IEI Integration Corp.

MODEL:

AFL3-W15C/W19C/W22C-ADLP

Flat Bezel Panel PC with Intel® Alder Lake-P Processor, PCAP Touchscreen, Four USB 3.2 Gen 1, Dual 2.5GbE LAN, RS-232/422/485, Wi-Fi 802.11a/b/g/n/ac/ax and RoHS

User Manual

Rev. 1.00 - September 5, 2023

RoHS Lead Free

Revision

Date	Version	Changes
September 5, 2023	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，请仔细阅读使用手册。

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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，不要在使用手册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。

---

en Warning! Operation of this equipment in a residential environment could cause radio interference.

de Vorsicht! Der Betrieb dieses Geräts in einer Wohnumgebung kann zu Funkstörungen führen.

fr Warning! L'utilisation de cet équipement dans un environnement résidentiel peut provoquer des interférences radio.

it Avvertenza! Il funzionamento di questa apparecchiatura in un ambiente residenziale potrebbe causare interferenze radio.

es Atención! El funcionamiento de este equipo en un entorno residencial podría causar interferencias de radio.

zh 警告！在住宅環境中操作該設備可能會造成無線電干擾。

cn 警告！在住宅环境中操作该设备可能会造成无线电干扰。

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Manual Conventions

WARNING

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

CAUTION

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

NOTE

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

HOT SURFACE

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

Table of Contents

List of Figures

List of Tables

List of BIOS Menus

Chapter

1

Introduction

1.1 Overview

Figure 1-1: AFL3-W15C/W19C/W22C-ADLP Flat Bezel Panel PC

The AFL3-W15C/W19C/W22C-ADLP series is a Intel® Alder Lake P Core™ 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® Alder Lake P Core™ i7 / i5 / i3 & Celeron® is a System-On-Chip (SOC) that ensures optimal memory, graphics, and peripheral I/O support. The system comes with 8GB DDR4 SO-DIMMs 3200MHz 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 3.2 Gen 1 ports ensure simplified connectivity to a variety of external peripheral devices. Wi-Fi capabilities and two RJ-45 Ethernet connectors provide the system with smooth connection to an external LAN.

1.2 Model Variations

There are several models in the AFL3-W15C/W19C/W22C-ADLP series. The model numbers and model variations are listed below.

Model	Size	Processor
AFL3-W15C-ADLP-i3/8G-R10	15.6"	Intel® Core™ i3-1220P
AFL3-W15C-ADLP-i5/8G-R10		Intel® Core™ i5-1240P
AFL3-W15C-ADLP-i7/8G-R10		Intel® Core™ i7-1260P
AFL3-W19C-ADLP-i3/8G-R10	18.5"	Intel® Core™ i3-1220P
AFL3-W19C-ADLP-i5/8G-R10		Intel® Core™ i5-1240P
AFL3-W19C-ADLP-i7/8G-R10		Intel® Core™ i7-1260P
AFL3-W22C-ADLP-i3/8G-R10	21.5"	Intel® Core™ i3-1220P
AFL3-W22C-ADLP-i5/8G-R10		Intel® Core™ i5-1240P
AFL3-W22C-ADLP-i7/8G-R10		Intel® Core™ i7-1260P

Table 1-1:Model Variations

1.3 Features

The AFL3-W15C/W19C/W22C-ADLP features are listed below:

- Flat-bezel LCD with LED backlight
- 12th Gen Intel® Alder Lake-P Mobile Processors
- Preinstalled with 8 GB of DDR4 memory (system max. 32 GB)
- Anti-glare/anti-UV projected capacitive type touchscreen
- Wi-Fi 802.11a/b/g/n/ac/ax high speed wireless
- Two 2.5 GbE RJ-45 connectors
- Two internal speakers
- Four USB 3.2 Gen 1 (5 Gb/s) ports
- Optional RFID reader
- Optional magnetic stripe card reader
- IP 64 compliant front panel

1.4 Front Panel

The front side of the AFL3-W15C/W19C/W22C-ADLP is a flat-bezel panel with a TFT LCD screen surrounded by a PC/ABS plastic frame (**Figure 1-2**).

Figure 1-2: Front View

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

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

1.5 Bottom Panel

The bottom panel of the AFL3-W15C/W19C/W22C-ADLP has the following connectors and switches .

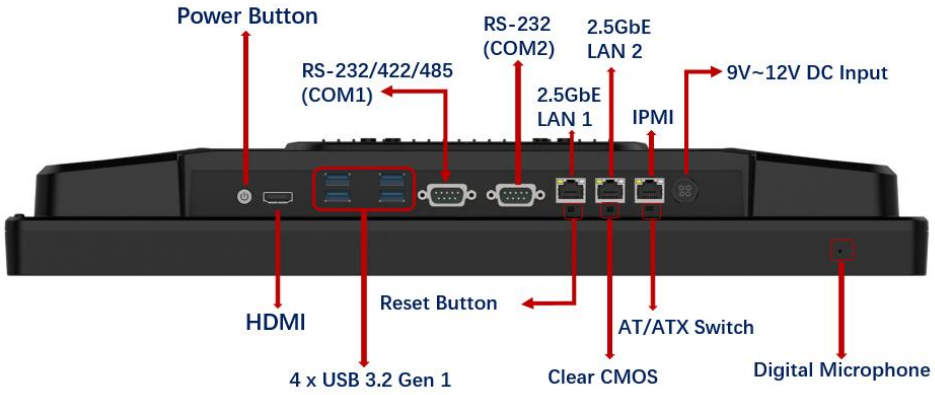


Figure 1-3: AFL3-W15C/W19C/W22C-ADLP Bottom Panel

1.6 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.

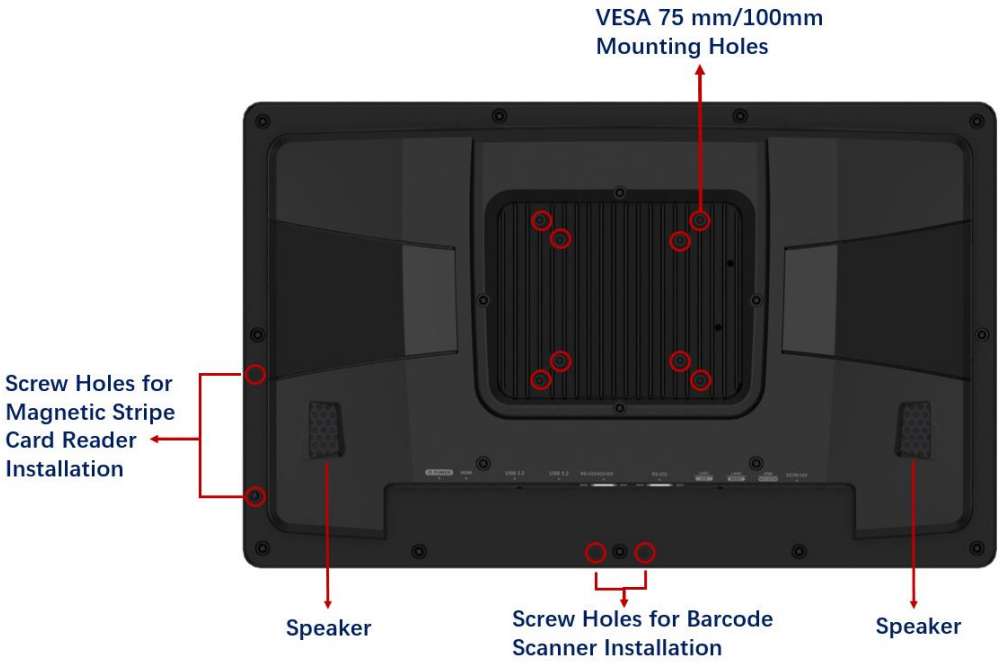


Figure 1-4: AFL3-W15C/W19C/W22C-ADLP Rear View

1.7 Side Panel

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

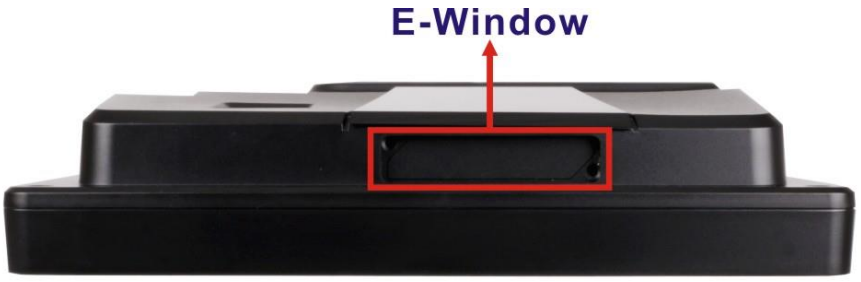


Figure 1-5: Side View

The E-Window modules supported by the AFL3-W15C/W19C/W22C-ADLP are listed below. All listed E-Window modules are for ATO (assembly-to-order) only.

