



MODEL:
AFL3-W07A-BT-N1

**Flat Bezel Panel PC with Intel® Celeron® N2807 Dual-Core CPU,
Touchscreen, Dual USB 3.0, Dual GbE LAN, Dual RS-232,
HD Audio, Wi-Fi 802.11a/b/g/n/ac, IP 65 Rating and RoHS**

User Manual

Revision

Date	Version	Changes
July 23, 2015	1.03	Updated Table 6-13: Webcam Connector (CAM_USB1) Pinouts
June 30, 2015	1.02	Updated the following sections: Chapter 2: Unpacking Section 3.7.2: Panel Mounting Section 3.7.3: Cabinet and Rack Installation
November 11, 2014	1.01	Updated Wi-Fi specification to 802.11a/b/g/n/ac
July 22, 2014	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.

Table of Contents

1 INTRODUCTION.....	1
1.1 OVERVIEW.....	2
1.2 FEATURES.....	3
1.3 FRONT PANEL	3
1.4 REAR PANEL.....	4
1.5 BOTTOM PANEL	4
1.6 SYSTEM SPECIFICATIONS.....	6
1.7 DIMENSIONS.....	8
2 UNPACKING	9
2.1 UNPACKING.....	10
2.2 PACKING LIST.....	11
2.3 OPTIONAL ITEMS.....	12
3 INSTALLATION	14
3.1 ANTI-STATIC PRECAUTIONS	15
3.2 INSTALLATION PRECAUTIONS	15
3.3 INSTALLATION AND CONFIGURATION STEPS	16
3.4 mSATA MODULE INSTALLATION	16
3.5 AT/ATX MODE SELECTION.....	19
3.5.1 AT Power Mode.....	19
3.5.2 ATX Power Mode	19
3.6 EXTERNAL PERIPHERAL DEVICE CONNECTION	20
3.6.1 LAN Connection.....	20
3.6.2 Serial Device Connection	21
3.6.3 USB Device Connection.....	21
3.7 MOUNTING THE SYSTEM	22
3.7.1 Wall Mounting.....	23
3.7.2 Panel Mounting.....	26
3.7.3 Cabinet and Rack Installation	28
3.7.4 Arm Mounting	32

3.7.5 Stand Mounting	34
3.7.6 V-Stand Mounting.....	35
3.8 POWERING ON THE SYSTEM	37
3.9 RESET THE SYSTEM	38
3.10 CLEAR CMOS.....	38
3.11 SOFTWARE INSTALLATION	39
3.11.1 Keypad AP	40
4 BIOS SETUP	41
4.1 INTRODUCTION.....	42
4.1.1 Starting Setup.....	42
4.1.2 Using Setup	42
4.1.3 Getting Help.....	43
4.1.4 Unable to Reboot after Configuration Changes	43
4.1.5 BIOS Menu Bar.....	43
4.2 MAIN.....	44
4.3 ADVANCED	46
4.3.1 ACPI Settings	47
4.3.2 F81866 Super IO Configuration	48
4.3.2.1 Serial Port n Configuration	48
4.3.2.1.1 Serial Port 1 Configuration	49
4.3.2.1.2 Serial Port 2 Configuration	49
4.3.3 F81866 H/W Monitor.....	51
4.3.4 RTC Wake Settings	52
4.3.5 Serial Port Console Redirection	53
4.3.6 CPU Configuration.....	54
4.3.7 IDE Configuration	56
4.3.8 USB Configuration.....	57
4.4 CHIPSET	58
4.4.1 North Bridge Configuration.....	59
4.4.1.1 Internal IGD Configuration.....	59
4.4.2 South Bridge Configuration.....	61
4.4.2.1 PCI Express Configuration	63
4.5 SECURITY	64
4.6 BOOT.....	65

AFL3-W07A-BT-N1 Panel PC

4.7 SAVE & EXIT	67
5 SYSTEM MAINTENANCE	69
5.1 SYSTEM MAINTENANCE INTRODUCTION	70
5.2 ANTI-STATIC PRECAUTIONS	70
5.3 TURN OFF THE POWER	71
5.4 REMOVING THE BACK COVER	71
5.5 WLAN CARD REPLACEMENT	72
5.6 REINSTALLING THE COVER.....	74
6 INTERFACE CONNECTORS	75
6.1 PERIPHERAL INTERFACE CONNECTORS.....	76
6.2 INTERNAL PERIPHERAL CONNECTORS	77
6.2.1 Battery Connector (CN2).....	77
6.2.2 LVDS Connector (LVDS2)	78
6.2.3 MCU Connector (JSPI2).....	78
6.2.4 PCIe Mini Connector, Full-Size (M_PCIE1).....	79
6.2.5 PCIe Mini Connector, Half-Size (M_PCIE2).....	80
6.2.6 Power LED Connector (PW_LED1).....	81
6.2.7 Speaker Connector (CN3).....	81
6.2.8 SPI Flash Connector (JSPI1).....	81
6.2.9 Touch Panel Connector (TOUCH_USB1)	81
6.2.10 USB 2.0 Connector (HUB_USB1)	82
6.2.11 VGA Connector (VGA_CON1).....	82
6.2.12 Webcam Connector (CAM_USB1).....	82
6.3 EXTERNAL INTERFACE PANEL CONNECTORS	83
6.3.1 Ethernet Connectors (LAN1 & LAN2).....	83
6.3.2 Power Connector (CN5)	84
6.3.3 RS-232 DB-9 Serial Ports (COM1)	84
6.3.4 RS-232 DB-9 Serial Ports (COM2)	84
6.3.5 USB 3.0 Connectors (USB_CON1).....	85
A REGULATORY COMPLIANCE	86
B SAFETY PRECAUTIONS	91
B.1 SAFETY PRECAUTIONS.....	92

<i>B.1.1 General Safety Precautions</i>	92
<i>B.1.2 Anti-static Precautions</i>	93
<i>B.1.3 Product Disposal</i>	94
B.2 MAINTENANCE AND CLEANING PRECAUTIONS	94
<i>B.2.1 Maintenance and Cleaning</i>	94
<i>B.2.2 Cleaning Tools</i>	95
C BIOS MENU OPTIONS	96
D WATCHDOG TIMER	99
E HAZARDOUS MATERIALS DISCLOSURE	102
<i>E.1 HAZARDOUS MATERIAL DISCLOSURE TABLE FOR IPB PRODUCTS CERTIFIED AS ROHS COMPLIANT UNDER 2002/95/EC WITHOUT MERCURY</i>	103

List of Figures

Figure 1-1: AFL3-W07A-BT-N1 Flat Bezel Panel PC.....	2
Figure 1-2: Front View.....	3
Figure 1-3: Rear View	4
Figure 1-4: Bottom Panel	5
Figure 1-5: AFL3-W07A-BT-N1 Dimensions (mm).....	8
Figure 3-1: Back Cover Retention Screws	17
Figure 3-2: Open the Back Cover	17
Figure 3-3: mSATA Module Slot Location.....	18
Figure 3-4: mSATA Module Installation.....	18
Figure 3-5: AT/ATX Switch Location.....	19
Figure 3-6: LAN Connection	20
Figure 3-7: DB-9 Serial Port Connector.....	21
Figure 3-8: USB Device Connection	22
Figure 3-9: Wall-mounting Bracket	23
Figure 3-10: Chassis Support Screws.....	25
Figure 3-11: Secure the Panel PC	25
Figure 3-12: Cutout Dimensions	26
Figure 3-13: Panel Mounting Kit Installation	27
Figure 3-14: Securing Panel Mounting Brackets.....	28
Figure 3-15: Rack/Cabinet Bracket Installation	29
Figure 3-16: Rack Mounting Kit Installation	30
Figure 3-17: Securing Rack Mounting Brackets.....	31
Figure 3-18: Install into a Rack/Cabinet	31
Figure 3-19: Arm Mounting Retention Screw Holes.....	33
Figure 3-20: Arm Mounting	33
Figure 3-21: Stand Mounting (Stand-A/Bxx)	34
Figure 3-22: Drill Pilot Holes for V-Stand	35
Figure 3-23: Secure V-Stand to System	36
Figure 3-24: Secure V-Stand to Mounting Area.....	36
Figure 3-25: Powering On the System.....	37
Figure 3-26: Reset Button Location.....	38



Figure 3-27: Clear CMOS Button Location.....38

Figure 3-28: Keypad AP40

Figure 5-1: Back Cover Retention Screws72

Figure 5-2: WLAN Card Location73

Figure 5-3: Releasing the WLAN Card.....73

Figure 5-4: Removing the WLAN Card74

Figure 6-1: Main Board Layout Diagram (Front Side).....76

Figure 6-2: Main Board Layout Diagram (Solder Side).....76



List of Tables

Table 1-1: System Specifications.....	7
Table 6-1: BIOS Navigation Keys	43
Table 6-1: Peripheral Interface Connectors	77
Table 6-2: Battery Connector (CN2) Pinouts	77
Table 6-3: LVDS Connector (LVDS2) Pinouts	78
Table 6-4: MCU Connector (JSPI2) Pinouts	79
Table 6-5: PCIe Mini Connector (M_PCIE1) Pinouts	79
Table 6-6: PCIe Mini Connector (M_PCIE2) Pinouts	80
Table 6-7: Power LED Connector (PW_LED1) Pinouts	81
Table 6-8: Speaker Connector (CN3) Pinouts	81
Table 6-9: SPI Flash Connector (JSPI1) Pinouts	81
Table 6-10: Touch Panel Connector (TOUCH_USB1) Pinouts	82
Table 6-11: USB 2.0 Connector (HUB_USB1) Pinouts	82
Table 6-12: VGA Connector (VGA_CON1) Pinouts	82
Table 6-13: Webcam Connector (CAM_USB1) Pinouts	83
Table 6-14: Rear Panel Connectors	83
Table 6-15: Ethernet Connectors (LAN1 & LAN2) Pinouts	83
Table 6-16: Power Connector (CN5) Pinouts	84
Table 6-17: RS-232 DB-9 Serial Ports (COM1) Pinouts	84
Table 6-18: RS-232 DB-9 Serial Ports (COM2) Pinouts	84
Table 6-19: USB 3.0 Connectors (USB_CON1) Pinouts.....	85



List of BIOS Menus

BIOS Menu 1: Main	44
BIOS Menu 2: Advanced	46
BIOS Menu 3: ACPI Settings	47
BIOS Menu 4: F81866 Super IO Configuration	48
BIOS Menu 5: Serial Port n Configuration Menu	48
BIOS Menu 6: F81866 H/W Monitor	51
BIOS Menu 7: RTC Wake Settings	52
BIOS Menu 8: Serial Port Console Redirection	53
BIOS Menu 9: CPU Configuration	54
BIOS Menu 10: IDE Configuration	56
BIOS Menu 11: USB Configuration	57
BIOS Menu 12: Chipset	58
BIOS Menu 13: North Bridge Configuration	59
BIOS Menu 14: Internal IGD Configuration	59
BIOS Menu 15: South Bridge Configuration	61
BIOS Menu 16: PCI Express Configuration	63
BIOS Menu 17: Security	64
BIOS Menu 18: Boot	65
BIOS Menu 19: Save & Exit.....	67

Chapter

1

Introduction

1.1 Overview



Figure 1-1: AFL3-W07A-BT-N1 Flat Bezel Panel PC

The AFL3-W07A-BT-N1 is a dual-core Intel® Celeron® processor N2807 powered flat bezel panel PC with a rich variety of functions and peripherals. The compact design is ideal for easy and simplified integration into kiosk and point-of-sales (POS) applications.

The Intel® Celeron® N2807 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 on-board memory ensuring smooth data throughputs with reduced bottlenecks and fast system access.

Two serial ports and two external USB 3.0 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.

AFL3-W07A-BT-N1 Panel PC

1.2 Features

The AFL3-W07A-BT-N1 features are listed below:

- 7" flat-bezel LCD with LED backlight
- Intel® Celeron® processor N2807 (1.58 GHz, dual-core)
- On-board 2 GB DDR3L memory
- Projected capacitive type touchscreen
- Wi-Fi 802.11a/b/g/n/ac 1T1R high speed wireless
- One 2 W speaker
- Optional RFID reader
- IP 65 compliant front panel

1.3 Front Panel

The front side of the AFL3-W07A-BT-N1 is a flat-bezel panel with a 7" TFT LCD screen surrounded by a PC/ABS plastic frame (**Figure 1-2**).

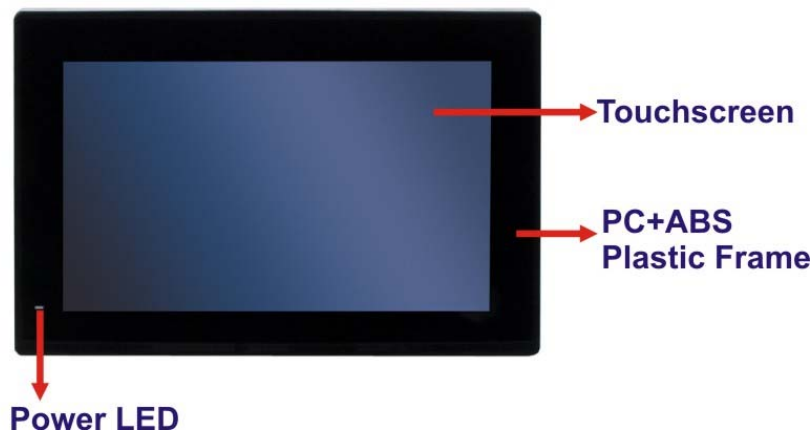


Figure 1-2: Front View

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.

1.4 Rear Panel

The rear panel provides access to retention screw holes that support VESA mounting. See **Figure 1-5**.

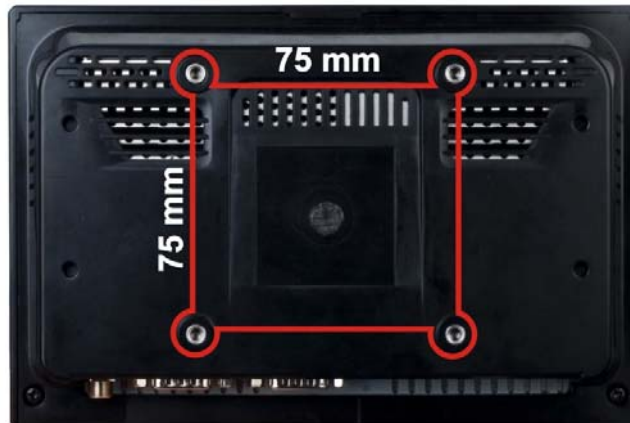


Figure 1-3: Rear View

1.5 Bottom Panel

The bottom panel of the AFL3-W07A-BT-N1 has the following connectors and switches (**Figure 1-6**):

- 1 x 9 V ~ 30 V DC input power jack
- 2 x RS-232 DB-9 connector
- 2 x GbE RJ-45 connector
- 2 x USB 3.0 connector
- 1 x AT/ATX switch
- 1 x Power button
- 1 x Reset button

AFL3-W07A-BT-N1 Panel PC

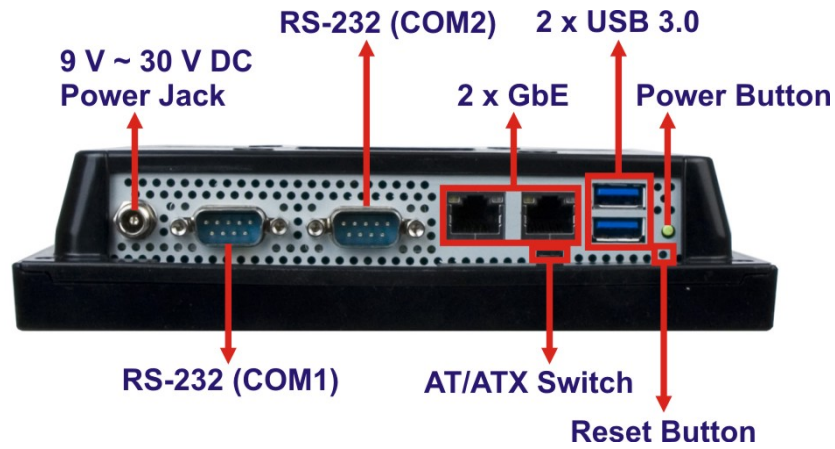


Figure 1-4: Bottom Panel



1.6 System Specifications

The technical specifications for the AFL3-W07A-BT-N1 systems are listed in **Table 1-4**.

