IEI Integration Corp.

MODEL:

AFL3-W19A-AL

Flat Bezel Panel PC with Intel® Celeron® J3455 CPU, Touchscreen, Four USB, Dual GbE LAN, RS-232/422/485, HD Audio, Wi-Fi 802.11a/b/g/n/ac and RoHS

User Manual

Rev. 1.01 - December 7, 2018

RoHS Lead Free

Revision

Date	Version	Changes
December 7, 2018	1.01	Added anti-glare and anti-UV touchscreen feature Added E-Window module support list
June 15, 2018	1.00	Initial release

Safety Instructions

en Warning! Read the user manual before connecting the system to the power source.

de Vorsicht! Bitte lesen Sie die Bedienungsanleitung, bevor Sie das System an eine Stromquelle anschließen.

fr Attention! Avant de brancher le système à la source d'alimentation, consultez le mode d'emploi.

it Avvertenza! Consultare il manuale utente prima di collegare il sistema all'alimentatore.

es Atención! Lea atentamente este manual del usuario antes de operar la fuente de alimentación.

zh 警告！在將系統連接到電源之前，請仔細閱讀使用手冊。

cn 警告！在将系统连接到电源之前，请仔细阅读使用手冊。

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en Warning! To prevent the system from overheating, do not operate it in an area that exceeds the maximum operating temperature described in the user manual.

de Vorsicht! Um eine Überhitzung des Systems zu vermeiden, betreiben Sie es ausschließlich im zulässigen Betriebstemperaturbereich. Dieser ist in der Bedienungsanleitung vermerkt.

fr Attention! Pour éviter la surchauffe du système, ne l'utilisez pas dans une zone dont la température dépasse les limites décrits dans le mode d'emploi.

it Avvertenza! Per evitare che il sistema si surriscaldi, non utilizzarlo in aree che superino la temperatura massima d'esercizio descritta nel manuale utente.

es Atención! Para evitar el excesivo calentamiento del sistema, no opere en las condiciones de temperatura superior a lo recomendado en este manual del usuario.

zh 警告！為防止系統過熱，不要在使用手冊上記載的產品工作溫度範圍之外操作此系統。

cn 警告！为防止系统过热，不要在使用手冊上记载的产品工作温度范围之外操作此系统。

---

en Warning! Use only the adapter and power cord approved for this system. Use of another type of adapter may risk fire or explosion. Please refer to the user manual for the power adapter specifications.

de Vorsicht! Nur zugelassene Netzteile und Netzkabel dürfen verwendet werden. Die Benutzung von anderen Netzteilen kann einen Brand oder eine Explosion zur Folge haben. Prüfen Sie die jeweiligen Spezifikationen in der Bedienungsanleitung.

fr Attention! Utilisez exclusivement le câble d'alimentation et l'adaptateur homologués pour ce système. L'utilisation d'un autre type d'adaptateur risquerait de provoquer un incendie ou une explosion. Veuillez référer au mode d'emploi pour les spécifications de l'adaptateur d'alimentation.

it Avvertenza! Utilizzare solo l'adattatore e il cavo di alimentazione approvati per questo sistema. L'uso di un altro tipo di adattatore può causare rischio d'incendio o esplosione. Si prega di fare riferimento al manuale utente per le specifiche sull'alimentazione.

es Atención! Utilice solamente el adaptador de corriente alterna (CA) con Marcas Conformidad otorgadas. Cualquier otro adaptador no otorgado aumenta el riesgo de explosión o incendio. Por favor consulte el manual del usuario para las especificaciones del adaptador de alimentación.

zh 警告！只能使用經過認證、適用於本系統的電源變壓器與電源線。使用不適用的電源變壓器將可能導致火災或爆炸。電源變壓器規格請參考使用手冊。

cn 警告！只能使用经过认证，适用于本系统的电源适配器与电源线。使用不适用的电源适配器将可能导致火灾或爆炸。电源适配器规格请参考使用手册。

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en Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

de Vorsicht! Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

fr Attention! La mise au rebut ou le recyclage de ce produit sont généralement soumis aux lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

it Avvertenza! Lo smaltimento di questo prodotto deve essere eseguito secondo le leggi e i regolamenti locali.

es Atención! La disposición final de residuos de este producto se debe cumplir con las normativas y leyes del país.

zh 警告！本產品的廢棄處理應根據該國家的法律和規章進行。

cn 警告！本产品的废弃处理应根据该国家的法律和规章进行。

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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

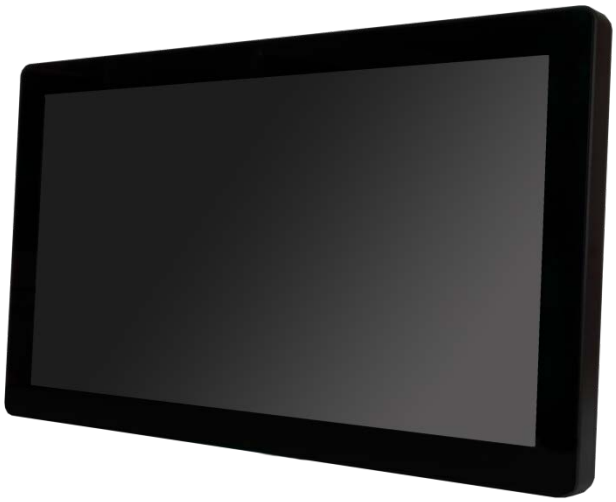


Figure 1-1: AFL3-W19A-AL Flat Bezel Panel PC

The AFL3-W19A-AL series is a quad-core Intel® Celeron® J3455 powered flat bezel touchscreen 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® J3455 is a System-on-Chip (SoC) that ensures optimal memory, graphics, and peripheral I/O support. The system comes with 4.0 GB of DDR3L SO-DIMM memory ensuring smooth data throughputs with reduced bottlenecks and fast system access.

One RS-232/422/485 serial port, one RS-232 serial port and four external USB 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 Features

The AFL3-W19A-AL features are listed below:

- Flat-bezel LCD with LED backlight
- Intel® Celeron® J3455 processor
- Preinstalled with 4 GB of DDR3L memory (system max. 8 GB)
- Projected capacitive type touchscreen with anti-UV and anti-glare coating
- Wi-Fi 802.11a/b/g/n/ac high speed wireless
- Two PCIe GbE RJ-45 connectors
- Two internal speakers
- Two USB 3.0 ports and two USB 2.0 ports
- One RS-232/422/485 serial port and one RS-232 serial port by RJ-45 connectors
- Optional RFID reader
- Optional magnetic stripe card reader
- 12 V–34 V wide range DC power input
- IP 64 compliant front panel

1.3 Front Panel

The front side of the AFL3-W19A-AL is a flat-bezel panel with a TFT LCD screen surrounded by a PC/ABS plastic frame (**Figure 1-2**).

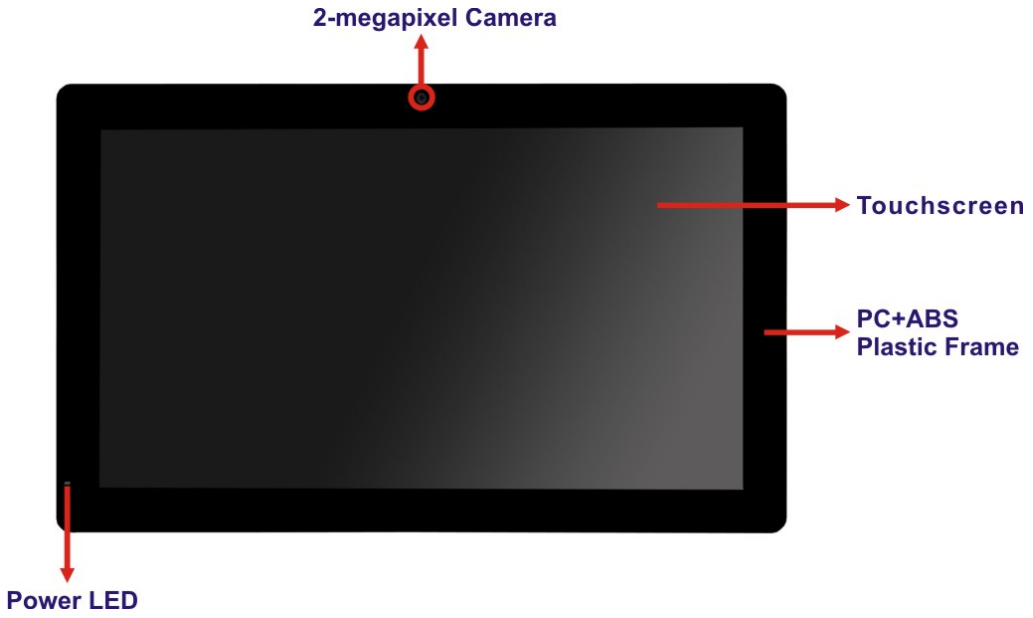


Figure 1-2: Front View

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.

1.4 Bottom Panel

The bottom panel of the AFL3-W19A-AL has the following connectors and switches.

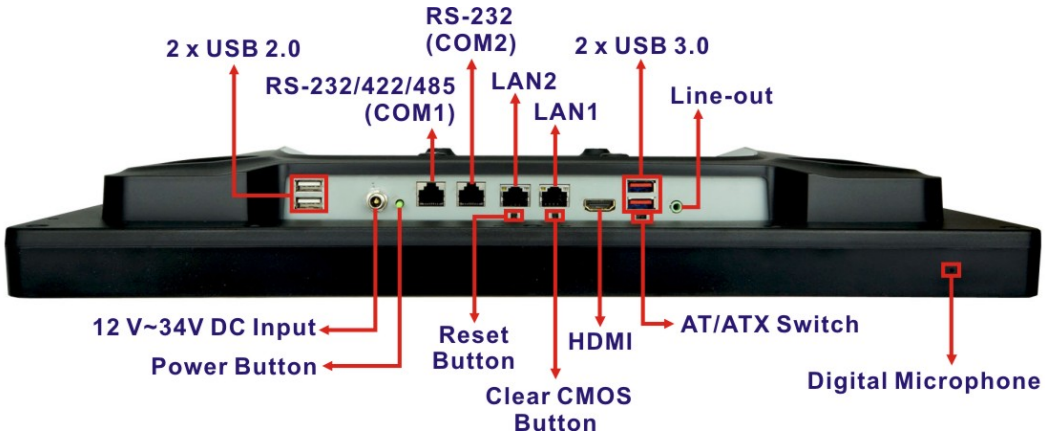


Figure 1-3: Bottom Panel

1.5 Rear Panel

The rear panel has two speakers and retention screw holes that support VESA mounting. The rear panel also has several retention screw holes for installing the optional barcode scanner and magnetic stripe card reader.

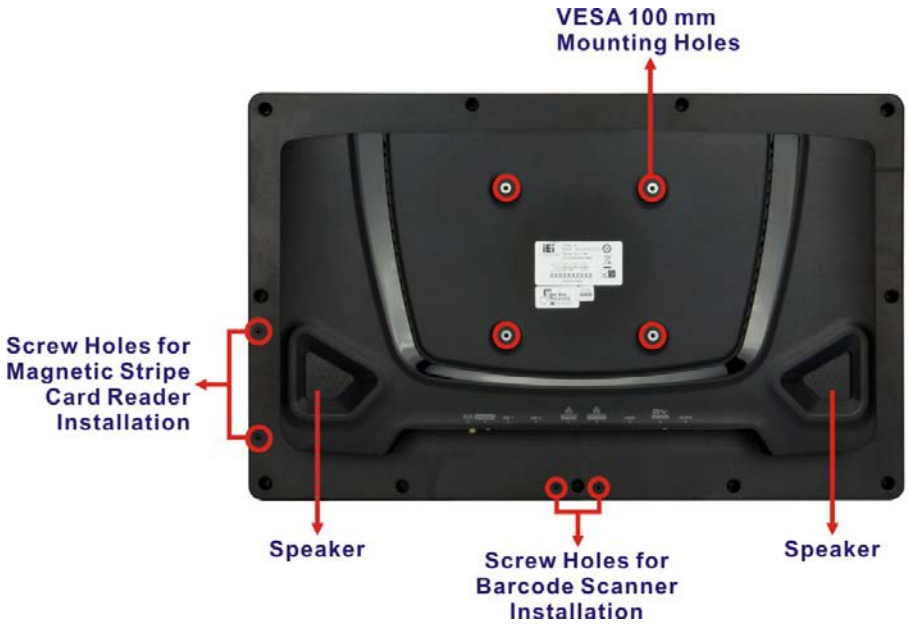


Figure 1-4: Rear View

1.6 Side Panel

The right side panel has one E-Window that supports a variety of IEI modules to provide additional connector interface.

Figure 1-5: Side View

The E-Window modules supported by the AFL3-W19A-AL are listed below. All listed E-Window modules are for ATO (assembly-to-order) only.

Part No.	Description
E-MPCIE-LAN02	PCIe Mini card supports one GbE port with Realtek RTL8111E controller, PMS 194C I/O bracket and 340 mm cable
E-MPCIE-CClink02	PCIe Mini card supports CC-Link Slave interface V2.0 and V1.1, with black C I/O bracket and 300mm cable
E-MPCIE-PROFIBUS02	PCIe Mini card supports universal PROFI BUS DP card for Master or Slave, with black C I/O bracket and 300mm cable
E-MPCIE-EtherCAT	PCIe Mini card supports universal real-time Ethernet protocols, with black C I/O bracket and 280mm 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 1-1: Supported E-Window Modules

1.7 System Specifications

The technical specifications for the AFL3-W19A-AL systems are listed in **Table 1-2**.

Specification	AFL3-W19A-AL
LCD Size	18.5″ (16:9)
Max. Resolution	1366 (W) x 768 (H)
Brightness (cd/m^2)	250
Contrast Ratio	1000:1
LCD Color	262K
Pixel Pitch (H x V) (mm)	0.240 x 0.240
Viewing Angle (H-V)	170° / 160°
Backlight MTBF	30,000 hrs
Backlight	LED
Touchscreen	Projected capacitive type with anti-UV and anti-glare coating, USB interface
Touch Controller	EETI EXC 3188
CPU (SoC)	Intel® Celeron® processor J3455 (quad-core, 2M cache, 1.5 GHz up to 2.30 GHz, TDP 10W)
Memory	One 204-pin 1600/1333 MHz single-channel DDR3L SO-DIMM slot preinstalled with 4 GB SDRAM (system max. 8 GB)
Ethernet	Two Intel® I211 PCIe GbE controllers
Storage	One full-size PCIe Mini slot supports mSATA module One 2.5″ SATA 3Gb/s HDD bay
Audio	Realtek ALC892 HD Audio codec

Internal Speaker	Two 3 W
Camera	2-megapixel with low light function and digital microphone
Wireless & Bluetooth	One M.2 2230 module supports 802.11a/b/g/n/ac WLAN + Bluetooth v4.0
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
Thermal Design	Fanless
VESA Mount	100 mm x 100 mm
Mounting	Panel, wall, stand or arm mounting
Front Panel Color	Black C
Net/Gross Weight	6.3 kg / 9 kg
Dimensions (W x H x D) (mm)	470 x 280 x 60
Operating Temperature	-15ºC ~ 50ºC (with air flow)
Storage Temperature	-20ºC ~ 60ºC
Humidity	10% ~ 95% (non-condensing)
Power Supply	60 W power adapter
Input:	100 V ~ 240 V AC, 50 Hz ~ 60 Hz
Output:	12 V DC, 5 A
Power Requirement	12 V ~ 34 V DC
Power Consumption	12 V @ 3.27 A (Intel® Celeron® processor J3455 with 4 GB 1600 MHz DDR3L memory)

IP Level	IP 64 compliant front panel
Safety/EMC	CE, FCC Class A
I/O Ports and Switches	1 x RS-232/422/485 serial port (COM1, RJ-45) 1 x RS-232 serial port (COM2, RJ-45) 2 x GbE LAN (RJ-45) 2 x USB 3.0 connectors 2 x USB 2.0 connectors 1 x HDMI output connector 1 x Audio line-out jack 1 x Power switch 1 x AT/ATX switch 1 x Reset button 1 x Clear CMOS button 1 x 12 V ~ 34 V DC input jack

Table 1-2: System Specifications

1.8 Dimensions

The AFL3-W19A-AL dimensions are shown below.

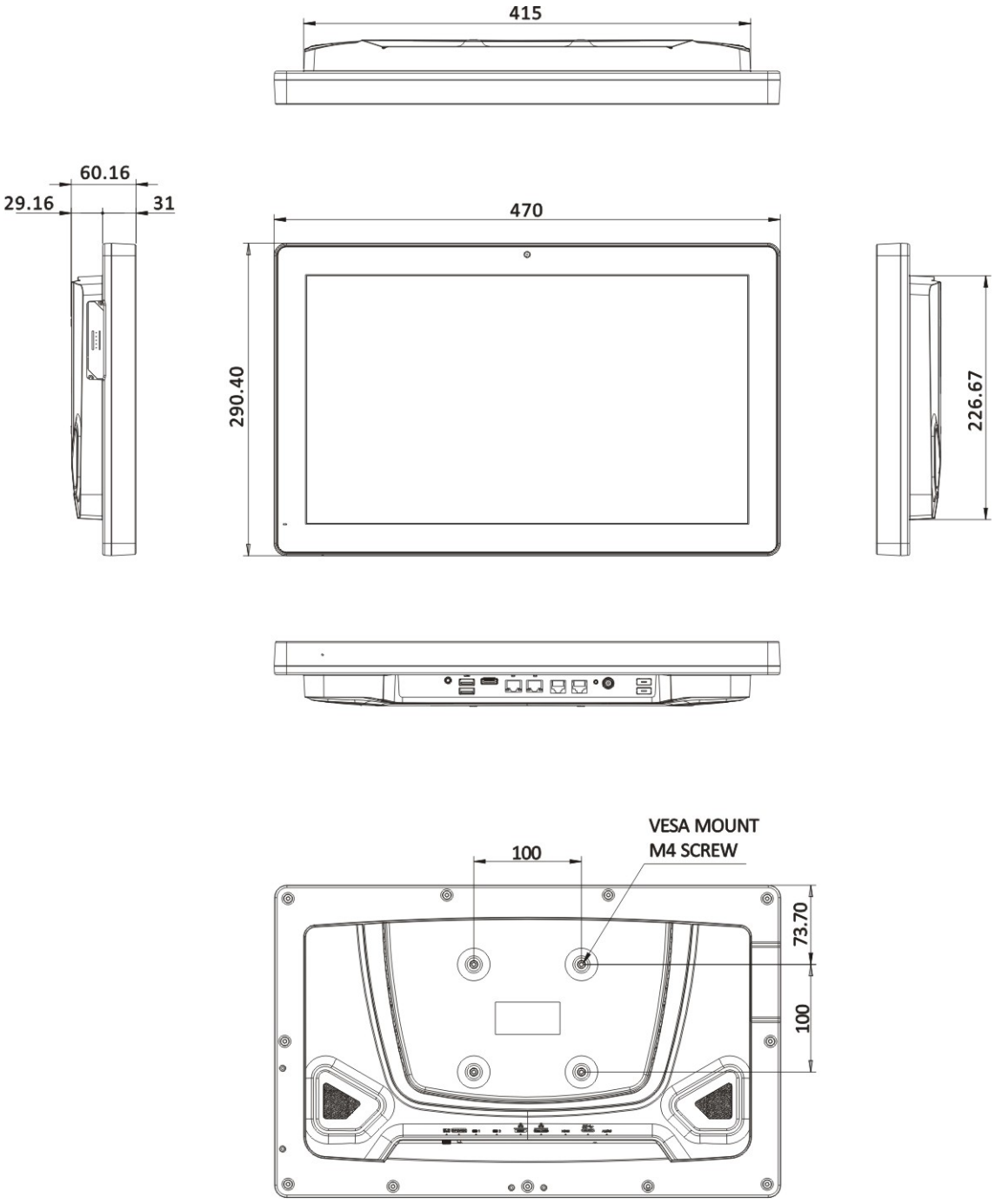


Figure 1-6: Dimensions (mm)

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: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 2: Open the outside box.

