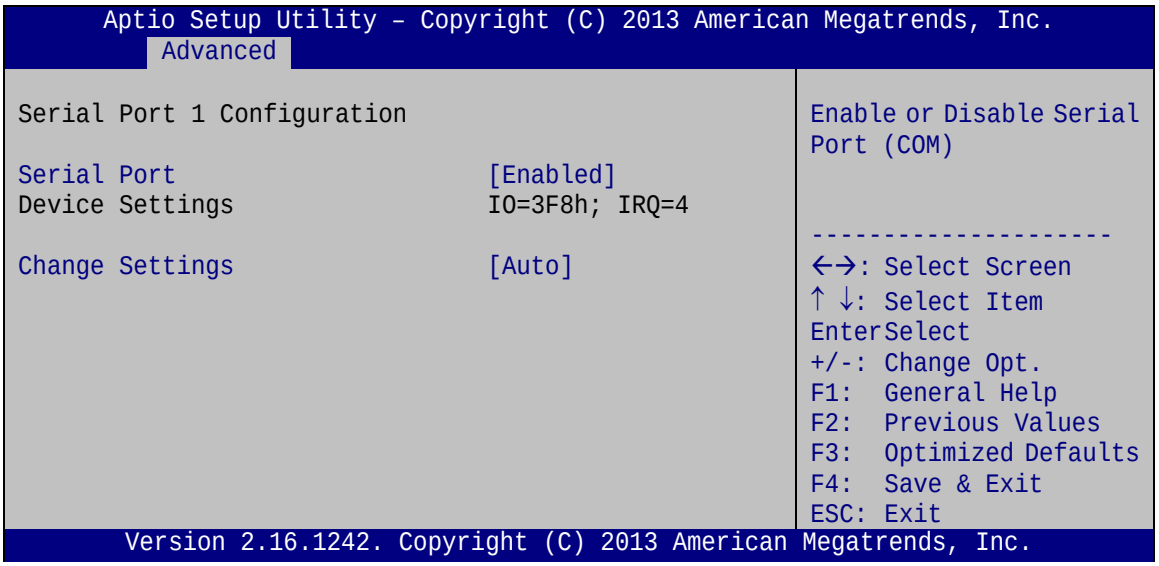
Use the **F81866 Super IO Configuration** menu (**BIOS Menu 4**) to set or change the configurations for the serial ports.



BIOS Menu 4: F81866 Super IO Configuration

4.3.2.1 Serial Port n Configuration

Use the **Serial Port n Configuration** menu (**BIOS Menu 5**) to configure the serial port n.



BIOS Menu 5: Serial Port n Configuration Menu

4.3.2.1.1 Serial Port 1 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=3F8h; IRQ=4**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ4
➔ **IO=3F8h; IRQ=3, 4**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
➔ **IO=2F8h; IRQ=3, 4**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4
➔ **IO=3E8h; IRQ=3, 4**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ3, 4
➔ **IO=2E8h; IRQ=3, 4**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ3, 4

4.3.2.1.2 Serial Port 2 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=2F8h; IRQ=3**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ3
➔ **IO=3F8h; IRQ=3, 4**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
➔ **IO=2F8h; IRQ=3, 4**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4
➔ **IO=3E8h; IRQ=3, 4**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ3, 4
➔ **IO=2E8h; IRQ=3, 4**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ3, 4

4.3.2.1.3 Serial Port 3 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=3E8h; IRQ=10**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ10
➔ **IO=3F8h; IRQ=10, 11**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ10, 11
➔ **IO=2F8h; IRQ=10, 11**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ10, 11
➔ **IO=3E8h; IRQ=10, 11**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ10, 11
➔ **IO=2E8h; IRQ=10, 11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ10, 11
➔ **IO=2F0h; IRQ=10, 11**		Serial Port I/O port address is 2F0h and the interrupt address is IRQ10, 11
➔ **IO=2E0h; IRQ=10, 11**		Serial Port I/O port address is 2E0h and the interrupt address is IRQ10, 11

4.3.2.1.4 Serial Port 4 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=2E8h; IRQ=11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ11
➔ **IO=3F8h; IRQ=10, 11**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ10, 11
➔ **IO=2F8h; IRQ=10, 11**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ10, 11
➔ **IO=3E8h; IRQ=10, 11**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ10, 11
➔ **IO=2E8h; IRQ=10, 11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ10, 11
➔ **IO=2F0h; IRQ=10, 11**		Serial Port I/O port address is 2F0h and the interrupt address is IRQ10, 11
➔ **IO=2E0h; IRQ=10, 11**		Serial Port I/O port address is 2E0h and the interrupt address is IRQ10, 11

4.3.2.1.5 Serial Port 5 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

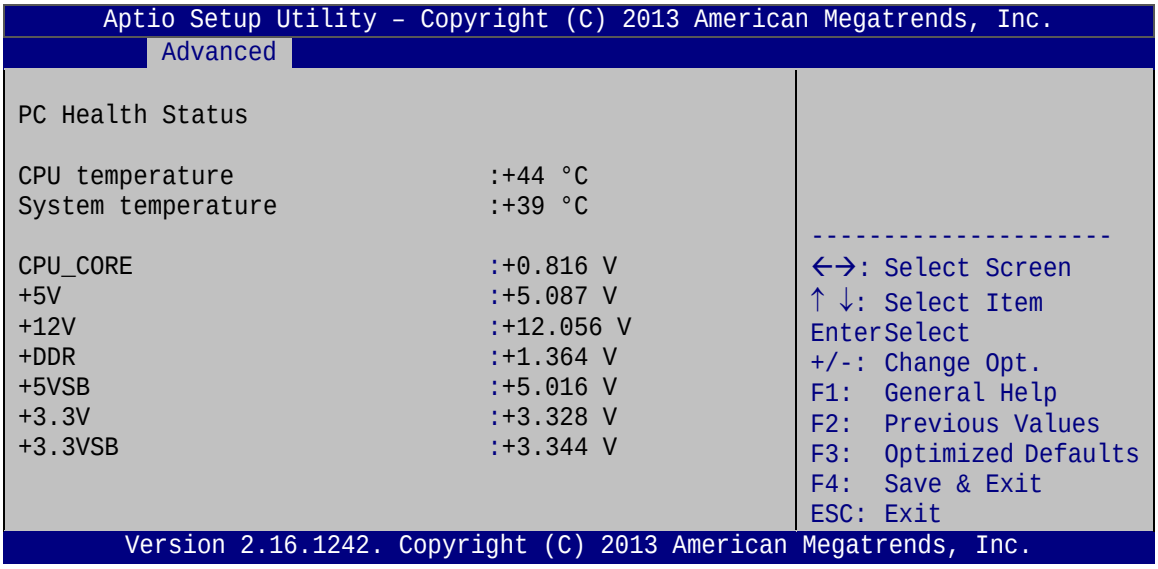
➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=2F0h; IRQ=10**		Serial Port I/O port address is 2F0h and the interrupt address is IRQ10
➔ **IO=3F8h; IRQ=10, 11**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ10, 11
➔ **IO=2F8h; IRQ=10, 11**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ10, 11
➔ **IO=3E8h; IRQ=10, 11**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ10, 11
➔ **IO=2E8h; IRQ=10, 11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ10, 11
➔ **IO=2F0h; IRQ=10, 11**		Serial Port I/O port address is 2F0h and the interrupt address is IRQ10, 11
➔ **IO=2E0h; IRQ=10, 11**		Serial Port I/O port address is 2E0h and the interrupt address is IRQ10, 11

4.3.3 F81866 H/W Monitor

The F81866 H/W Monitor menu (**BIOS Menu 6**) shows the operating temperatures and voltages.



BIOS Menu 6: F81866 H/W Monitor

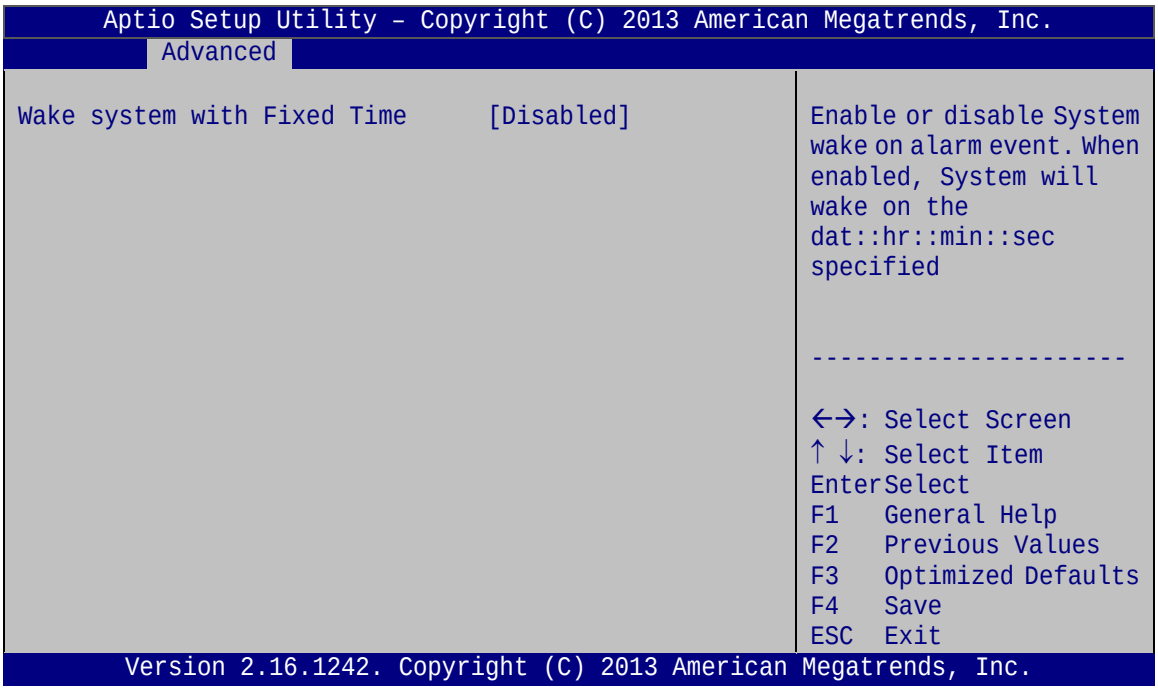
➔ **Hardware Health Status**

The following system parameters and values are shown. The system parameters that are monitored are:

- CPU Temperature
- System Temperature
- Voltages:
  - CPU_CORE
  - +5V
  - +12V
  - +DDR
  - +5VSB
  - +3.3V
  - +3.3VSB

4.3.4 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 7**) configures RTC wake event.