Part No.	Description	Supported Model
iM2-LVDS01-R10	M.2 to Single/Dual Channel LVDS Module	AFL3-W15C-ADLP AFL3-W19C-ADLP AFL3-W22C-ADLP
iM2-CAN-2P-R10	M.2 B Key + M Key card supports 2-Port CAN B us with Isolation Protection, RoHs	AFL3-W15C-ADLP AFL3-W19C-ADLP AFL3-W22C-ADLP
iM2-UART-R10	M.2 B Key&M Key card supports four RS-232/422/485 Port, RoHs	AFL3-W15C-ADLP AFL3-W19C-ADLP AFL3-W22C-ADLP

Table 1-2: Supported E-Window Modules

1.8 System Specifications

The technical specifications for the AFL3-W15C/W19C/W22C-ADLP systems are listed in **Table 1-3**.

Specification	AFL3-W15C-ADLP	AFL3-W19C-ADLP	AFL3-W22C-ADLP
LCD Size	15.6" (16:10)	18.5" (16:10)	21.5" (16:10)
Max. Resolution	1920 (W) x 1080 (H)	1920 (W) x 1080 (H)	1920 (W) x 1080 (H)
Brightness (cd/m^2)	400	350	350
Contrast Ratio	800:1	1200:1	1000:1
LCD Color	16.7M	16.7M	16.7M
Pixel Pitch (H x V) (mm)	0.240 x 0.240	0.240 x 0.240	0.248 x 0.248
Viewing Angle (H-V)	170° / 170°	170° / 170°	178° / 178°
Backlight MTBF	50,000 hrs	50,000 hrs	50,000 hrs
Backlight	LED	LED	LED
Touchscreen	PCAP with USB interface (anti-UV/AR coating)		
Touch Controller	EXC3160		
CPU (SoC)	Intel® Alder Lake P Core™ i7 / i5 / i3		
Memory	Two 260-pin DDR4 SO-DIMM slots preinstalled with 8 GB SDRAM (system max. 32 GB)		
Ethernet	LAN1: Intel® I225 LM(support Intel AMT) + LAN2: Intel® I225V		
Storage	Two M.2 M-key slot (PCIe signal) for M.2 2280 module installation One M.2 3080 B-key (PCIex1 or SATA) support IPMI function		
Audio	Realtek ALC888S HD Audio codec/		
Internal Speaker	Two 3 W		

Camera	2-megapixel with low light function and digital microphone		
Wireless & Bluetooth	IEEE 802.11ax 2T2R module (Wi-Fi 6E) with BT v5.2 (M.2 2230 E-key)		
RFID Reader	Mifare 13.56 MHz card reader (optional)		
Card Reader	Magnetic stripe card reader (optional)		
Construction Material	PC+ABS plastic		
Thermal Design	Fanless		
VESA Mount	75 mm x 75 mm 100 mm x 100 mm		
Mounting	Panel, wall, rack, stand or arm mounting		
Front Panel Color	Black C		
Dimensions (W x H x D) (mm)	396 x 250 x 64	472 x 292 x 68	528 x 336 x 68
Storage Temperature	-20ºC ~ 60ºC		
Humidity	10% ~ 95% (non-condensing)		
Power Supply	96 W power adapter		
Input:	100 V ~ 240 V AC, 50 Hz ~ 60 Hz		
Output:	12 V DC, 8 A		
Power Requirement	12 V DC		
IP Level	IP 64 compliant front panel		
Safety/EMC	CE, FCC Class A,UKCA		
I/O Ports and Switches	1 x RS-232/422/485 serial port (DB-9 connector) 1 x RS-232 serial port (DB-9 connector) 2 x 2.5GbE LAN (RJ-45 connector) 4 x USB 3.2 Gen 1 (5 Gb/s) connectors 1 x HDMI output connector		

	1 x Power switch 1 x AT/ATX switch 1 x ClearCMOS Button 1 x Reset button 1 x 12V DC Jack

Table 1-3: System Specifications

1.8.1 WLAN/Bluetooth Frequency Range and Power

Technology	Frequency range/MHz	Max.E.I.R.P/dBm
WLAN 2.4GHz	2400-2483.5	20
WLAN 5GHz	5150–5250	23
WLAN 5GHz	5250–5350	23
WLAN 5GHz	5470–5725	23
WLAN 5GHz	5725–5850	13.98
WLAN 6GHz	5945–6425	14
Bluetooth BR/EDR	2402-2480	10
Bluetooth LE	2402-2480	10

Table 1-4: WLAN/Bluetooth Frequency Range and Power

WARNING!

This equipment complies with CE radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

5G Wifi alerts and restricted country codes
The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

1.9 Dimensions

The following sections list the dimensions of each model.

1.9.1 AFL3-W15C-ADLP Dimensions

The AFL3-W15C-ADLP dimensions are shown below.

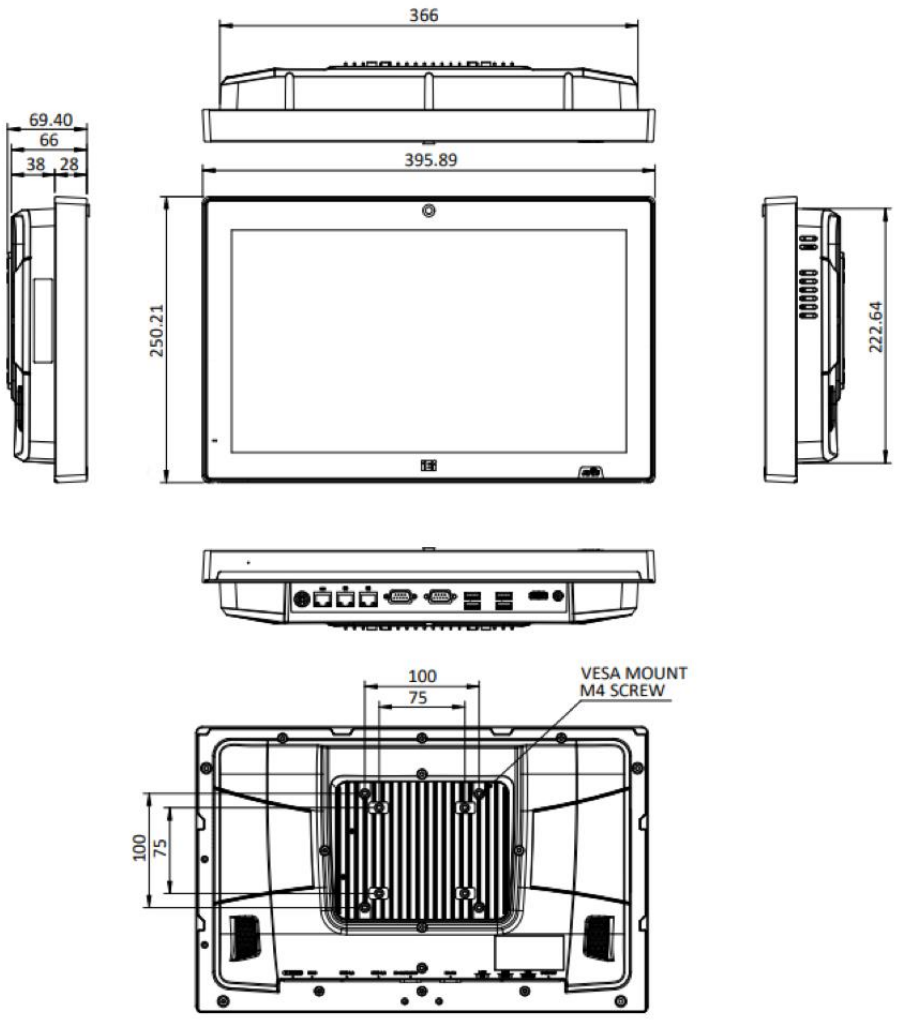


Figure 1-6: AFL3-W15C-ADLP Dimensions (mm)

1.9.2 AFL3-W19C-ADLP Dimensions

The AFL3-W19C-ADLP dimensions are shown below.