Specification	AFL3-W07A-BT-N1
LCD Size	7" (16:9)
Max. Resolution	1024 (W) x 600 (H)
Brightness (cd/m2)	500
Contrast Ratio	700:1
LCD Color	16.2M
Pixel Pitch (H x V) (mm)	0.0635 (H) x 0.1905 (V)
Viewing Angle (H-V)	150° / 145°
Backlight	LED backlight (MTBF: 20,000 hrs)
Touchscreen	Projected capacitive type with USB interface (Touch controller: EETI EXC7200)
CPU (SoC)	Intel® Celeron® processor N2807 (1.58 GHz, dual-core)
Ethernet	Two Realtek RTL8111E PCIe GbE controllers support ASF2.0
Memory	On-board 1333 MHz 2 GB/4 GB DDR3L memory
Storage	One full-size PCIe Mini card slot for mSATA module installation
Audio	Realtek ALC892 HD Audio codec
Speaker	One 2 W stereo speaker (left channel output only)
Wireless	One 802.11a/b/g/n/ac 1T1R wireless LAN module (half-size PCIe Mini card)
RFID Reader	MIFARE 13.56 MHz card reader (optional)
OSD Function	Controlled by OSD software



AFL3-W07A-BT-N1 Panel PC

Construction Material	PC+ABS plastic front frame
Mounting	VESA 75 mm x 75 mm (panel, wall, rack, stand or arm mounting)
Front Panel Color	Black
Net Weight	700 g
Dimensions (W x H x D)	191 mm x 127 mm x 43 mm
Operating Temperature	-10°C ~ 50°C
Storage Temperature	-20°C ~ 60°C
Humidity	10% ~ 95% (non-condensing)
IP Level	IP 65 compliant front panel
Power Supply	36 W power adapter
	Input: 90 V AC ~ 264 V AC @ 50 Hz/ 60 Hz
	Output: 12 V DC
Power Requirement	9 V ~ 30 V DC
Power Consumption	12V @2.17 A
Safety/EMC	CE, FCC
I/O Ports and Switches	2 x RS-232 (DB-9 connector)
	2 x GbE LAN (RJ-45 connector)
	2 x USB 3.0 connectors
	1 x Power button
	1 x AT/ATX switch
	1 x Reset button
	1 x 9 V ~ 30 V DC input jack

Table 1-1: System Specifications

1.7 Dimensions

The AFL3-W07A-BT-N1 dimensions are shown below.

- **Width:** 190.9 mm
- **Height:** 127.3 mm
- **Depth:** 43.4 mm

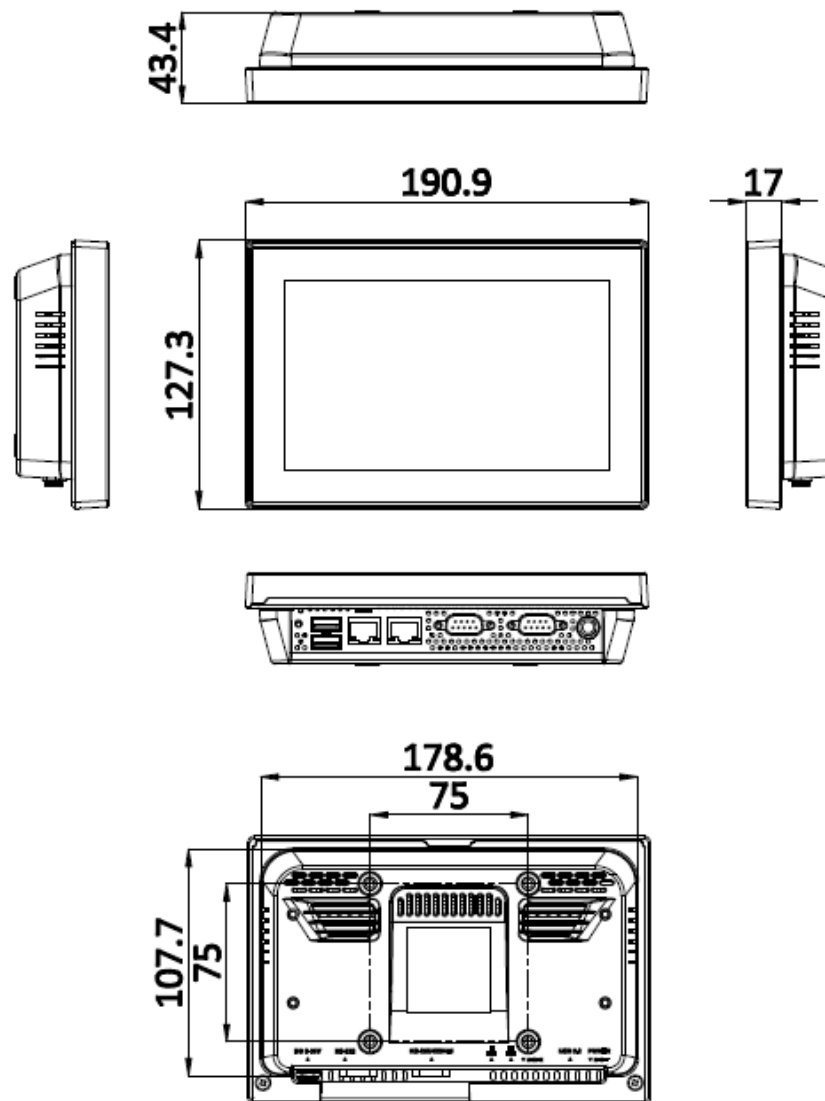


Figure 1-5: AFL3-W07A-BT-N1 Dimensions (mm)

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.

AFL3-W07A-BT-N1 Panel PC

2.2 Packing List

The AFL3-W07A-BT-N1 flat bezel panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL3-W07A-BT-N1 panel PC	
1	Power adapter (36 W) (P/N: 63040-010036-121-RS)	
1	Power cord (P/N: 32702-000400-200-RS)	
4	Screws for VESA mounting	
2	Screws for PCIe Mini card installation	
1	Utility CD	
1	One Key Recovery CD	

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)	
Panel mounting kit (P/N: AFL3PK-W07A-R10)	
Rack mount kit (P/N: AFL3RK-W07A-R10)	
Arm (P/N: ARM-11-RS)	
Arm (P/N: ARM-31-RS)	
Stand for VESA 75 (P/N: STAND-B08)	

AFL3-W07A-BT-N1 Panel PC

Item and Part Number	Image
Stand (P/N: STAND-100-RS)	
LCD monitor stand with adjustable hinge (P/N: VSTAND-A07-R11)	

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

Chapter

3

Installation

AFL3-W07A-BT-N1 Panel PC

3.1 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W07A-BT-N1 may result in permanent damage to the AFL3-W07A-BT-N1 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W07A-BT-N1. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W07A-BT-N1 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-W07A-BT-N1, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W07A-BT-N1.
- ***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.

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 mSATA Module Installation



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).

To install an mSATA module into the AFL3-W07A-BT-N1, please follow the steps below:

Step 1: Remove two (2) retention screws from the back cover (**Figure 3-1**).

AFL3-W07A-BT-N1 Panel PC



Figure 3-1: Back Cover Retention Screws

Step 2: Remove the back cover from the device. See **Figure 3-2**.



Figure 3-2: Open the Back Cover

Step 3: 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 3-3**).

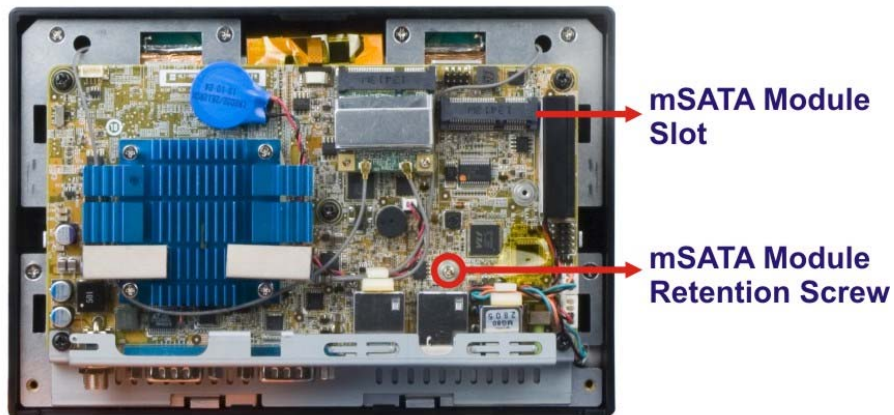


Figure 3-3: mSATA Module Slot Location

- Step 4:** 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 20°.
- Step 5:** 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 3-4**).

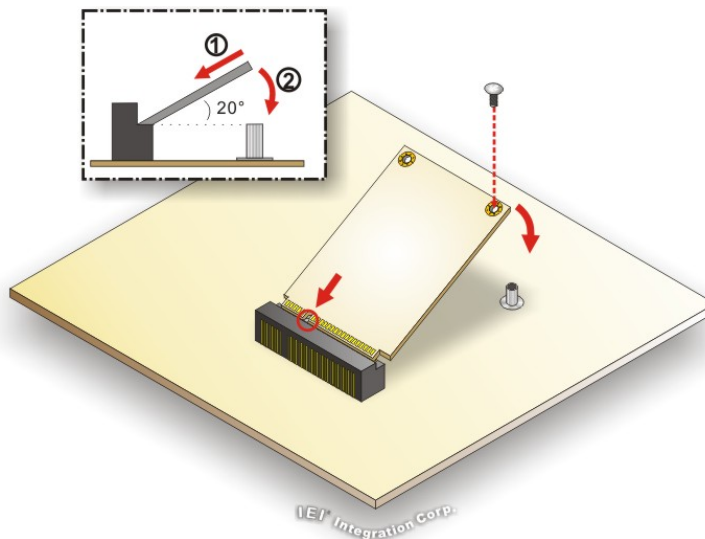


Figure 3-4: mSATA Module Installation

- Step 6:** Replace the back cover and secure it using two (2) retention screws.

AFL3-W07A-BT-N1 Panel PC

3.5 AT/ATX Mode Selection

AT or ATX power mode can be used on the AFL3-W07A-BT-N1. The selection is made through an AT/ATX switch located on the bottom panel (**Figure 3-5**).



Figure 3-5: AT/ATX Switch Location

3.5.1 AT Power Mode

With the AT mode selected, the power is controlled by a central power unit rather than a power switch. The AFL3-W07A-BT-N1 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

3.5.2 ATX Power Mode

With the ATX mode selected, the AFL3-W07A-BT-N1 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

3.6 External Peripheral Device Connection

The following external peripheral devices can be connected to the external peripheral interface connectors.

- RJ-45 Ethernet cable connector
- Serial port devices
- USB devices

To install these devices, connect the corresponding cable connector from the actual device to the corresponding AFL3-W07A-BT-N1 external peripheral interface connector making sure the pins are properly aligned.

3.6.1 LAN Connection

The RJ-45 connector enables connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

Step 1: **Locate the RJ-45 connector.** The location of the LAN connector is shown in Chapter 1.

Step 2: **Align the connectors.** Align the RJ-45 connector on the LAN cable with the RJ-45 connectors on the AFL3-W07A-BT-N1. See **Figure 3-6**.

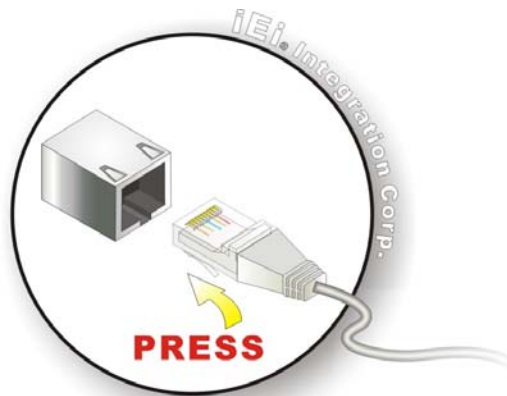


Figure 3-6: LAN Connection

Step 3: **Insert the LAN cable RJ-45 connector.** Once aligned, gently insert the LAN cable RJ-45 connector into the external interface.

AFL3-W07A-BT-N1 Panel PC

3.6.2 Serial Device Connection

Follow the steps below to connect a serial device to the DB-9 connector of the AFL3-W07A-BT-N1 panel PC.

Step 1: **Locate the DB-9 connector.** The location of the DB-9 connectors is shown in Chapter 1.

Step 2: **Insert the serial connector.** Insert the DB-9 connector of a serial device into the DB-9 connector on the bottom panel. See **Figure 3-7**.

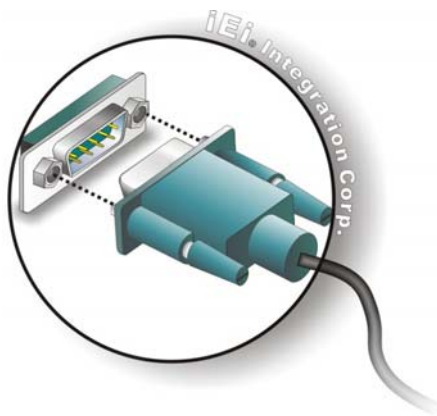


Figure 3-7: DB-9 Serial Port Connector

Step 3: **Secure the connector.** Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

3.6.3 USB Device Connection



NOTE:

User must install the USB 3.0 driver before connecting a USB device to the system or else the system may not recognize the connected device.

There are two USB 3.0 connectors on the AFL3-W07A-BT-N1. To connect a USB device, please follow the instructions below.

Step 1: **Locate the USB connectors.** The locations of the USB connectors are shown in **Chapter 1**.

Step 2: **Align the connectors.** Align the USB device connector with one of the connectors on the AFL3-W07A-BT-N1. See **Figure 3-8**.