BIOS Menu 7: RTC Wake Settings

➔ **Wake System with Fixed Time [Disabled]**

Use the **Wake System with Fixed Time** option to specify the time the system should be roused from a suspended state.

➔ **Disabled** **DEFAULT** The real time clock (RTC) cannot generate a wake event

➔ **Enabled**

If selected, the following appears with values that can be selected:

*Wake up every day

*Wake up date

*Wake up hour

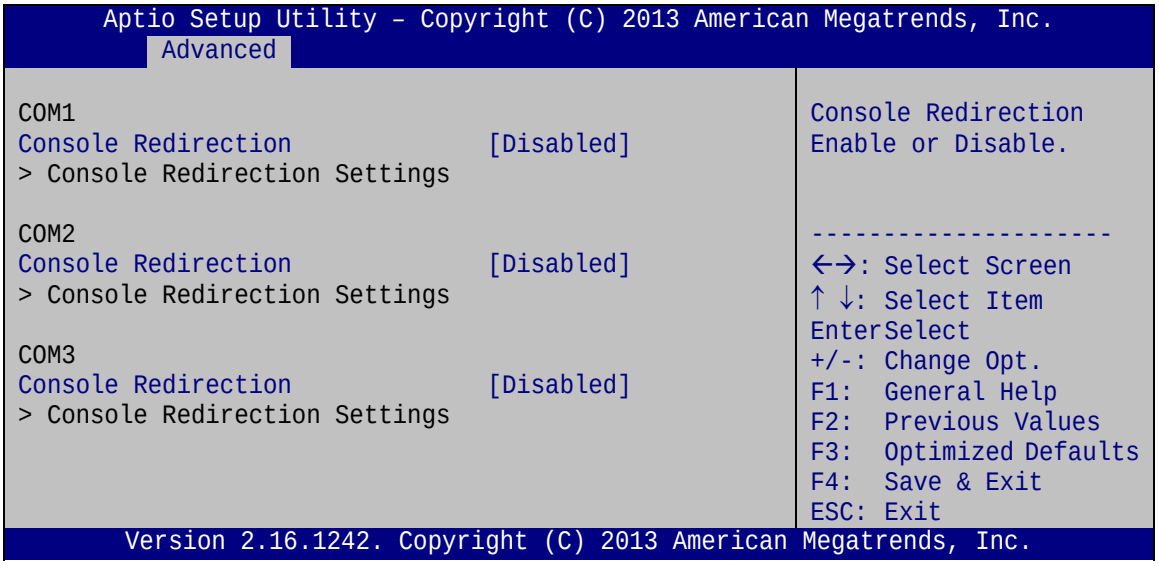
*Wake up minute

*Wake up second

After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

4.3.5 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 8**) allows the console redirection options to be configured. Console redirection allows users to maintain a system remotely by re-directing keyboard input and text output through the serial port.



BIOS Menu 8: Serial Port Console Redirection

➔ **Console Redirection [Disabled]**

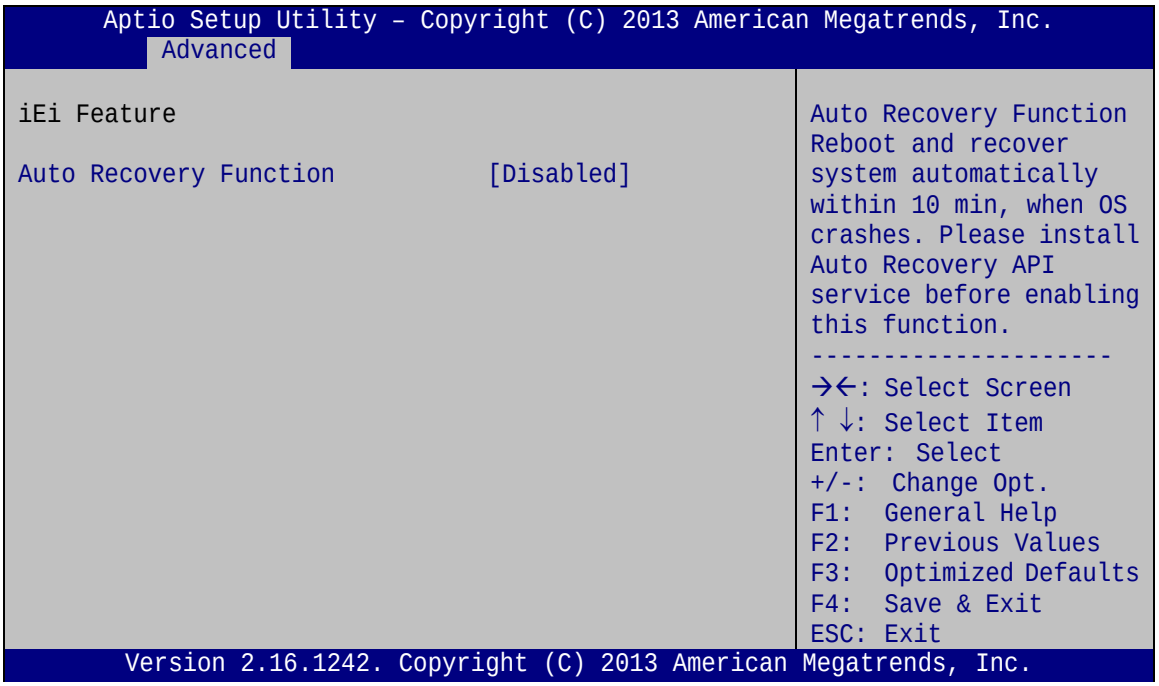
Use **Console Redirection** option to enable or disable the console redirection function.

➔ **Disabled** **DEFAULT** Disabled the console redirection function

➔ **Enabled** Enabled the console redirection function

4.3.6 iEi Feature

Use the **iEi Feature** menu (**BIOS Menu 9**) to configure One Key Recovery function.



BIOS Menu 9: iEi Feature

➔ **Auto Recovery Function [Disabled]**

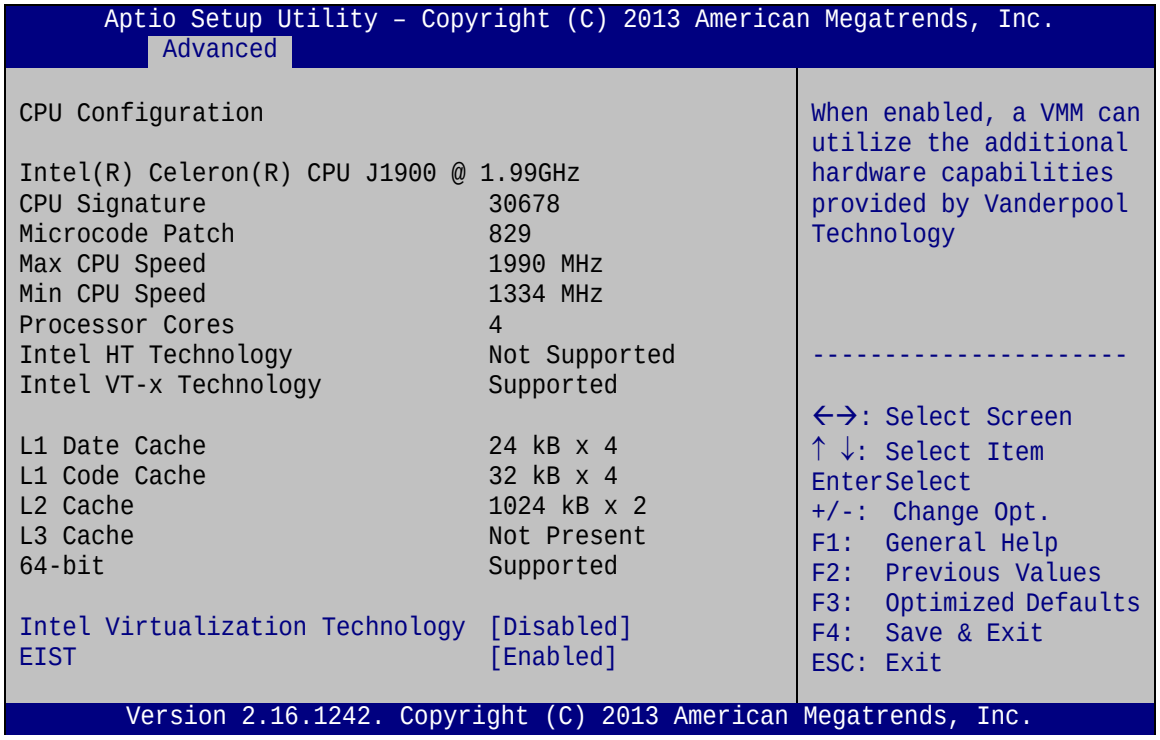
Use the **Auto Recovery Function** BIOS option to enable or disable the auto recovery function of the IEI One Key Recovery.