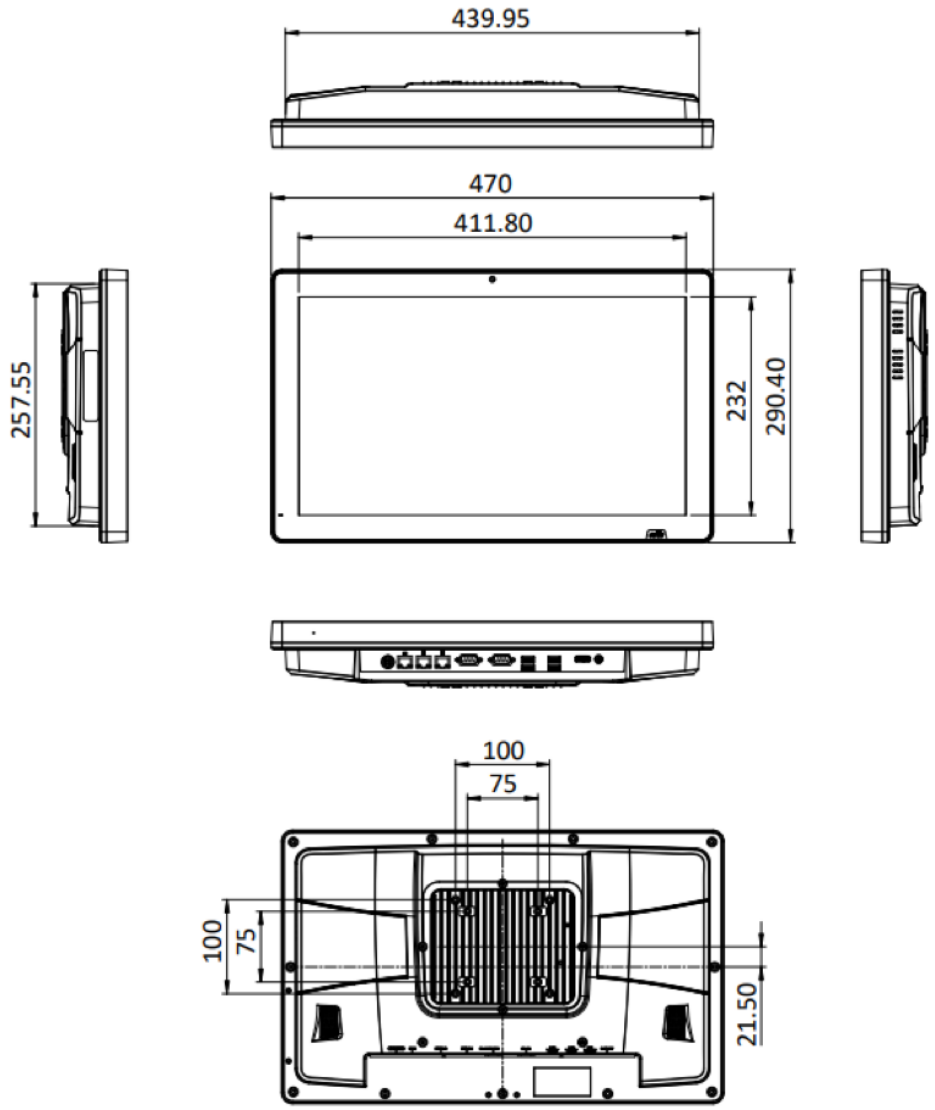


Figure 1-7: AFL3-W19C-ADLP Dimensions (mm)

1.9.3 AFL3-W22C-ADLP Dimensions

The AFL3-W22C-ADLP dimensions are shown below.

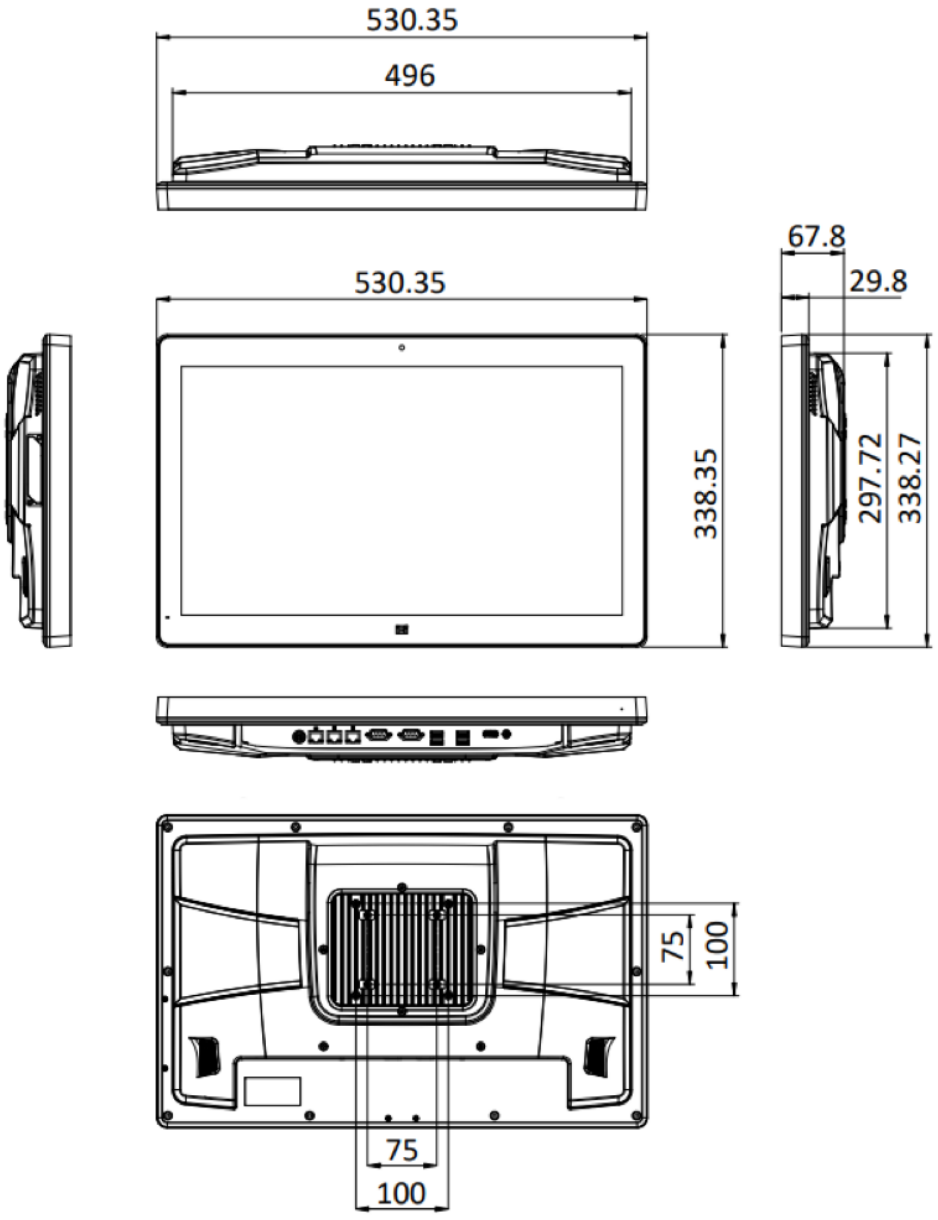


Figure 1-8: AFL3-W22C-ADLP Dimensions (mm)

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 duri ng 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 -W15C/W19C/W22C-ADLP was purchased from or contact an IEI sales re presentative directly by sending an email to sales@ieiworld.com.

The AFL3-W15C/W19C/W22C-ADLP flat bezel panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL3-W15C/W19C/W22C-ADLP panel PC	
1	96 W power adapter (**P/N**: 63040-010096-100-RS)	
1	Power cord	
4	Screws (M4*6) for VESA mounting	
4	Screws (M3*4) for HDD installation	

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)	

Item and Part Number	Image
Panel mounting kit (**P/N**: AFL3PK-W15A-R10 for W15C) (**P/N**: AFL3PK-W19C-R10 for W19C & W22C)	
Rack mounting kit (**P/N**: AFL3RK-W15B-R10 for W15C)	
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-W15C/W19C/W22C-ADLP may result in permanent damage to the AFL3-W15C/W19C/W22C-ADLP and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W15C/W19C/W22C-ADLP. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W15C/W19C/W22C-ADLP.
- ***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 M.2 module or a HDD.