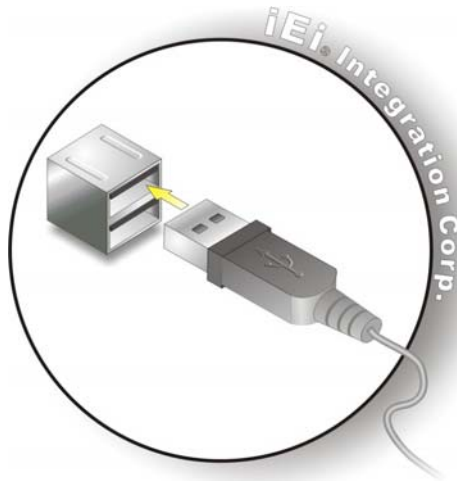


Figure 3-8: USB Device Connection

Step 3: **Insert the device connector.** Once aligned, gently insert the USB device connector into the onboard connector.

3.7 Mounting the System

The methods of mounting the AFL3-W07A-BT-N1 are listed below.

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

The mounting methods are described below.

AFL3-W07A-BT-N1 Panel PC

3.7.1 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 3-9**).

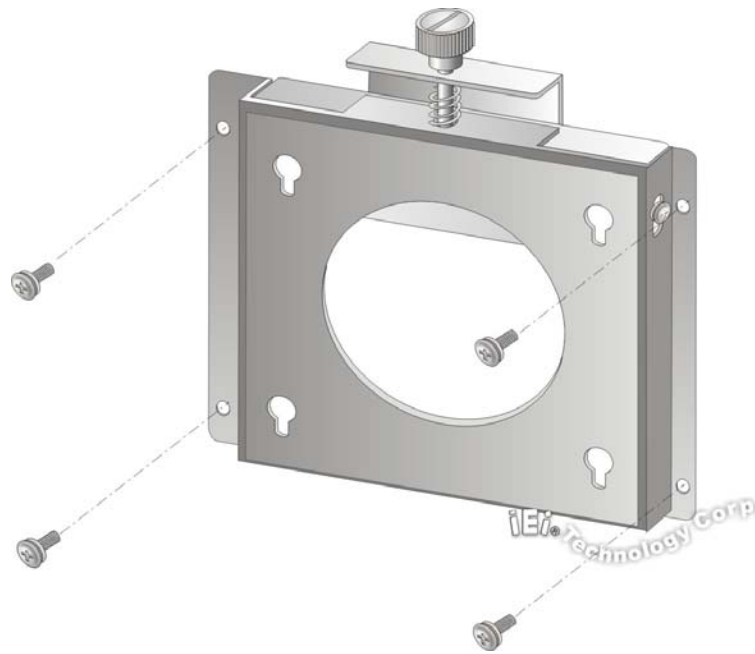
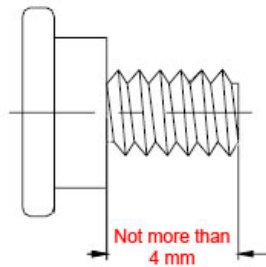


Figure 3-9: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mount kit into the four screw holes on the rear panel of the flat bezel panel PC and tighten until the screw shank is secured against the rear panel (**Figure 3-10**).

**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 3-10**). 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.

AFL3-W07A-BT-N1 Panel PC

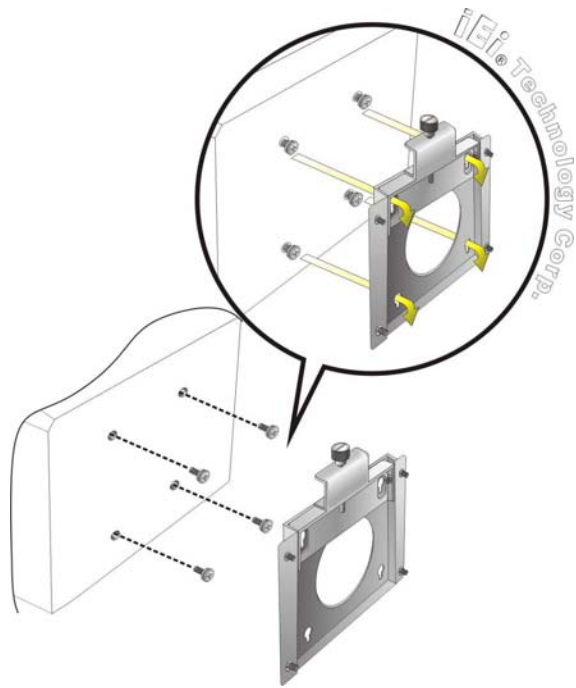


Figure 3-10: Chassis Support Screws

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket. (Figure 3-11).

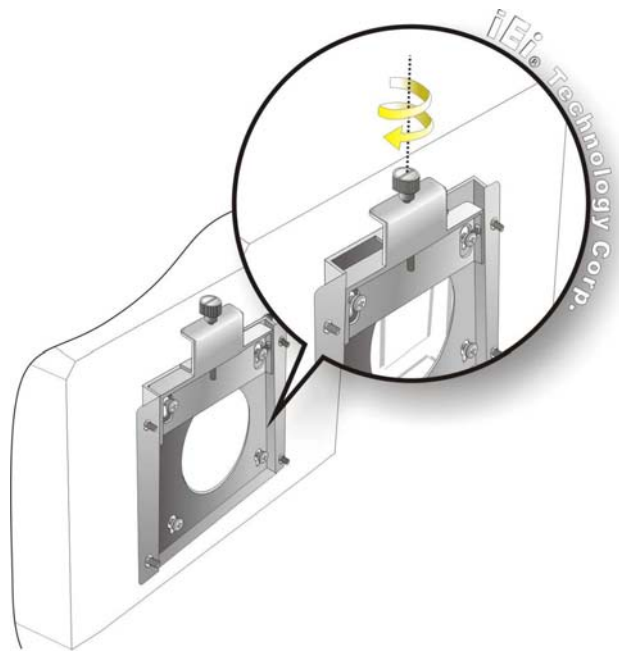


Figure 3-11: Secure the Panel PC

3.7.2 Panel Mounting

To mount the AFL3-W07A-BT-N1 flat bezel panel PC into a panel, please follow the steps below.

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

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

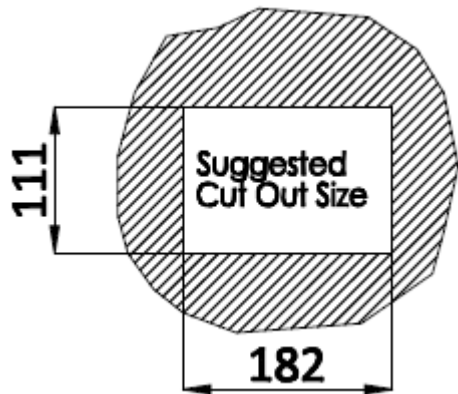


Figure 3-12: Cutout Dimensions

Step 3: Slide the flat bezel 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 3-13**.

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.

AFL3-W07A-BT-N1 Panel PC

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

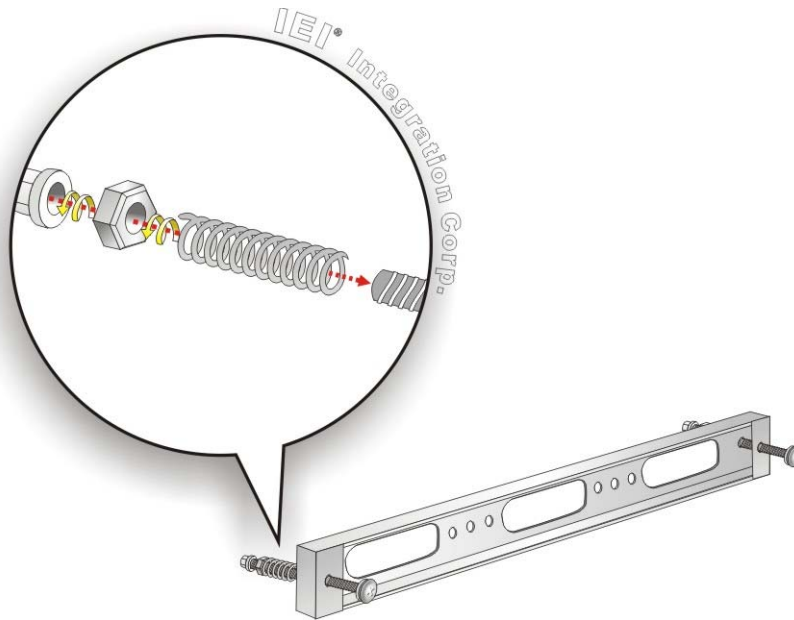


Figure 3-13: Panel Mounting Kit Installation

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 3-14).

**NOTE:**

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

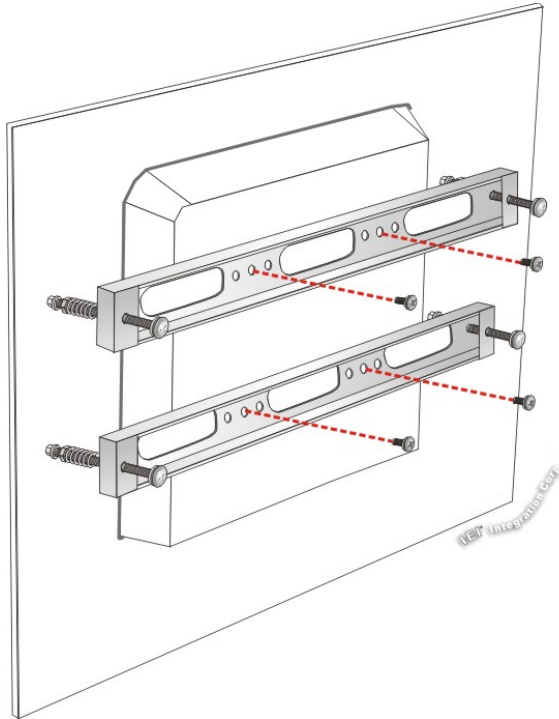


Figure 3-14: Securing Panel Mounting Brackets

3.7.3 Cabinet and Rack Installation

The AFL3-W07A-BT-N1 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-W07A-BT-N1 flat bezel panel PC and the rack/cabinet into which the AFL3-W07A-BT-N1 is installed.

- Step 1:** Slide the rear chassis of the AFL3-W07A-BT-N1 flat bezel panel PC through the rack/cabinet bracket until the frame is flush against the front of the bracket (Figure 3-15).

AFL3-W07A-BT-N1 Panel PC

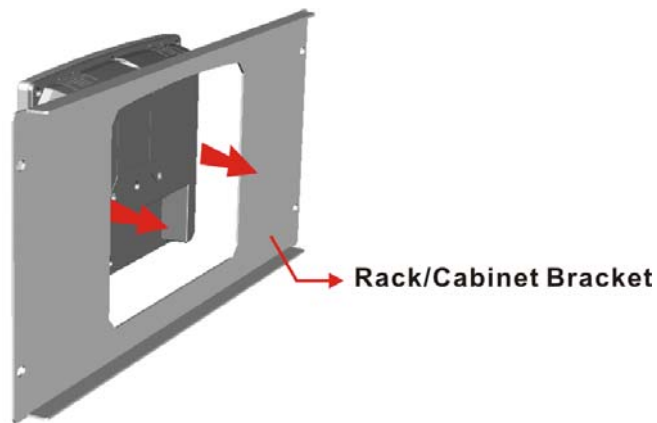


Figure 3-15: Rack/Cabinet Bracket Installation

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 3-16**.

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.

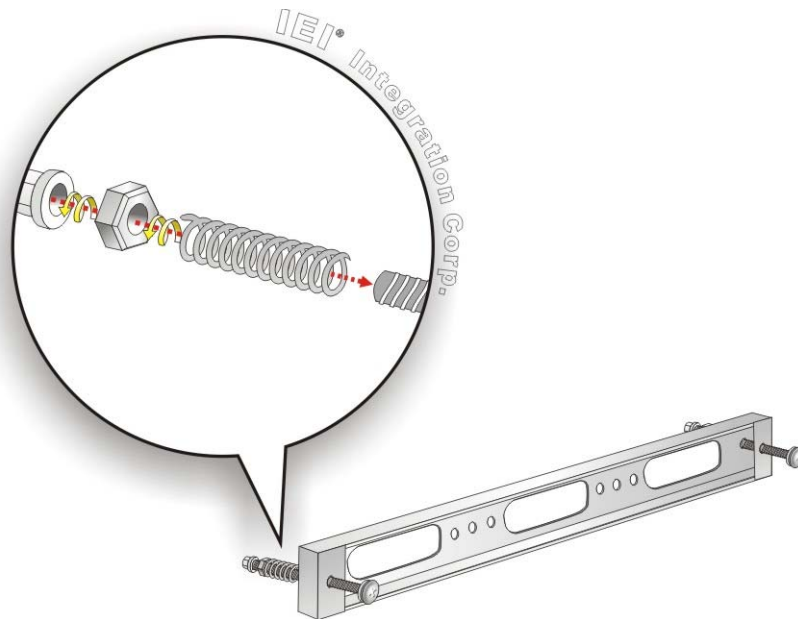


Figure 3-16: Rack Mounting Kit Installation

- 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 3-17).



NOTE:

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

AFL3-W07A-BT-N1 Panel PC

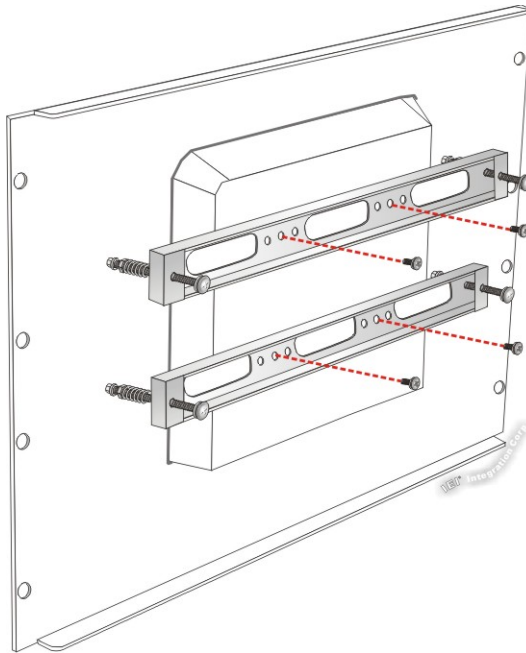


Figure 3-17: Securing Rack Mounting Brackets

Step 6: Slide the panel PC with the attached rack/cabinet bracket into a rack or cabinet (Figure 3-18).

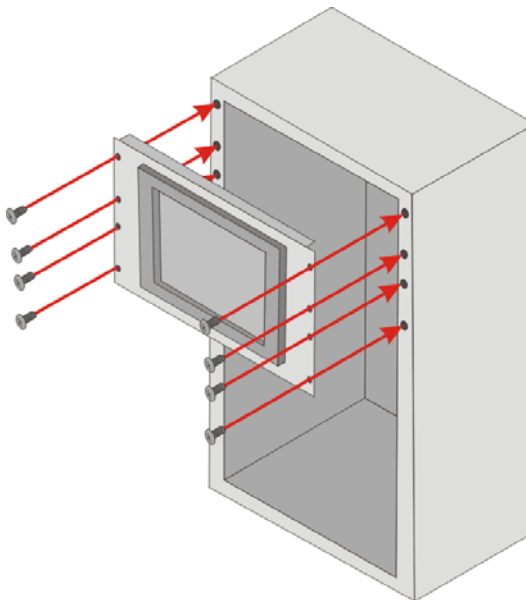


Figure 3-18: Install into a Rack/Cabinet

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 3-18**).