➔ **Disabled** **DEFAULT** Auto recovery function disabled

➔ **Enabled** Auto recovery function enabled

4.3.7 CPU Configuration

Use the **CPU Configuration** (**BIOS Menu 10**) to view detailed CPU specifications and configure the CPU.



BIOS Menu 10: CPU Configuration

The CPU Configuration menu lists the following CPU details:

- CPU Signature: Lists the CPU signature value.
- Microcode Patch: Lists the microcode patch being used.
- Max CPU Speed: Lists the maximum CPU processing speed.
- Min CPU Speed: Lists the minimum CPU processing speed.
- Processor Cores: Lists the number of the processor core
- Intel HT Technology: Indicates if Intel HT Technology is supported by the CPU.
- Intel VT-x Technology: Indicates if Intel VT-x Technology is supported by the CPU.
- L1 Data Cache: Lists the amount of data storage space on the L1 cache.
- L1 Code Cache: Lists the amount of code storage space on the L1 cache.

- L2 Cache: Lists the amount of storage space on the L2 cache.
- L3 Cache: Lists the amount of storage space on the L3 cache.
- 64-bit: Indicates if 64-bit OS is supported by the CPU.

➔ **Intel Virtualization Technology [Disabled]**

Use the **Intel Virtualization Technology** option to enable or disable virtualization on the system. When combined with third party software, Intel® Virtualization technology allows several OSs to run on the same system at the same time.

➔ **Disabled**	**DEFAULT**	Disables Intel Virtualization Technology.
➔ **Enabled**		Enables Intel Virtualization Technology.

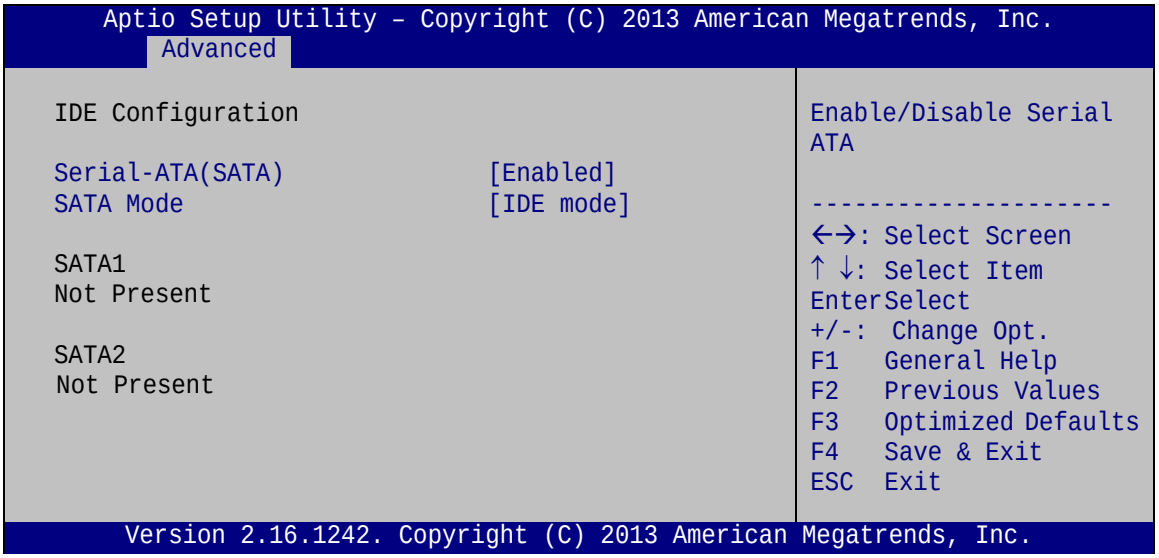
➔ **EIST [Enabled]**

Use the **EIST** option to enable or disable Enhanced Intel SpeedStep® Techonology (EIST).

➔ **Disabled**		Disables Enhanced Intel SpeedStep® Techonology.
➔ **Enabled**	**DEFAULT**	Enables Enhanced Intel SpeedStep® Techonology.

4.3.8 IDE Configuration

Use the **IDE Configuration** menu (**BIOS Menu 11**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 11: IDE Configuration

➔ **Serial-ATA (SATA) [Enabled]**

Use the **Serial-ATA (SATA)** option to enable or disable the serial ATA controller.

➔ **Enabled** **DEFAULT** Enables the on-board SATA controller.

➔ **Disabled** Disables the on-board SATA controller.

➔ **SATA Mode [IDE Mode]**

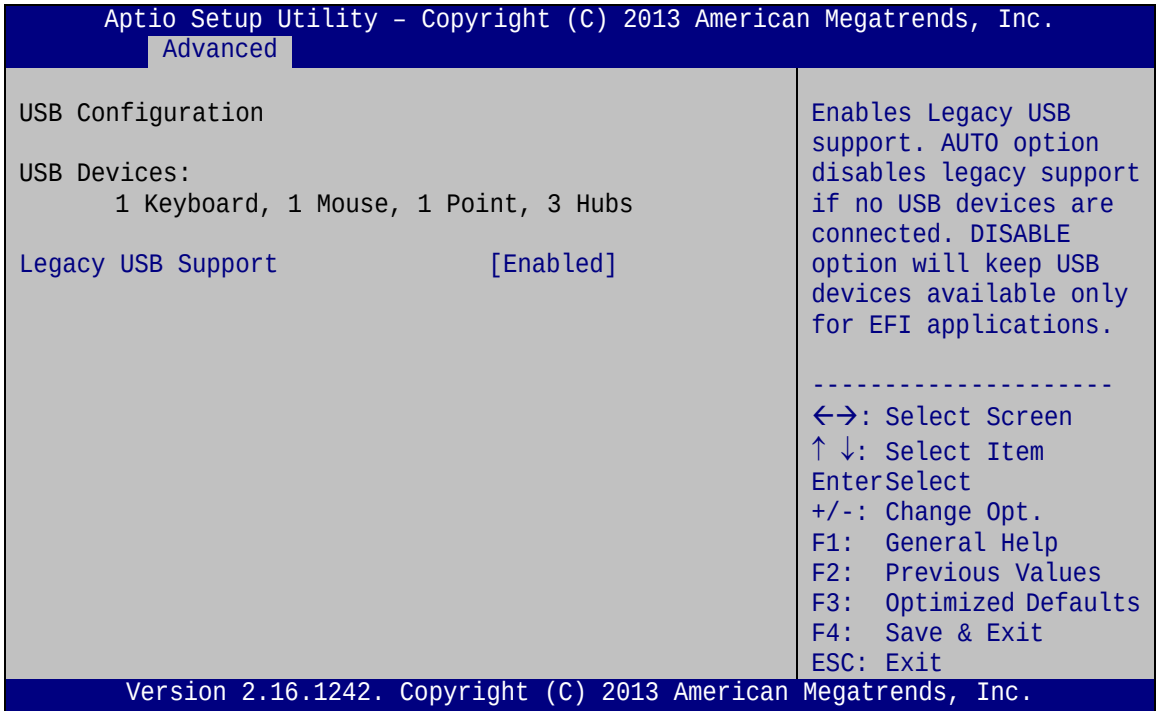
Use the **SATA Mode** option to configure SATA devices as normal IDE devices.

➔ **IDE Mode** **DEFAULT** Configures SATA devices as normal IDE device.

➔ **AHCI Mode** Configures SATA devices as AHCI device.

4.3.9 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 12**) to read USB configuration information and configure the USB settings.



BIOS Menu 12: USB Configuration

➔ **USB Devices**

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

➔ **Legacy USB Support [Enabled]**

Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

➔ **Enabled** **DEFAULT** Legacy USB support enabled

➔	**Disabled**	Legacy USB support disabled
➔	**Auto**	Legacy USB support disabled if no USB devices are connected

4.4 Chipset

Use the **Chipset** menu (**BIOS Menu 13**) to access the North Bridge, South Bridge, and Integrated Graphics configuration menus.

WARNING!