Step 3: Configure the system.

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

Step 5: Mount the flat bezel panel PC.

3.4 Removing the Back Covers

To access the AFL3-W15C/W19C/W22C-ADLP 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 retention screws from the back cover. Two types of screw are used for securing the plastic cover of the AFL3-W15C-ADLP. See **Figure 3-1** for detail. Be aware of this for reinstalling the plastic cover.

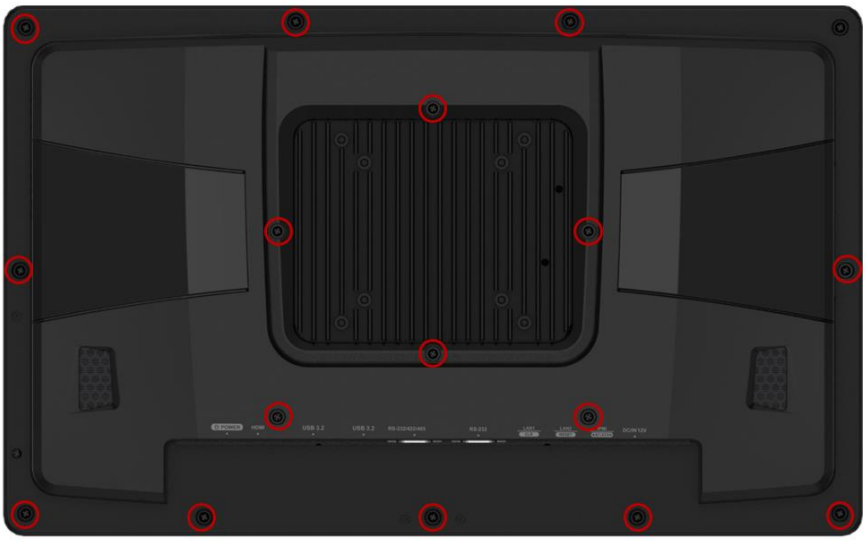


Figure 3-1: AFL3-W15C/W19C/W22C-ADLP Back Cover Retention Screws

Step 2: Lift the plastic back cover off the AFL3-W15C/W19C/W22C-ADLP.

Step 3: Remove the retention screws from the internal aluminum cover. Two types of screw are used for securing the aluminum cover. See the following diagrams for detail. Be aware of this for reinstalling the aluminum cover.

For 15.6" panel PC: see **Figure 3-2**

For 18.5" panel PC: see **Figure 3-3**

For 21.5" panel PC: see **Figure 3-4**

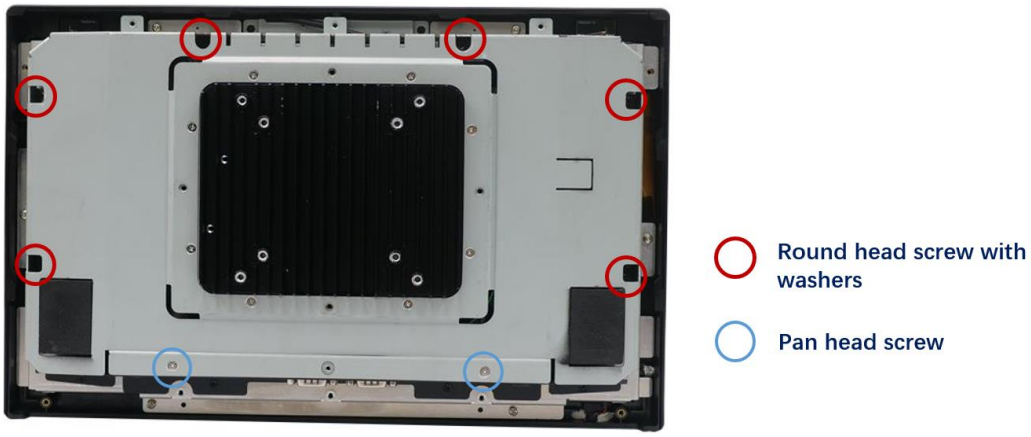


Figure 3-2: AFL3-W15C-ADLP Aluminum Cover Retention Screws

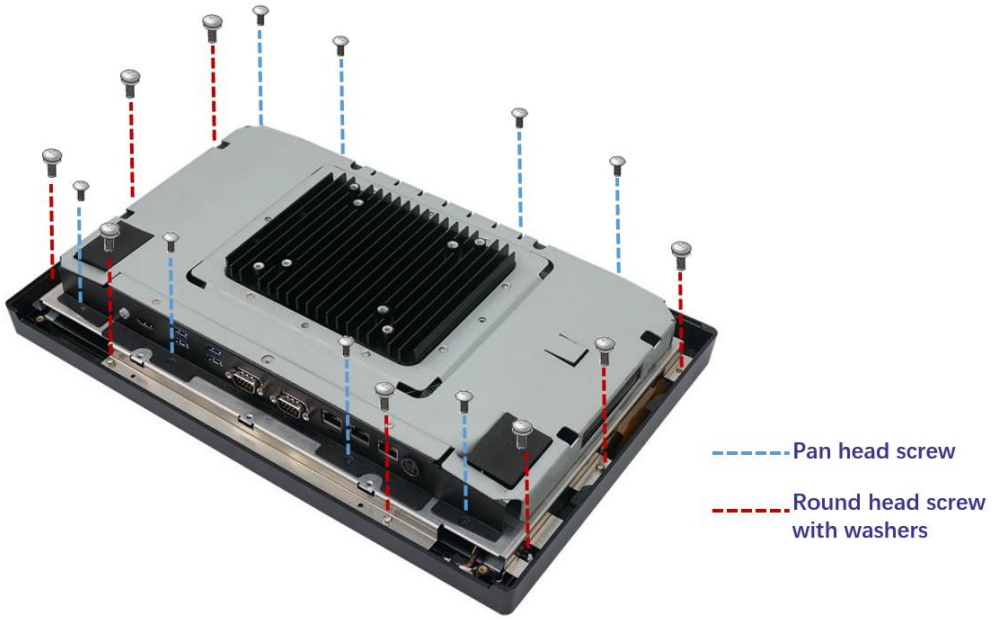


Figure 3-3: AFL3-W19C-ADLP Aluminum Cover Retention Screws

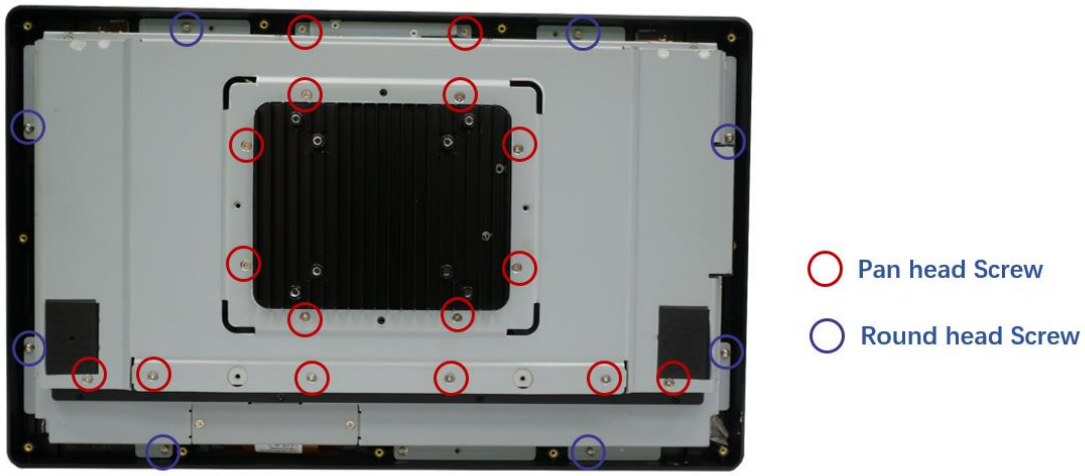


Figure 3-4: AFL3-W22C-ADLP Aluminum Cover Retention Screws

Step 4: Lift the aluminum cover off the AFL3-W15C/W19C/W22C-ADLP. A thermal pad is attached under the center of the aluminum cover. To easily remove the cover, turn the cover in a clockwise direction first to detach the thermal pad before lifting the cover (**Figure 3-5**).