3.7.4 Arm Mounting

The AFL3-W07A-BT-N1 is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75 mm interface pad. To mount the AFL3-W07A-BT-N1 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 interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL3-W07A-BT-N1 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 3-19**).

AFL3-W07A-BT-N1 Panel PC

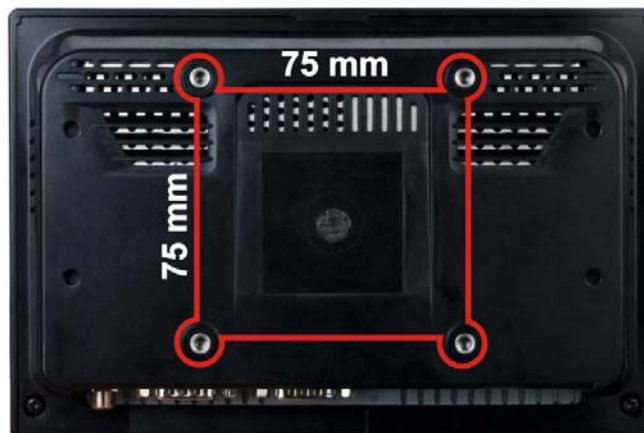


Figure 3-19: Arm Mounting Retention Screw Holes

Step 4: Secure the AFL3-W07A-BT-N1 to the interface pad by inserting four retention screws through the mounting arm interface pad and into the AFL3-W07A-BT-N1.

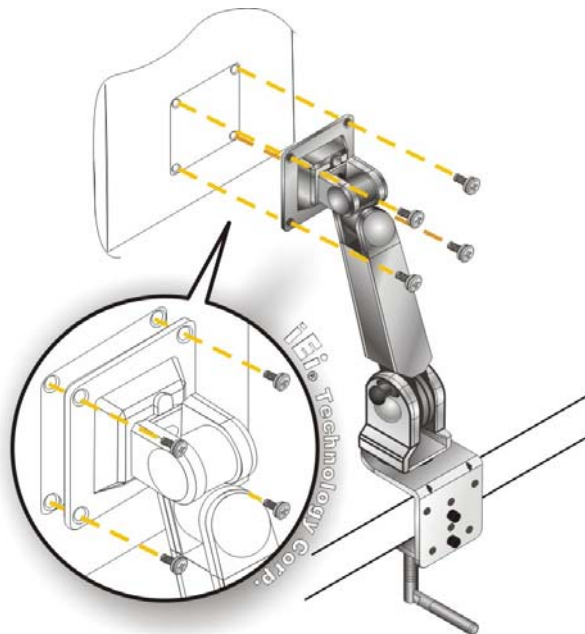


Figure 3-20: Arm Mounting

3.7.5 Stand Mounting

To mount the AFL3-W07A-BT-N1 using the stand mounting kit, please follow the steps below.

Step 1: Locate the screw holes on the rear of the AFL3-W07A-BT-N1. 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-W07A-BT-N1 insert the retention screws into the screw holes and tighten them.

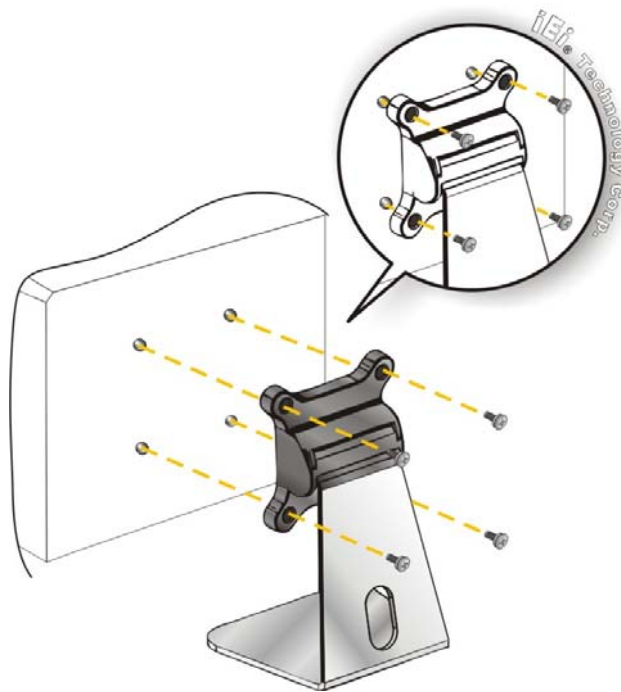


Figure 3-21: Stand Mounting (Stand-A/Bxx)

AFL3-W07A-BT-N1 Panel PC

3.7.6 V-Stand Mounting

To mount the AFL3-W07A-BT-N1 using the 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.

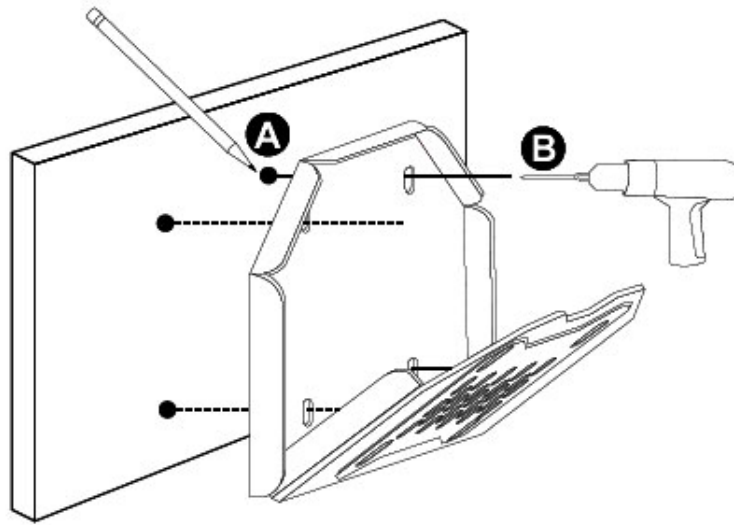


Figure 3-22: Drill Pilot Holes for V-Stand

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.

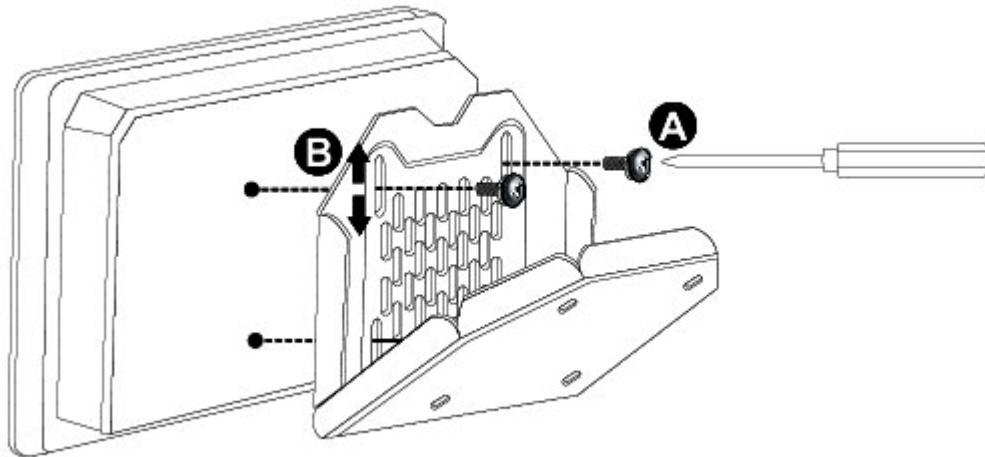


Figure 3-23: Secure V-Stand to System

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.

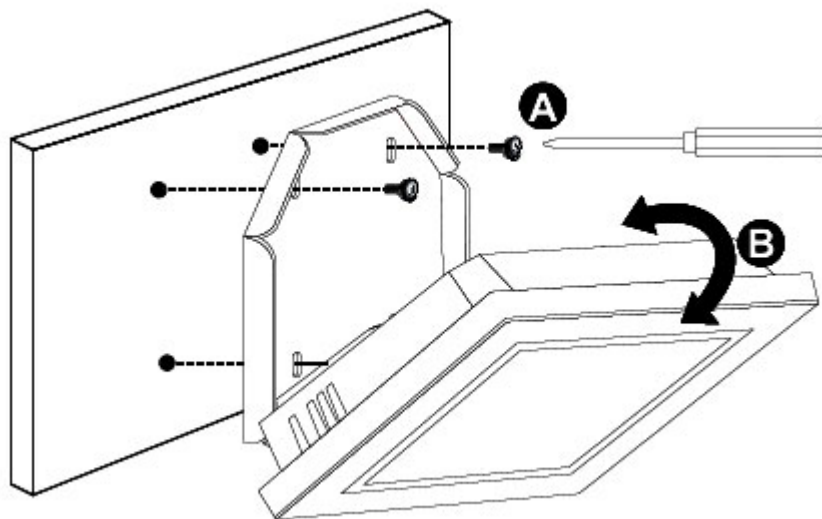


Figure 3-24: Secure V-Stand to Mounting Area

AFL3-W07A-BT-N1 Panel PC

3.8 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-W07A-BT-N1.
- 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.

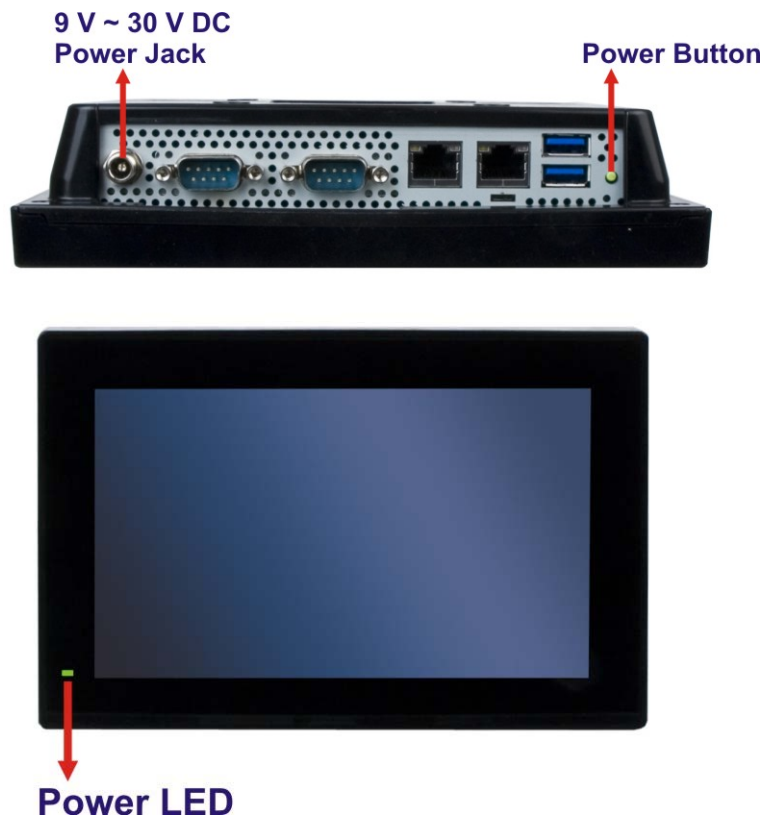


Figure 3-25: Powering On the System

3.9 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 3-26**. Press the reset button to reboot the system.



Figure 3-26: Reset Button Location

3.10 Clear CMOS

If the AFL3-W07A-BT-N1 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 3-27**.



Figure 3-27: Clear CMOS Button Location

AFL3-W07A-BT-N1 Panel PC



NOTE:

To access the clear CMOS button, the plastic back cover must be removed. Please refer to **Section 3.4: mSATA Module Installation** (**Step 1 ~ Step 2**) for the instruction.

3.11 Software Installation



NOTE:

The content of the CD may vary throughout the life cycle of the product and is subject to change without prior notice. Visit the IEI website or contact technical support for the latest updates.

All the drivers for the AFL3-W07A-BT-N1 are on the utility CD that came with the system. The utility CD contains drivers for Windows 7 and Windows 8 operating systems. Please select the corresponding drivers for the system.

The following drivers can be installed on the **Windows 7** operating system:

- Chipset
- I/O driver
- Graphics
- TXE
- USB 3.0
- LAN
- Audio
- Wi-Fi
- Keypad AP

The following drivers can be installed on the **Windows 8** operating system:

- Chipset
- Graphics
- LAN
- Audio
- Wi-Fi
- Keypad AP

3.11.1 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 3-28: 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** or **F2** key as soon as the system is turned on or
2. Press the **DEL** or **F2** key when the “**Press DEL or F2 to enter SETUP**” message appears on the screen.

If the message disappears before the **DEL** or **F2** 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

AFL3-W07A-BT-N1 Panel PC

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.
- Boot – Changes the system boot configuration.
- Security – Sets User and Supervisor Passwords.

- **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.

Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.		
Main	Advanced	Chipset
Security Boot Save & Exit		
BIOS Information		Set the Date. Use Tab to switch between Data elements.
BIOS Vendor		American Megatrends
Core Version		5.009
Compliancy		UEFI 2.3; PI 1.2
Project Version		E446AR10.ROM
Build Date and Time		07/10/2014 16:22:41
CPU Configuration		-----
Microcode Patch		809
BayTrial SoC		C0 Stepping
TXE Information		←→: Select Screen
Sec RC Version		↑ ↓: Select Item
TXE FW Version		EnterSelect
System Date		+/-: Change Opt.
System Time		F1: General Help
Access Level		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.		

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
- **Compliancy:** Current compliant version

AFL3-W07A-BT-N1 Panel PC

- **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

→ 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.

- ACPI Settings
- F81866 Super IO Configuration
- F81866 H/W Monitor
- RTC Wake Settings
- Serial Port Console Redirection
- CPU Configuration
- IDE Configuration
- USB Configuration

```

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main  Advanced  Chipset  Security  Boot  Save & Exit
-----
> ACPI Settings
> F81866 Super IO Configuration
> F81866 H/M Monitor
> RTC Wake Settings
> Serial Port Console Redirection
> CPU Configuration
> IDE Configuration
> USB Configuration

System ACPI Parameters.

-----

<=>: Select Screen
↑ ↓: Select Item
Enter: Select
+/-: 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.

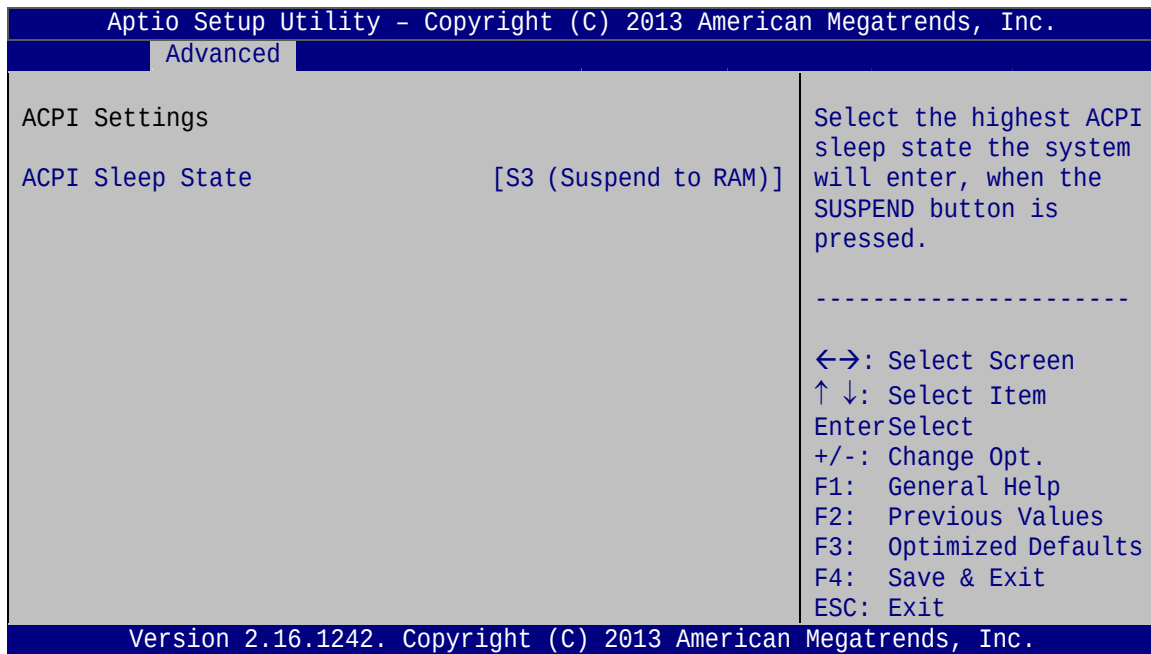
```

BIOS Menu 2: Advanced

AFL3-W07A-BT-N1 Panel PC

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.