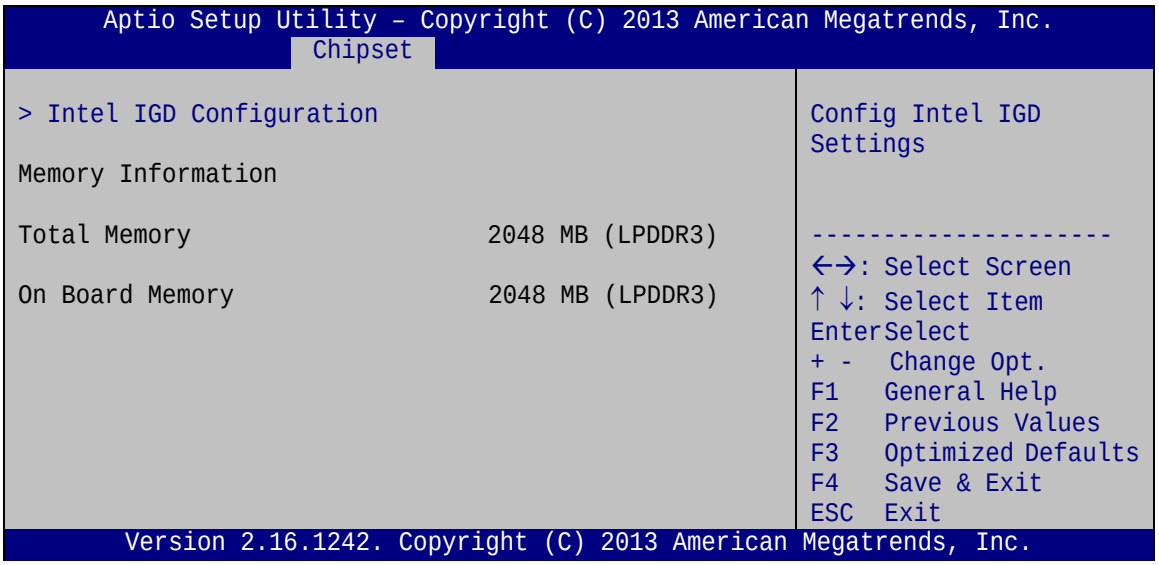
Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.

```
      Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
  Main    Advanced  Chipset  Security    Boot    Save & Exit

> North Bridge                                  North Bridge Parameters
> South Bridge


                                                ---------------------
                                                ←→: Select Screen
                                                ↑ ↓: Select Item
                                                EnterSelect
                                                + -   Change Opt.
                                                F1    General Help
                                                F2    Previous Values
                                                F3    Optimized Defaults
                                                F4    Save & Exit
                                                ESC   Exit
        Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

BIOS Menu 13: Chipset

4.4.1 North Bridge Configuration

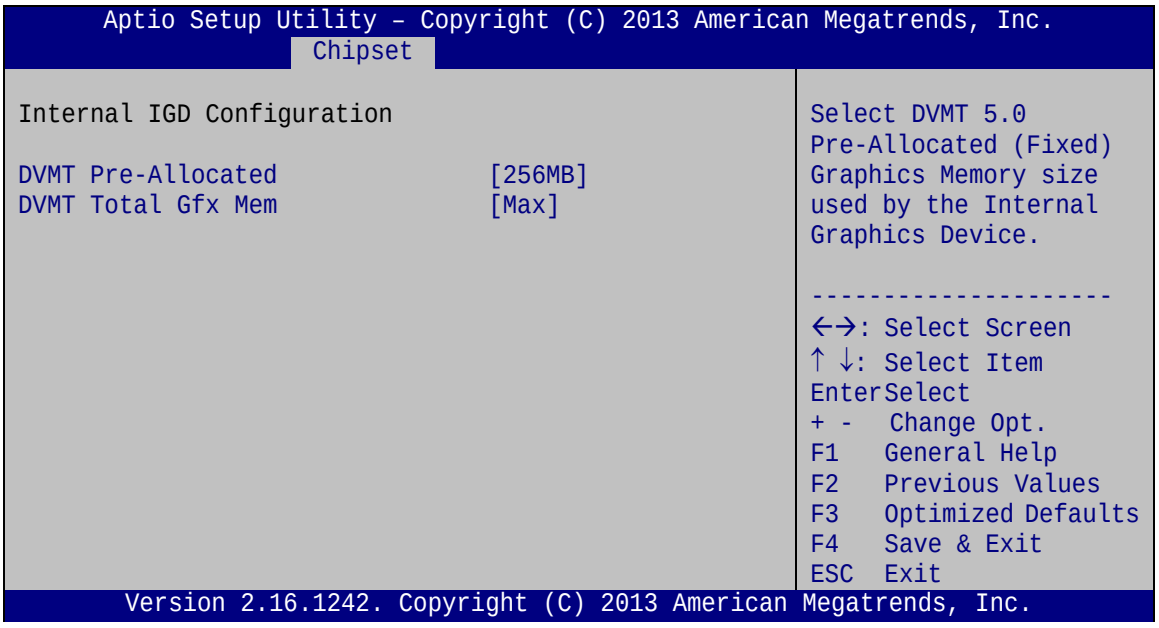
Use the **North Bridge** menu (**BIOS Menu 14**) to configure the north bridge chipset.



BIOS Menu 14: North Bridge Configuration

4.4.1.1 Internal IGD Configuration

Use the Internal IGD Configuration (**BIOS Menu 15**) menu to set the integrated graphics.



BIOS Menu 15: Internal IGD Configuration

➔ **DVMT Pre-Allocated [256M]**

Use the **DVMT Pre-Allocated** option to specify the amount of system memory that can be used by the internal graphics device.

➔ **64M**		64 MB of memory used by internal graphics device
➔ **128M**		128 MB of memory used by internal graphics device
➔ **256M**	**DEFAULT**	256 MB of memory used by internal graphics device
➔ **512M**		512 MB of memory used by internal graphics device

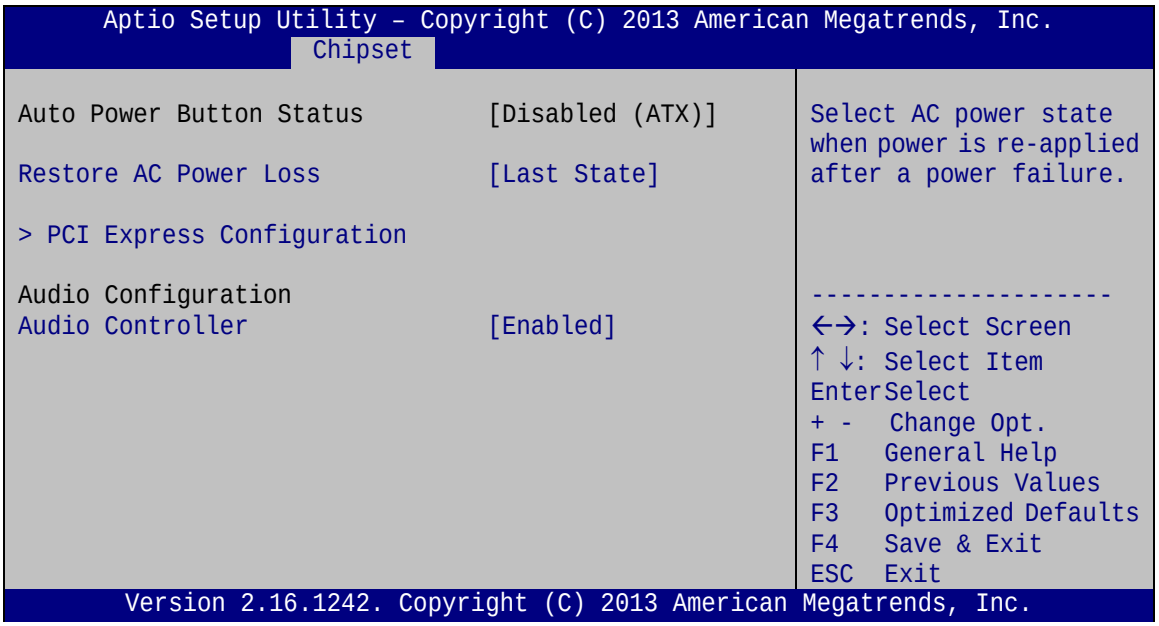
➔ **DVMT Total Gfx Mem [Max]**

Use the **DVMT Total Gfx Mem** option to specify the maximum amount of memory that can be allocated as graphics memory. Configuration options are listed below.

- 128MB
- 256MB
- Max **Default**

4.4.2 South Bridge Configuration

Use the **South Bridge** menu (**BIOS Menu 16**) to configure the south bridge chipset.



BIOS Menu 16: South Bridge Configuration

➔ **Restore on AC Power Loss [Last State]**

Use the **Restore on AC Power Loss** BIOS option to specify what state the system returns to if there is a sudden loss of power to the system.

➔ **Power Off** The system remains turned off

➔ **Power On** The system turns on

➔ **Last State** **DEFAULT** The system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

➔ **Audio Controller [Enabled]**

Use the **Audio Controller** BIOS option to enable or disable the High Definition Audio controller.

➔ **Disabled** The High Definition Audio controller is disabled.

➔ **Enabled** **DEFAULT** The High Definition Audio controller is enabled.

4.4.2.1 PCI Express Configuration

Use the **PCI Express Configuration** submenu (**BIOS Menu 17**) to configure the PCI Express slots.

```
Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
                    Chipset
PCI Express Configuration                  Configure PCIe Port
PCI-E Mini Card (Full Size)                Speed
  Speed                        [Auto]

PCI-E Mini Card (Half Size)                ---------------------
  Speed                        [Auto]      ←→: Select Screen
                                           ↑ ↓: Select Item
                                           EnterSelect
                                           + -   Change Opt.
                                           F1    General Help
                                           F2    Previous Values
                                           F3    Optimized Defaults
                                           F4    Save & Exit
                                           ESC   Exit
      Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

BIOS Menu 17: PCI Express Configuration

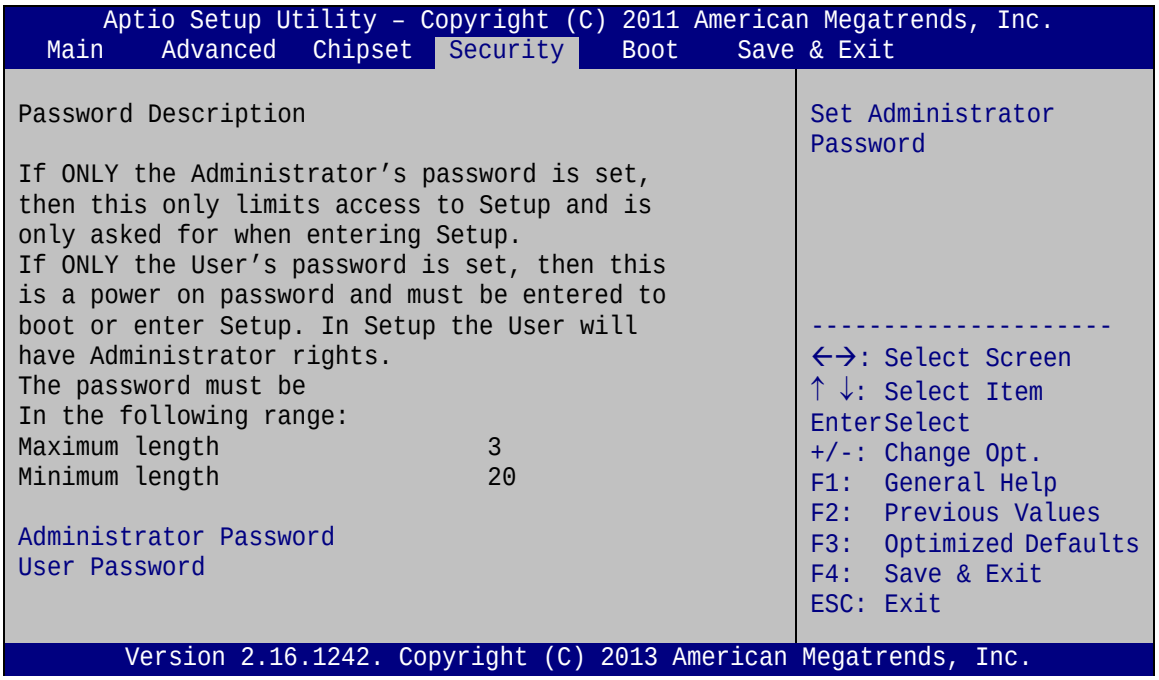
➔ **Speed [Auto]**

Use the **Speed** option to configure the PCIe Mini card slot speed.