Step 3: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 4: Open the inside box.

Step 5: Lift the panel PC out of the boxes.

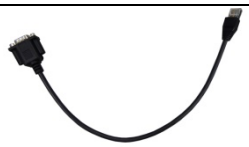
Step 6: Remove the peripheral parts box from the main box.

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-W19A-AL was purchased from or contact an IEI sales representative directly by sending an email to sales@ieiworld.com.

The AFL3-W19A-AL flat bezel panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL3-W19A-AL panel PC	
1	60 W power adapter (**P/N**: 63040-010060-120-RS)	
1	Power cord	
2	RJ-45 to DB-9 COM port cable	
4	Screws (M4*6) for VESA mounting	
4	Screws (M3*4) for HDD installation	
1	Thermal pad for HDD	

2.3 Optional Items

The following are optional components which may be separately purchased:

Item and Part Number	Image
VESA 100 wall mount kit (**P/N**: AFLWK-19B)	
Panel mounting kit (**P/N**: AFL3PK-W19C-R10)	
Arm (**P/N**: ARM-11-RS)	
Arm (**P/N**: ARM-31-RS)	
Stand for VESA 100 (**P/N**: STAND-A19-RS)	

Item and Part Number	Image
Stand for VESA 75/VESA 100 (**P/N**: STAND-C19-R10)	
Magnetic card reader (**P/N**: AFL3P-W10MSR-U-R10)	
Barcode scanner (**P/N**: AFL3-2D-R10)	

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-W19A-AL may result in permanent damage to the AFL3-W19A-AL and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W19A-AL. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W19A-AL 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-W19A-AL, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W19A-AL.
- ***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 an 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 Covers

To access the AFL3-W19A-AL internally the plastic back cover and the internal aluminum cover must be removed. To remove the covers, please follow the steps below.

Step 1: Remove the 11 retention screws from the back cover. See **Figure 3-1**.

Figure 3-1: Back Cover Retention Screws

Step 2: Lift the plastic back cover off the AFL3-W19A-AL.

Step 3: Remove the 15 retention screws from the internal aluminum cover.

See **Figure 3-2**.

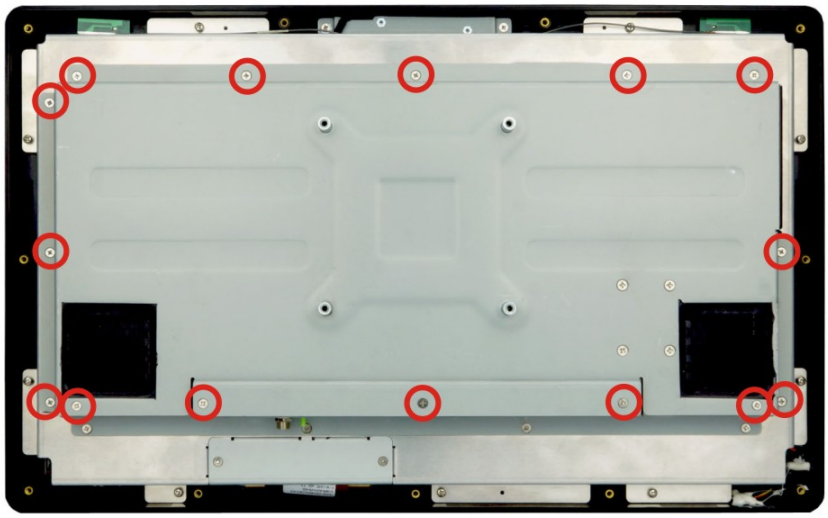


Figure 3-2: Aluminum Cover Retention Screws

Step 4: Lift the aluminum cover off the AFL3-W19A-AL.

3.5 mSATA Module Installation

To install a full-size mSATA module into the AFL3-W19A-AL, please follow the steps below:

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

Step 2: Locate the mSATA module slot. Remove the preinstalled retention screw on the screw pillar as shown in **Figure 3-3**.

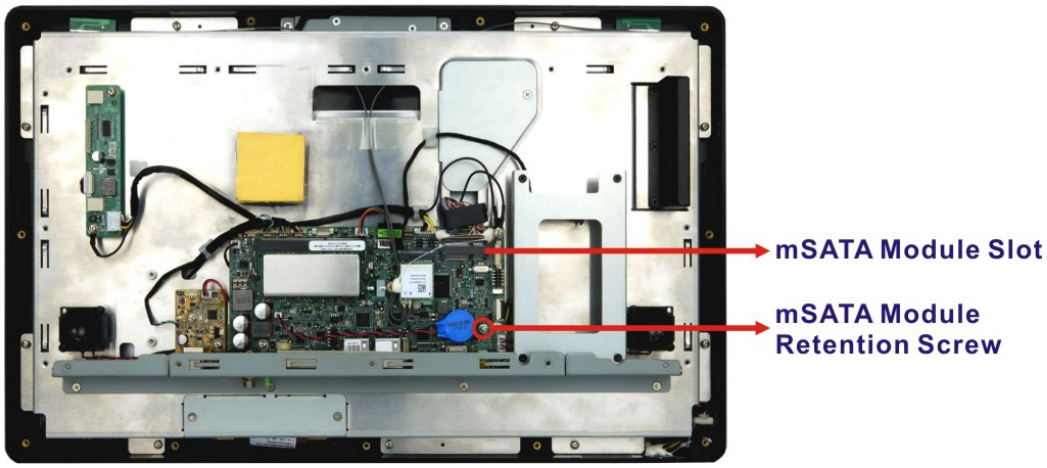


Figure 3-3: mSATA Module Slot Location

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 (**Figure 3-4**).

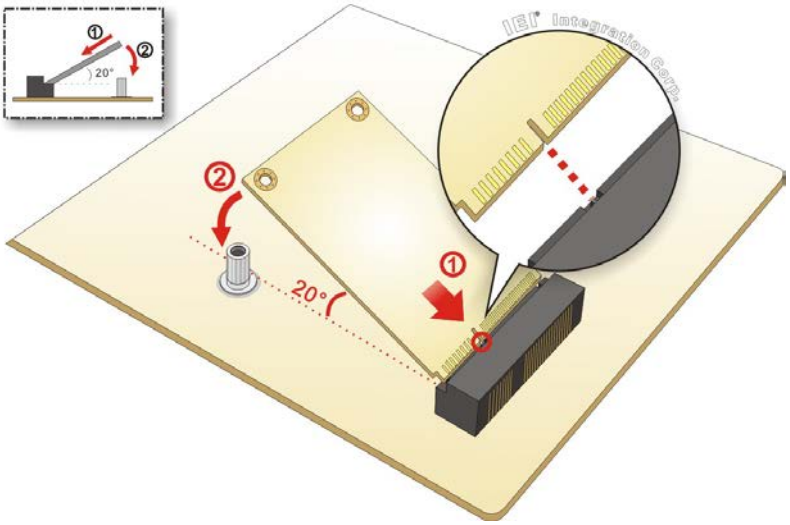


Figure 3-4: Installing an mSATA Module

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 3-4**).

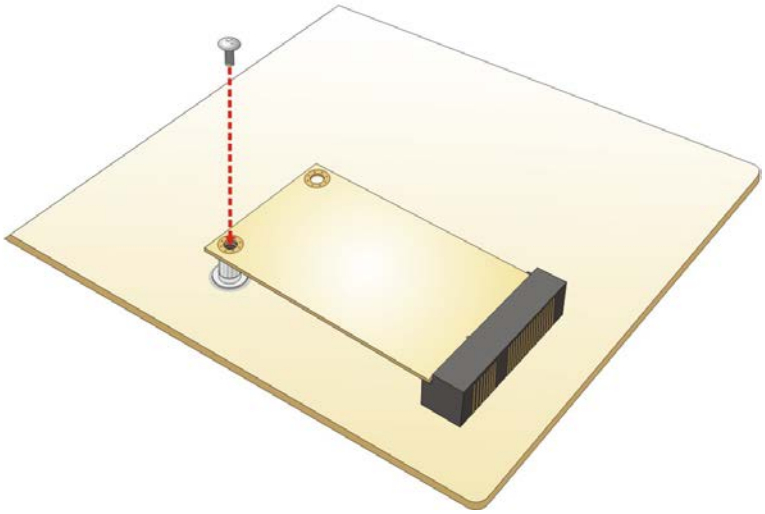


Figure 3-5: Securing the mSATA Module

Step 5: Re-install the aluminum cover and the plastic back cover.

3.5.1 PCIe Mini Slot Mode Selection

The PCIe Mini slot can be set as the mSATA mode or PCIe Mini mode. The jumper selection options are shown in **Table 3-1**.

J_SATA1	Description
Short A-B	Set PCIe Mini Slot (MSATA1) as PCIe Mini (Default)
Short B-C	Set PCIe Mini Slot (MSATA1) as mSATA

Table 3-1: PCIe Mini Slot Mode Selection (J_SATA1)

The PCIe Mini slot mode switch location is shown in **Figure 3-6** below.

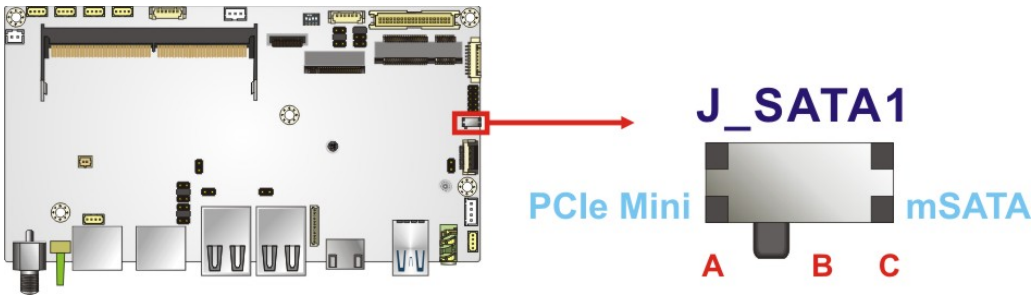


Figure 3-6: PCIe Mini Slot Mode Switch Location

3.6 HDD Installation

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

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

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

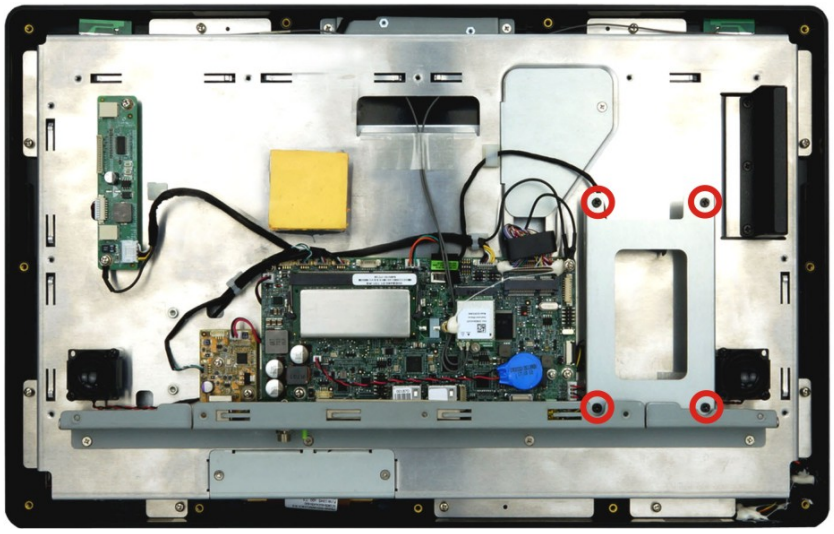


Figure 3-7: HDD Bracket Retention Screws

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 3-8**).

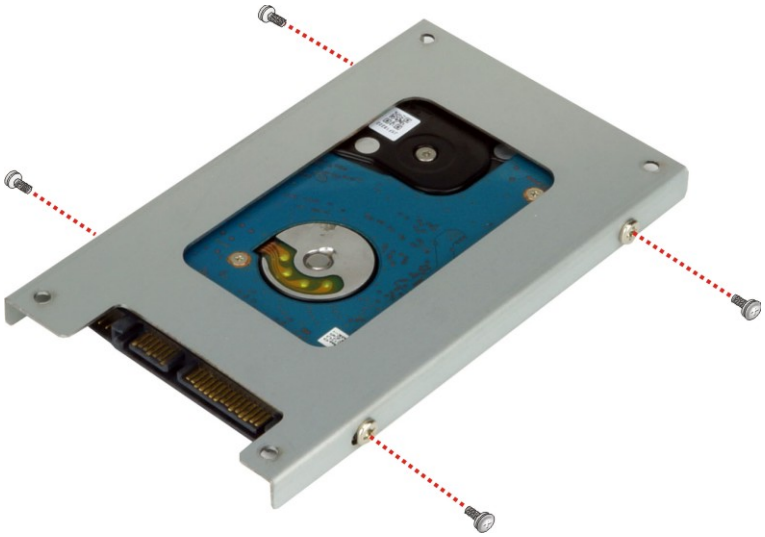


Figure 3-8: HDD Retention Screws

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

Step 5: Install the HDD into the AFL3-W19A-AL by aligning the retention screw holes in the HDD brackets with the retention screw holes on the chassis. Insert the four retention screws.

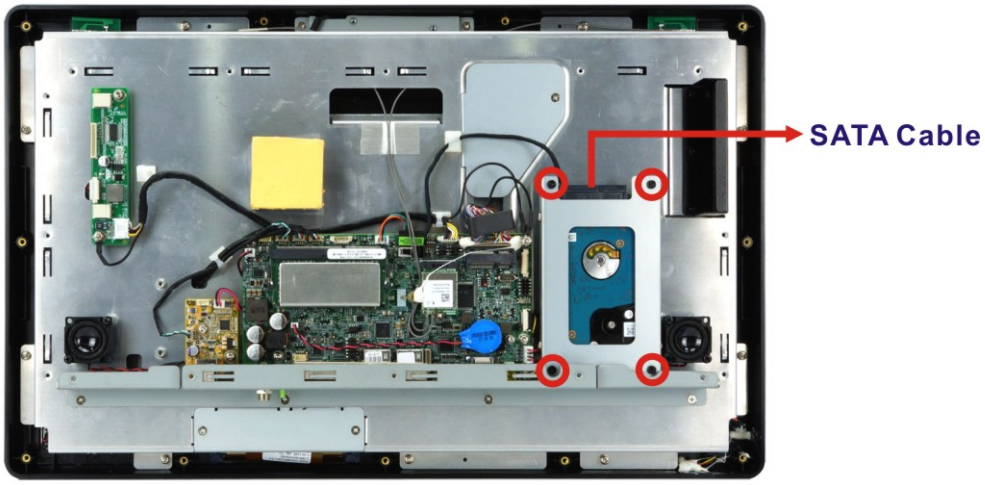


Figure 3-9: HDD Installation

Step 6: Take the thermal pad included in the package. Peel off the plastic sheet from the thermal pad, and remove the blue sheet from the adhesive side of the thermal pad.

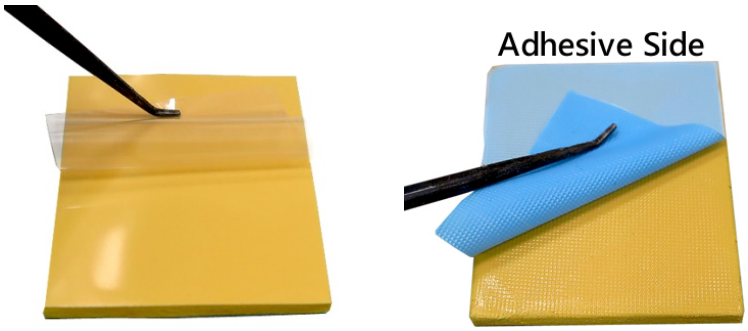


Figure 3-10: HDD Thermal Pad

Step 7: Face the adhesive side down, and attach the thermal pad on the aluminum cover as shown below.

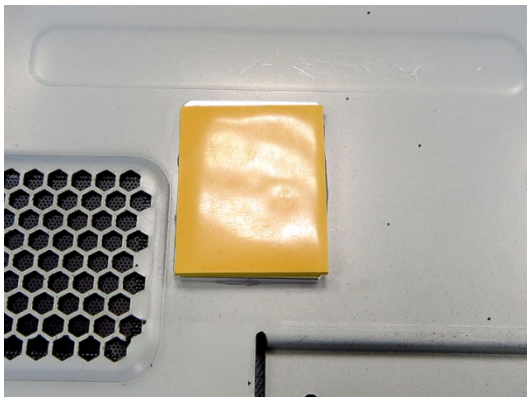


Figure 3-11: Attach HDD Thermal Pad

CAUTION:

The HDD thermal pad helps draw the heat away from the HDD and evenly dissipates it into the heat sink on the internal aluminum cover. Failing to apply the thermal pad properly may cause HDD and system damage.

The thermal pad is required only when installing a HDD. An SSD does not need a thermal pad to transfer heat.

Step 8: Re-install the internal aluminum cover and the plastic back cover.

3.7 Serial Port Configuration and Connection

The AFL3-W19A-AL series has two serial ports, including one RS-232/422/484 port (COM1, RJ-45) and one RS-232 port (COM2, RJ-45). The jumper settings and pinouts of the serial ports are listed in the following sections.

3.7.1 Serial Port Connection

The two serial ports are RJ-45 serial device connectors on the bottom panel. Each serial port connects to a cable with a standard D-sub 9 connector at the other end (cable included). Follow the steps below to connect a serial device to the AFL3-W19A-AL.

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 doesn't.

Step 2: Insert the RJ-45 to D-sub 9 cable.

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. See Figure 3-12.