➔ **S1 (CPU Stop Clock)**

The system enters S1 (POS) sleep state. The system appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode.

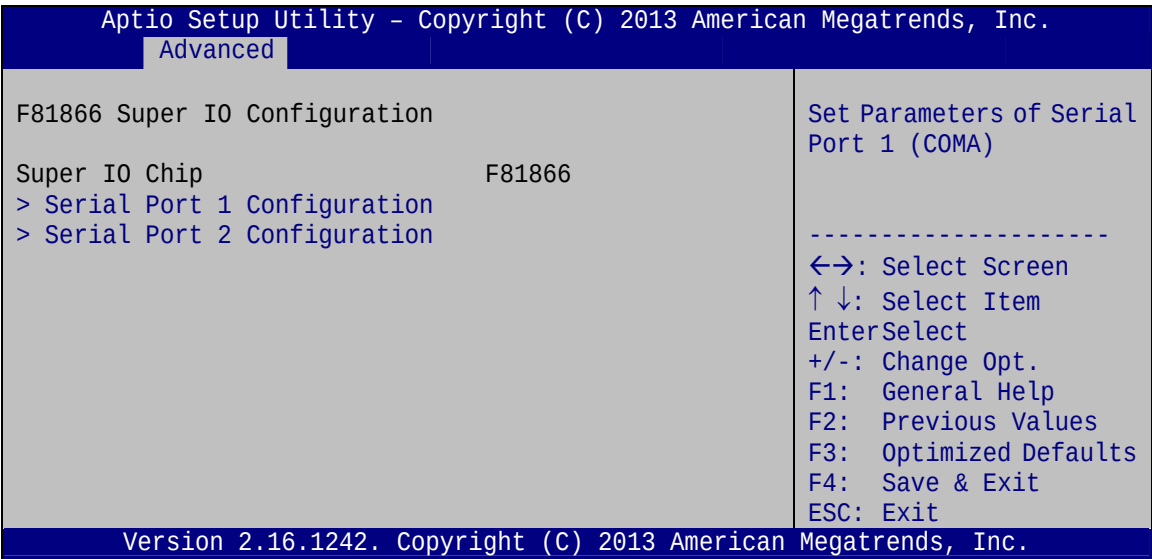
➔ **S3 (Suspend to DEFAULT RAM)**

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

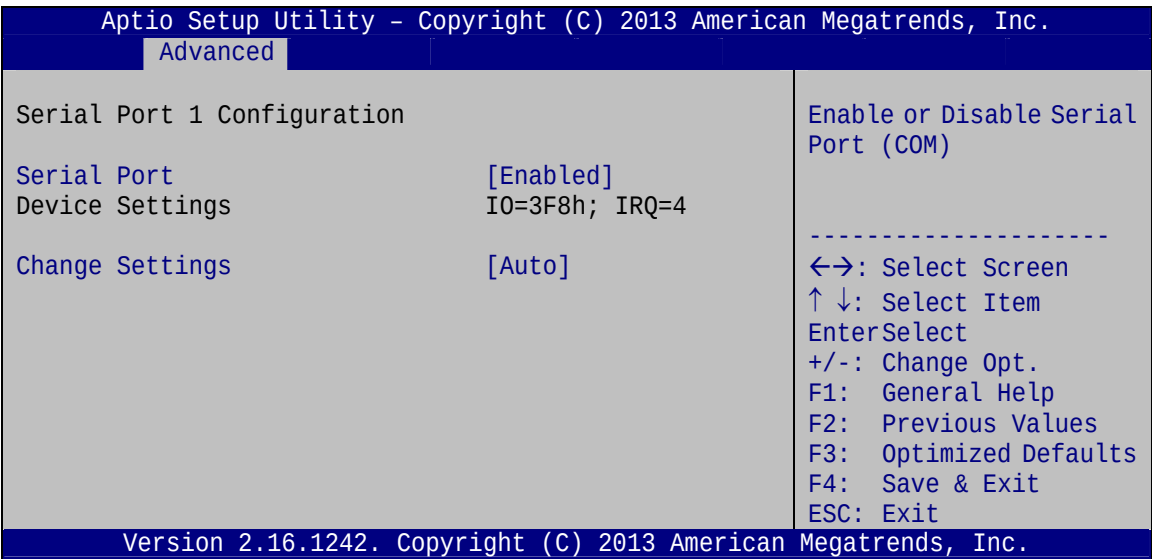
Use the **F81866 Super IO Configuration** menu (**BIOS Menu 4**) to set or change the configurations for the serial ports.



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



AFL3-W07A-BT-N1 Panel PC

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 |

AFL3-W07A-BT-N1 Panel PC

4.3.3 F81866 H/W Monitor

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

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.		
Advanced		
PC Health Status		
CPU temperature	:+49 °C	
System temperature	:+54 °C	

CPU_CORE	:+0.728 V	↔: Select Screen
+5V	:+5.129 V	↑ ↓: Select Item
+12V	:+12.056 V	EnterSelect
+DDR	:+1.372 V	+/-: Change Opt.
+5VSB	:+5.064 V	F1: General Help
+3.3V	:+3.334 V	F2: Previous Values
+3.3VSB	:+3.360 V	F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.		

BIOS Menu 6: F81866 H/W Monitor

➔ Hardware Health Status

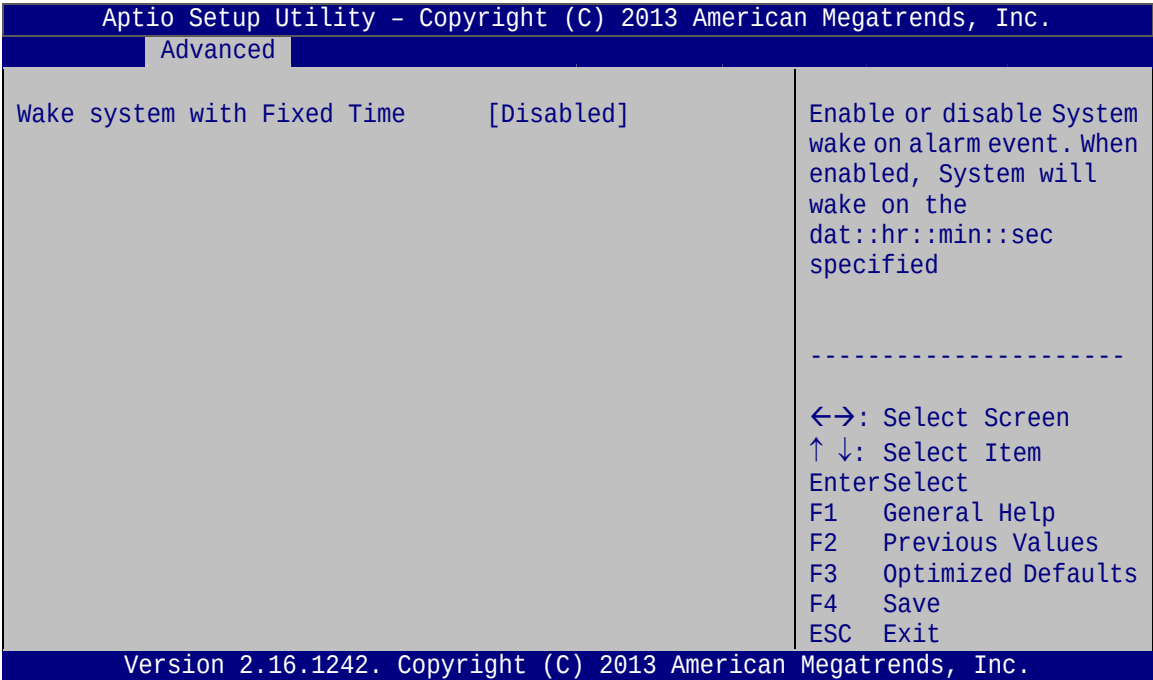
The following system parameters and values are shown. The system parameters that are monitored are:

- 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



AFL3-W07A-BT-N1 Panel PC

➔ Enabled

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

*Wake up every day

*Wake up date

*Wake up hour

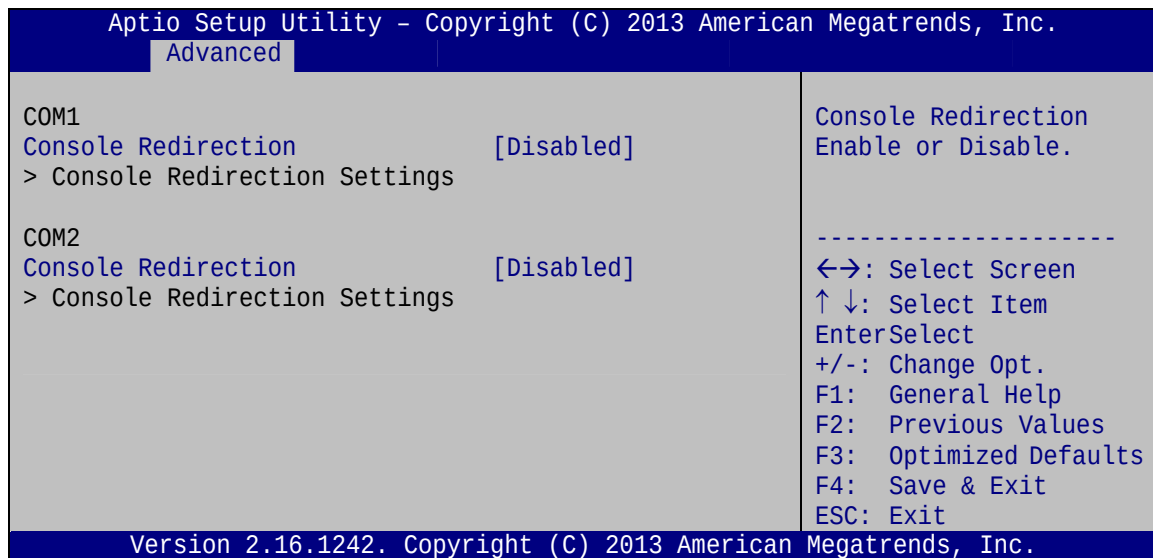
*Wake up minute

*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

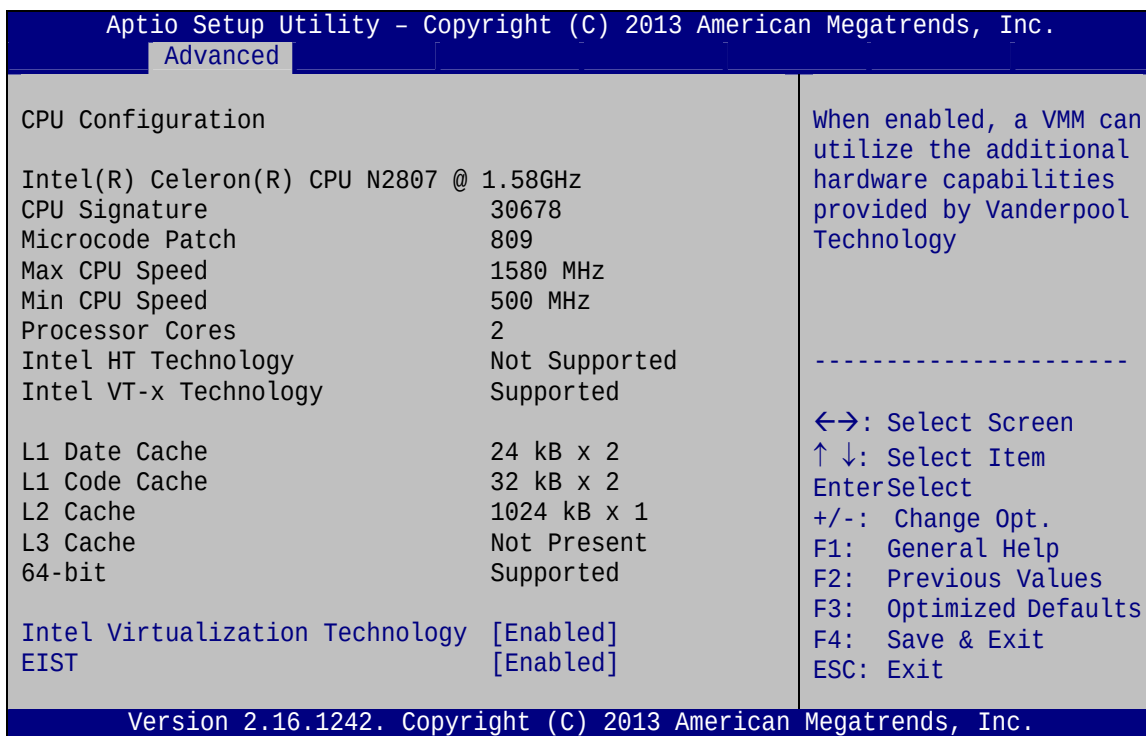
➔ **Console Redirection [Disabled]**

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 CPU Configuration

Use the **CPU Configuration (BIOS Menu 9)** to view detailed CPU specifications and configure the CPU.



BIOS Menu 9: CPU Configuration

The CPU Configuration menu (**BIOS Menu 6**) 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.