- Auto **DEFAULT**
- Gen 2
- Gen 1

4.5 Security

Use the **Security** menu (**BIOS Menu 18**) to set system and user passwords.



BIOS Menu 18: Security

➔ **Administrator Password**

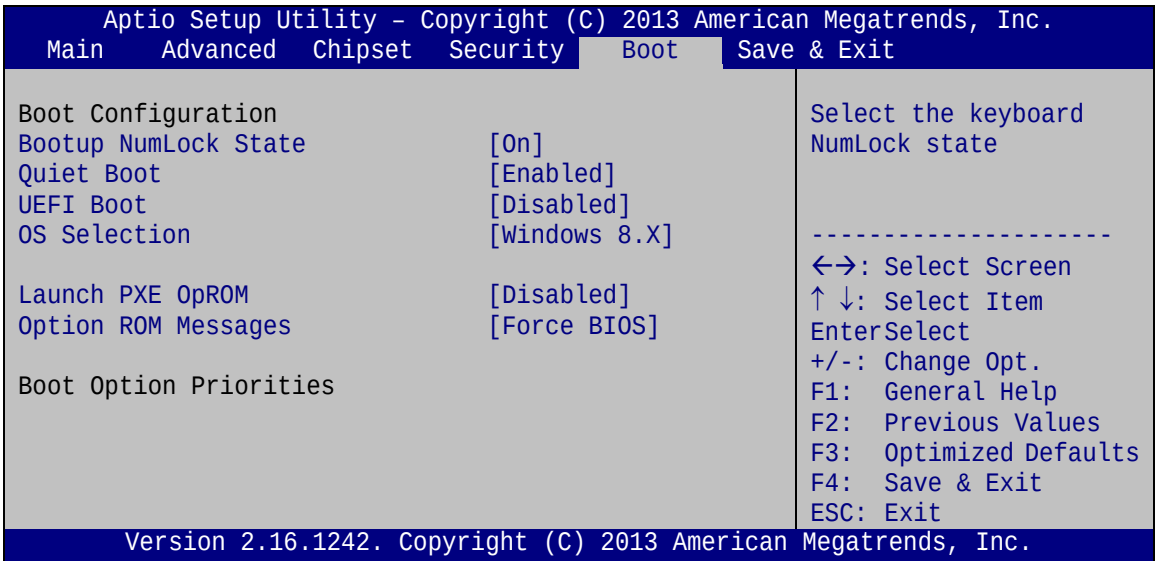
Use the **Administrator Password** field to set or change an administrator password.

➔ **User Password**

Use the **User Password** field to set or change a user password.

4.6 Boot

Use the **Boot** menu (**BIOS Menu 19**) to configure system boot options.



BIOS Menu 19: Boot

➔ **Bootup NumLock State [On]**

Use the **Bootup NumLock State** BIOS option to specify if the number lock setting must be modified during boot up.

➔ **On** **DEFAULT** Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

➔ **Off** Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.

➔ **Quiet Boot [Enabled]**

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

➔ **Disabled**		Normal POST messages displayed
➔ **Enabled**	**DEFAULT**	OEM Logo displayed instead of POST messages

➔ **UEFI Boot [Disabled]**

Use the **UEFI Boot** BIOS option to enable or disable UEFI boot.

➔ **Enabled**		Enable UEFI boot if the 1st boot device is a GPT HDD.
➔ **Disabled**	**DEFAULT**	Disable UEFI boot.

➔ **OS Selection [Windows 8.x]**

Use the **OS Selection** BIOS option to select an operating system (OS) before installing OS.

➔ **Windows 8.x**	**DEFAULT**	The system will be installed with Windows 8.x operating system.
➔ **Android**		The system will be installed with Android operating system.
➔ **Windows 7**		The system will be installed with Windows 7 operating system.

WARNING:

Before installing the operating system, the user must enter the **Boot** BIOS menu and choose which operating system will be installed. Otherwise the OS installation may fail.

➔ **Launch PXE OpROM [Disabled]**

Use the **Launch PXE OpROM** option to enable or disable boot option for legacy network devices.

➔ **Disabled**	**DEFAULT**	Ignore all PXE Option ROMs
➔ **Enabled**		Load PXE Option ROMs

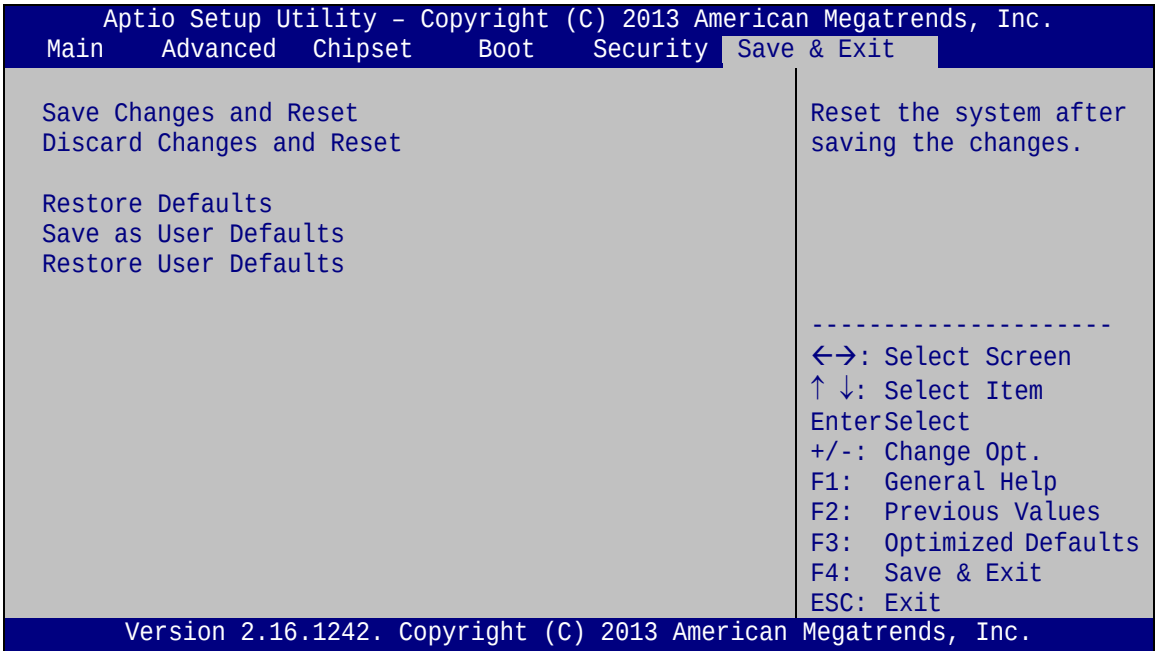
➔ **Option ROM Messages [Force BIOS]**

Use the **Option ROM Messages** option to set the Option ROM display mode.

➔ **Force BIOS**	**DEFAULT**	Sets display mode to force BIOS.
➔ **Keep Current**		Sets display mode to current.

4.7 Save & Exit

Use the **Save & Exit** menu (**BIOS Menu 20**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 20: Save & Exit

➔ **Save Changes and Reset**

Use the **Save Changes and Reset** option to save the changes made to the BIOS options and reset the system.

➔ **Discard Changes and Reset**

Use the **Discard Changes and Reset** option to exit the system without saving the changes made to the BIOS configuration setup program.

➔ **Restore Defaults**

Use the **Restore Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F3 key can be used for this operation.**

➔ **Save as User Defaults**

Use the **Save as User Defaults** option to save the changes done so far as user defaults.

➔ **Restore User Defaults**

Use the **Restore User Defaults** option to restore the user defaults to all the setup options.

Chapter

5

System Maintenance

5.1 System Maintenance Introduction

If the components of the AFL3-W10A/12A/W15A-BT fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions for the AFL3-W10A/12A/W15A-BT are described below.

5.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W10A/12A/W15A-BT may result in permanent damage to the AFL3-W10A/12A/W15A-BT and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W10A/12A/W15A-BT. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W10A/12A/W15A-BT is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: - Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding***: - Before handling the board touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: - When configuring the AFL3-W10A/12A/W15A-BT, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W10A/12A/W15A-BT.
- ***Only handle the edges of the PCB***: - When handling the PCB, hold the PCB by the edges.

5.3 Turn off the Power

WARNING:

Failing to turn off the system before opening it can cause permanent damage to the system and serious or fatal injury to the user.

Before any maintenance procedures are carried out on the system, make sure the system is turned off.

5.4 WLAN Card Replacement

The AFL3-W10A/12A/W15A-BT has one WLAN card slot. To replace the WLAN card, follow the instructions below.

Step 1: Follow all anti-static procedures. See **Section 5.2**.

Step 2: Turn off the power. See **Section 5.3**.

Step 3: Remove the plastic back cover. See **Section 3.4** above.