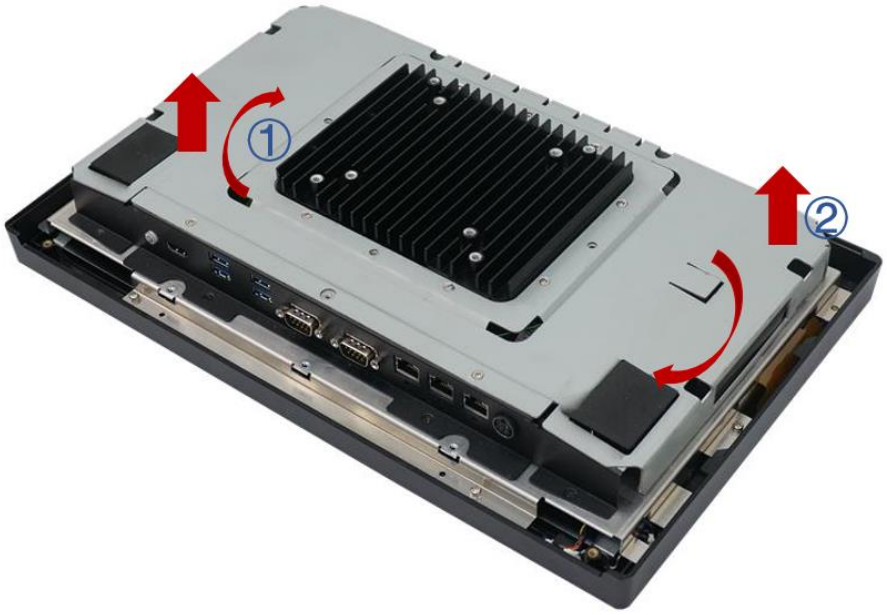


Figure 3-5: Lift the Aluminum Cover

3.5 M.2 Module Installation

The AFL3-W15C/W19C/W22C-ADLP has an M.2 2280 M-key slot (PCIe signal). To install an M.2 module into the AFL3-W15C/W19C/W22C-ADLP, 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 M.2 slot. Remove the preinstalled retention screw on the motherboard as shown in **Figure 3-6**.

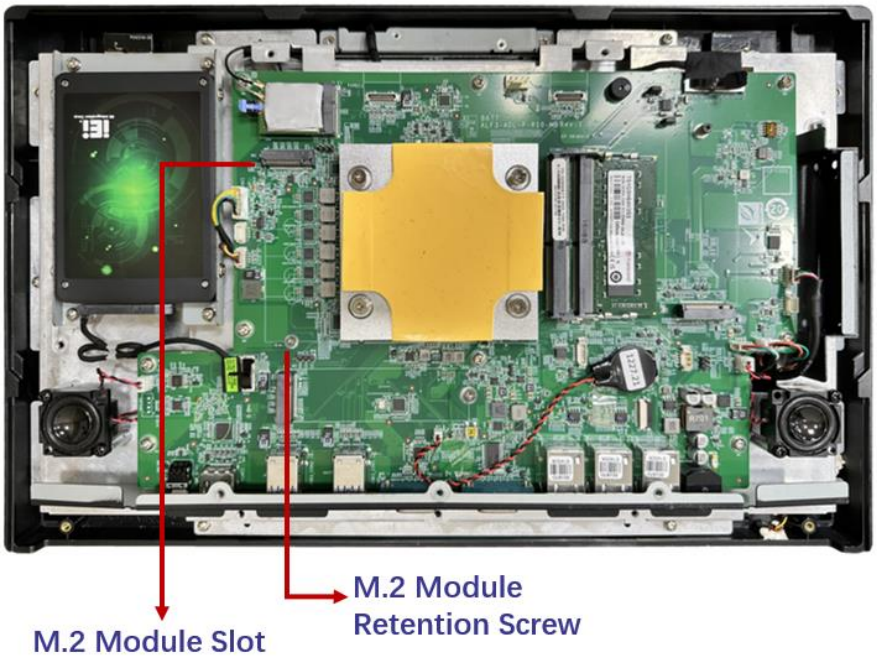


Figure 3-6: M.2 Module Slot Location

Step 3: Line up the notch on the card with the notch on the slot. Slide the M.2 card into the socket at an angle of about 20º (**Figure 3-7**).

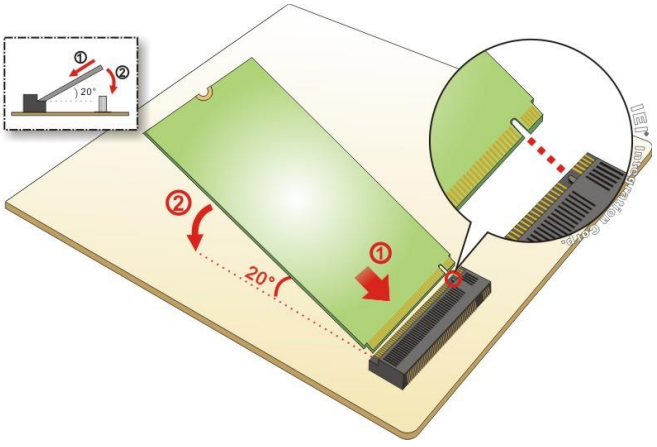


Figure 3-7: Inserting the M.2 Module into the Slot at an Angle

Step 4: Secure the M.2 module with the previously removed retention screw (**Figure 3-8**).

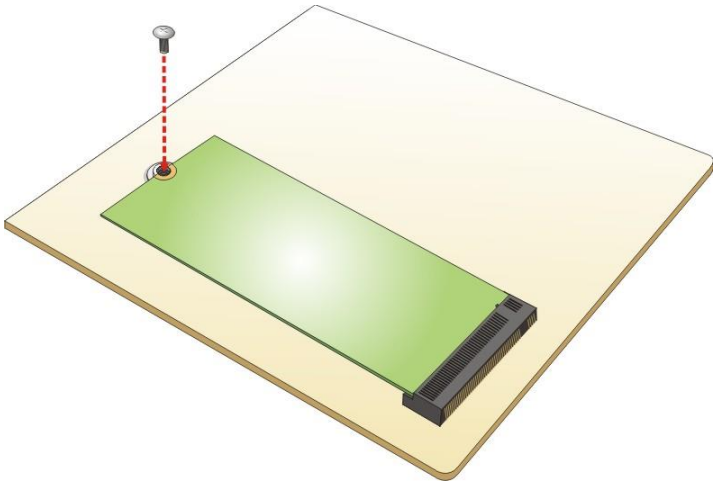


Figure 3-8: Securing the M.2 Module

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 3-9: 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 3-10**).

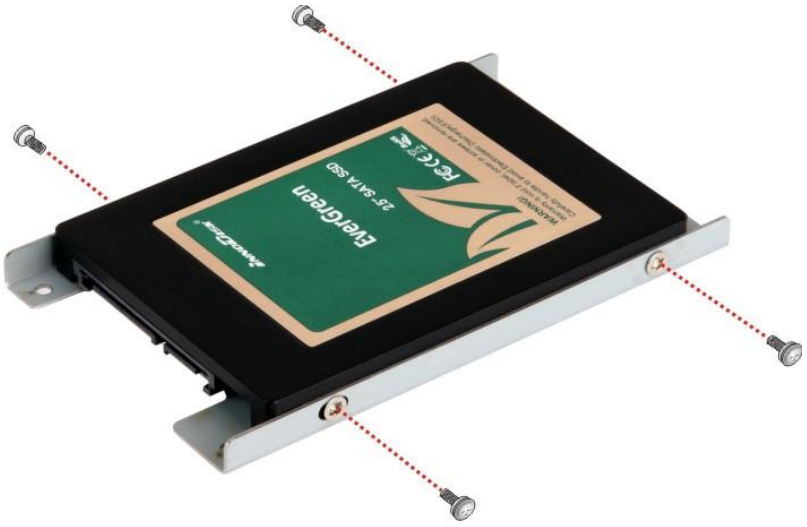


Figure 3-10: HDD Retention Screws

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

Step 5: Install the HDD into the AFL3-W15C/W19C/W22C-ADLP by aligning the retention screw holes in the HDD brackets with the retention screw holes on the chassis. Insert the four retention screws.

Figure 3-11: HDD Installation

Step 6: Replace the internal aluminum cover and the plastic back cover.