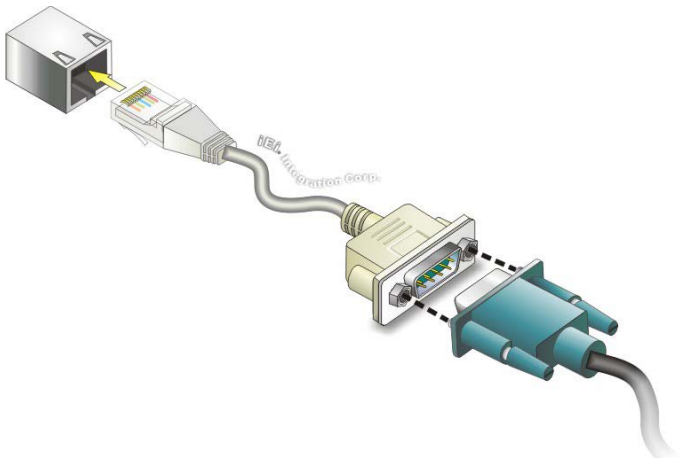


Figure 3-12: Serial Device Connection

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.

3.7.2 RS-232 Serial Port Pinouts

The pinouts of the RS-232 serial port (COM2) are listed in the following tables.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD	5	NSOUT
2	-NDSR	6	-NCTS
3	NSIN	7	-NDTR
4	-NRTS	8	-XRI

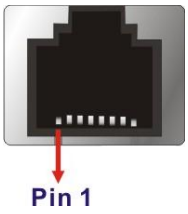


Table 3-2: RS-232 RJ-45 Serial Port (COM2) Pinouts

Pin No.	Description	Pin No.	Description
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

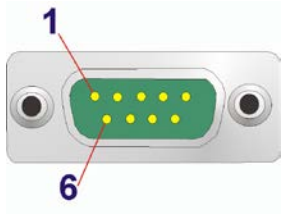


Table 3-3: RS-232 DB-9 Serial Port (COM2) Pinouts

3.7.3 RS-232/422/485 Serial Port Pinouts

The pinouts of the RS-232/422/485 serial port (COM1) are listed in the following tables. The serial communication mode selection can be made through the BIOS options. Please refer to **Section 4.3.2.2** for detail information. The pinouts of the D-sub 9 connector are listed below.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD	5	NSOUT
2	-NDSR	6	-NCTS
3	NSIN	7	-NDTR
4	-NRTS	8	-XRI

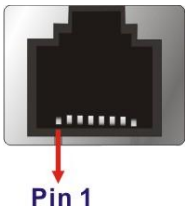


Table 3-4: RS-232/422/485 RJ-45 Serial Port (COM1) Pinouts

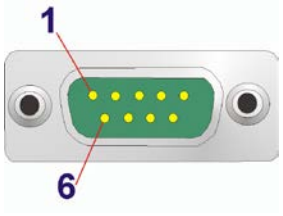
PIN NO.	RS-232	RS-422	RS-485	
1	DCD	TXD422-	TXD485-	
2	SIN	TXD422+	TXD485+	
3	SOUT	RXD422+	--	
4	DTR	RXD422-	--	
5	GND	--	--	
6	DSR	--	--	
7	RTS	--	--	
8	CTS	--	--	
9	RI	--	--	

Table 3-5: RS-232/422/485 DB-9 Serial Port (COM1) Pinouts

3.7.4 DB-9 Serial Port Pin 9 Selection

Pin 9 on the COM1 and COM2 DB-9 connectors can be set as the ring (RI) signal, +5 V or +12 V. The jumper selection options are shown in **Table 3-6** and **Table 3-7**.

JP1	Description
Short 1-2	COM2 RI Pin use +5 V
Short 3-4	COM2 RI Pin use RI (Default)
Short 5-6	COM2 RI Pin use +12 V

Table 3-6: COM1 Pin 9 Setting Jumper Settings (JP1)

JP2	Description
Short 1-2	COM1 RI Pin use +5 V
Short 3-4	COM1 RI Pin use RI (Default)
Short 5-6	COM1 RI Pin use +12 V

Table 3-7: COM2 Pin 9 Setting Jumper Settings (JP2)

The DB-9 Serial Port Pin 9 Setting jumper locations are shown in **Figure 3-13** below.

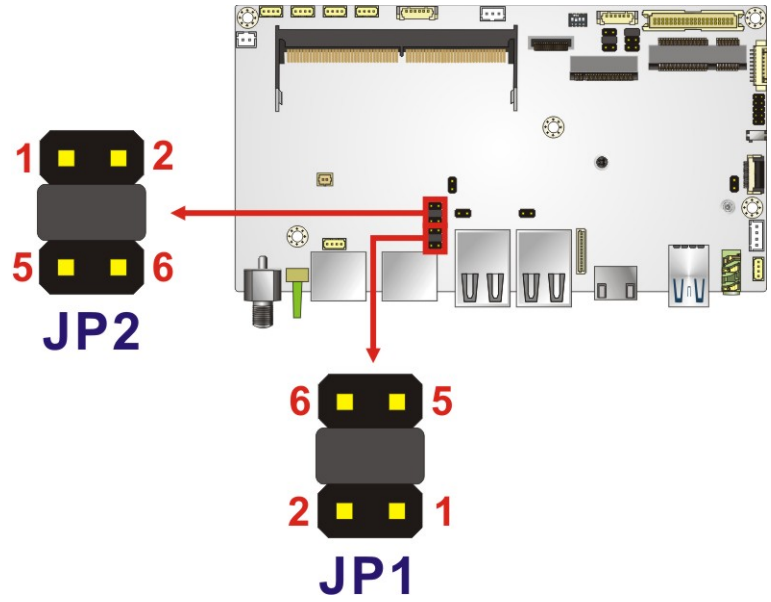


Figure 3-13: DB-9 Serial Port Pin 9 Setting Jumper Locations

3.8 AT/ATX Mode Selection

AT or ATX power mode can be used on the AFL3-W19A-AL. The selection is made through an AT/ATX switch located on the bottom panel (**Figure 3-14**).

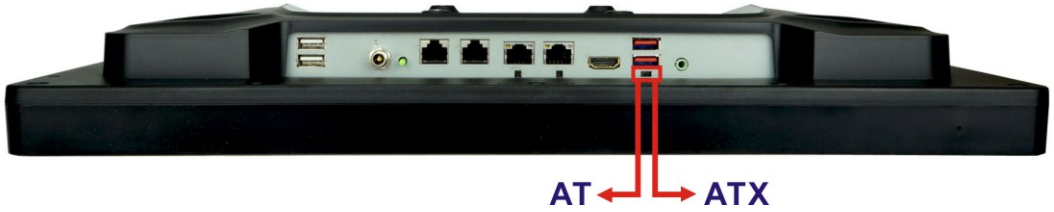


Figure 3-14: AT/ATX Switch Location

3.8.1 AT Power Mode

With the AT mode selected, the power is controlled by a central power unit rather than a power switch. The AFL3-W19A-AL 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

- Factory automation platform
- Manufacturing shop flow

3.8.2 ATX Power Mode

With the ATX mode selected, the AFL3-W19A-AL 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

3.9 Mounting the System

The methods of mounting the AFL3-W19A-AL are listed and described below.

- Wall mounting
- Panel mounting
- Arm mounting
- Stand mounting

3.9.1 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 3-15**).

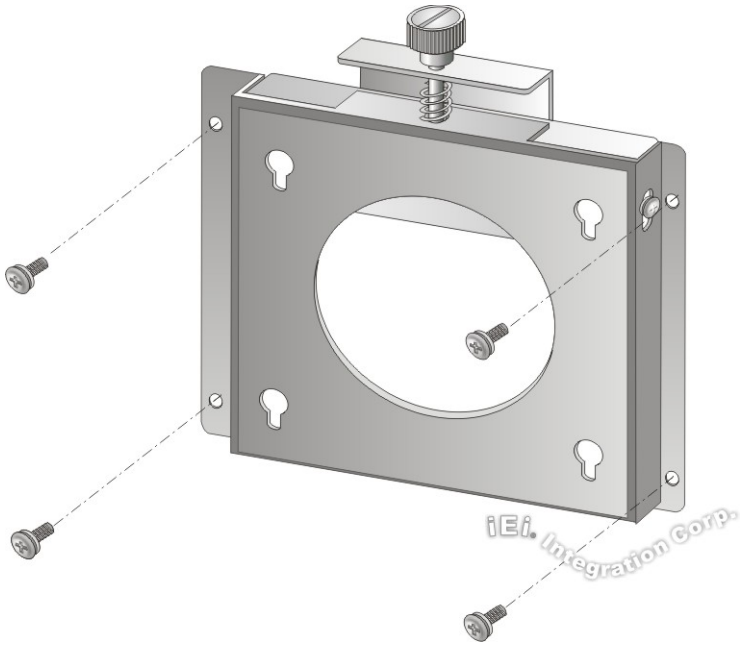
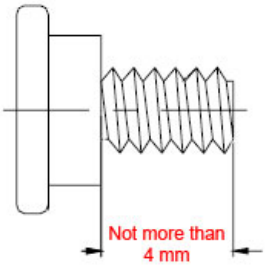


Figure 3-15: Wall-mounting Bracket

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 3-16**).

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 3-16**). 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.

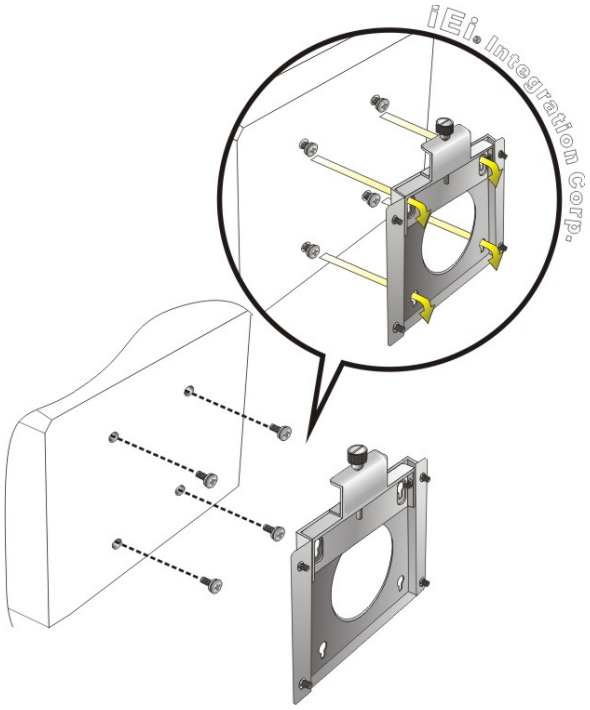


Figure 3-16: Chassis Support Screws

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket (**Figure 3-17**).

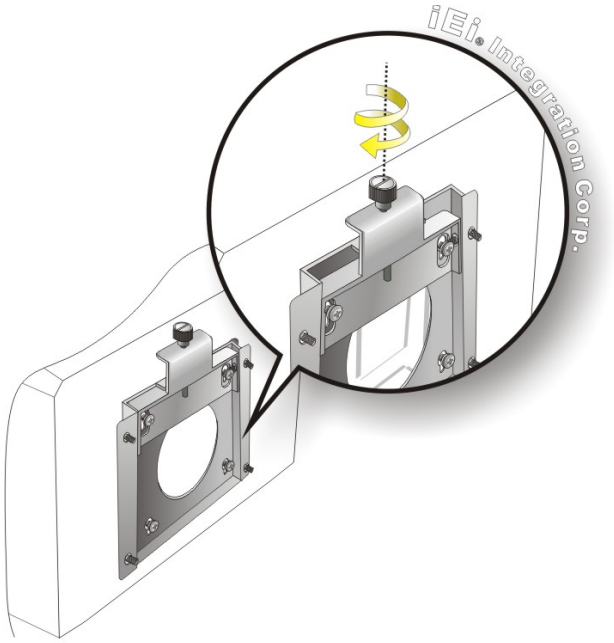


Figure 3-17: Secure the Panel PC

3.9.2 Panel Mounting

To mount the AFL3-W19A-AL 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 than the outer edge.

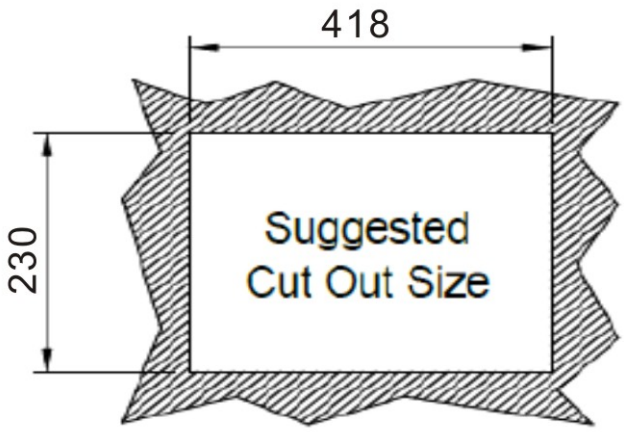


Figure 3-18: Cutout Dimensions

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 3-19**.

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.

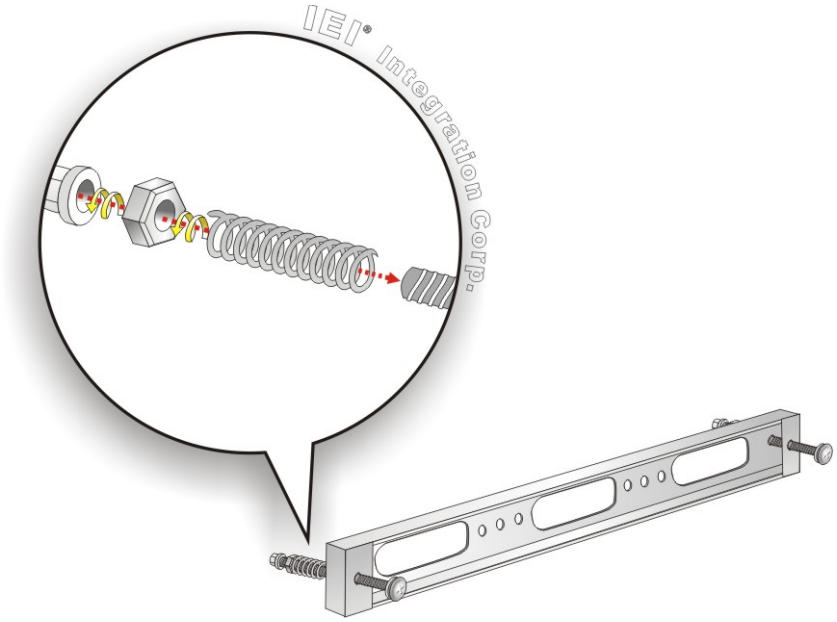


Figure 3-19: Panel Mounting Kit Installation

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 3-20**).

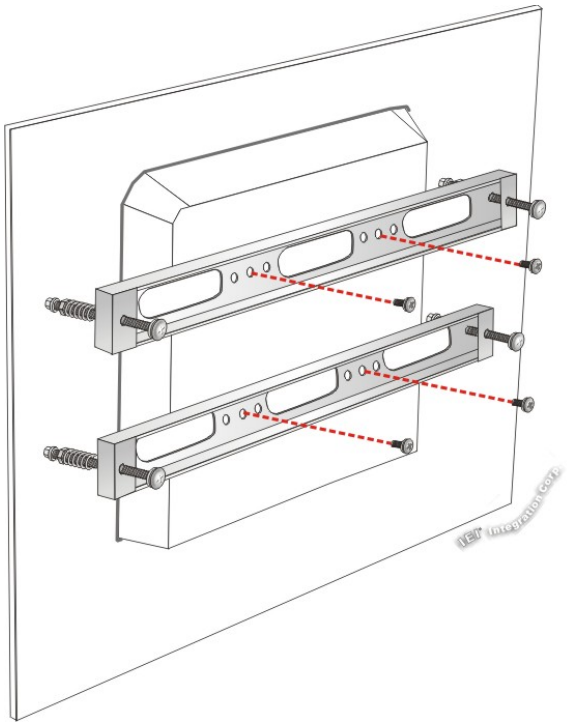


Figure 3-20: Securing Panel Mounting Brackets

NOTE:

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

3.9.3 Arm Mounting

The AFL3-W19A-AL is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100 mm interface pad. To mount the AFL3-W19A-AL 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 100 mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL3-W19A-AL 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 3-21**).

Figure 3-21: Arm Mounting Retention Screw Holes

Step 4: Secure the AFL3-W19A-AL to the interface pad by inserting four retention screws through the mounting arm interface pad and into the AFL3-W19A-AL.

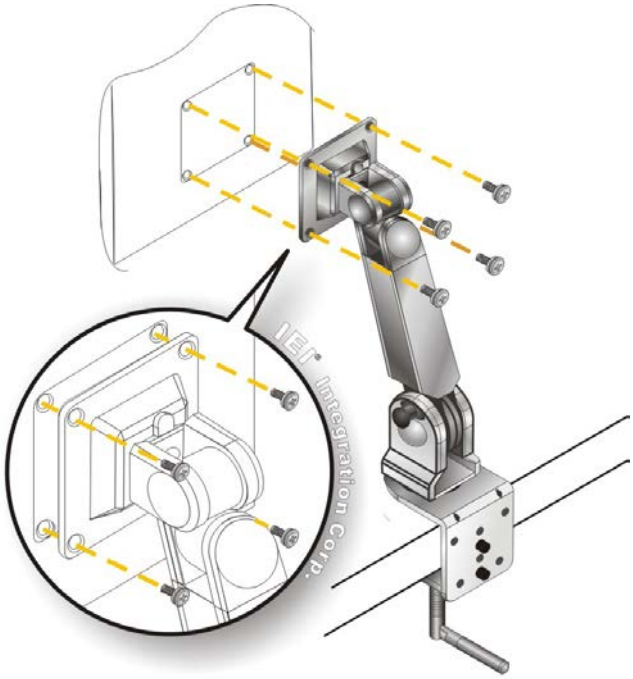


Figure 3-22: Arm Mounting

3.9.4 Stand Mounting

To mount the AFL3-W19A-AL using the stand mounting kit, please follow the steps below.

Step 1: Locate the screw holes on the rear of the AFL3-W19A-AL. 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-W19A-AL insert the retention screws into the screw holes and tighten them.

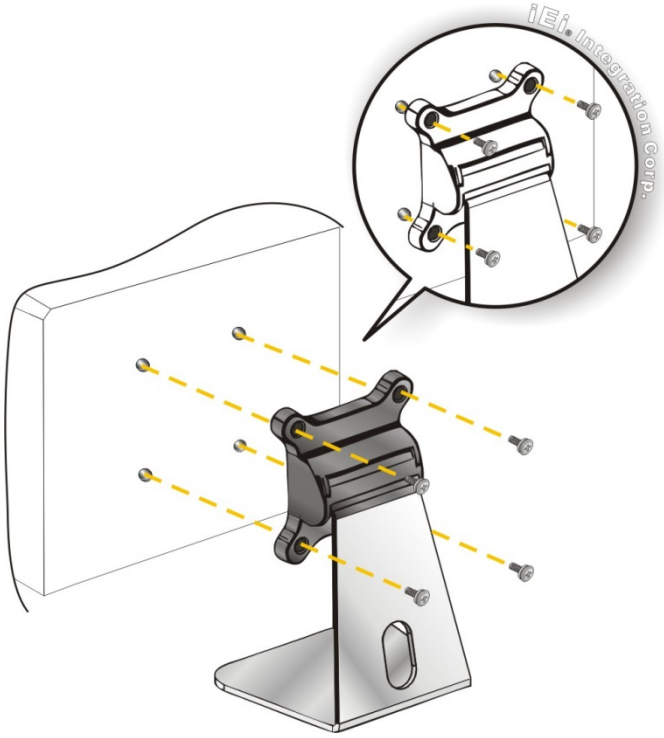


Figure 3-23: Stand Mounting (Stand-A/Bxx)

3.10 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-W19A-AL.