Step 4: Locate the WLAN card (**Figure 5-1**).

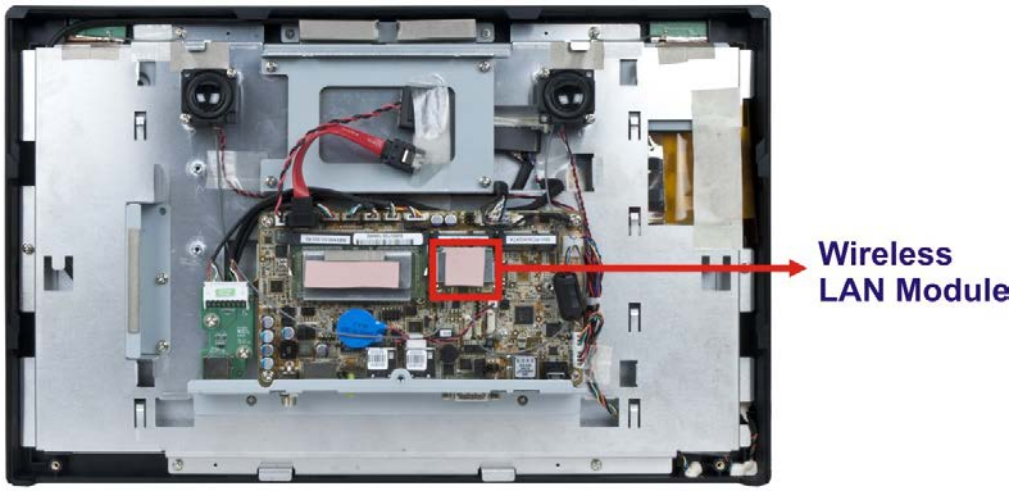


Figure 5-1: WLAN Card Location

Step 5: Disconnect the antenna cables on the WLAN module and remove the retention screw to release the WLAN card (**Figure 5-2**).

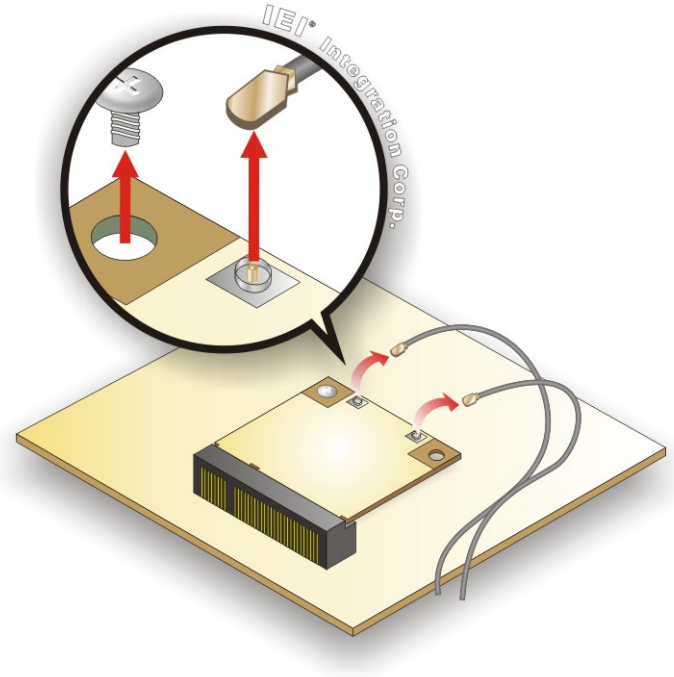


Figure 5-2: Releasing the WLAN Card

Step 6: Grasp the WLAN card by the edges and carefully pull it out of the socket (**Figure 5-3**).

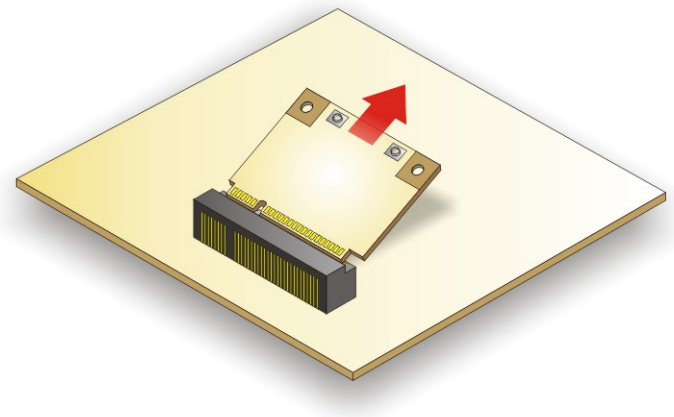


Figure 5-3: Removing the WLAN Card

Step 7: Install a new WLAN card by inserting the card into the slot at an angle.

Step 8: Push the WLAN card down and secure it with the previously removed retention screw.

Step 9: Connect the antenna cables.

Step 10: Replace the back cover and secure it using the previously removed retention screws.

5.5 Reinstalling the Cover

WARNING:

Failing to reinstall the cover may result in permanent damage to the system. Please make sure all coverings are properly installed.

When maintenance procedures are complete, please make sure the plastic back cover is replaced

Chapter

6

Interface Connectors

6.1 Peripheral Interface Connectors

The AFL3-W10A/12A/W15A-BT panel PC motherboard comes with a number of peripheral interface connectors and configuration jumpers. The connector locations are shown in **Figure 6-1** and **Figure 6-2**. The Pin 1 locations of the on-board connectors are also indicated in the diagram below. The connector pinouts for these connectors are listed in the following sections.

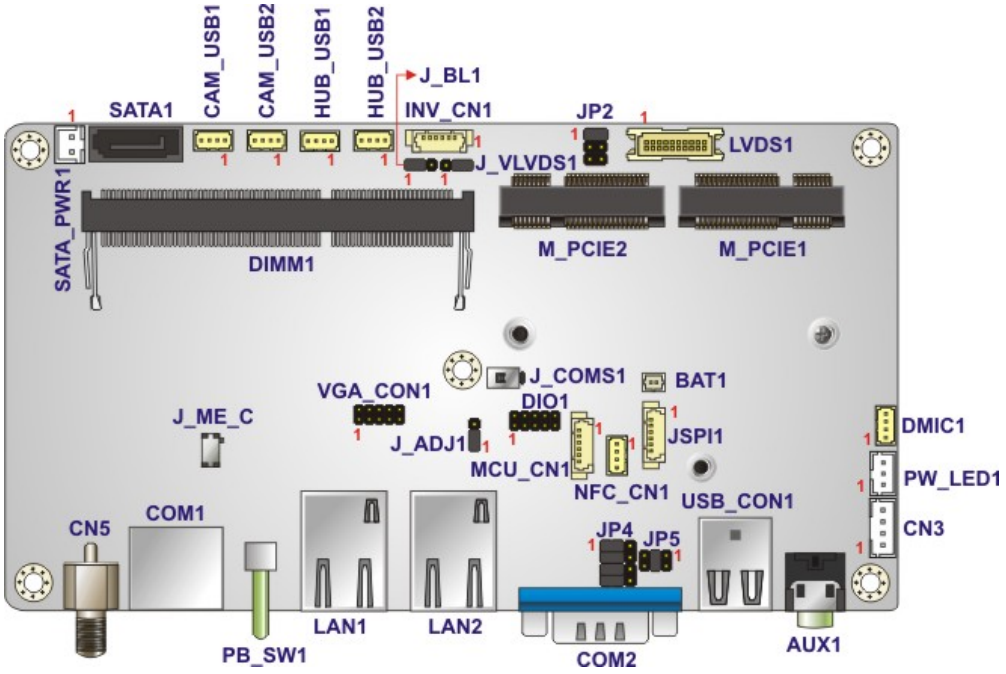


Figure 6-1: Main Board Layout Diagram (Front Side)

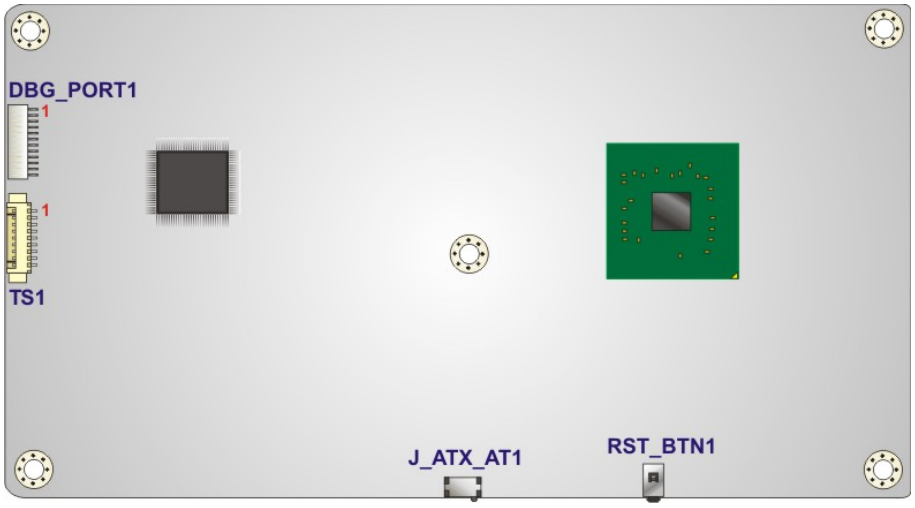


Figure 6-2: Main Board Layout Diagram (Solder Side)