AFL3-W07A-BT-N1 Panel PC

- 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 [Enabled]

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 | | Disables Intel Virtualization Technology. |
| ➔ | Enabled | DEFAULT | Enables Intel Virtualization Technology. |

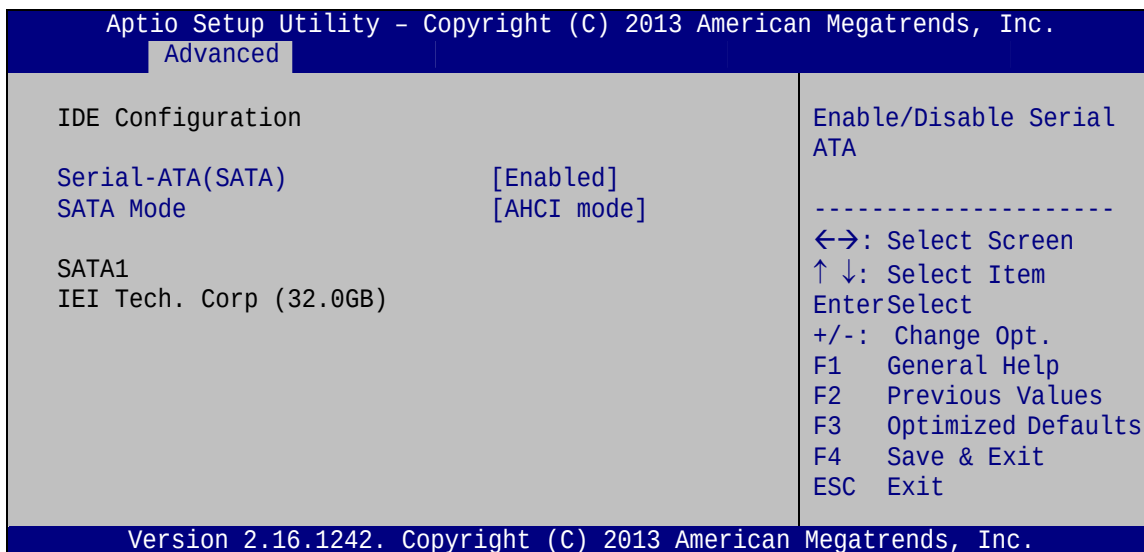
➔ EIST [Enabled]

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. |

4.3.7 IDE Configuration

Use the **IDE Configuration** menu (**BIOS Menu 10**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 10: 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 [AHCI Mode]

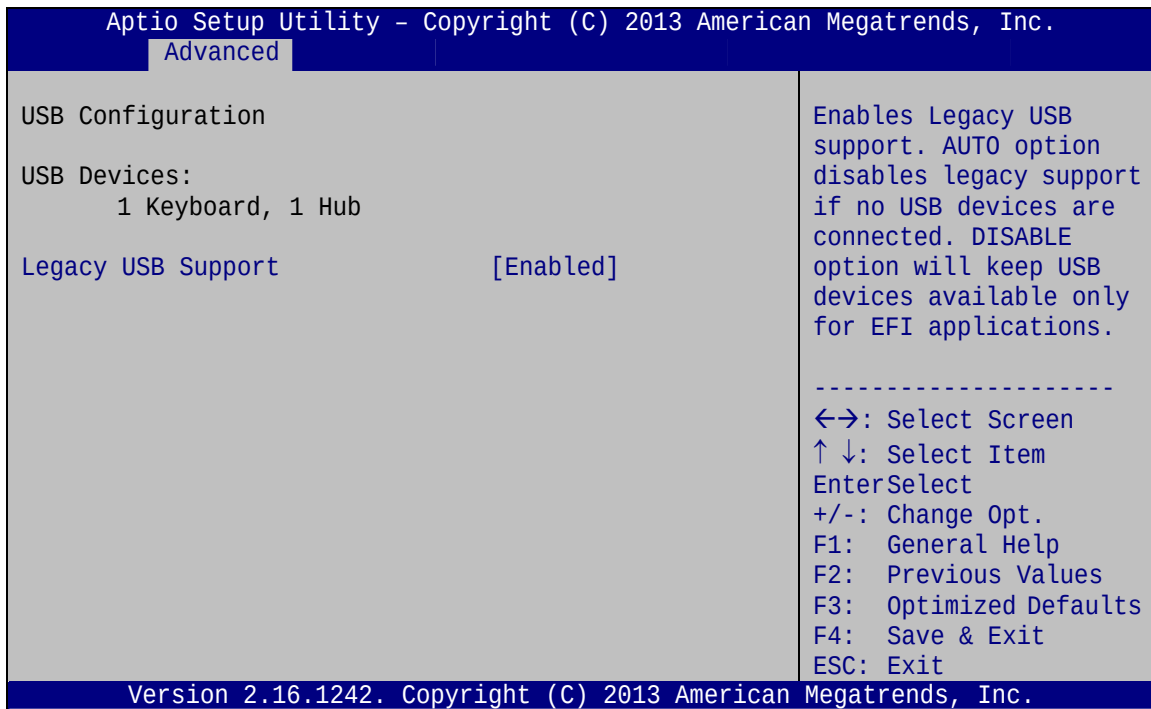
Use the **SATA Mode** option to configure SATA devices as normal IDE devices.

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

AFL3-W07A-BT-N1 Panel PC

4.3.8 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 11**) to read USB configuration information and configure the USB settings.



BIOS Menu 11: 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

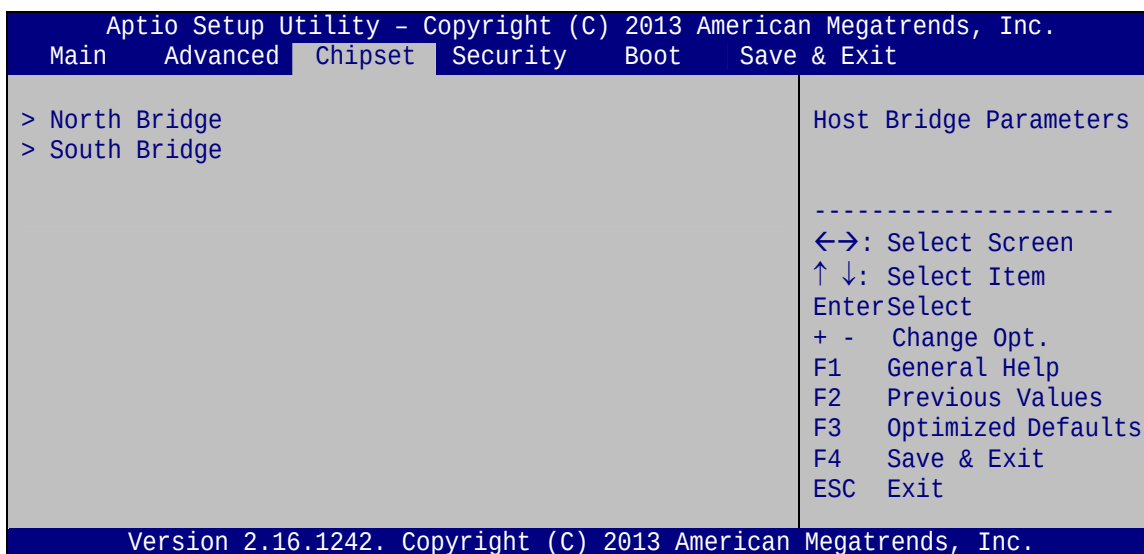
4.4 Chipset

Use the **Chipset** menu (**BIOS Menu 12**) 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.

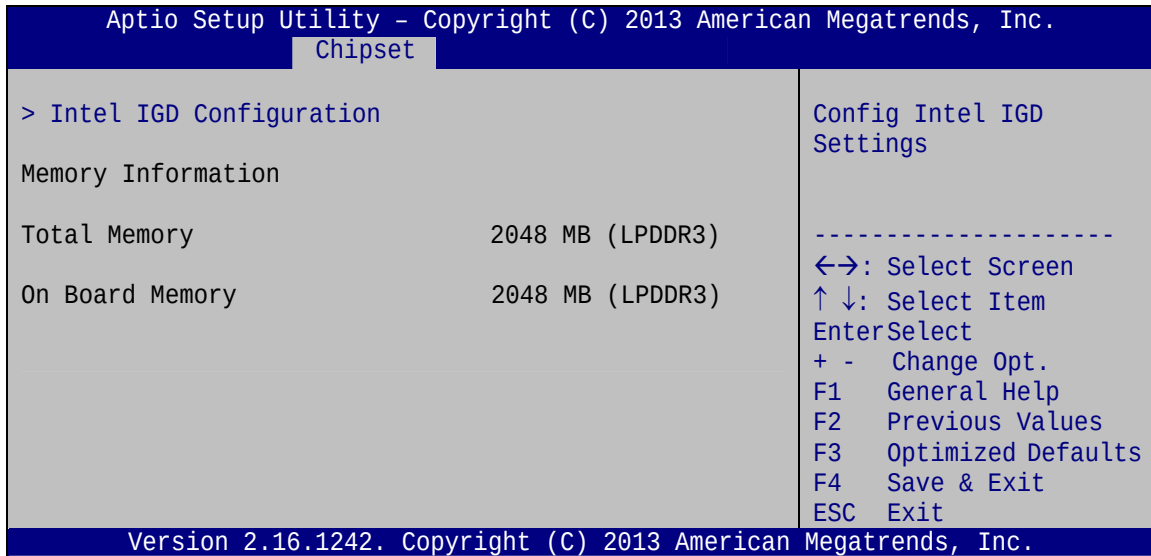


BIOS Menu 12: Chipset

AFL3-W07A-BT-N1 Panel PC

4.4.1 North Bridge Configuration

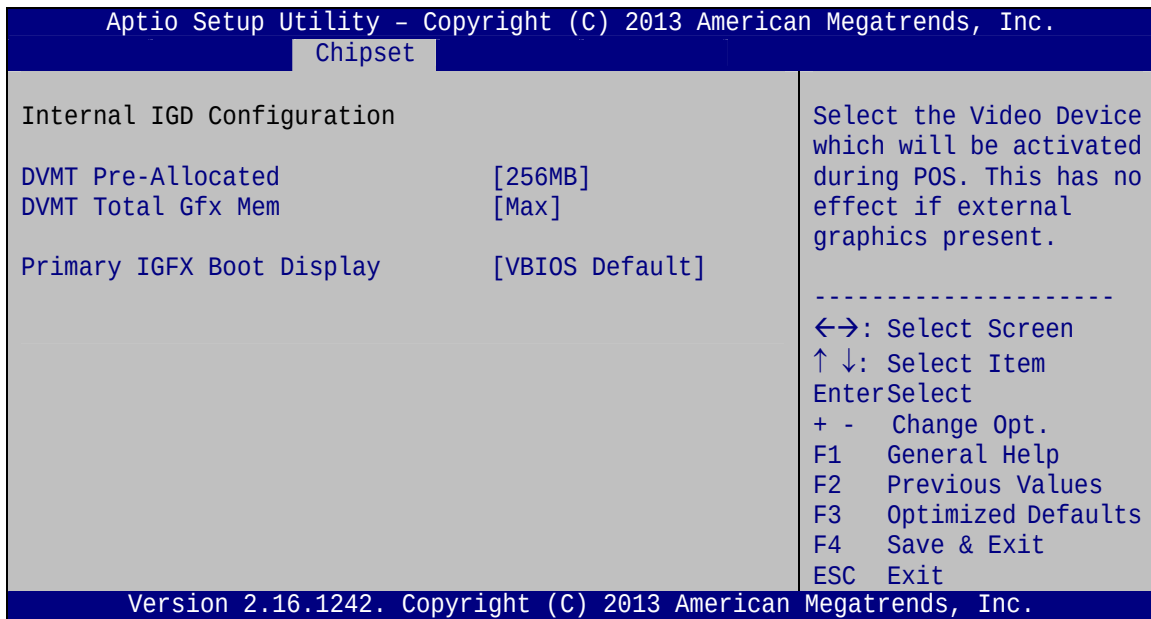
Use the **North Bridge** menu (**BIOS Menu 13**) to configure the north bridge chipset.



BIOS Menu 13: North Bridge Configuration

4.4.1.1 Internal IGD Configuration

Use the Internal IGD Configuration (**BIOS Menu 14**) menu to set the integrated graphics.



BIOS Menu 14: 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**

➔ **Primary IGFX Boot Display [VBIOS Default]**

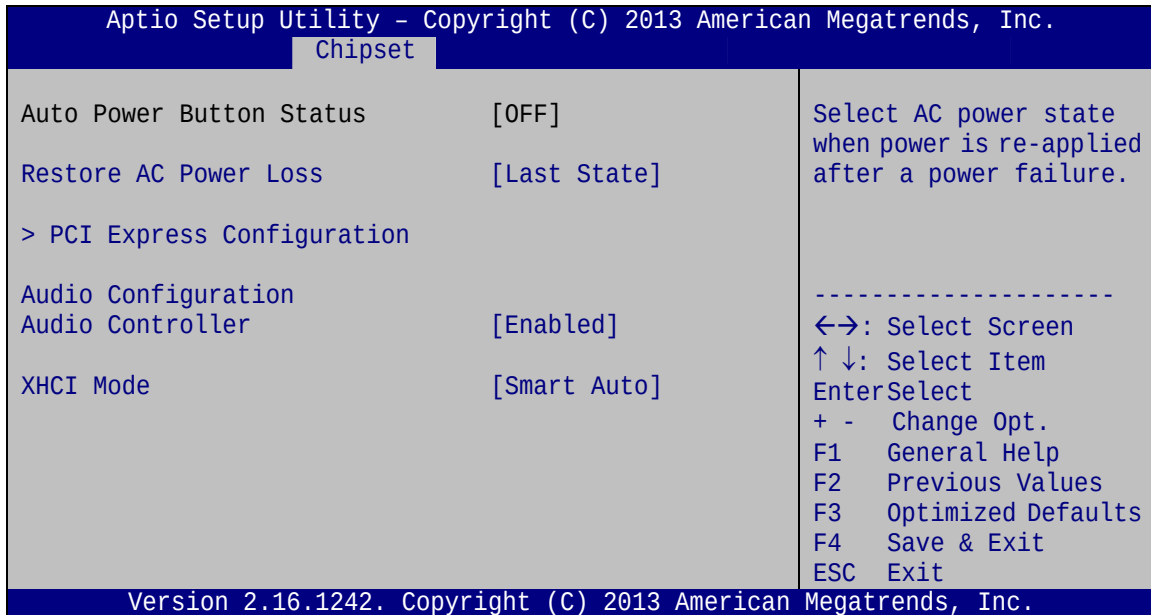
Use the **Primary IGFX Boot Display** option to select the display device used by the system when it boots. Configuration options are listed below.

- VBIOS Default **DEFAULT**
- CRT
- LFP

AFL3-W07A-BT-N1 Panel PC

4.4.2 South Bridge Configuration

Use the **South Bridge** menu (**BIOS Menu 15**) to configure the south bridge chipset.



BIOS Menu 15: 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.

➔ **XHCI Mode [Smart Auto]**

Use the **XHCI Mode** BIOS option to configure the USB xHCI (USB 3.0) controller.

➔ **Enabled** Enable the xHCI controller. USB 3.0 ports behave as USB 3.0 ports.

➔ **Smart** **DEFAULT** Allow the use of USB 3.0 devices prior to OS boot.
 Auto USB 3.0 ports function as USB 3.0 ports even during a reboot.