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

Step 4: Short press the power button to power up the system. Once powered up, the power LED on the front panel turns on in green.

Figure 3-24: Powering On the System

3.11 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 3-25**. Press the reset button to reboot the system.

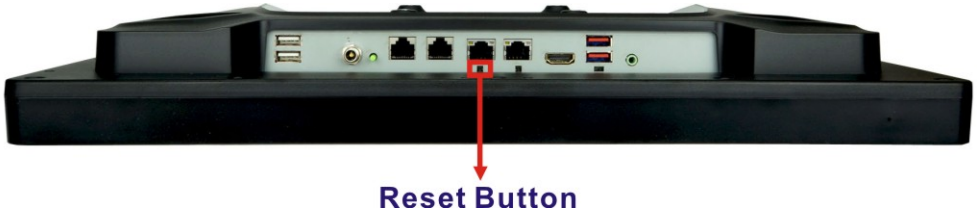


Figure 3-25: Reset Button Location

3.12 Clear CMOS

If the AFL3-W19A-AL fails to boot due to improper BIOS settings, the clear CMOS button 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 3-26**.

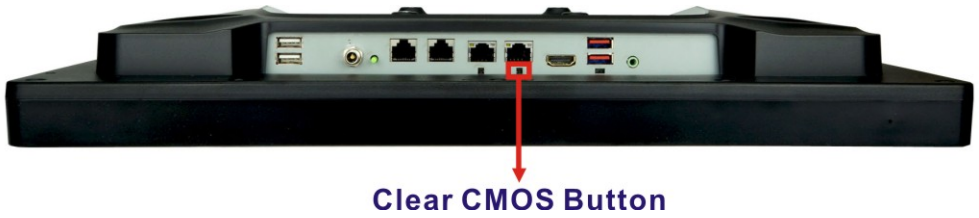


Figure 3-26: Clear CMOS Button Location

3.13 Software Installation

All the drivers for the AFL3-W19A-AL are available on IEI Resource Download Center (https://download.ieiworld.com). Type **AFL3-W19A-AL** and press Enter to find all the relevant software, utilities, and documentation.

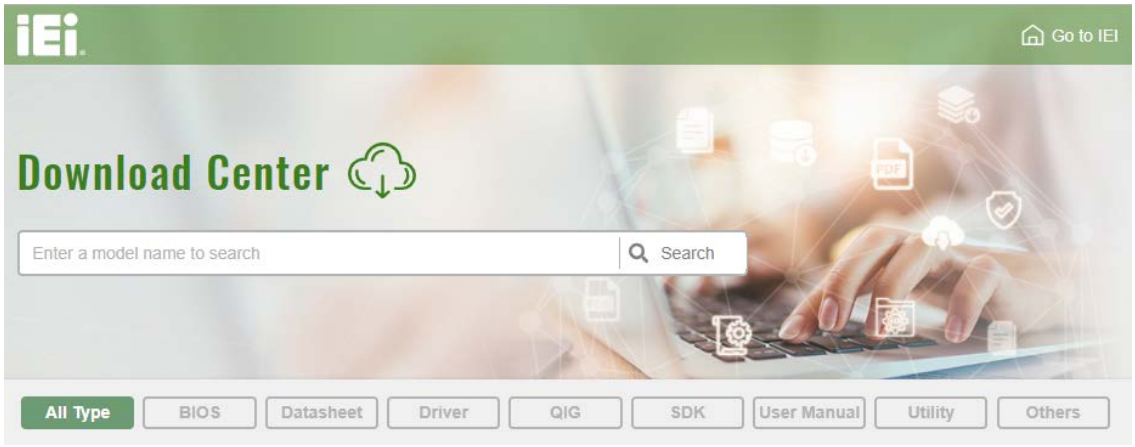
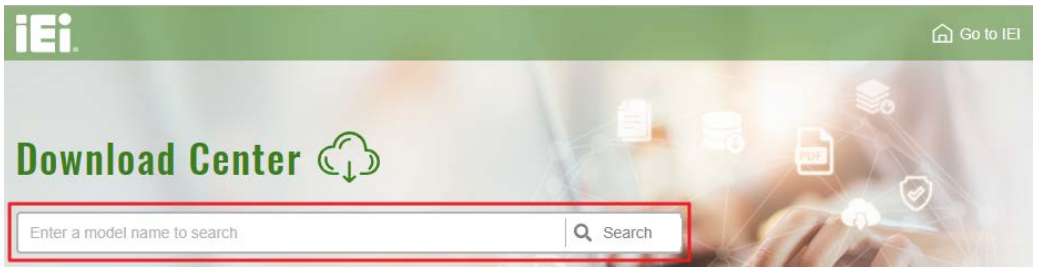


Figure 3-27: IEI Resource Download Center

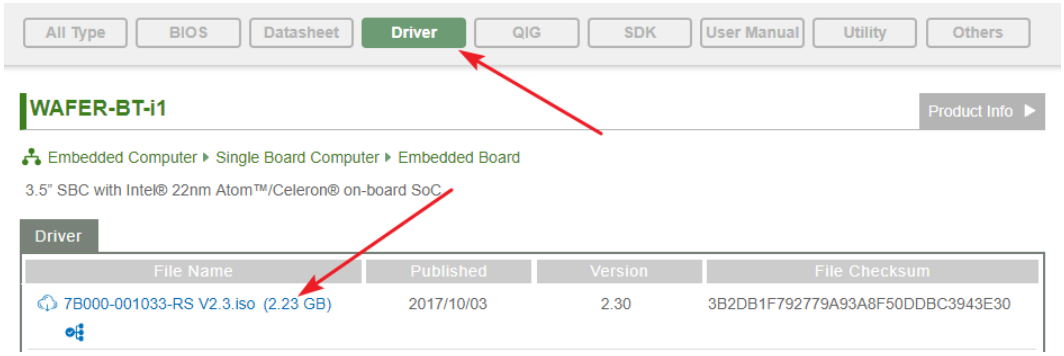
3.13.1 Driver Download

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

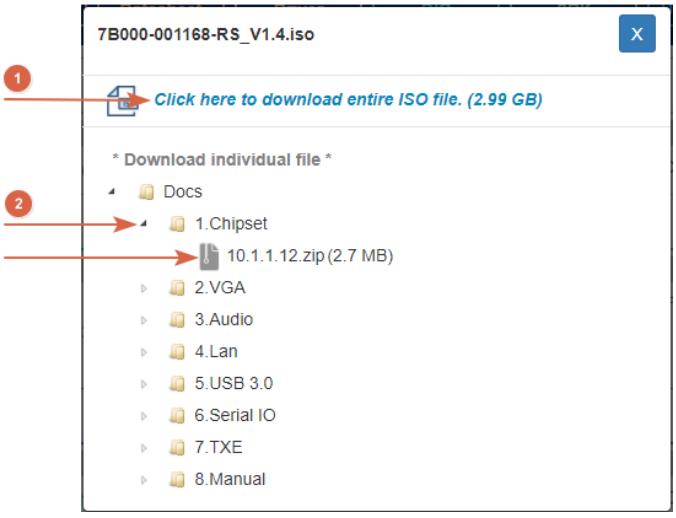
Step 1: Go to https://download.ieiworld.com. Type **AFL3-W19A-AL** and press Enter.



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.

Chapter

4

BIOS Setup

4.1 Introduction

The BIOS is programmed onto the BIOS chip. The BIOS setup program allows changes to certain system settings. This chapter outlines the options that can 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 **DELETE** or **F2** key as soon as the system is turned on or
2. Press the **DELETE** or **F2** key when the "**Press Del to enter SETUP**" message appears on the screen.

If the message disappears before the **DELETE** 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.

Key	Function
Up arrow	Move to previous item
Down arrow	Move to next item
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

Key	Function
-	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 not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu

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 is made, clear CMOS defaults. Use the clear CMOS button described in **Section 3.12**.

4.1.5 BIOS Menu Bar

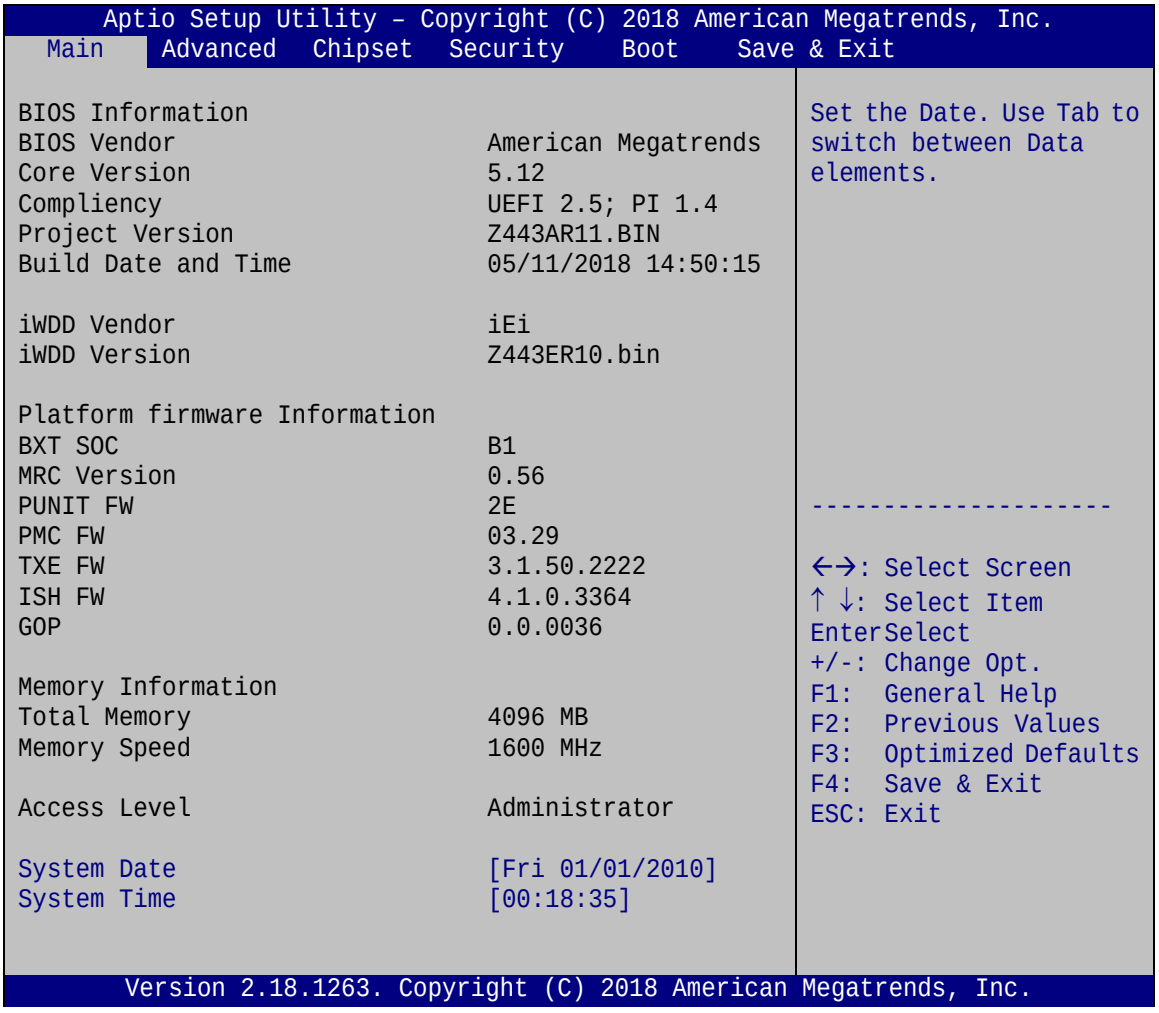
The **menu bar** on top of the BIOS screen has the following main items:

- 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

➔ **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!

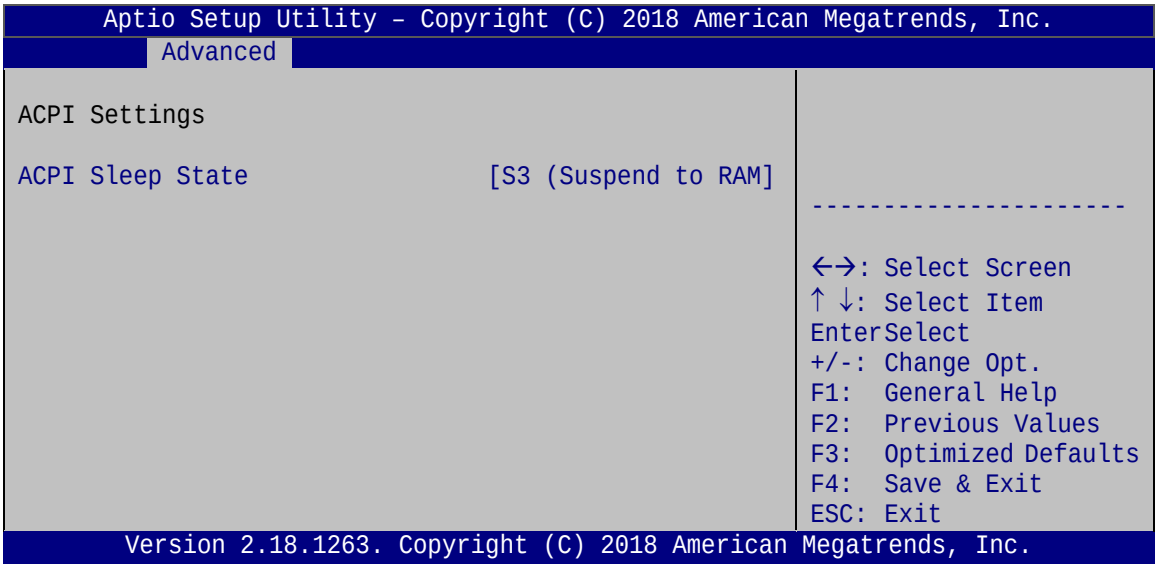
Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

```
      Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
  Main    Advanced   Chipset   Security    Boot    Save & Exit

> ACPI Settings                                  System ACPI Parameters.
> F81866 Super IO Configuration
> iWDD H/W Monitor
> USB Configuration
> CPU Configuration                              ----------------------
> RTC Wake Settings                              ←→: Select Screen
> Power Saving Configuration                     ↑ ↓: Select Item
> Serial Port Console Redirection                EnterSelect
> iEi Feature                                    F1   General Help
                                                 F2   Previous Values
                                                 F3   Optimized Defaults
                                                 F4   Save
                                                 ESC  Exit
       Version 2.18.1263. Copyright (C) 2018 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.

```
Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
        Advanced
F81866 Super IO Configuration                  Set Parameters of Serial
                                               Port 1 (COMA)
Super IO Chip                    F81866
> Serial Port 1 Configuration                  ---------------------
> Serial Port 2 Configuration                  ←→: Select Screen
                                               ↑ ↓: Select Item
                                               EnterSelect
                                               F1   General Help
                                               F2   Previous Values
                                               F3    Optimized
                                               Defaults
                                               F4    Save
                                               ESC   Exit
        Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