6.2 Internal Peripheral Connectors

Internal peripheral connectors are found on the motherboard and are only accessible when the motherboard is outside of the chassis. The table below shows a list of the peripheral interface connectors on the AFL3MB2-BT. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Battery connector	2-pin wafer	BAT1
Digital I/O connector	10-pin header	DIO1
Inverter connector	6-pin wafer	INV_CN1
LVDS connector	20-pin crimp	LVDS1
MCU connector	6-pin wafer	MCU_CN1
Microphone connector	4-pin wafer	DMIC1
PCIe Mini card slot	Full-size PCIe Mini slot	M_PCIE1
PCIe Mini card slot	Half-size PCIe Mini slot	M_PCIE2
Power LED connector	3-pin wafer	PW_LED1
SATA connector	7-pin connector	SATA1
SATA power connector	2-pin wafer	SATA_PWR1
Speaker connector	4-pin wafer	CN3
SPI Flash connector	6-pin wafer	JSPI1
TTL serial connector (COM4)	4-pin wafer	NFC_CN1
USB 2.0 connector	4-pin wafer	HUB_USB1
USB 2.0 connector	4-pin wafer	HUB_USB2
USB connector	4-pin wafer	CAM_USB2
VGA connector	10-pin header	VGA_CON1
Webcam connector	4-pin wafer	CAM_USB1

Table 6-1: Peripheral Interface Connectors

6.2.1 Battery Connector (BAT1)

PIN NO.	DESCRIPTION
1	+3V
2	GND

Table 6-2: Battery Connector (BAT1) Pinouts

6.2.2 Digital I/O Connector (DIO1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC +5V
3	DGPO3	4	DGPO2
5	DGPO1	6	DGPO0
7	DGPI3	8	DGPI2
9	DGPI1	10	DGPI0

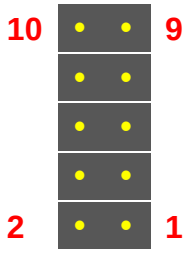


Table 6-3: Digital I/O Connector (DIO1) Pinouts

6.2.3 Inverter Connector (INV_CN1)

PIN NO.	DESCRIPTION
1	+12V
2	+12V
3	BLON
4	Brightness
5	GND
6	GND

Table 6-4: Inverter Connector (INV_CN1) Pinouts

6.2.4 LVDS Connector (LVDS1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	LVDSA0+	4	LVDSA0-
5	LVDSA1+	6	LVDSA1-
7	LVDSA2+	8	LVDSA2-
9	LVDSACLK+	10	LVDSACLK-
11	LVDSA3+	12	LVDSA3-
13	GND	14	GND
15	NC	16	NC
17	VCC	18	VCC
19	VCC	20	VCC

Table 6-5: LVDS Connector (LVDS1) Pinouts

6.2.5 MCU Connector (MCU_CN1)

PIN NO.	DESCRIPTION
1	MCLR
2	+5V
3	GND
4	ICSPCLK
5	ICSPDAT
6	NC

Table 6-6: MCU Connector (MCU_CN1) Pinouts

6.2.6 Microphone Connector (DMIC1)

PIN NO.	DESCRIPTION
1	DMIC_CLK
2	DMIC_DATA
3	+3.3V
4	GND

Table 6-7: Microphone Connector (DMIC1) Pinouts

6.2.7 PCIe Mini Connector, Full-Size (M_PCIE1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	WAKE#	2	VCC3
3	NC	4	GND
5	NC	6	VCC1.5
7	CLKREQ#	8	NC
9	GND	10	NC
11	REFCLK0-	12	NC
13	REFCLK0+	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	PERST#
23	PERn0	24	VCC3_AUX
25	PERp0	26	GND
27	GND	28	VCC1.5
29	GND	30	SMB_CLK
31	PETn0	32	SMB_DATA
33	PETp0	34	GND
35	GND	36	USB_DATA1-
37	GND	38	USB_DATA1+
39	VCC3_AUX	40	GND
41	VCC3_AUX	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	VCC1.5
49	NC	50	GND
51	Reserved	52	VCC3

Table 6-8: PCIe Mini Connector (M_PCIE1) Pinouts

6.2.8 PCIe Mini Connector, Half-Size (M_PCIE2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	WAKE#	2	VCC3
3	Reserved	4	GND
5	Reserved	6	VCC1.5
7	CLKREQ#	8	NC
9	GND	10	NC
11	REFCLK1-	12	NC
13	REFCLK1+	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	PERST#
23	PERn2	24	VCC3_AUX
25	PERp2	26	GND
27	GND	28	VCC1.5
29	GND	30	SMB_CLK
31	PETn2	32	SMB_DATA
33	PETp2	34	GND
35	GND	36	NC
37	GND	38	NC
39	VCC3_AUX	40	GND
41	VCC3_AUX	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	VCC1.5
49	NC	50	GND
51	Reserved	52	VCC3

Table 6-9: PCIe Mini Connector (M_PCIE2) Pinouts

6.2.9 Power LED Connector (PW_LED1)

PIN NO.	DESCRIPTION
1	PW_LED +5V
2	GND
3	SUS PW LED +5V

Table 6-10: Power LED Connector (PW_LED1) Pinouts

6.2.10 SATA Connector (SATA1)

PIN NO.	DESCRIPTION
1	GND
2	STXP_0
3	STXN_0
4	GND
5	SRXN_0
6	SRXP_0
7	GND

Table 6-11: SATA Connector (SATA1) Pinouts

6.2.11 SATA Power Connector (SATA_PWR1)

PIN NO.	DESCRIPTION
1	+5V
2	GND

Table 6-12: SATA Power Connector (SATA_PWR1) Pinouts

6.2.12 Speaker Connector (CN3)

PIN NO.	DESCRIPTION
1	AUD_OUTL+
2	AUD_OUTL-
3	AUD_OUTR-
4	AUD_OUTR+

Table 6-13: Speaker Connector (CN3) Pinouts

6.2.13 SPI Flash Connector (JSPI1)

PIN NO.	DESCRIPTION
1	+1.8V
2	SPI_CS
3	SPI_SO
4	SPI_CLK
5	SPI_SI
6	GND

Table 6-14: SPI Flash Connector (JSPI1) Pinouts

6.2.14 TTL Serial Connector, COM4 (NFC_CN1)

PIN NO.	DESCRIPTION
1	+5V
2	SIN4
3	SOUT4
4	GND

Table 6-15: TTL Serial Connector, COM4 (NFC_CN1) Pinouts

6.2.15 USB 2.0 Connector (HUB_USB1)

PIN NO.	DESCRIPTION
1	+5V
2	DATA4-
3	DATA4+
4	GND

Table 6-16: USB 2.0 Connector (HUB_USB1) Pinouts

6.2.16 USB 2.0 Connector (HUB_USB2)

PIN NO.	DESCRIPTION
1	+5V
2	DATA3-
3	DATA3+
4	GND

Table 6-17: USB 2.0 Connector (HUB_USB2) Pinouts

6.2.17 VGA Connector (VGA_CON1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	DDCDA
3	GREEN	4	DDCLK
5	BLUE	6	GND
7	HSYNC	8	GND
9	VSYNC	10	GND

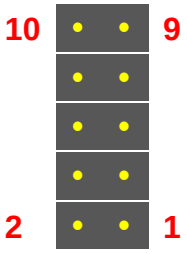


Table 6-18: VGA Connector (VGA_CON1) Pinouts

6.2.18 USB Connector (CAM_USB2)

PIN NO.	DESCRIPTION
1	+5V
2	DATA3-
3	DATA3+
4	GND

Table 6-19: USB Connector (CAM_USB2) Pinouts

6.2.19 Webcam Connector (CAM_USB1)

PIN NO.	DESCRIPTION
1	+5V
2	DATA2-
3	DATA2+
4	GND

Table 6-20: Webcam Connector (CAM_USB1) Pinouts

6.3 External Interface Panel Connectors

The table below lists the rear panel connectors on the AFL2MB-15A motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Ethernet connector	RJ-45	LAN1
Ethernet connector	RJ-45	LAN2
Power button	Push button	PB_SW1
Power connector	Power jack	CN5
RS-232 serial port	RJ-45	COM1
RS-232/422/485 serial port	D-sub 9	COM2
USB 3.0 connectors	USB 3.0 port	USB_CON1

Table 6-21: Rear Panel Connectors

6.3.1 Ethernet Connectors (LAN1 & LAN2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	10	MDI3-
2	MDI0-	11	+3.3Vsus
3	MDI1+	12	ACT-1
4	MDI1-	13	LINNK1000 +3.3sus
5	N/A	14	LINNK1000 +3.3sus
6	N/A	15	GND
7	MDI2+	16	GND
8	MDI2-	17	N/A
9	MDI3+	18	N/A

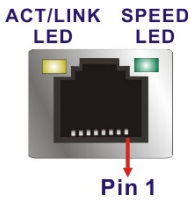


Table 6-22: Ethernet Connectors (LAN1 & LAN2) Pinouts

6.3.2 Power Connector (CN5)

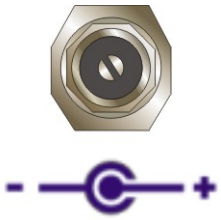


Table 6-23: Power Connector (CN5) Pinouts

6.3.3 RS-232 RJ-45 Serial Port (COM1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	5	NTX1
2	NDSR1	6	NCTS1
3	NRX1	7	NDTR1
4	NRTS1	8	NRI1

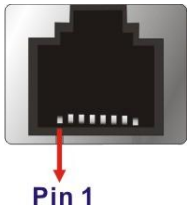


Table 6-24: RS-232 RJ-45 Serial Port (COM1) Pinouts

6.3.4 RS-232/422/485 DB-9 Serial Port (COM2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD2	6	NDSR2
2	NRX2	7	NRTS2
3	NTX2	8	NCTS2
4	NDTR2	9	NRI2
5	GND		

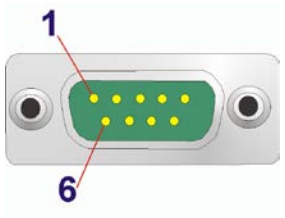


Table 6-25: RS-232/422/485 DB-9 Serial Port (COM2) Pinouts

6.3.5 USB 3.0 Connectors (USB_CON1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5Vsus	10	+5Vsus
2	DATA1-	11	DATA2-
3	DATA1+	12	DATA2+
4	GND	13	GND
5	SSRX1-	14	SSRX2-
6	SSRX1+	15	SSRX2+
7	GND	16	GND
8	SSTX1-	17	SSTX2-
9	SSTX1+	18	SSTX2+

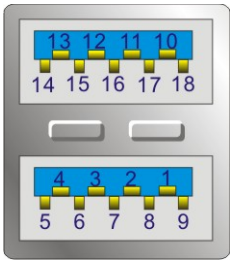


Table 6-26: USB 3.0 Connectors (USB_CON1) Pinouts

6.4 Preconfigured Jumper Settings

CAUTION:

The following jumpers are preconfigured for the AFL3-W10A/12A/W15A-BT. Users should not change these jumpers (**Table 6-27**). It is only for reference.