3.7 Clear CMOS

If the AFL3-W15C/W19C/W22C-ADLP fails to boot due to improper BIOS settings, the clear CMOS jumper clears the CMOS data and resets the system BIOS information. To do this, push the clear CMOS button for three seconds, then restart the system. The clear CMOS button location is shown in **Figure 3-12**.

Figure 3-12: Clear CMOS Button Location

3.8 AT/ATX Mode Selection

AT or ATX power mode can be used on the AFL3-W15C/W19C/W22C-ADLP. The selection is made through an AT/ATX switch located on the bottom panel (**Figure 3-13**).

Figure 3-13: 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-W15C/W19C/W22C-ADLP panel PC turns on automatically when the power is connected. The AT mode benefits a production line to control multiple panel PCs from a central management center and other applications including:

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

3.8.2 ATX Power Mode

With the ATX mode selected, the AFL3-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP are listed below.

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

The mounting methods are described below.

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 3-14**).

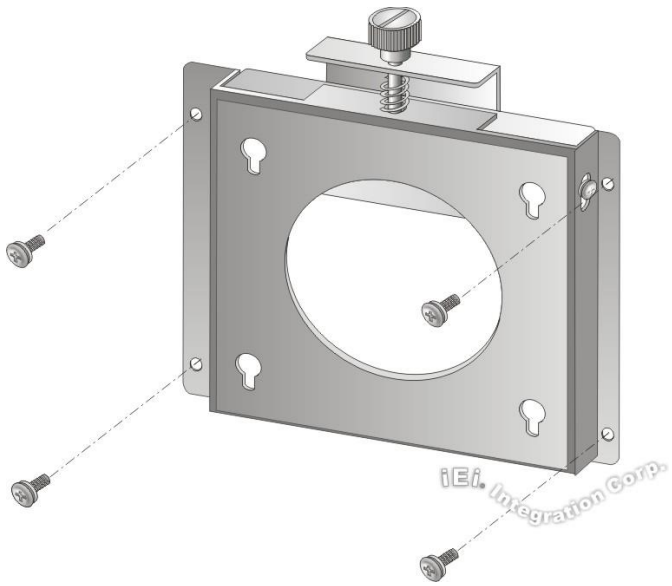
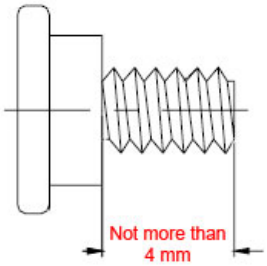


Figure 3-14: Wall-mounting Bracket

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 3-15**).

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. 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.

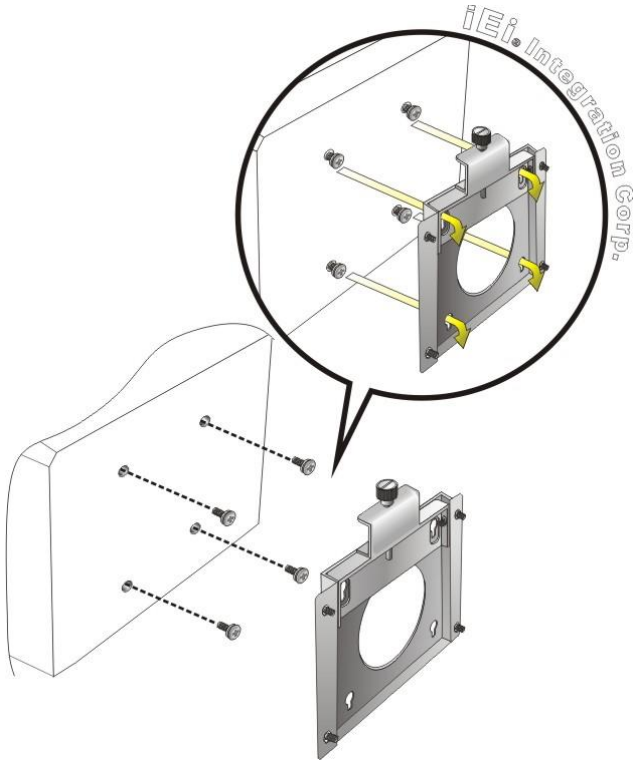


Figure 3-15: Chassis Support Screws

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket (**Figure 3-16**).

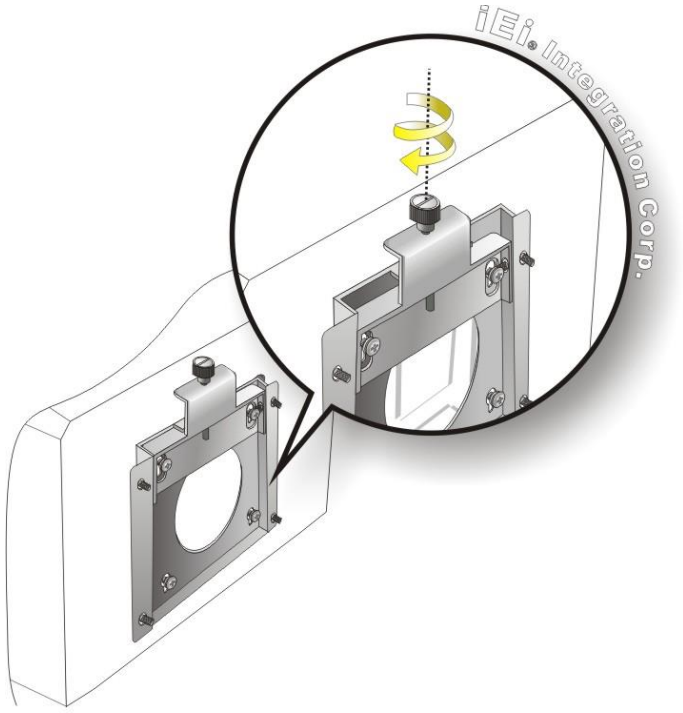


Figure 3-16: Secure the Panel PC

3.9.2 Panel Mounting

To mount the AFL3-W15C/W19C/W22C-ADLP 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.

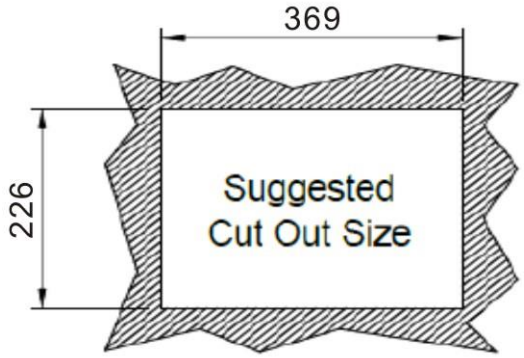


Figure 3-17: AFL3-W15C-ADLP Cutout Dimensions

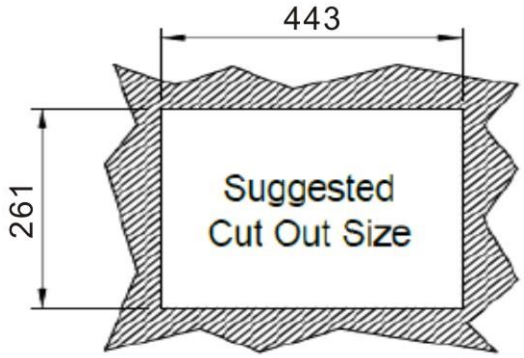


Figure 3-18: AFL3-W19C-ADLP Cutout Dimensions

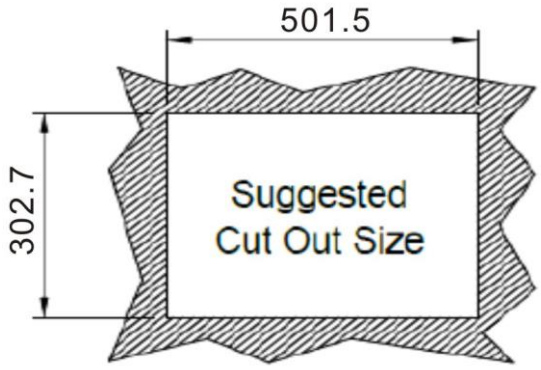


Figure 3-19: AFL3-W22C-ADLP Cutout Dimensions

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 3-20**.

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.