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.

```
Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
        Advanced
Serial Port 1 Configuration                    Enable or Disable Serial
                                               Port (COM)
Serial Port                      [Enabled]
Device Settings                  IO=3F8h; IRQ=4
                                               ---------------------
                                               ←→: Select Screen
Change Settings                  [IO=3F8h; IRQ=4]
                                               ↑ ↓: Select Item
                                               EnterSelect
                                               F1   General Help
                                               F2   Previous Values
                                               F3    Optimized
                                               Defaults
                                               F4    Save
                                               ESC   Exit
        Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

BIOS Menu 5: Serial Port n Configuration

4.3.2.2 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 [IO=3F8h; IRQ=4]**

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

➔ **IO=3F8h; IRQ=4**	**DEFAULT**	Serial Port I/O port address is 3F8h and the interrupt address is IRQ4
➔ **IO=3F8h; IRQ=4, 10, 11**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ4, 10, 11
➔ **IO=2F8h; IRQ=4, 10, 11**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ4, 10, 11
➔ **IO=3E8h; IRQ=4, 10, 11**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ4, 10, 11
➔ **IO=2E8h; IRQ=4, 10, 11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ4, 10, 11

➔ **Transfer Mode [RS232]**

Use the **Transfer Mode** option to select the Serial Port 2 signaling mode.

➔ **RS422**		Serial Port 6 signaling mode is RS-422
➔ **RS232**	**DEFAULT**	Serial Port 6 signaling mode is RS-232
➔ **RS485**		Serial Port 6 signaling mode is RS-485

4.3.2.3 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

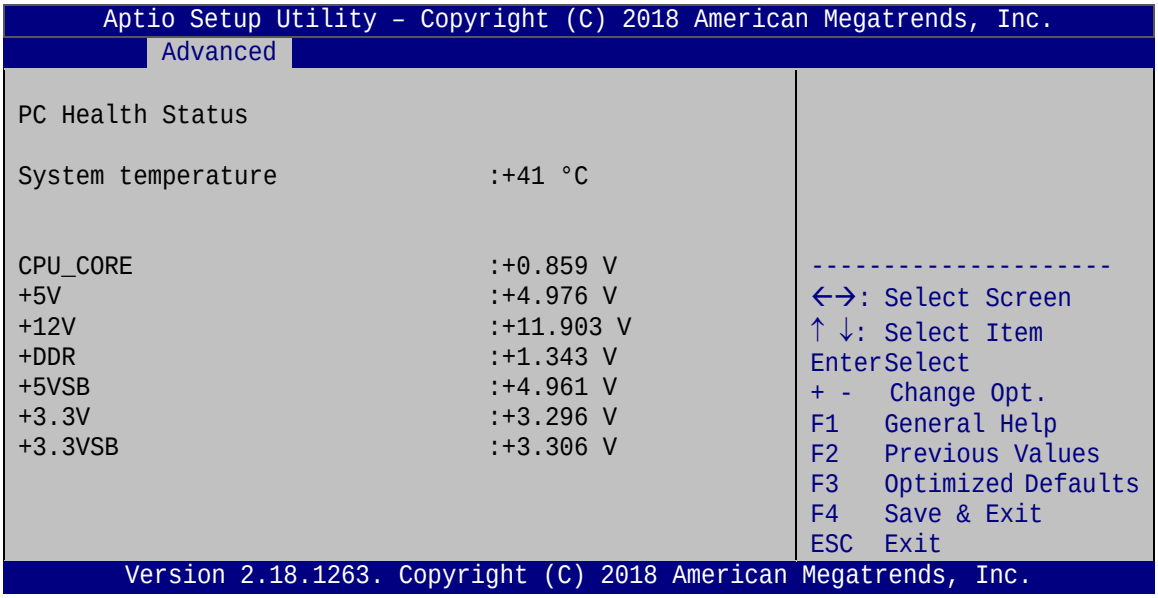
➔ **Change Settings [IO=2F8h; IRQ=11]**

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

➔ **IO=2F8h; IRQ=11**	**DEFAULT**	Serial Port I/O port address is 2F8h and the interrupt address is IRQ11
➔ **IO=3F8h; IRQ=4, 10, 11**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ4, 10, 11
➔ **IO=2F8h; IRQ=4, 10, 11**		Serial Port I/O port address is 2F8h and the interrupt address is IRQ4, 10, 11
➔ **IO=3E8h; IRQ=4, 10, 11**		Serial Port I/O port address is 3E8h and the interrupt address is IRQ4, 10, 11
➔ **IO=2E8h; IRQ=4, 10, 11**		Serial Port I/O port address is 2E8h and the interrupt address is IRQ4, 10, 11

4.3.3 iWDD H/W Monitor

The **iWDD H/W Monitor** menu (**BIOS Menu 6**) displays operating temperature, fan speeds and system voltages.



BIOS Menu 6: iWDD H/W Monitor

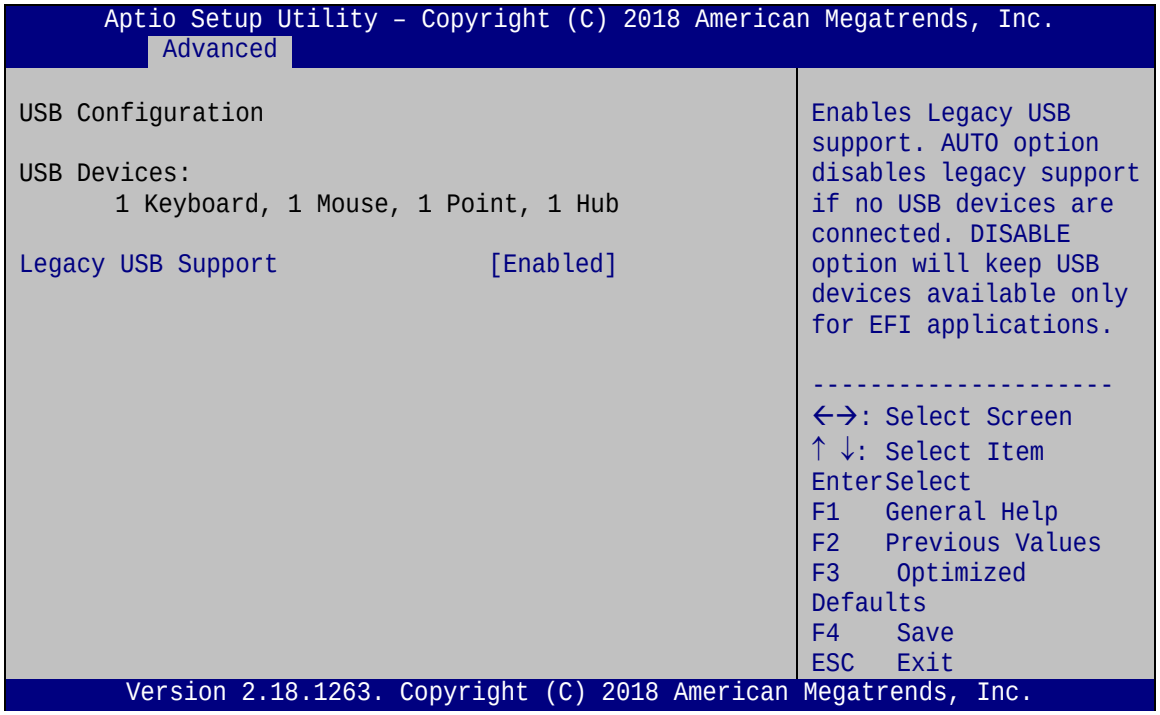
➔ **PC Health Status**

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

- System Temperatures
- Voltages
  - CPU_CORE
  - +5V
  - +12V
  - +DDR
  - +5VSB
  - +3.3V
  - +3.3VSB

4.3.4 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 7**) to read USB configuration information and configure the USB settings.



BIOS Menu 7: 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

4.3.5 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 8**) to view detailed CPU specifications and configure the CPU.

```
Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
   Advanced

CPU Configuration                                  Enable/Disable Intel
                                                   SpeedStep
Intel(R) Celeron(R) CPU J3455 @ 1.50GHz
CPU Signature                   506C9
Microcode Patch                 2E
Max CPU Speed                   1500 MHz
Min CPU Speed                   800 MHz
Processor Cores                 4
Intel HT Technology             Not Supported
Intel VT-x Technology           Supported          ----------------------

L1 Data Cache                   24 KB x 4          ←→: Select Screen
L1 Code Cache                   32 KB x 4          ↑ ↓: Select Item
L2 Cache                        1024 KB x 2        EnterSelect
L3 Cache                        Not Present        F1   General Help
                                                   F2   Previous Values
EIST                            [Enabled]          F3    Optimized
C-States                        [Disabled]         Defaults
Intel Virtualization Technology [Disabled]         F4    Save
VT-d                            [Disabled]         ESC   Exit

      Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

BIOS Menu 8: CPU Configuration

➔ **EIST [Enabled]**

Use the **EIST** option to enable or disable the Intel® Speed Step Technology.

➔ **Disabled** Disables the Intel® Speed Step Technology.

➔ **Enabled** **DEFAULT** Enables the Intel® Speed Step Technology.

➔ **C-States [Disabled]**

Use the **C-States** option to enable or disable the C-states.

➔ **Disabled** **DEFAULT** Disables the C-state

➔ **Enabled** Enables the C-state

➔ **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.

➔ **VT-d [Disabled]**

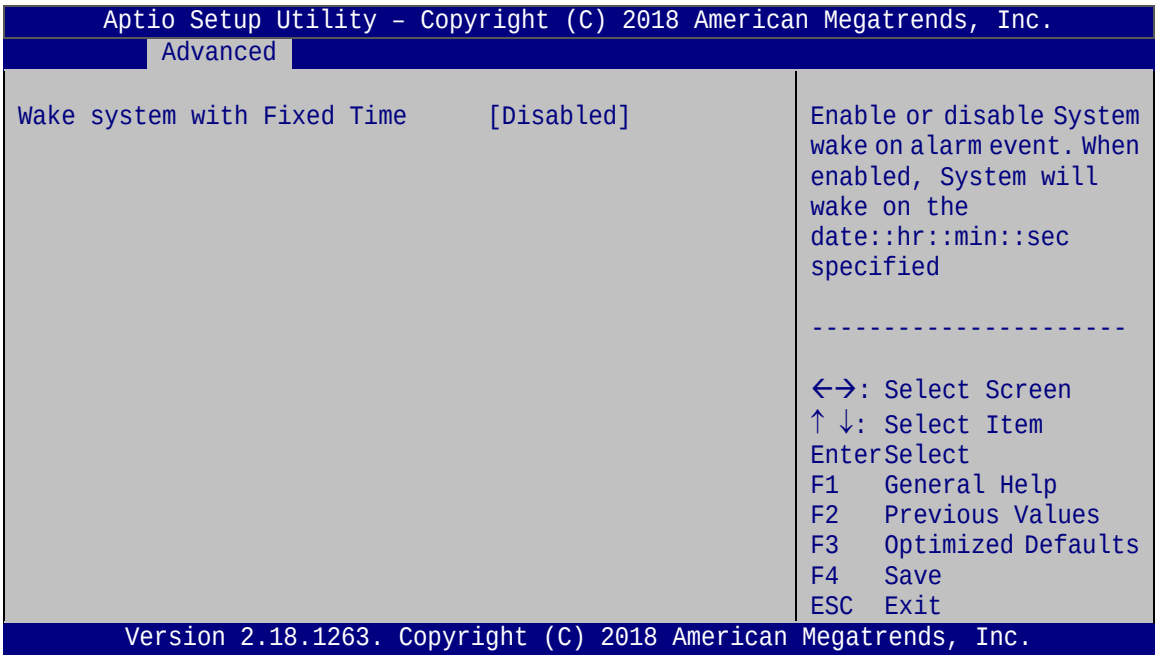
Use the **VT-d** BIOS option to enable or disabled VT-d support.

➔ **Disabled** **DEFAULT** Disable VT-d support.

➔ **Enabled** Enable VT-d support.

4.3.6 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 9**) configures RTC wake event.



BIOS Menu 9: RTC Wake Settings

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

Use the **Wake system with Fixed Time** option to enable or disable the system wake on alarm event.

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

➔ **Enabled** If selected, the **Wake up every day** option appears allowing you to enable to disable the system to wake every day at the specified time. Besides, the following options appear with values that can be selected:

Wake up date

Wake up hour

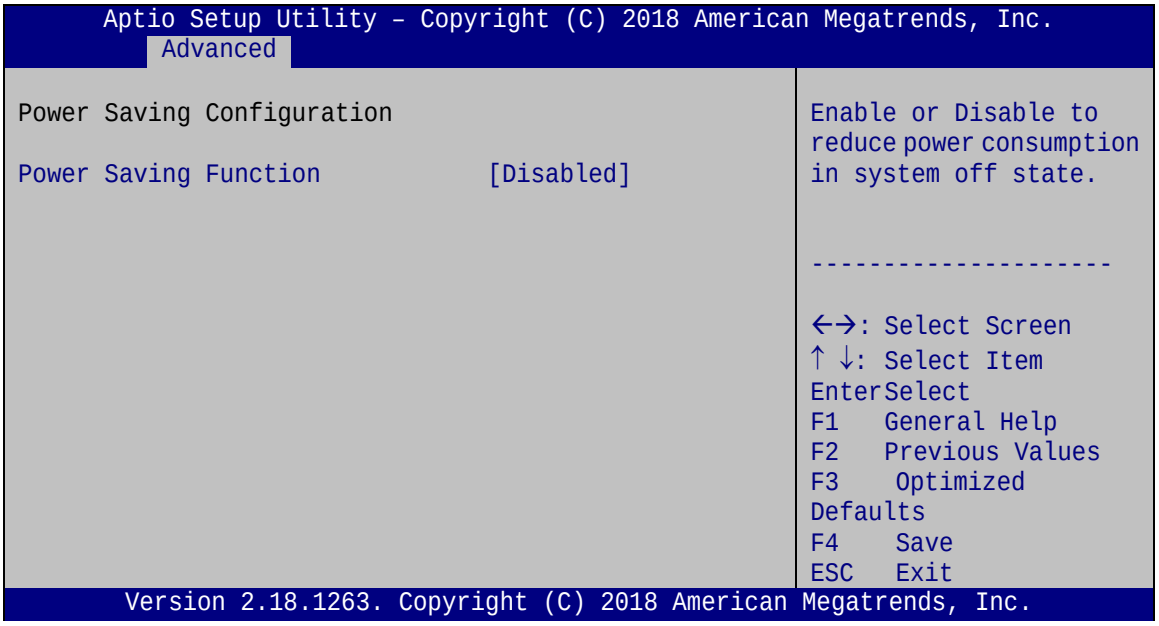
Wake up minute

Wake up second

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

4.3.7 Power Saving Configuration

Use the **Power Saving Configuration** menu (**BIOS Menu 10**) to configure system to reduce power consumption in system off state.



BIOS Menu 10: Power Saving Configuration

➔ **Power Saving Function(ERP) [Disabled]**

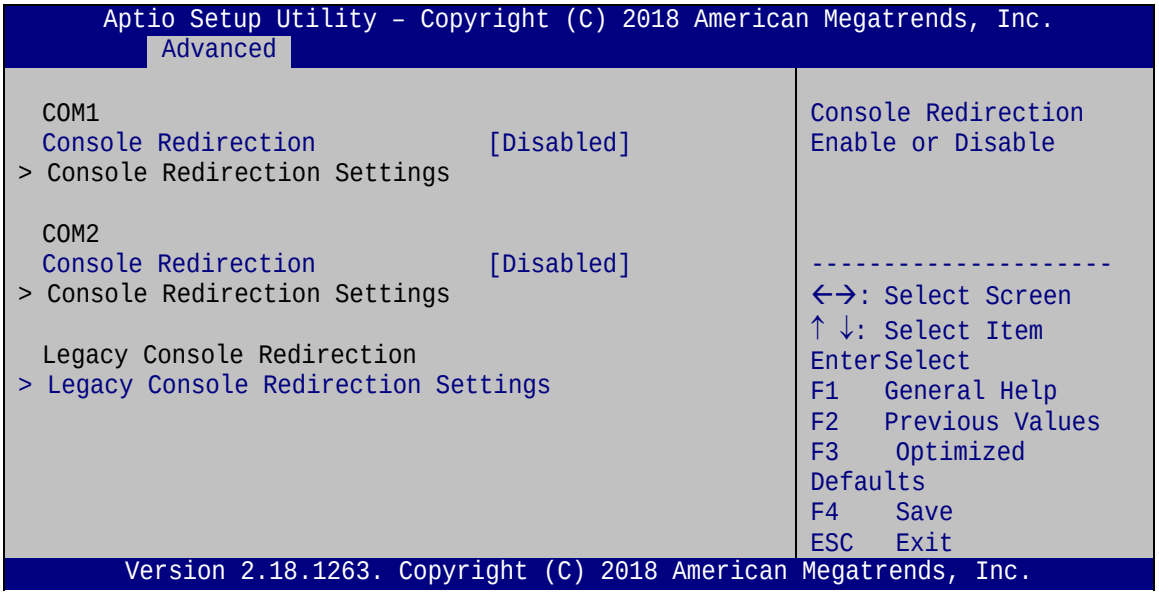
Use the **Power Saving Function** BIOS option to enable or disable the power saving function.

➔ **Disabled** **DEFAULT** Power saving function is disabled.

➔ **Enabled** Power saving function is enabled. It will reduce power consumption when the system is off.

4.3.8 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 11**) 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 11: Serial Port Console Redirection

➔ **Console Redirection [Disabled]**

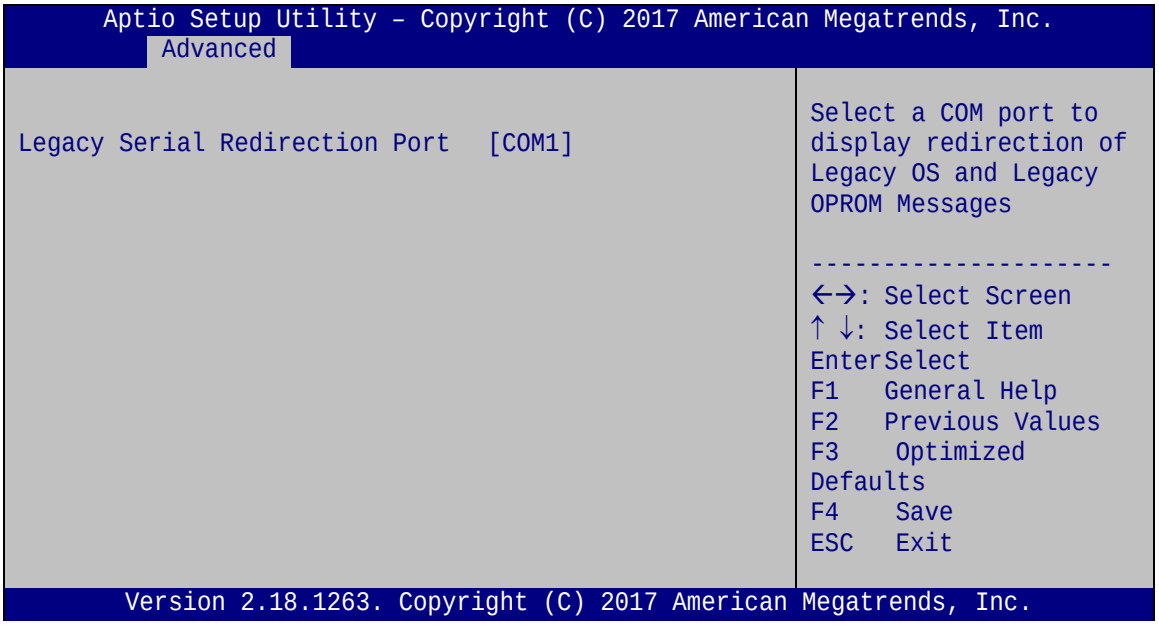
Use **Console Redirection** option to enable or disable the console redirection function.

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

➔ **Enabled** Enabled the console redirection function

4.3.8.1 Legacy Console Redirection Settings

The **Legacy Console Redirection Settings** menu (**BIOS Menu 12**) allows the legacy console redirection options to be configured.



BIOS Menu 12: Legacy Console Redirection Settings

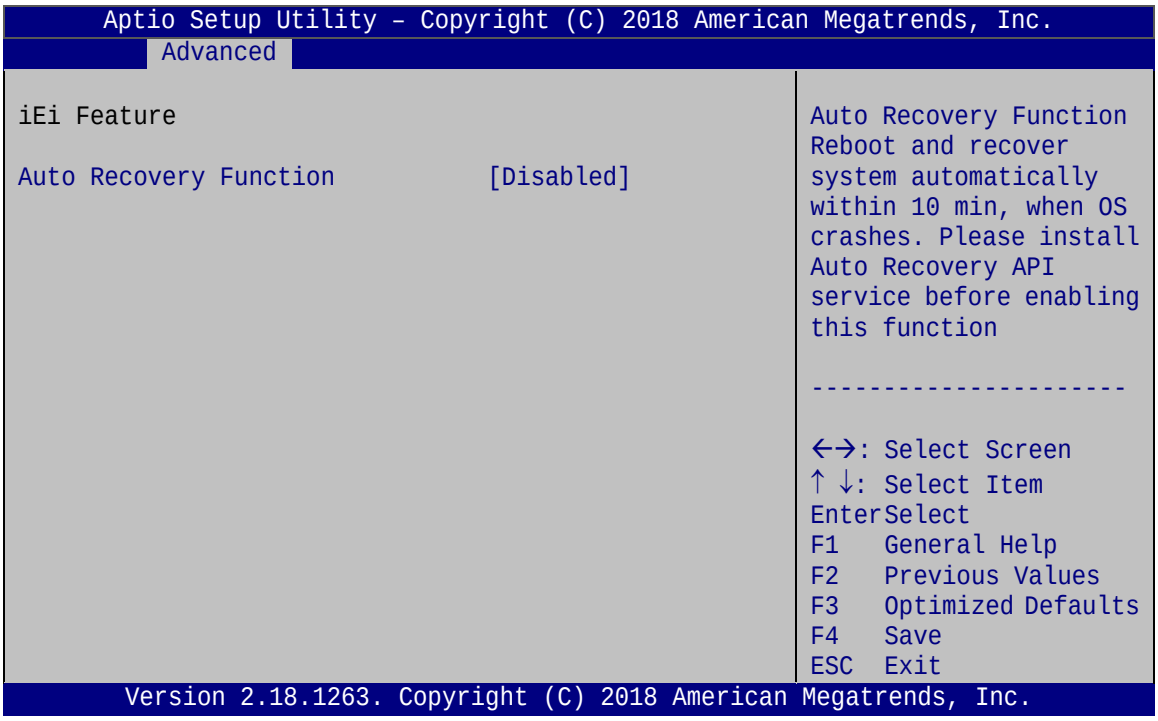
➔ **Legacy Serial Redirection Port [COM1]**

Use the **Legacy Serial Redirection Port** option to specify a COM port to display redirection of legacy OS and legacy OPROM messages. The options include:

- COM1 **DEFAULT**
- COM2

4.3.9 IEI Feature

Use the **IEI Feature** menu (**BIOS Menu 13**) to configure One Key Recovery function.