Jumper Name	Type	Label
Backlight voltage selection	3-pin header	J_BL1
Inverter power selection	6-pin header	JP2
LVDS voltage selection	3-pin header	J_VLVDS1
Panel PWM power selection	3-pin header	J_ADJ1
Serial port selection	12-pin header	JP4

Table 6-27: Preconfigured Jumpers

6.4.1 Backlight Voltage Selection Jumper (J_BL1)

Pin	Description
Short 1-2	+3.3 V (Default)
Short 2-3	+5 V

Table 6-28: Backlight Voltage Selection Jumper (J_BL1) Settings

6.4.2 Inverter Power Selection Jumper (JP2)

Pin	Description
Short 1-2	+12 V (Default)
Short 3-4	+5 V
Short 5-6	+3.3 V

Table 6-29: Inverter Power Selection Jumper (JP2) Settings

6.4.3 LVDS Panel Voltage Selection Jumper (J_VLVDS1)

Pin	Description
Short 1-2	+3.3 V
Short 2-3	+5 V (Default)

Table 6-30: LVDS Voltage Selection Jumper (J_VLVDS1) Settings

6.4.4 Panel PWM Power Selection Jumper (J_ADJ1)

Pin	Description
Short 1-2	+3.3V (Default)
Short 2-3	+5V

Table 6-31: Panel PWM Power Selection Jumper (J_ADJ1) Settings

Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY

CE

This equipment is in conformity with the following EU directives:

- EMC Directive (2014/30/EU)
- Low-Voltage Directive (2014/35/EU)
- RoHS II Directive (2011/65/EU, 2015/863/EU)

If the user modifies and/or install other devices in the equipment, the CE conformity declaration may no longer apply.

If this equipment has telecommunications functionality, it also complies with the requirements of the Radio Equipment Directive 2014/53/EU.

English IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Български [Bulgarian] IEI Integration Corp. декларира, че този оборудване е в съответствие със съществените изисквания и другите приложими правила на Директива 2014/53/EU.
Česky [Czech] IEI Integration Corp tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.
Dansk [Danish] IEI Integration Corp erklærer herved, at følgende udstyr overholder de væsentlige krav c øvrige relevante krav i direktiv 2014/53/EU.
Deutsch [German] IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/53/EU.
Eesti [Estonian] IEI Integration Corp deklareerib seadme seadme vastavust direktiivi 2014/53/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

Español [Spanish] IEI Integration Corp declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU.
Ελληνική [Greek] IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU.
Français [French] IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU.
Italiano [Italian] IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.
Latviski [Latvian] IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 2014/53/EU.
Lietuvių [Lithuanian] IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 2014/53/EU Direktyvos nuostatas.
Nederlands [Dutch] IEI Integration Corp dat het toestel toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.
Malti [Maltese] IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/EU.
Magyar [Hungarian] IEI Integration Corp nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 2014/53/EU irányelv egyéb elõírásainak.
Polski [Polish] IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostał□mi stosownymi postanowieniami Dyrektywy 2014/53/EU.
Português [Portuguese] IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 2014/□3/EU.

Româna [Romanian] IEI Integration Corp declară că acest echipament este in conformitate cu cerinţele esenţiale şi cu celelalte prevederi relevante ale Directivei 2014/53/EU.
Slovensko [Slovenian] IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Slovensky [Slovak] IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.
Suomi [Finnish] I❒ Integration Corp vakuuttaa täten että laitteet on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish] IEI Integration Corp förklarar att denna utrustningstyp står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.

FCC WARNING

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Federal Communication Commission Interference Statement

This equipment has been assembled with components that 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.

CHINA ROHS

The label on the product indicates the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Appendix

B

Safety Precautions

WARNING:

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the AFL3-W10A/12A/W15A-BT.

B.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

B.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the device is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the AFL3-W10A/12A/W15A-BT is being installed, moved or modified.
- ***To prevent the risk of electric shock, make sure power cord is unplugged from wall socket.*** To fully disengage the power to the unit, please disconnect the power cord from the AC outlet. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
- ***Do not apply voltage levels that exceed the specified voltage range***. Doing so may cause fire and/or an electrical shock. Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- ***Electric shocks can occur*** if the AFL3-W10A/12A/W15A-BT chassis is opened when it is running. To avoid risk of electric shock, this device must only be connected to a supply mains with protective earth.
- ***Do not drop or insert any objects*** into the ventilation openings of the AFL3-W10A/12A/W15A-BT.

- ***If considerable amounts of dust, water, or fluids enter the* device**, turn off the power supply immediately, unplug the power cord, and contact the AFL3-W10A/12A/W15A-BT vendor.
- **DO NOT**:
  - Drop the device against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature

B.1.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the installation of the AFL3-W10A/12A/W15A-BT may result in permanent damage to the AFL3-W10A/12A/W15A-BT and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W10A/12A/W15A-BT. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W10A/12A/W15A-BT is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding***: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component***: When handling the electrical component, hold the electrical component by its edges.

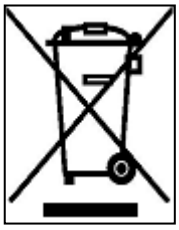
B.1.3 Product Disposal

CAUTION:

Risk of explosion if battery is replaced by an incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union–If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union–The device that produces less waste and is easier to recycle is classified as electronic device in terms of the European Directive 2012/19/EU (WEEE), and must not be disposed of as domestic garbage.



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

B.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the AFL3-W10A/12A/W15A-BT, please follow the guidelines below.

WARNING:

- For safety reasons, turn-off the power and unplug the panel PC before cleaning.
- If you dropped any material or liquid such as water onto the panel PC when cleaning, unplug the power cable immediately and contact your dealer or the nearest service center. Always make sure your hands are dry when unplugging the power cable.

B.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the AFL3-W10A/12A/W15A-BT, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the device does not require cleaning. Keep fluids away from the device interior.
- Be cautious of all small removable components when vacuuming the device.
- Never drop any objects or liquids through the openings of the device.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the device.
- Avoid eating, drinking and smoking within vicinity of the device.

B.2.2 Cleaning Tools

Some components in the AFL3-W10A/12A/W15A-BT may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the AFL3-W10A/12A/W15A-BT.

- ***Cloth***– Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the device.
- ***Water or rubbing alcohol***–A cloth moistened with water or rubbing alcohol can be used to clean the device.
- ***Using solvents***–The use of solvents is not recommended when cleaning the device as they may damage the plastic parts.
- ***Vacuum cleaner***–Using a vacuum specifically designed for computers is one of the best methods of cleaning the device. Dust and dirt can restrict the airflow in the device and cause its circuitry to corrode.
- ***Cotton swabs***–Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- **Foam swabs**–Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

C

BIOS Menu Options

Appendix

D

Watchdog Timer

NOTE:

The following discussion applies to DOS. Contact IEI support or visit the IEI website for drivers for other operating systems.

The Watchdog Timer is a hardware-based timer that attempts to restart the system when it stops working. The system may stop working because of external EMI or software bugs. The Watchdog Timer ensures that standalone systems like ATMs will automatically attempt to restart in the case of system problems.

A BIOS function call (INT 15H) is used to control the Watchdog Timer.

INT 15H:

AH – 6FH Sub-function:	
AL – 2:	Sets the Watchdog Timer's period.
BL:	Time-out value (Its unit-second is dependent on the item "Watchdog Timer unit select" in CMOS setup).

Table D-1: AH-6FH Sub-function

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. When the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.

NOTE:

The Watchdog Timer is activated through software. The software application that activates the Watchdog Timer must also deactivate it when closed. If the Watchdog Timer is not deactivated, the system will automatically restart after the Timer has finished its countdown.

EXAMPLE PROGRAM:

```
; INITIAL TIMER PERIOD COUNTER

;
W_LOOP:
;

        MOV     AX, 6F02H       ;setting the time-out value
        MOV     BL, 30          ;time-out value is 48 seconds
        INT     15H

;
; ADD THE APPLICATION PROGRAM HERE
;

        CMP     EXIT_AP, 1      ;is the application over?
        JNE     W_LOOP          ;No, restart the application

        MOV     AX, 6F02H       ;disable Watchdog Timer
        MOV     BL, 0           ;
        INT     15H

;
; EXIT ;
```

Appendix

E

Hazardous Materials Disclosure

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated "Environmentally Friendly Use Period" (EFUP). This is an estimate of the number of years that these substances would "not leak out or undergo abrupt change." This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006 (now replaced by GB/T 26572-2011).

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006 (now replaced by GB/T 26572-2011).

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签，此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组装	O	O	O	O	O	O
电池	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T 11363-2006 (现由 GB/T 26572-2011 取代) 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 (现由 GB/T 26572-2011 取代) 标准规定的限量要求。