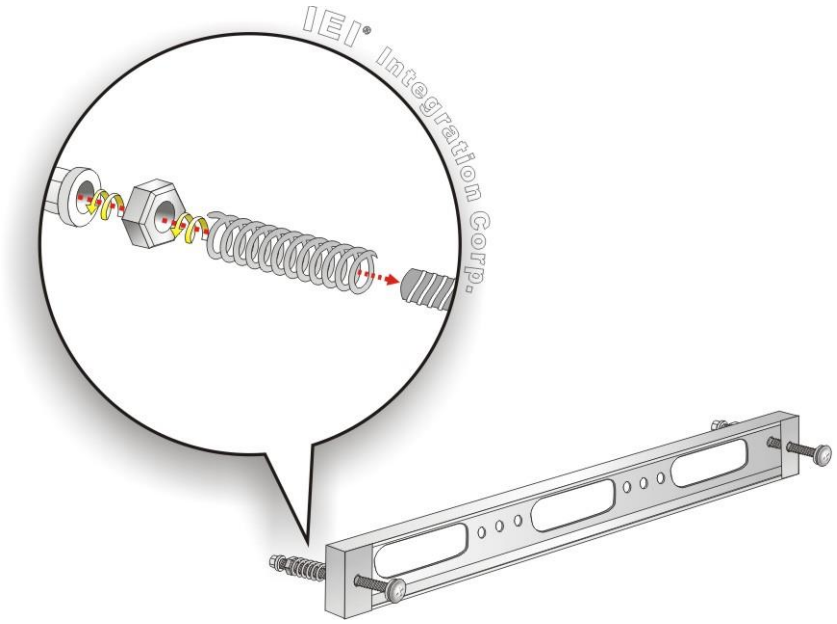


Figure 3-20: Panel Mounting Kit Installation

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 3-21**).

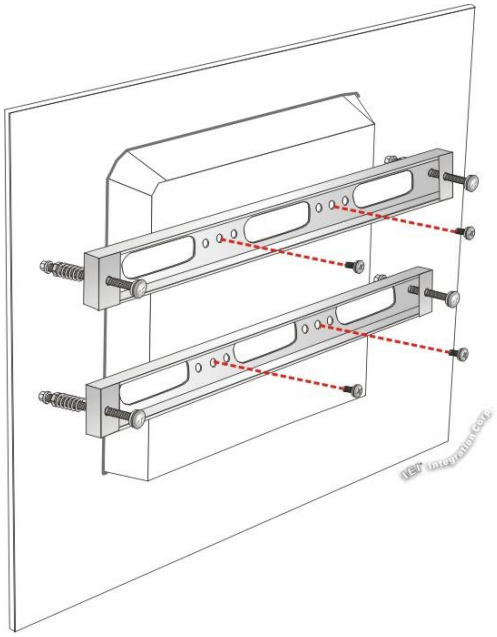


Figure 3-21: Securing Panel Mounting Brackets

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 Cabinet and Rack Installation

The AFL3-W15C/W19C/W22C-ADLP flat bezel panel PC can be installed into a cabinet or rack. The installation procedures are similar to the panel mounting installation. To do this, please follow the steps below:

NOTE:

When purchasing the cabinet/rack installation bracket, make sure it is compatible with both the AFL3-W15C/W19C/W22C-ADLP flat bezel panel PC and the rack/cabinet into which the AFL3-W15C/W19C/W22C-ADLP is installed.

Step 1: Slide the rear chassis of the AFL3-W15C/W19C/W22C-ADLP panel PC through the rack/cabinet bracket until the frame is flush against the front of the bracket.

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

See **Figure 3-22**.

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

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

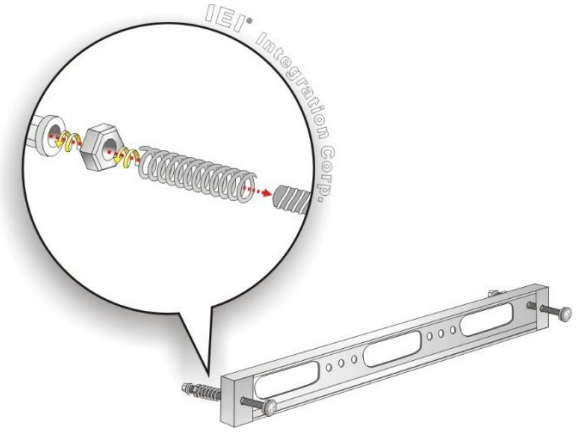


Figure 3-22: Rack Mounting Kit Installation

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

Step 5: Secure the two rack mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes and tightening them (**Figure 3-23**).

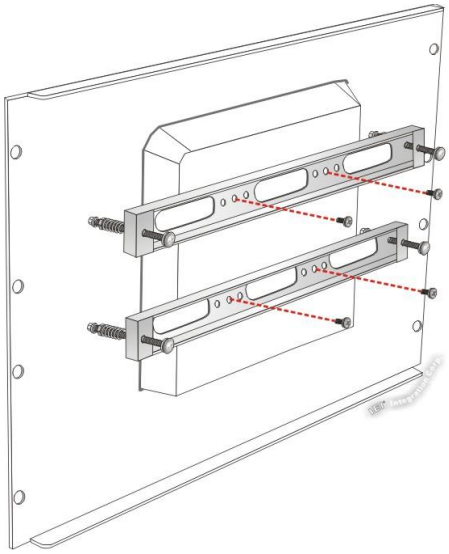


Figure 3-23: Securing Rack Mounting Brackets

Step 6: Slide the panel PC with the attached rack/cabinet bracket into a rack or cabinet (**Figure 3-24**).

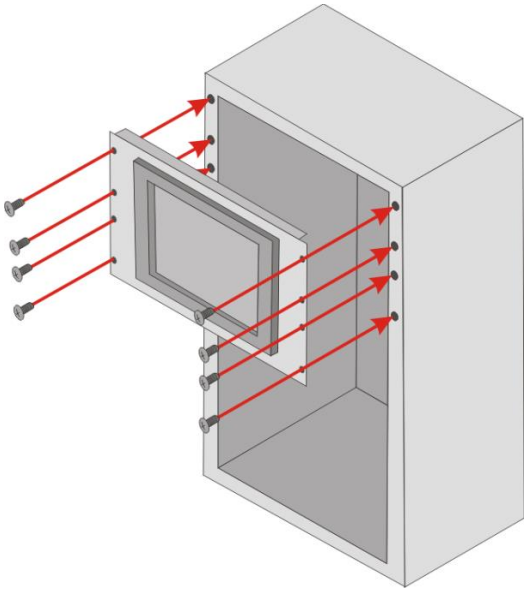


Figure 3-24: Install into a Rack/Cabinet

Step 7: Once the panel PC with the attached rack/cabinet bracket has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet.

NOTE:

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

3.9.4 Arm Mounting

The AFL3-W15C/W19C/W22C-ADLP is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75 mm or a 100 mm interface pad. To mount the AFL3-W15C/W19C/W22C-ADLP on an arm, please follow the steps below.

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

NOTE:

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 75 mm or a 100 mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL3-W15C/W19C/W22C-ADLP 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 3-25**).

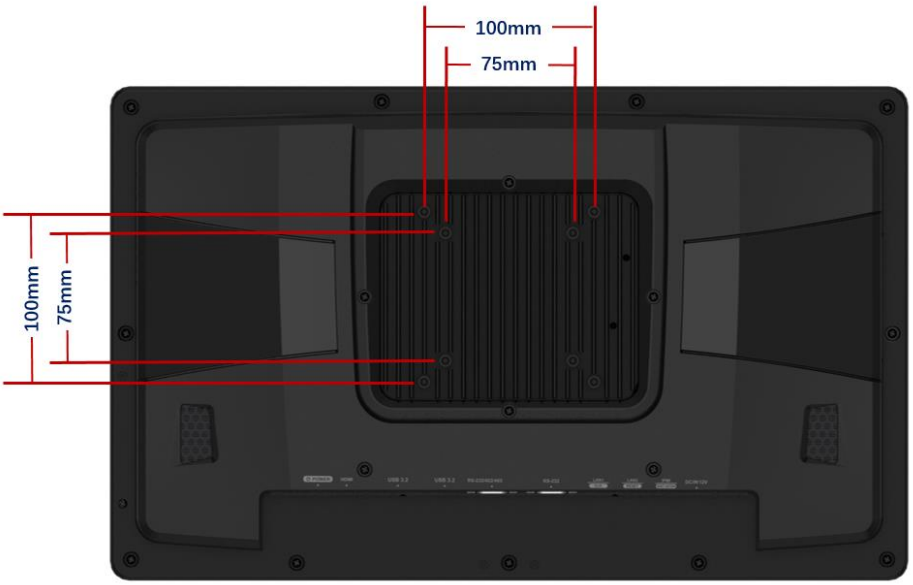


Figure 3-25: Arm Mounting Retention Screw Holes

Step 4: Secure the AFL3-W15C/W19C/W22C-ADLP to the interface pad by inserting four retention screws through the mounting arm interface pad and into the AFL3-W15C/W19C/W22C-ADLP.