BIOS Menu 13: 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

4.4 Chipset

Use the **Chipset** menu (**BIOS Menu 14**) to access the north bridge and south bridge configuration menus

WARNING!

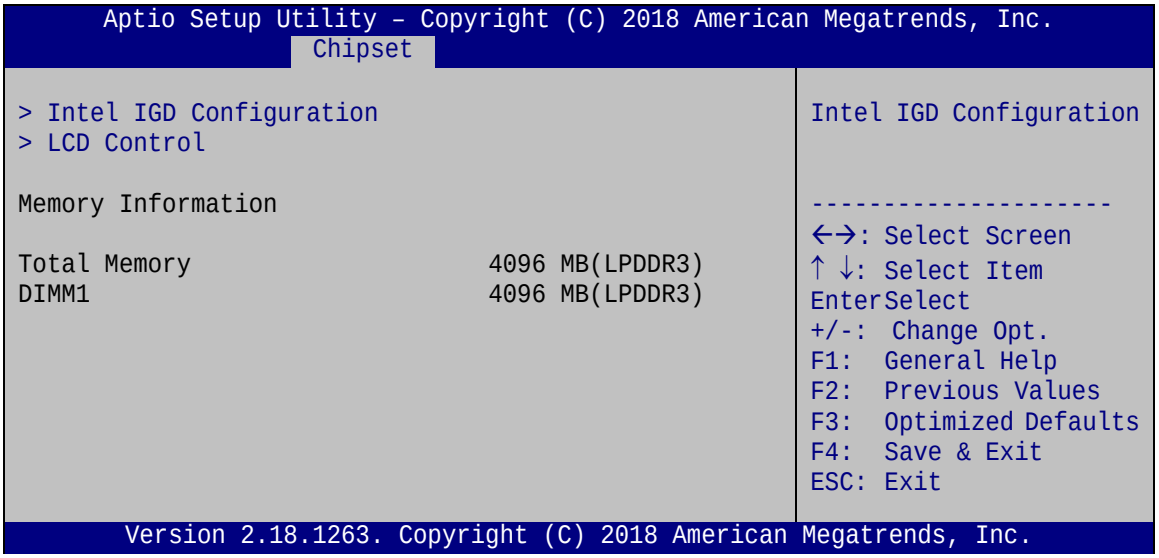
Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.

```
      Aptio Setup Utility – Copyright (C) 2018 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 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

BIOS Menu 14: Chipset

4.4.1 North Bridge Configuration

Use the **North Bridge Configuration** menu (**BIOS Menu 15**) to configure the Intel IGD settings and LCD settings.



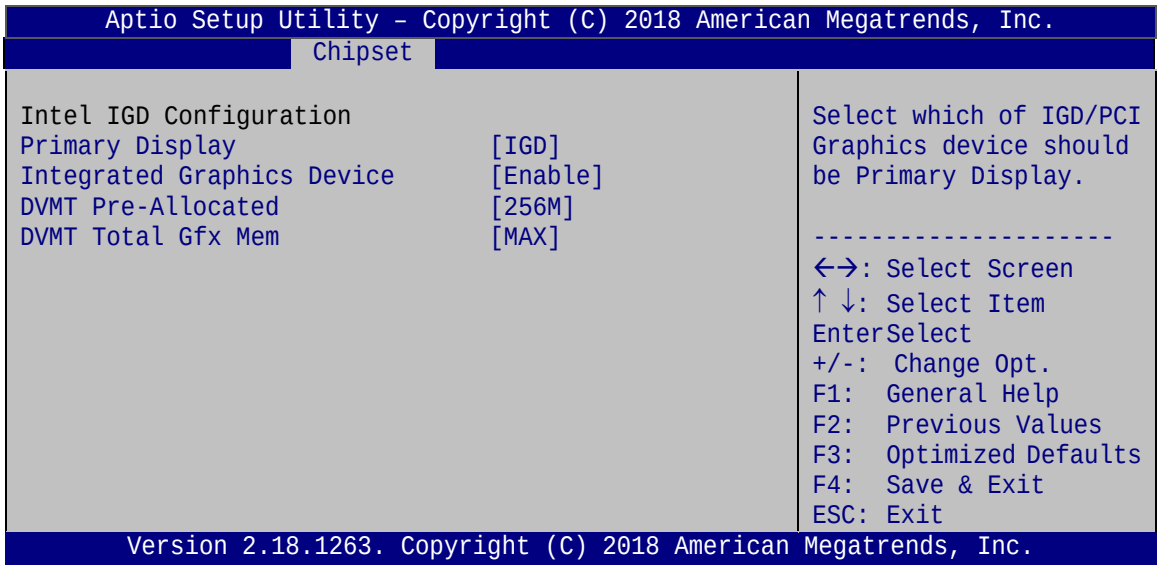
BIOS Menu 15: North Bridge Configuration

➔ **Memory Information**

The **Memory Information** lists a brief summary of the on-board memory. The fields in **Memory Information** cannot be changed.

4.4.1.1 Intel IGD Configuration

Use the **Intel IGD Configuration** menu (**BIOS Menu 16**) to configure the video device connected to the system.



BIOS Menu 16: Intel IGD Configuration

➔ **Primary Display [IGD]**

Use the **Primary Display** option to select the graphics controller used as the primary boot device. Select either an integrated graphics controller (IGD) or a PCI express (PEG) controller. Configuration options are listed below:

- IGD **DEFAULT**
- PCIe

➔ **Integrated Graphics Device [Enable]**

Use the **Integrated Graphics Device** option enables or disables Integrated Graphics Device (IGD).

➔ **Disable** Always disable IGD.

➔ **Enable** **DEFAULT** Enabled Integrated Graphics Device (IGD) when selected as the Primary Video Adaptor.

➔ **DVMT Pre-Allocated [256MB]**

Use the **DVMT Pre-Allocated** option to set the amount of system memory allocated to the integrated graphics processor when the system boots. The system memory allocated can

then only be used as graphics memory, and is no longer available to applications or the operating system. Configuration options are listed below:

- 64M
- 128M
- 256M **DEFAULT**
- 512M

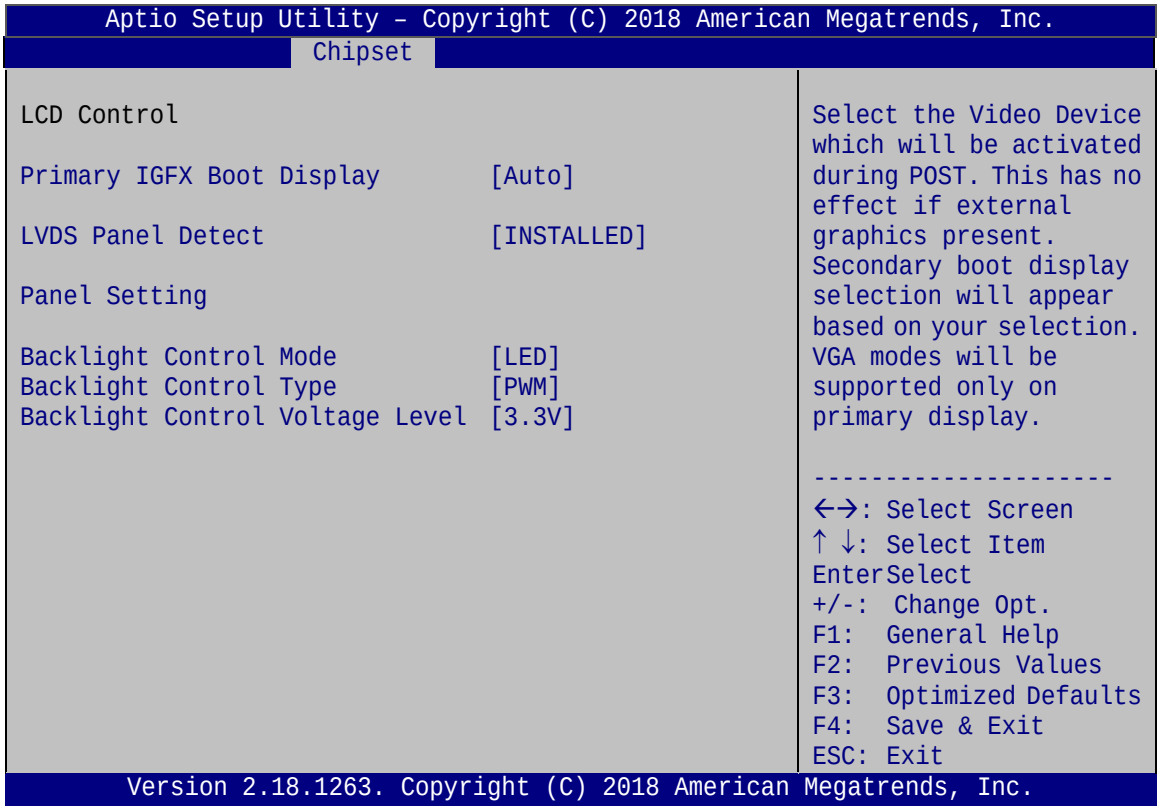
➔ **DVMT Total Gfx Mem [MAX]**

Use the **DVMT Total Gfx Mem** option to select DVMT5.0 total graphic memory size used by the internal graphic device. The following options are available:

- 128M
- 256M
- MAX **DEFAULT**

4.4.1.2 LCD Control

Use the **LCD Control** submenu (**BIOS Menu 17**) to select a display device which will be activated during POST.



BIOS Menu 17: LCD Control

➔ **Primary IGFX Boot Display [Auto]**

Use the **Primary IGFX Boot Display** option to select the display device used by the system when it boots.

- Auto **DEFAULT**
- LVDS
- HDMI1

➔ **Backlight Control Mode [LED]**

Use the **Backlight Control Mode** option to specify the backlight control mode. Configuration options are listed below.

- LED **DEFAULT**
- CCFL

➔ **Backlight Control Voltage Level [3.3V]**

Use the **Backlight Control Voltage Level** option to specify the voltage of the power supplied to the LCD panel. Configuration options are listed below.

- 3.3V **DEFAULT**
- 5.0V

➔ **Backlight Control Type [PWM]**

Use the **Backlight Control Type** option to specify the backlight control type. Configuration options are listed below.

- PWM **DEFAULT**
- DC

4.4.2 South Bridge Configuration

Use the **South Bridge Configuration** menu (**BIOS Menu 18**) to configure the south bridge chipset.

```
Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
                    Chipset
Auto Power Button Function      [Disable (ATX)]     HD-Audio Configuration
> HD-Audio Configuration                            Settings
> PCI Express Configuration
> SATA Configuration
                                                    ----------------------
Restore AC Power Loss           [Last State]        ←→: Select Screen
                                                    ↑ ↓: Select Item
USB Power SW1                   [+5V DUAL]          EnterSelect
                                                    +/-:  Change Opt.
                                                    F1:  General Help
                                                    F2:  Previous Values
                                                    F3:  Optimized Defaults
                                                    F4:  Save & Exit
                                                    ESC: Exit
Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

BIOS Menu 18: 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.

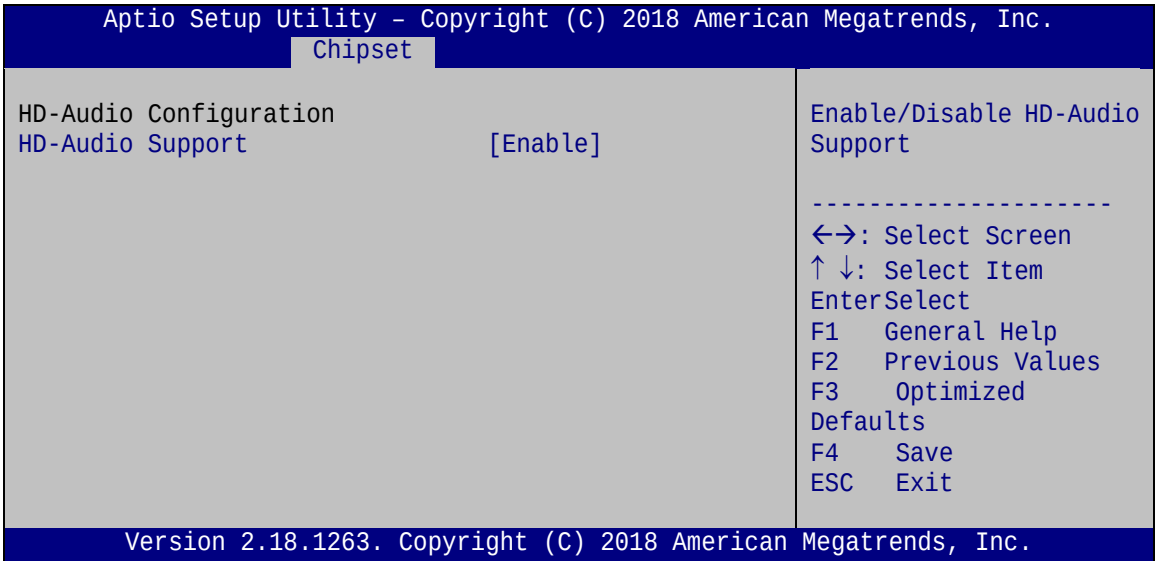
➔ **USB Power SW1 [+5V DUAL]**

Use the **USB Power SW1** BIOS option to configure the USB power source for the external USB 3.0 connectors.

➔ **+5V DUAL**	**DEFAULT**	Set the USB power source to +5V dual
➔ **+5V**		Set the USB power source to +5V

4.4.2.1 HD-Audio Configuration

Use the **HD-Audio Configuration** menu (**BIOS Menu 19**) to configure the HD Audio.



BIOS Menu 19: HD-Audio Configuration

➔ **HD-Audio Support [Enable]**

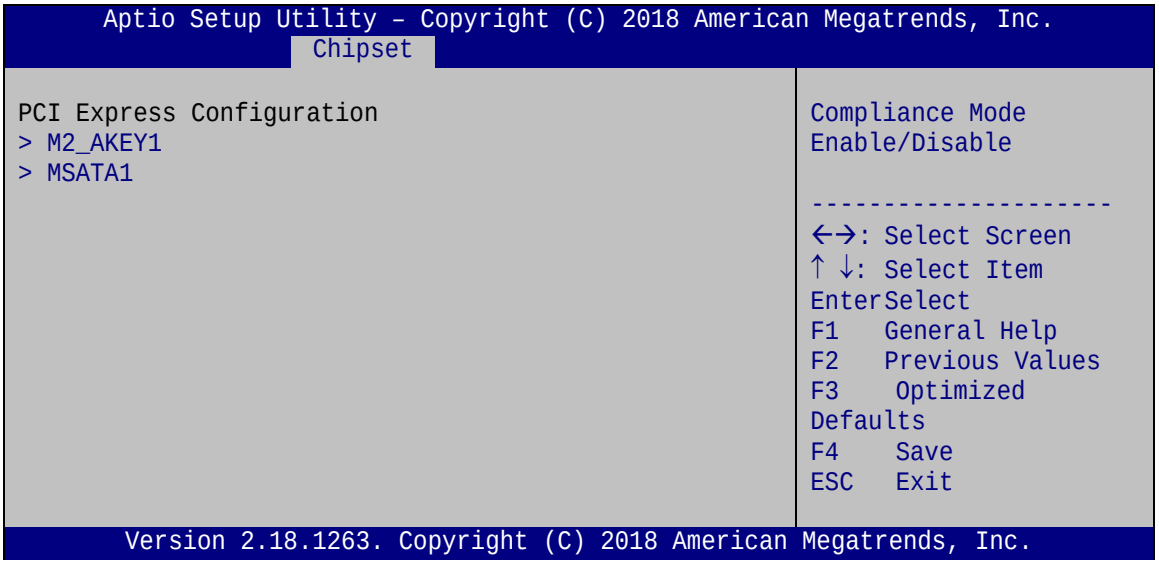
Use the **HD-Audio Support** option to enable or disable the High Definition Audio controller.

➔ **Disable** The onboard High Definition Audio controller is disabled

➔ **Enable** **DEFAULT** The onboard High Definition Audio controller is detected automatically and enabled

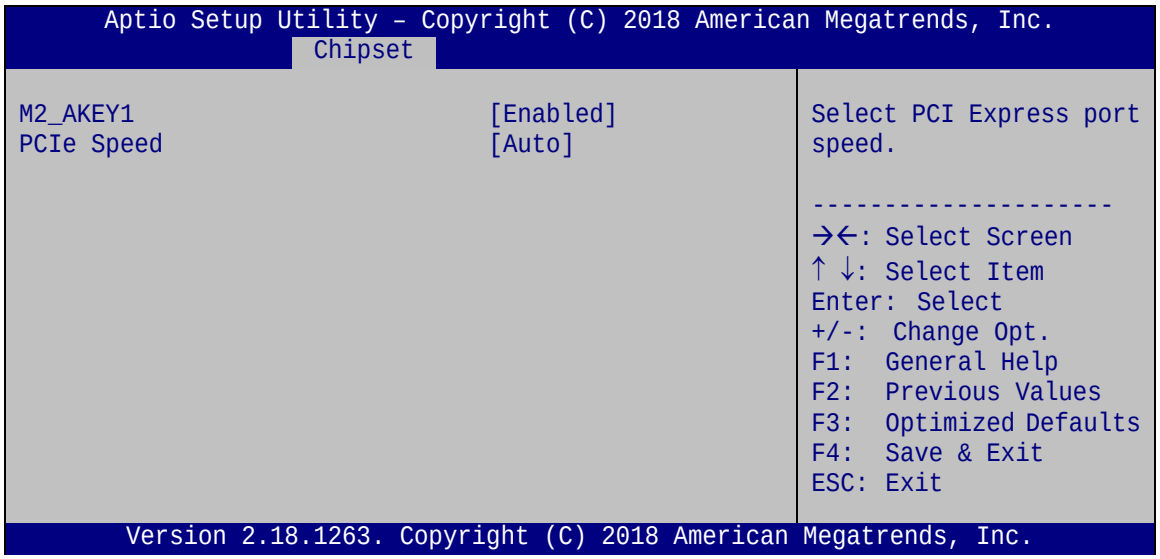
4.4.2.2 PCI Express Configuration

Use the **PCI Express Configuration** menu (**BIOS Menu 20**) to configure the PCI Express.