NOTE:

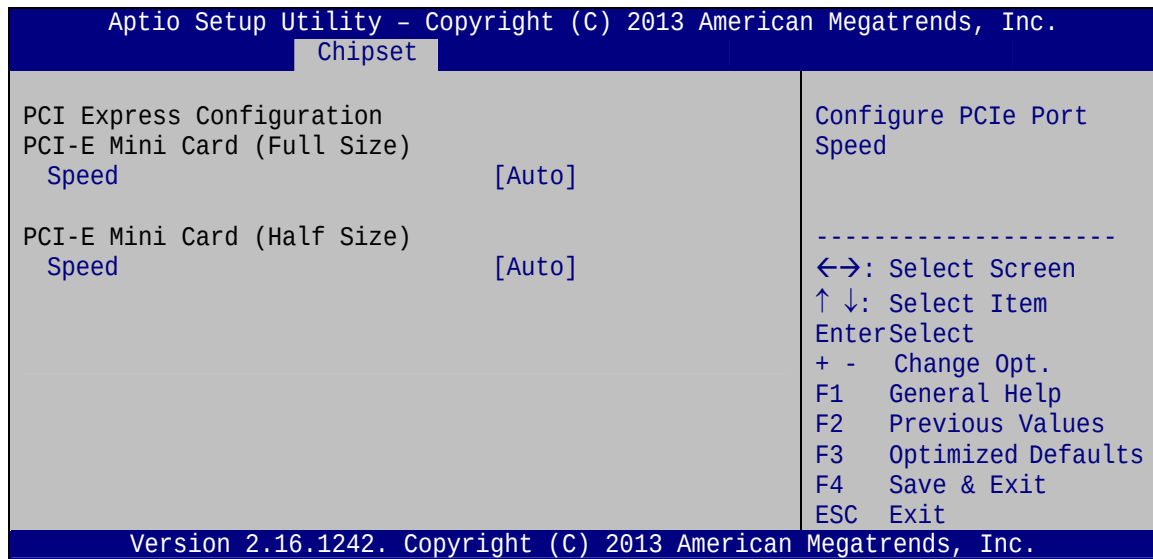
If the system is running Windows 7 operating system, the USB 3.0 driver must be installed to support USB 3.0.



AFL3-W07A-BT-N1 Panel PC

4.4.2.1 PCI Express Configuration

Use the **PCI Express Configuration** submenu (**BIOS Menu 16**) to configure the PCI Express slots.



BIOS Menu 16: PCI Express Configuration

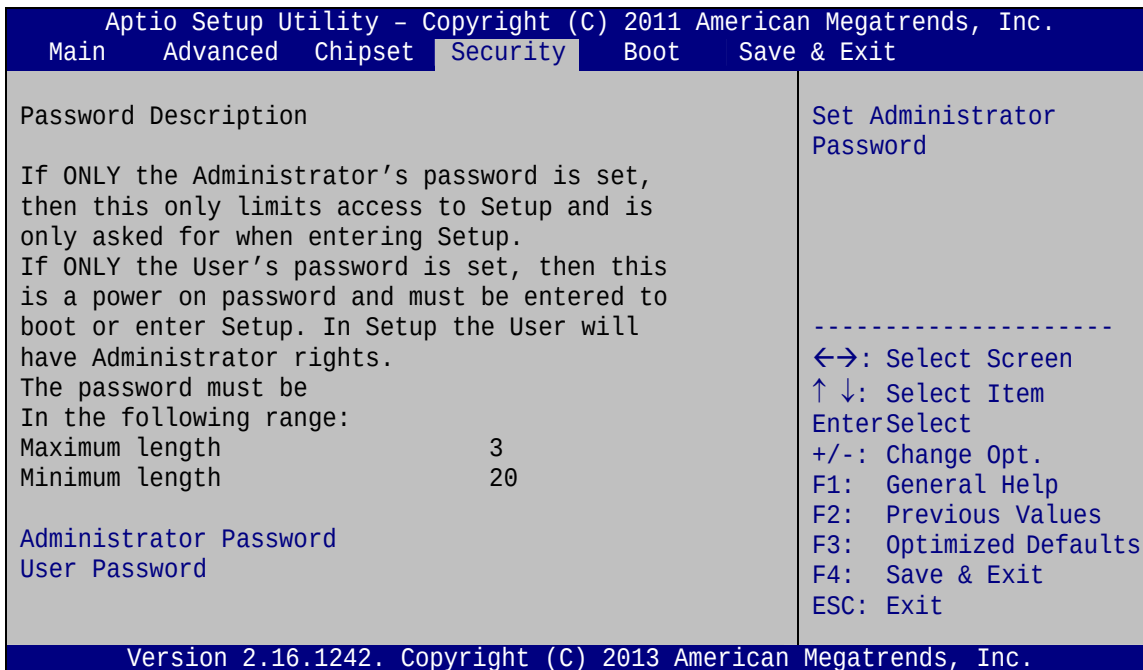
→ Speed [Auto]

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 17**) to set system and user passwords.



BIOS Menu 17: Security

➔ Administrator Password

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

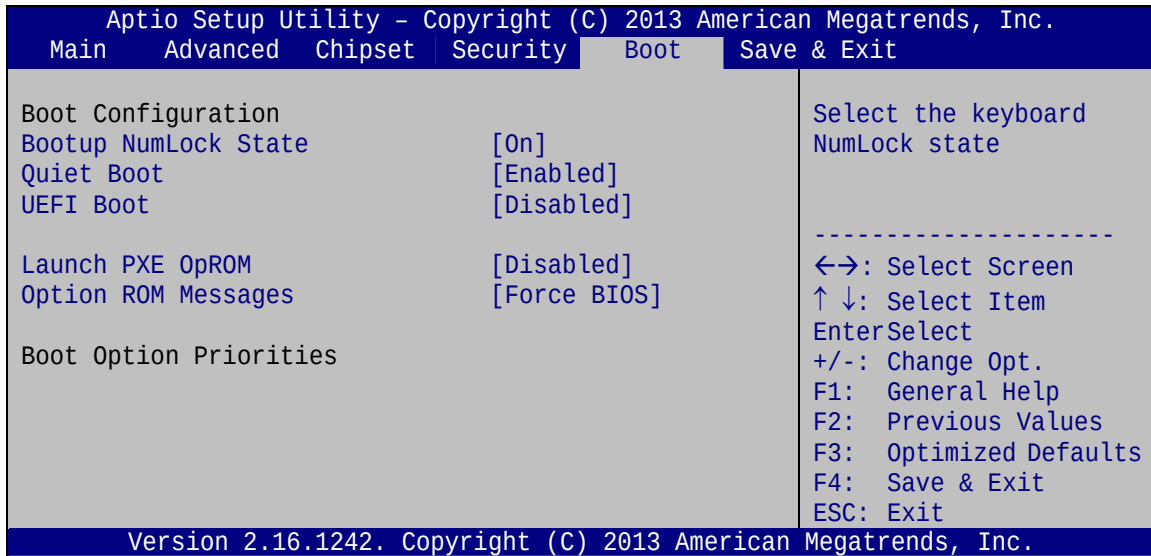
➔ User Password

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

AFL3-W07A-BT-N1 Panel PC

4.6 Boot

Use the **Boot** menu (**BIOS Menu 18**) to configure system boot options.

**BIOS Menu 18: 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.

➔ **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]**

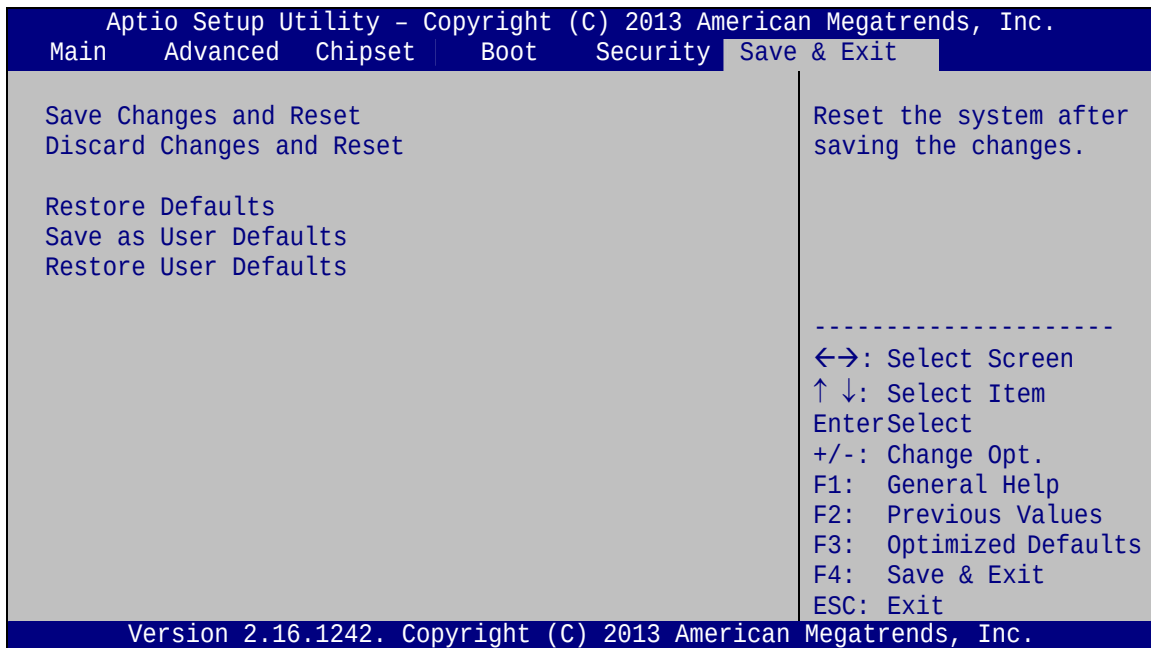
Use the **Option ROM Messages** option to set the Option ROM display mode.

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

AFL3-W07A-BT-N1 Panel PC

4.7 Save & Exit

Use the **Save & Exit** menu (**BIOS Menu 19**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 19: 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-W07A-BT-N1 fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions for the AFL3-W07A-BT-N1 are described below.

5.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W07A-BT-N1 may result in permanent damage to the AFL3-W07A-BT-N1 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W07A-BT-N1. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W07A-BT-N1 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-W07A-BT-N1, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W07A-BT-N1.
- ***Only handle the edges of the PCB:*** - When handling the PCB, hold the PCB by the edges.

AFL3-W07A-BT-N1 Panel PC

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 Removing the Back Cover

**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).

To access the AFL3-W07A-BT-N1 internally the back cover must be removed. To remove the back cover, please follow the steps 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 two retention screws from the back cover (**Figure 5-1**).

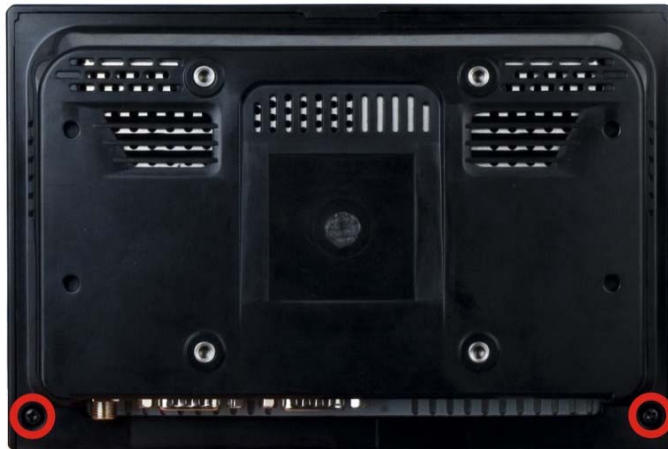


Figure 5-1: Back Cover Retention Screws

Step 4: Carefully separate the back cover from the chassis and lift the cover of the device

5.5 WLAN Card Replacement

The AFL3-W07A-BT-N1 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 back cover. See **Section 5.4** above.

Step 4: Locate the WLAN card (**Figure 5-2**).

AFL3-W07A-BT-N1 Panel PC

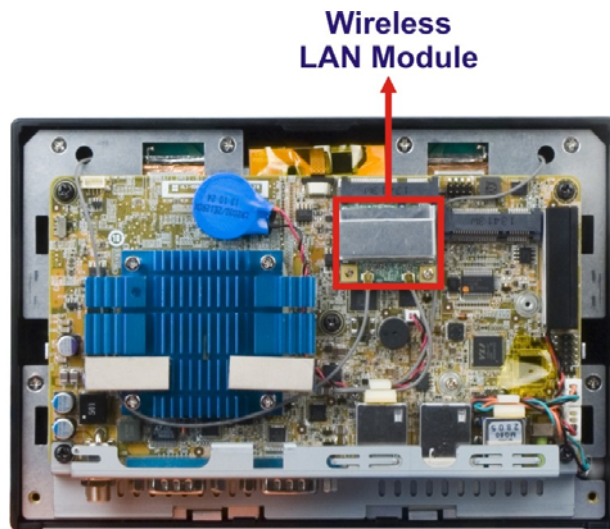


Figure 5-2: WLAN Card Location

Step 5: Disconnect the antenna cables on the WLAN module and remove the retention screw to release the WLAN card (Figure 5-3).

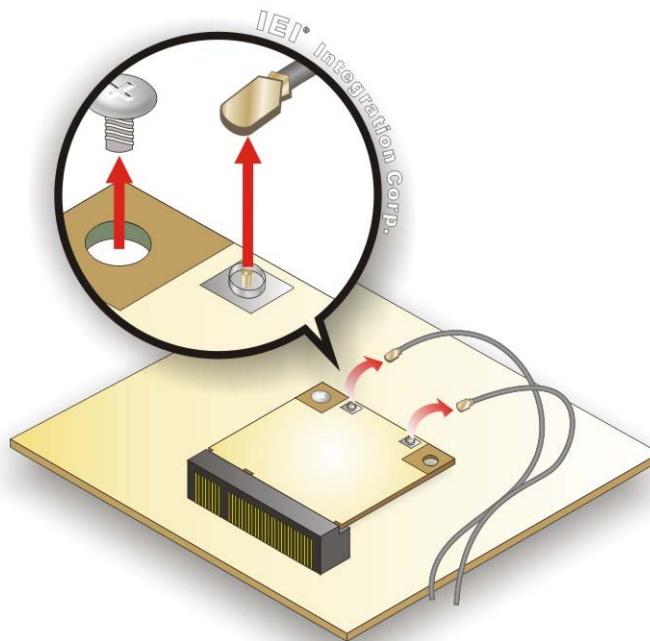


Figure 5-3: Releasing the WLAN Card

Step 6: Grasp the WLAN card by the edges and carefully pull it out of the socket (**Figure 5-4**).

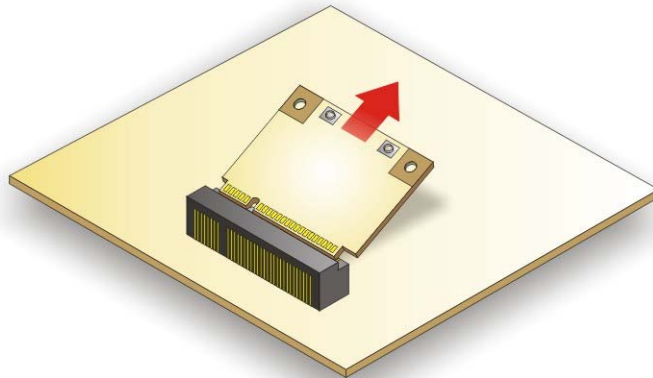


Figure 5-4: Removing the WLAN Card

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.

5.6 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-W07A-BT-N1 panel PC motherboard comes with a number of peripheral interface connectors and configuration jumpers. The connector locations are shown in **Figure 6-1**. 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.