BIOS Menu 20: PCI Express Configuration

4.4.2.2.1 M2_AKEY1



BIOS Menu 21: M2_AKEY1

➔ **M2_AKEY1 [Enabled]**

Use the **M2_AKEY1** option to enable or disable the M.2 A-key slot.

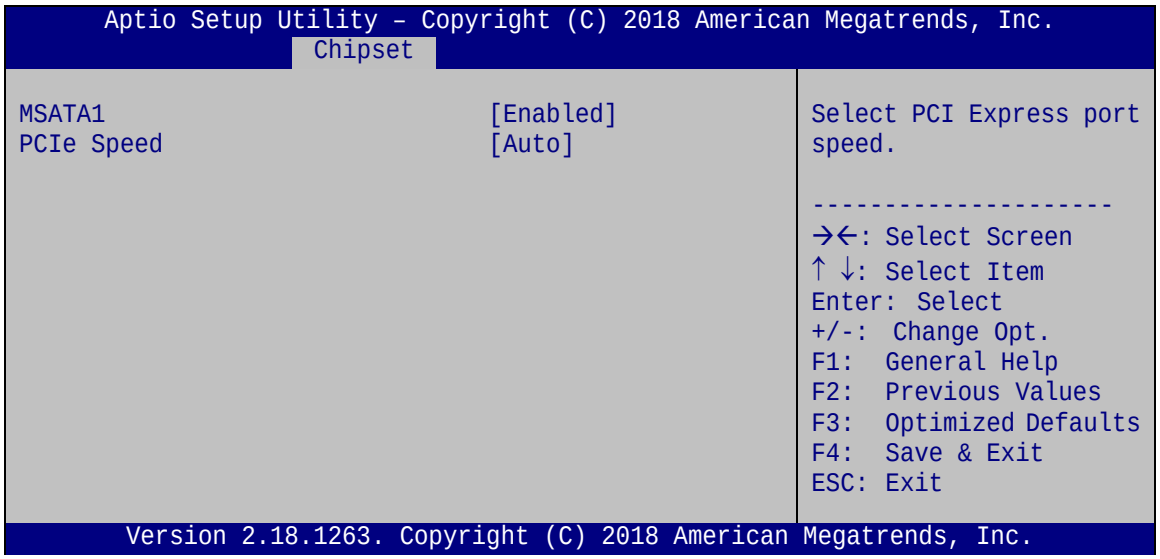
➔ **Disabled**		Disables the M.2 A-key slot.
➔ **Enabled**	**DEFAULT**	Enables the M.2 A-key slot.
➔ **Auto**		Disables the unused port automatically for the most optimum power savings.

➔ **PCIe Speed [Auto]**

Use this option to select the support type of the PCI Express slot. The following options are available:

- Auto **Default**
- Gen1
- Gen2

4.4.2.2.2 MSATA1



BIOS Menu 22: MSATA1

➔ **MSATA1 [Enabled]**

Use the **MSATA1** option to enable or disable the mSATA slot.

➔	**Disabled**		Disables the mSATA slot.
➔	**Enabled**	**DEFAULT**	Enables the mSATA slot.
➔	**Auto**		Disables the unused port automatically for the most optimum power savings.

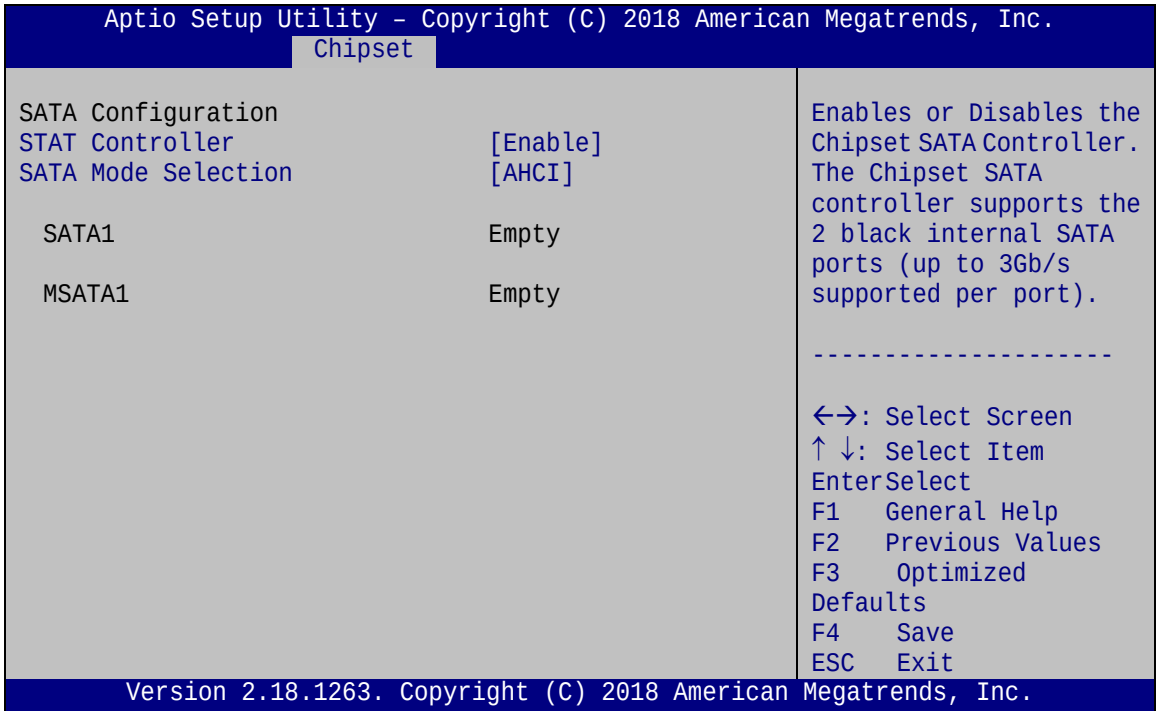
➔ **PCIe Speed [Auto]**

Use this option to select the support type of the PCI Express slot. The following options are available:

- Auto **Default**
- Gen1
- Gen2

4.4.2.3 SATA Configuration

Use the **SATA Configuration** menu (**BIOS Menu 23**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 23: SATA Configuration

➔ **STAT Controller [Enable]**

Use the **STAT Controller(s)** option to enable or disable the SATA device.

➔ **Enable** **DEFAULT** Enables the SATA device.

➔ **Disable** Disables the SATA device.

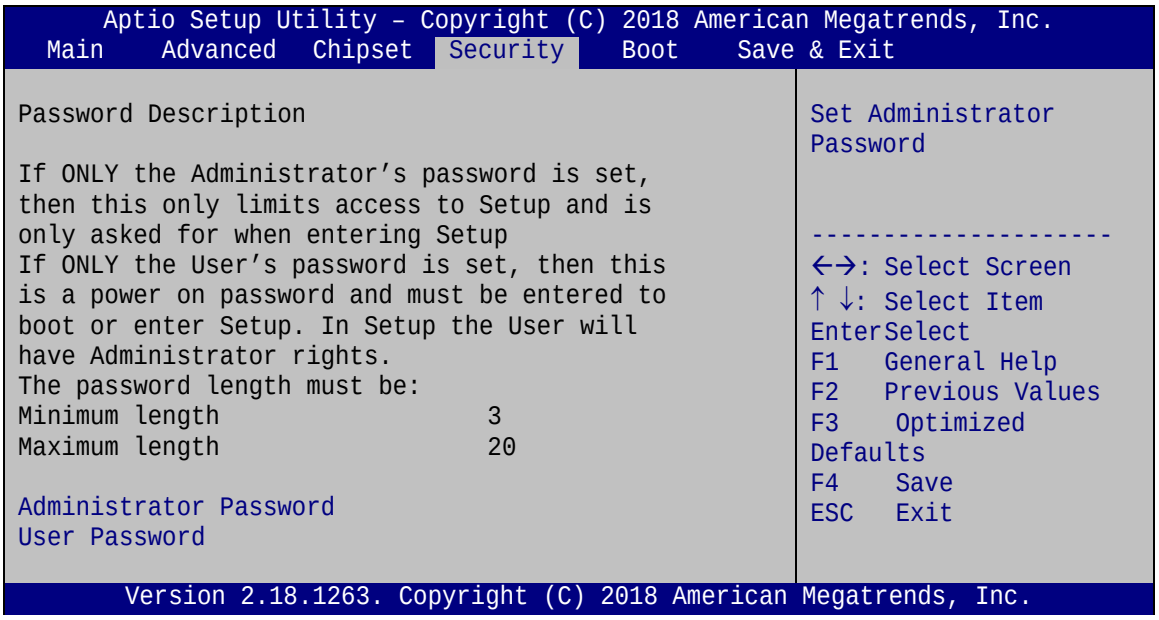
➔ **SATA Mode Selection [AHCI]**

Use the **SATA Mode Selection** option to configure SATA devices as AHCI devices.

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

4.5 Security

Use the **Security** menu (**BIOS Menu 24**) to set system and user passwords.



BIOS Menu 24: Security

➔ **Administrator Password**

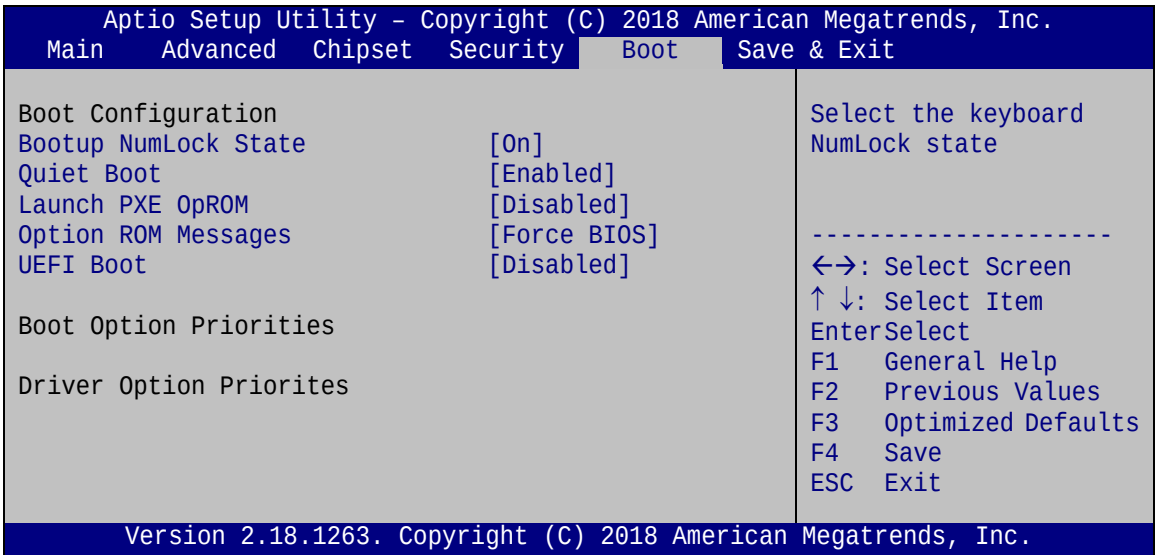
Use the **Administrator Password** to set or change an administrator password.

➔ **User Password**

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

4.6 Boot

Use the **Boot** menu (**BIOS Menu 25**) to configure system boot options.



BIOS Menu 25: 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

➔ **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.

➔ **UEFI Boot [Disabled]**

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

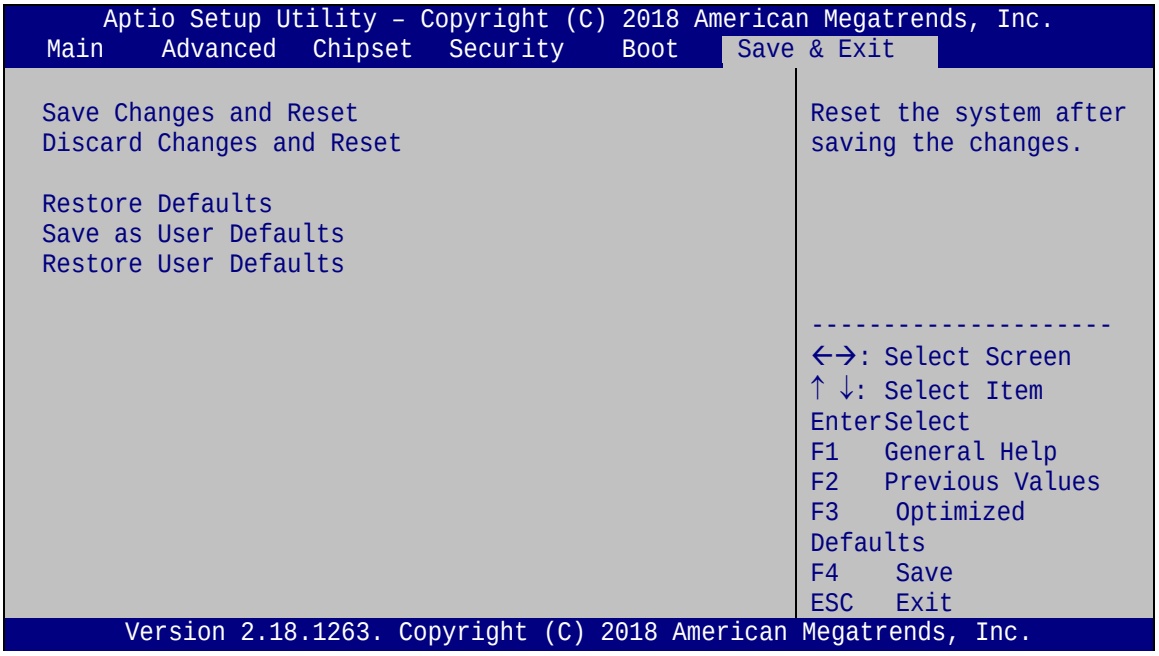
➔	**Enabled**		Boot from UEFI devices is enabled.
➔	**Disabled**	**DEFAULT**	Boot from UEFI devices is disabled.

➔ **Boot Option Priority**

Use the **Boot Option Priority** function to set the system boot sequence from the available devices. The drive sequence also depends on the boot sequence in the individual device section.

4.7 Save & Exit

Use the **Save & Exit** menu (**BIOS Menu 26**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 26: Save & Exit

➔ **Save Changes and Reset**

Use the **Save Changes and Reset** option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

➔ **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-W19A-AL fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions for the AFL3-W19A-AL are described below.

5.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W19A-AL may result in permanent damage to the AFL3-W19A-AL and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W19A-AL. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W19A-AL 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-W19A-AL, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W19A-AL.
- ***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 SO-DIMM Module Replacement

The AFL3-W19A-AL has one SO-DIMM module installed. To replace the SO-DIMM module, 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 and the internal aluminum cover. See **Section 3.4** above.

Step 4: Locate the SO-DIMM module (Figure 5-1).

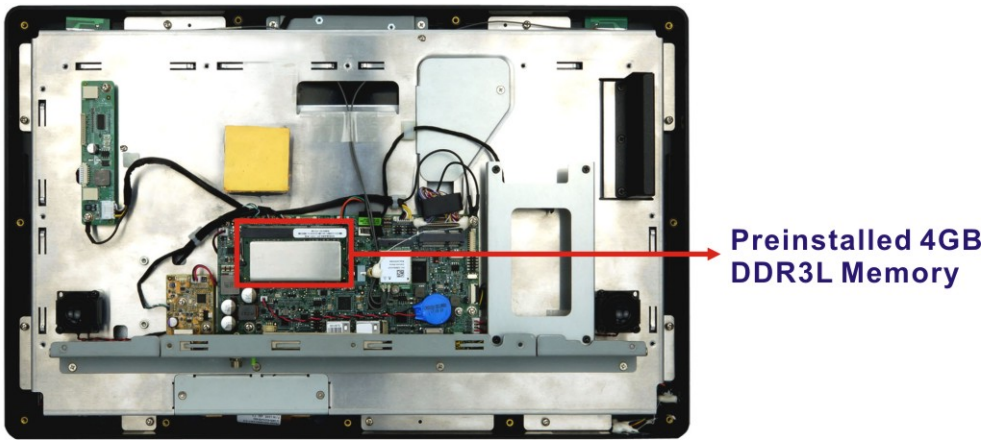


Figure 5-1: SO-DIMM module Location

Step 5: Remove the memory module by pulling both the spring retainer clips outward from the socket.

Step 6: Grasp the memory module by the edges and carefully pull it out of the socket.

Step 7: Install the new memory module by pushing it into the socket at a 20º angle (**Figure 5-2**).

Step 8: Gently push the memory module downwards and the arms clip into place (**Figure 5-2**).

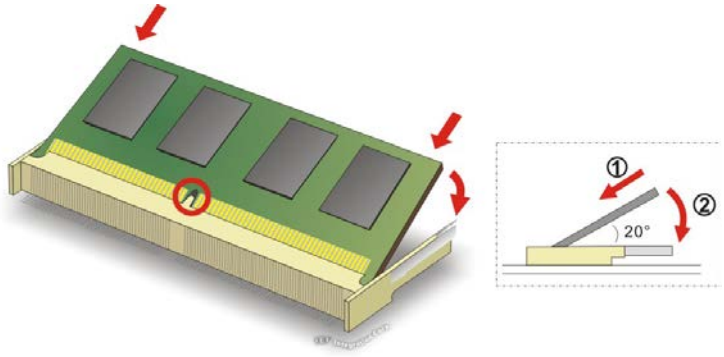


Figure 5-2: SO-DIMM Installation

Step 9: Reinstall the internal aluminum cover and the plastic back cover using the previously removed retention screws.

WARNING:

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

Chapter

6

Interface Connectors

6.1 Peripheral Interface Connectors

The AFL3-W19A-AL 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.

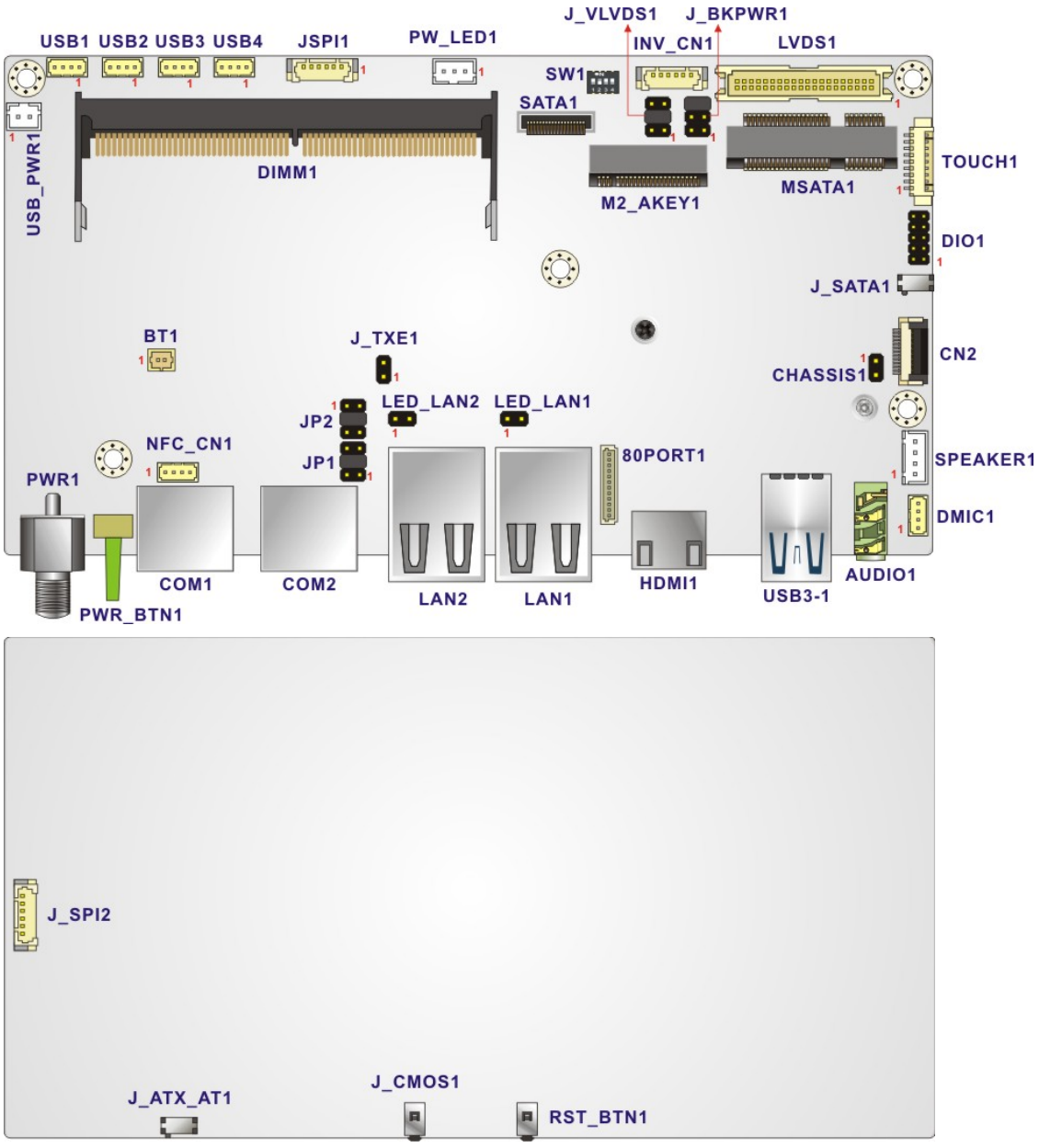


Figure 6-1: Main Board Layout Diagrams

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 motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Battery connector	2-pin wafer	BT1
Chassis intrusion connector	2-pin header	CHASSIS1
Debug connector	12-pin wafer	80PORT1
Debug connector, EC	18-pin wafer	CN2
Digital I/O connector	10-pin header	DIO1
Inverter connector	6-pin wafer	INV_CN1
LAN LED connector	2-pin header	LED_LAN1, LED_LAN2
LVDS connector	40-pin crimp	LVDS1
M.2 slot	A-key slot	M2_AKEY1
Microphone connector	4-pin wafer	DMIC1
PCIe Mini card slot	Full-size slot	MSATA1
Power LED connector	3-pin wafer	PW_LED1
SATA connector	20-pin connector	SATA1
Speaker connector	4-pin wafer	SPEAKER1
SPI Flash connector	6-pin wafer	JSPI1
Touch panel connector	9-pin wafer	TOUCH1
TTL serial connector (COM4)	4-pin wafer	NFC_CN1
USB connectors	4-pin wafer	USB1, USB2, USB3, USB4
USB power connector	2-pin wafer	USB_PWR1

Table 6-1: Peripheral Interface Connectors

6.2.1 Battery Connector (BAT1)

PIN NO.	DESCRIPTION
1	VBATT
2	GND

Table 6-2: Battery Connector (BAT1) Pinouts

6.2.1 Chassis Intrusion Connector (CHASSIS1)

PIN NO.	DESCRIPTION
1	+3.3VSB
2	Chassis open

Table 6-3: Chassis Intrusion Connector (CHASSIS1) Pinouts

6.2.2 Debug Connector (80PORT1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V (Reserved)	2	+3.3S
3	GND	4	INT_SERIRQ
5	LPC_AD3	6	LPC_AD2
7	LPC_AD1	8	LPC_AD0
9	LPC_FRAME_N	10	PLT_RST#
11	PLT_CLK	12	GND

Table 6-4: Debug Connector (80PORT1) Pinouts

6.2.1 Debug Connector, EC (CN2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	EC_EPP_STB#	2	EC_EPP_AFD#
3	EC_EPP_PD0	4	NC
5	EC_EPP_PD1	6	EC_EPP_INIT#
7	EC_EPP_PD2	8	EC_EPP_SLIN#
9	EC_EPP_PD3	10	GND
11	EC_EPP_PD4	12	NC
13	EC_EPP_PD5	14	EC_EPP_BUSY
15	EC_EPP_PD6	16	EC_EPP_KSI5
17	EC_EPP_PD7	18	EC_EPP_KSI4

Table 6-5: EC Debug Connector (CN2) Pinouts

6.2.2 Digital I/O Connector (DIO1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+5V
3	DOUT3	4	DOUT2
5	DOUT1	6	DOUT0
7	DIN3	8	DIN2
9	DIN1	10	DIN0

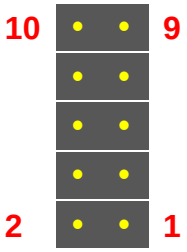


Table 6-6: Digital I/O Connector (DIO1) Pinouts

6.2.3 Inverter Connector (INV_CN1)

PIN NO.	DESCRIPTION
1	+12V
2	+12V
3	Backlight on/off
4	Backlight Brightness Control
5	GND
6	GND

Table 6-7: Inverter Connector (INV_CN1) Pinouts

6.2.1 LAN1 Link LED Connector (LED_LAN1)

PIN NO.	DESCRIPTION
1	+3.3V
2	LAN1_LED_LNK#_ACT

Table 6-8: LAN1 Link LED Connector (LED_LAN1) Pinouts

6.2.1 LAN2 Link LED Connector (LED_LAN2)

PIN NO.	DESCRIPTION
1	+3.3V
2	LAN2_LED_LNK#_ACT

Table 6-9: LAN2 Link LED Connector (LED_LAN2) Pinouts

6.2.2 LVDS Connector (LVDS1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	A_Y0#	4	A_Y1#
5	A_Y0	6	A_Y1
7	GND	8	GND
9	A_Y2#	10	A_CK#
11	A_Y2	12	A_CK
13	GND	14	GND
15	A_Y3#	16	B_Y0#
17	A_Y3	18	B_Y0
19	GND	20	GND
21	B_Y1#	22	B_Y2#
23	B_Y1	24	B_Y2
25	GND	26	GND
27	B_CK#	28	B_Y3#
29	B_CK	30	B_Y3
31	GND	32	GND
33	GND	34	GND
35	LVDS_VCC	36	LVDS_VCC
37	LVDS_VCC	38	LVDS_VCC
39	LVDS_VCC	40	LVDS_VCC

Table 6-10: LVDS Connector (LVDS1) Pinouts

6.2.3 M.2 A-key Slot (M2_AKEY1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+V3.3A
3	USB+	4	+V3.3A
5	USB-	6	NC
7	GND	8	Module Key
9	Module Key	10	Module Key
11	Module Key	12	Module Key
13	Module Key	14	Module Key
15	Module Key	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	GND	24	GND
25	NC	26	NC
27	NC	28	NC
29	GND	30	GND
31	NC	32	NC
33	GND	34	NC
35	PCIE_TX+	36	GND
37	PCIE_TX-	38	NC
39	GND	40	NC
41	PCIE_RX+	42	NC
43	PCIE_RX-	44	NC
45	GND	46	NC
47	CLK_PCIE+	48	NC
49	CLK_PCIE-	50	NC
51	GND	52	BUF_PLT_RST#
53	PCIE_CLKREQ#	54	Pull Up +V3.3A
55	PCIE_WAKE#	56	Pull Up +V3.3A
57	GND	58	NC
59	NC	60	NC

61	NC	62	NC
63	GND	64	NC
65	NC	66	NC
67	NC	68	NC
69	GND	70	NC
71	NC	72	+V3.3A
73	NC	74	+V3.3A
75	GND		

Table 6-11: M.2 M-key Slot (M2_AKEY1) Pinouts

6.2.4 Microphone Connector (DMIC1)

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

Table 6-12: Microphone Connector (DMIC1) Pinouts

6.2.5 PCIe Mini Connector, Full-Size (MSATA1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	NC
9	GND	10	NC
11	PCIE_CLK#	12	NC
13	PCIE _CLK	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	+3.3V

21	GND	22	PLTRST_N
23	PCIE_RXN(SATA_RX+)	24	+3.3V
25	PCIE_RXP-(SATA_RX-)	26	GND
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	PCIE_TXN(SATA_TX-)	32	SMB_DATA
33	PCIE_TXP(SATA_TX+)	34	GND
35	GND	36	USB_DATA-
37	GND	38	USB_DATA+
39	+3.3V	40	GND
41	+3.3V	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	1.5V
49	NC	50	GND
51	MSATA_DET	52	+3.3V

Table 6-13: PCIe Mini Connector (MSATA1) Pinouts

6.2.6 Power LED Connector (PW_LED1)

PIN NO.	DESCRIPTION
1	+5VS
2	GND
3	+5VA

Table 6-14: Power LED Connector (PW_LED1) Pinouts

6.2.7 SATA Connector (SATA1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	11	+5V
2	GND	12	NC
3	GND	13	NC
4	GND	14	GND
5	GND	15	SATA_RXP0
6	GND	16	SATA_RXN0
7	+5V	17	GND
8	+5V	18	SATA_TXN0
9	+5V	19	SATA_TXP0
10	+5V	20	GND

Table 6-15: SATA Connector (SATA1) Pinouts

6.2.1 Speaker Connector (SPEAKER1)

PIN NO.	DESCRIPTION
1	SPK-L+
2	SPK-L-
3	SPK-R-
4	SPK-R+

Table 6-16: Speaker Connector (SPEAKER1) Pinouts

6.2.2 SPI Flash Connector (JSPI1)

PIN NO.	DESCRIPTION
1	+3.3V
2	SPI_CS
3	SPI_SO_SW
4	SPI_CLK_SW
5	SPI_SI_SW
6	GND

Table 6-17: SPI Flash Connector (JSPI1) Pinouts

6.2.1 SPI Flash Connector, EC (JSPI2)

PIN NO.	DESCRIPTION
1	+3.3V
2	SPI_CS
3	SPI_SO_SW
4	SPI_CLK_SW
5	SPI_SI_SW
6	GND

Table 6-18: SPI Flash Connector, EC (JSPI2) Pinouts

6.2.2 Touch Panel Connector (TOUCH1)

PIN NO.	DESCRIPTION		
	8-Wire	4-Wire	5-Wire
1	Right Sense	N/A	N/A
2	Left Sense	N/A	N/A
3	Bottom Sense	N/A	N/A
4	TOP Sense	N/A	Sense(S)
5	Right Excite	Right	LR(X)
6	Left Excite	Left	LL(L)
7	Bottom Excite	Bottom	UR(H)
8	Top Excite	Top	UL(Y)
9	GND	GND	GND

Table 6-19: Touch Panel Connector (TOUCH1) Pinouts

6.2.3 TTL Serial Connector, COM4 (NFC_CN1)

PIN NO.	DESCRIPTION
1	+5V
2	SIN4 (UART Serial Input)
3	SOUT4 (UART Serial Output)
4	GND

Table 6-20: TTL Serial Connector, COM4 (NFC_CN1) Pinouts

6.2.4 USB 2.0 Connector (USB1~USB4)

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

Table 6-21: USB 2.0 Connector (USB1~USB4) Pinouts

6.2.5 USB Power Connector (USB_PWR1)

PIN NO.	DESCRIPTION
1	+V5A
2	GND

Table 6-22: USB Power Connector (USB_PWR1) Pinouts

6.3 External Interface Panel Connectors

The table below lists the rear panel connectors on the AFL3MB-ULT3 motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Audio line-out jack	Audio jack	AUDIO1
Ethernet connector	RJ-45	LAN1
Ethernet connector	RJ-45	LAN2
HDMI connector	HDMI connector	HDMI1
Power connector	Power jack	PWR1
RS-232 serial port	RJ-45	COM2
RS-232/422/485 serial port	RJ-45	COM1
USB 3.0 connectors	USB 3.0 port	USB3-1

Table 6-23: Rear Panel Connectors

6.3.1 Ethernet Connectors (LAN1 & LAN2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA0+	10	MDIA2-
2	MDIA0-	11	MDIA1-
3	MDIA1+	12	MDIA3+
4	MDIA2+	13	MDIA3-

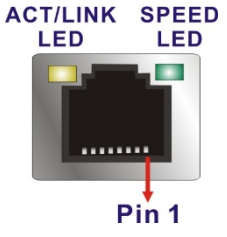


Table 6-24: Ethernet Connectors (LAN2 & LAN3) Pinouts

6.3.2 HDMI Connector (HDMI1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	HDMI_DATA2+	11	GND
2	GND	12	HDMI_CLK#
3	HDMI_DATA2#-	13	N/C
4	HDMI_DATA1+	14	N/C
5	GND	15	HDMI_SCL
6	HDMI_DATA1#-	16	HDMI_SDA
7	HDMI_DATA0+	17	GND
8	GND	18	+5VCC
9	HDMI_DATA0#-	19	HDMI_HPD
10	HDMI_CLK+		

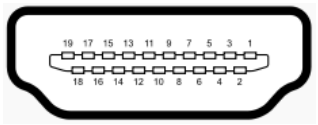


Table 6-25: HDMI Connector (HDMI1) Pinouts

6.3.3 RS-232/422/485 DB-9 Serial Port (COM1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD(TX-)(D-)	5	NSOUT(RX+)
2	-NDSR	6	-NCTS
3	NSIN(TX+)(D+)	7	-NDTR(RX-)
4	-NRTS	8	-XRI

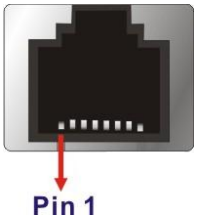


Table 6-26: RS-232/422/485 DB-9 Serial Port (COM1) Pinouts

6.3.4 RS-232 RJ-45 Serial Port (COM2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD	5	NSOUT
2	-NDSR	6	-NCTS
3	NSIN	7	-NDTR
4	-NRTS	8	-XRI

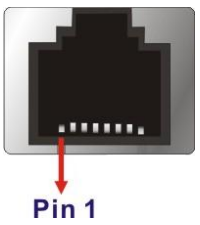


Table 6-27: RS-232 RJ-45 Serial Port (COM2) Pinouts

6.3.5 USB 3.0 Connectors (USB3-1)

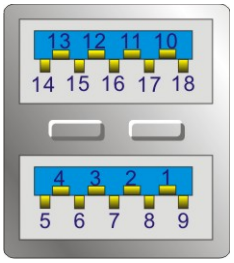
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION	
1	+5Vsus	10	+5Vsus	
2	DATA0-	11	DATA1-	
3	DATA0+	12	DATA1+	
4	GND	13	GND	
5	SSRX0-	14	SSRX1-	
6	SSRX0+	15	SSRX1+	
7	GND	16	GND	
8	SSTX0-	17	SSTX1-	
9	SSTX0+	18	SSTX1+	

Table 6-28: USB 3.0 Connectors (USB3-1) Pinouts

6.4 Preconfigured Jumper Settings

CAUTION:

The following jumpers are preconfigured for the AFL3-W19A-AL. Users should not change these jumpers except the J_TXE1 jumper (**Table 6-29**).

Jumper Name	Type	Label
Backlight voltage selection	6-pin header	J_BKPWR1
Flash descriptor security override	2-pin header	J_TXE1
LVDS voltage selection	6-pin header	J_VLVDS1
LVDS panel resolution selection	Switch	SW1

Table 6-29: Preconfigured Jumpers

6.4.1 Backlight Voltage Selection Jumper (J_BKPWR1)

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

Table 6-30: Backlight Voltage Selection Jumper (J_BKPWR1) Settings

6.4.2 Flash Descriptor Security Override Jumper

The Flash Descriptor Security Override jumper (J_TXE1) allows to enable or disable the ME firmware update.

Setting	Description
Open	Disabled (default)
Short	Enabled

Table 6-31: Flash Descriptor Security Override Jumper Settings

To update the ME firmware, please follow the steps below.

Step 1: Before turning on the system power, short the Flash Descriptor Security Override jumper.

Step 2: Update the BIOS and ME firmware, and then turn off the system power.

Step 3: Remove the metal clip on the Flash Descriptor Security Override jumper or return to its default setting.

Step 4: Restart the system. The system will reboot 2 ~ 3 times to complete the ME firmware update.

6.4.3 LVDS Panel Voltage Selection Jumper (J_VLVDS1)

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

Table 6-32: LVDS Voltage Selection Jumper (J_VLVDS1) Settings

6.4.4 LVDS Panel Resolution Selection Jumper (SW1)

* ON=0, OFF=1

SW1 (4-3-2-1)	Description
0000	800x600 18bit (Default)
0001	1024x768 18bit
0010	1024x768 24bit
0011	1280x768 18bit
0100	1280x800 18bit
0101	1280x960 18bit
0110	1280x1024 48bit
0111	1366x768 18bit
1000	1366x768 24bit
1001	1440x960 48bit
1010	1400x1050 48bit
1011	1600x900 48bit
1100	1680x1050 48bit
1101	1600x1200 48bit
1110	1920x1080 48bit
1111	1920x1200 48bit

Table 6-33: LVDS Resolution Selection Jumper (SW1) 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 Anforderu□gen 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 □ssentielles et aux autres dispositions pertinentes de la directive 2014/53/EU.
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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 pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU.
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Suomi [Finnish] IEI 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-W19A-AL.

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-W19A-AL 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-W19A-AL 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-W19A-AL.

- ***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-W19A-AL 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-W19A-AL may result in permanent damage to the AFL3-W19A-AL and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W19A-AL. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W19A-AL 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.

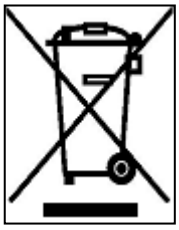
B.1.3 Product Disposal

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-W19A-AL, 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-W19A-AL, 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-W19A-AL 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-W19A-AL.

- ***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。