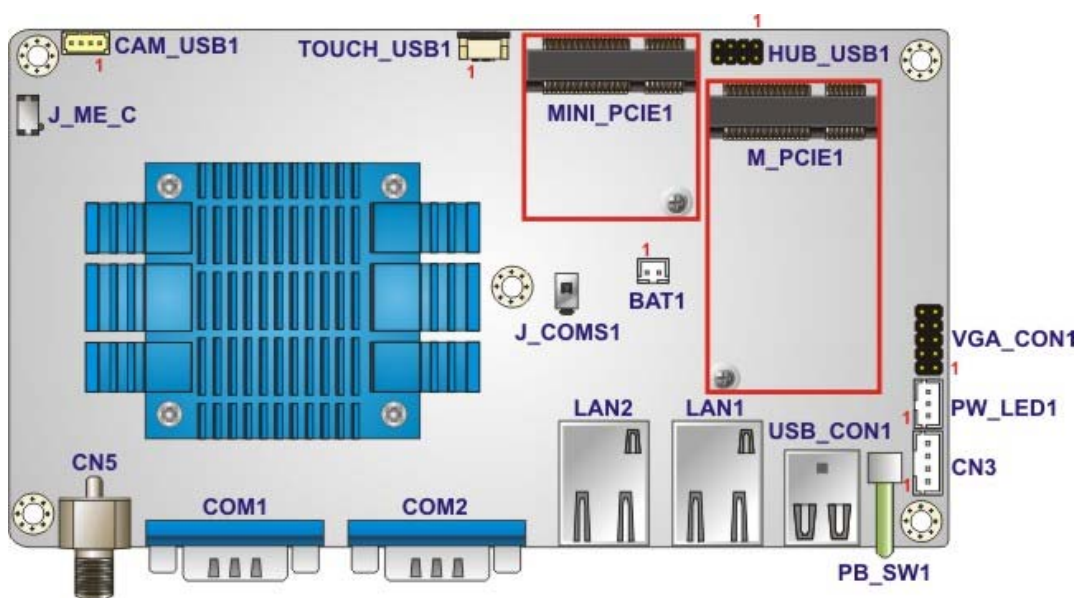


Figure 6-1: Main Board Layout Diagram (Front Side)



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

AFL3-W07A-BT-N1 Panel PC

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 AFL3MB1-BT. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Battery connector	2-pin wafer	BAT1
Debug port	12-pin wafer	DBG_PORT1
LVDS connector	40-pin FPC	LVDS2
MCU connector	6-pin wafer	JSPI2
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
Speaker connector	4-pin wafer	CN3
SPI Flash connector	6-pin wafer	JSPI1
Touch panel connector	8-pin FPC	TOUCH_USB1
USB 2.0 connector	8-pin header	HUB_USB1
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 (CN2)

PIN NO.	DESCRIPTION
1	+3V
2	GND

Table 6-2: Battery Connector (CN2) Pinouts



6.2.2 LVDS Connector (LVDS2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC_LCD_COM	21	LVDSA3+
2	+VCC_LCD2	22	GND
3	+VCC_LCD2	23	NC
4	NC	24	NC
5	LCD_RST_IN_3V3	25	GND
6	LCD_STBY_IN_3V3-	26	NC
7	GND	27	LCD_DIMO
8	LVDSA0-	28	LCD_SELB
9	LVDSA0+	29	VCC_LCD_AVDD
10	GND	30	GND
11	LVDSA1-	31	VLED-
12	LVDSA1+	32	VLED-
13	GND	33	LCD_LR
14	LVDSA2-	34	LCD_UD
15	LVDSA2+	35	LCD_VGL
16	GND	36	LCD_CABC_EN1
17	LVDSACLK-	37	LCD_CABC_EN0
18	LVDSACLK+	38	LCD_VGH
19	GND	39	VLED+
20	LVDSA3-	40	VLED+

Table 6-3: LVDS Connector (LVDS2) Pinouts

6.2.3 MCU Connector (JSPI2)

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



AFL3-W07A-BT-N1 Panel PC

6	NC
---	----

Table 6-4: MCU Connector (JSPI2) Pinouts**6.2.4 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	MPCIE_RXD-	24	VCC3_AUX
25	MPCIE_RXD+	26	GND
27	GND	28	VCC1.5
29	GND	30	SMB_CLK
31	MPCIE_TXD-	32	SMB_DATA
33	MPCIE_TXD+	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	mSATA_DET#	52	VCC3

Table 6-5: PCIe Mini Connector (M_PCIE1) Pinouts



6.2.5 PCIe Mini Connector, Half-Size (M_PCIE2)

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	MPCIE_RXD-	24	VCC3_AUX
25	MPCIE_RXD+	26	GND
27	GND	28	VCC1.5
29	GND	30	SMB_CLK
31	MPCIE_TXD-	32	SMB_DATA
33	MPCIE_TXD+	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	mSATA_DET#	52	VCC3

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



AFL3-W07A-BT-N1 Panel PC**6.2.6 Power LED Connector (PW_LED1)**

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

Table 6-7: Power LED Connector (PW_LED1) Pinouts**6.2.7 Speaker Connector (CN3)**

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

Table 6-8: Speaker Connector (CN3) Pinouts**6.2.8 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 6-9: SPI Flash Connector (JSPI1) Pinouts**6.2.9 Touch Panel Connector (TOUCH_USB1)**

PIN NO.	DESCRIPTION
1	NC
2	NC

3	NC
4	NC
5	DATA3 +
6	DATA3 -
7	GND
8	+3.3V

Table 6-10: Touch Panel Connector (TOUCH_USB1) Pinouts

6.2.10 USB 2.0 Connector (HUB_USB1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	GND
3	DATA4 -	4	DATA3 +
5	DATA4 +	6	DATA3 -
7	GND	8	+5V

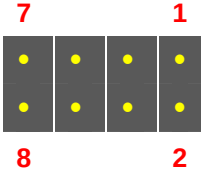


Table 6-11: USB 2.0 Connector (HUB_USB1) Pinouts

6.2.11 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

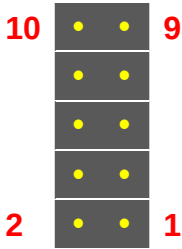


Table 6-12: VGA Connector (VGA_CON1) Pinouts

6.2.12 Webcam Connector (CAM_USB1)

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

AFL3-W07A-BT-N1 Panel PC

4	GND
---	-----

Table 6-13: 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	D-sub 9	COM1
RS-232 serial port	D-sub 9	COM2
USB 3.0 connectors	USB 3.0 port	USB_CON1

Table 6-14: 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	L1NNK1000 +3.3sus
5	N/A	14	L1NNK1000 +3.3sus
6	N/A	15	GND
7	MDI2+	16	GND
8	MDI2-	17	N/A
9	MDI3+	18	N/A

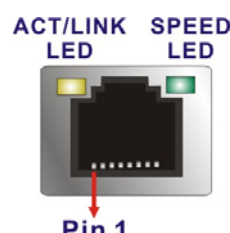


Table 6-15: Ethernet Connectors (LAN1 & LAN2) Pinouts

6.3.2 Power Connector (CN5)

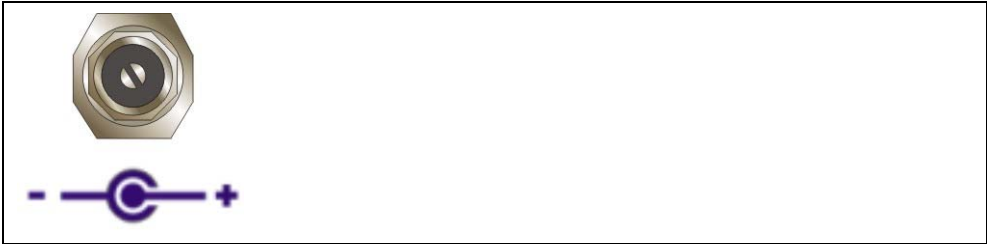


Table 6-16: Power Connector (CN5) Pinouts

6.3.3 RS-232 DB-9 Serial Ports (COM1)

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

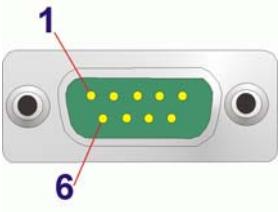
The image shows a DB-9 serial port connector with a green insert containing 9 pins. A red line points from the number '1' to the top-left pin, and another red line points from the number '6' to the bottom-right pin.

Table 6-17: RS-232 DB-9 Serial Ports (COM1) Pinouts

6.3.4 RS-232 DB-9 Serial Ports (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		

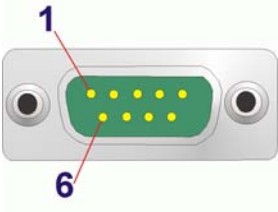
The image shows a DB-9 serial port connector with a green insert containing 9 pins. A red line points from the number '1' to the top-left pin, and another red line points from the number '6' to the bottom-right pin.

Table 6-18: RS-232 DB-9 Serial Ports (COM2) Pinouts

AFL3-W07A-BT-N1 Panel PC

6.3.5 USB 3.0 Connectors (USB_CON1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USB3_PWR1	10	USB3_PWR2
2	USB2P0_DM1_L	11	USB2P0_DM2_L
3	USB2P0_DP1_L	12	USB2P0_DP2_L
4	GND	13	GND
5	USB3P0_RXDN1_L	14	USB3P0_RXDN2_L
6	USB3P0_RXDP1_L	15	USB3P0_RXDP2_L
7	GND	16	GND
8	USB3P0_TXDN1_C_L	17	USB3P0_TXDN2_C_L
9	USB3P0_TXDP1_C_L	18	USB3P0_TXDP2_C_L

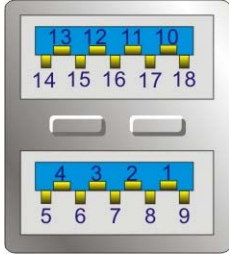


Table 6-19: USB 3.0 Connectors (USB_CON1) Pinouts

Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY



This equipment is in conformity with the following EU directives:

- EMC Directive 2004/108/EC
- Low-Voltage Directive 2006/95/EC
- RoHS II Directive 2011/65/EU
- Ecodesign Directive 2009/125/EC

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 R&TTE Directive 1999/5/EC.

English

IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Български [Bulgarian]

IEI Integration Corp. декларира, че този оборудване е в съответствие със съществените изисквания и другите приложими правила на Директива 1999/5/EC.

Česky [Czech]

IEI Integration Corp tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk [Danish]

IEI Integration Corp erklærer herved, at følgende udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch [German]

IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.

Eesti [Estonian]

IEI Integration Corp deklareerib seadme seadme vastavust direktiivi 1999/5/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 1999/5/CE.

Ελληνική [Greek]

IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.

Français [French]

IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano [Italian]

IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski [Latvian]

IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 1999/5/EK.

Lietuvių [Lithuanian]

IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB 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 1999/5/EG.

Malti [Maltese]

IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 1999/5/EC.

Magyar [Hungarian]

IEI Integration Corp nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

Polski [Polish]

IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.

Português [Portuguese]

IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

AFL3-W07A-BT-N1 Panel PC

Româna [Romanian]

IEI Integration Corp declară că acest echipament este în conformitate cu cerințele esențiale și cu celelalte prevederi relevante ale Directivei 1999/5/CE.

Slovensko [Slovenian]

IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky [Slovak]

IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi [Finnish]

IEI Integration Corp vakuuttaa täten että laitteet on direktiivin 1999/5/EY 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 1999/5/EG.

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.

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-W07A-BT-N1.

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 AFL3-W07A-BT-N1 is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the AFL3-W07A-BT-N1 is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range.*** Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the AFL3-W07A-BT-N1 chassis is opened when the AFL3-W07A-BT-N1 is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the AFL3-W07A-BT-N1.
- ***If considerable amounts of dust, water, or fluids enter the AFL3-W07A-BT-N1***, turn off the power supply immediately, unplug the power cord, and contact the AFL3-W07A-BT-N1 vendor.
- **DO NOT:**
 - Drop the AFL3-W07A-BT-N1 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

AFL3-W07A-BT-N1 Panel PC

B.1.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the AFL3-W07A-BT-N1 may result in permanent damage to the AFL3-W07A-BT-N1 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W07A-BT-N1. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W07A-BT-N1 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

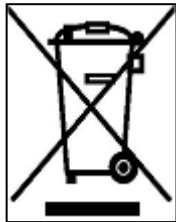


CAUTION:

Risk of explosion if battery is replaced by and 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:



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-W07A-BT-N1, please follow the guidelines below.

B.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the AFL3-W07A-BT-N1, please read the details below.

AFL3-W07A-BT-N1 Panel PC

- 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.
- Never use alcohol to clean the external chassis.
- The interior of the AFL3-W07A-BT-N1 does not require cleaning. Keep fluids away from the AFL3-W07A-BT-N1 interior.
- Be cautious of all small removable components when vacuuming the AFL3-W07A-BT-N1.
- Turn the AFL3-W07A-BT-N1 off before cleaning the AFL3-W07A-BT-N1.
- Never drop any objects or liquids through the openings of the AFL3-W07A-BT-N1.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the AFL3-W07A-BT-N1.
- Avoid eating, drinking and smoking within vicinity of the AFL3-W07A-BT-N1.

B.2.2 Cleaning Tools

Some components in the AFL3-W07A-BT-N1 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-W07A-BT-N1.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the AFL3-W07A-BT-N1.
- **Water** – A cloth moistened with water can be used to clean the AFL3-W07A-BT-N1.
- **Using solvents** – The use of solvents is not recommended when cleaning the AFL3-W07A-BT-N1 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 AFL3-W07A-BT-N1. Dust and dirt can restrict the airflow in the AFL3-W07A-BT-N1 and cause its circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with 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

AFL3-W07A-BT-N1 Panel PC

BIOS Information	44
CPU Information.....	45
TXE Information	45
System Date [xx/xx/xx]	45
System Time [xx:xx:xx]	45
ACPI Sleep State [S3 (Suspend to RAM)]	47
Serial Port [Enabled].....	49
Change Settings [Auto]	49
Serial Port [Enabled].....	49
Change Settings [Auto]	50
Hardware Health Status.....	51
Wake System with Fixed Time [Disabled]	52
Console Redirection [Disabled]	54
Intel Virtualization Technology [Enabled]	55
EIST [Enabled].....	55
Serial-ATA (SATA) [Enabled]	56
SATA Mode [AHCI Mode]	56
USB Devices	57
Legacy USB Support [Enabled].....	57
DVMT Pre-Allocated [256M]	60
DVMT Total Gfx Mem [Max].....	60
Primary IGFX Boot Display [VBIOS Default]	60
Restore on AC Power Loss [Last State]	61
Audio Controller [Enabled]	61
XHCI Mode [Smart Auto]	62
Speed [Auto].....	63
Administrator Password	64
User Password	64
Bootup NumLock State [On].....	65
Quiet Boot [Enabled]	66
UEFI Boot [Disabled]	66
Launch PXE OpROM [Disabled]	66
Option ROM Messages [Force BIOS].....	66
Save Changes and Reset	67



Discard Changes and Reset	67
Restore Defaults	67
Save as User Defaults	68
Restore User Defaults	68



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.

AFL3-W07A-BT-N1 Panel PC

**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

E.1 Hazardous Material Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

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 table on the next page.

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 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						

AFL3-W07A-BT-N1 Panel PC

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/T11363-2006 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/T11363-2006 标准规定的限量要求。						