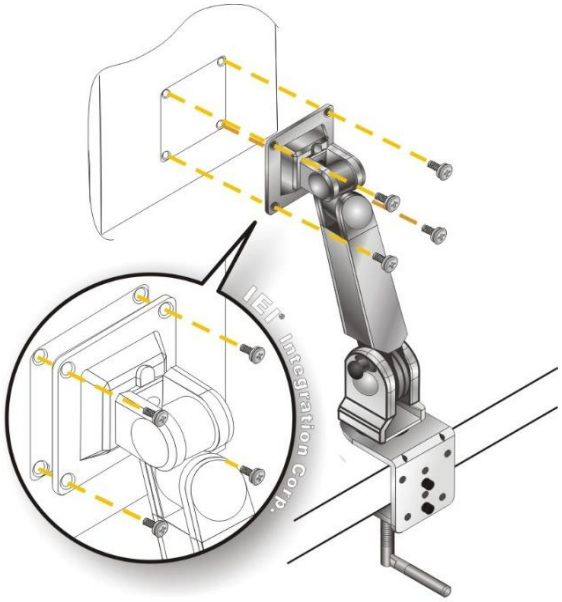


Figure 3-26: Arm Mounting

3.9.5 Stand Mounting

To mount the AFL3-W15C/W19C/W22C-ADLP using the stand mounting kit, please follow the steps below.

Step 1: Locate the screw holes on the rear of the AFL3-W15C/W19C/W22C-ADLP. 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-W15C/W19C/W22C-ADLP insert the retention screws into the screw holes and tighten them.

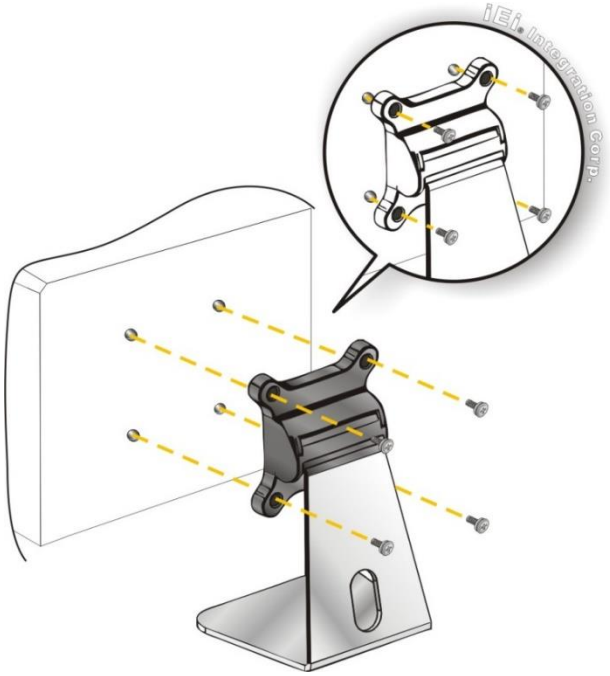


Figure 3-27: Stand Mounting (Stand-A/Bxx)

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-W15C/W19C/W22C-ADLP.

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 3-28: Powering On the System

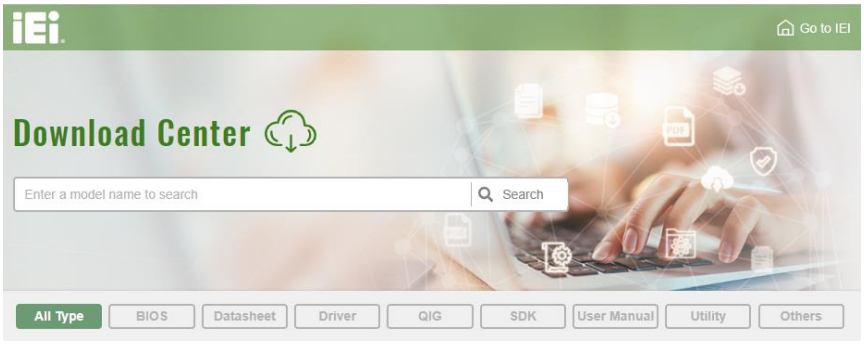
3.11 Reset the System

The reset button enables user to reboot the system when the system is turned on. The reset button location is shown in **Figure 3-29**. Press the reset button to reboot the system.

Figure 3-29: Reset Button Location

3.12 Software Installation

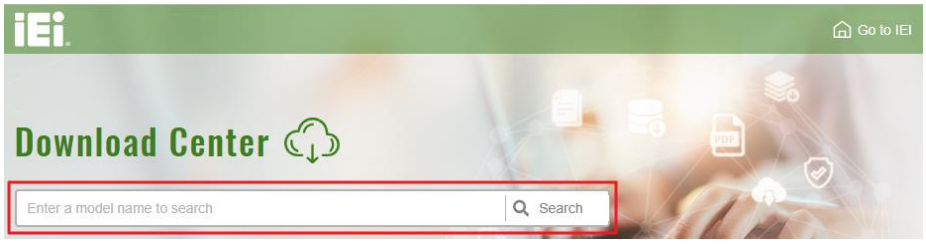
All the drivers for the AFL3-W15C/W19C/W22C-ADLP are available on IEI Resource Download Center (https://download.ieiworld.com). Type the model name and press Enter to find all the relevant software, utilities, and documentation.



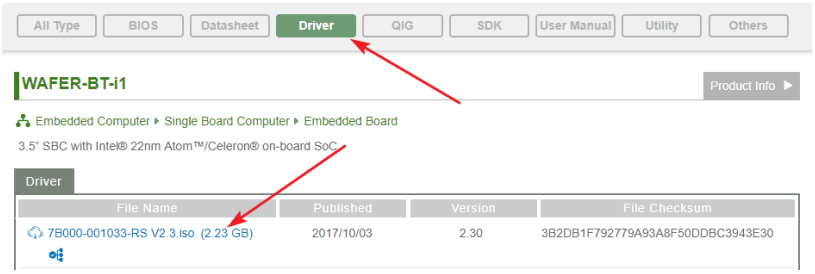
3.12.1 Driver Download

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

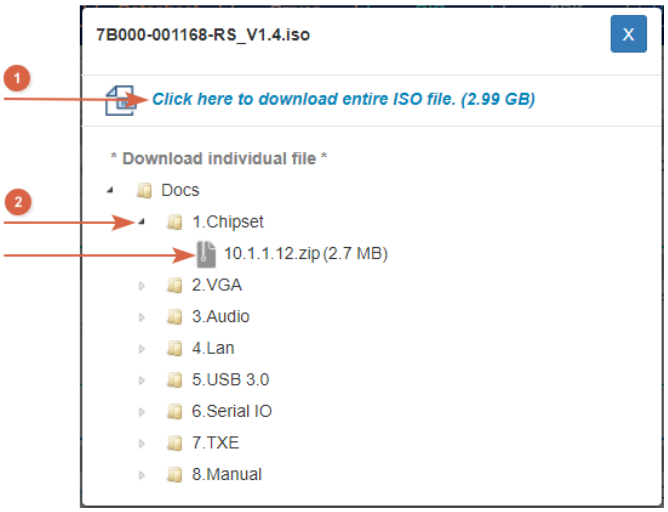
Step 1: Go to https://download.ieiworld.com. Type the model name and press Enter.



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



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



NOTE:

To install software from the downloaded ISO image file in Windows 8, 10 or 11, double-click the ISO file to mount it as a virtual drive to view its content.

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. **Using keyboard**: Press the **DEL** or **F2** as soon as the system is turned on.
2. **Using touchscreen**: Press the **Setup** button on the upper right corner of the BIOS Starting Menu.

If the message disappears before the **DEL** or **F2** key is pressed, restart the computer and try again, then the BIOS Starting Menu will appear. Select "Setup" and press Enter to get into the BIOS Setup.

Figure 4-1:BIOS Starting Menu

4.1.2 Using Setup

The BIOS Setup menu can be navigated by using a keyboard or a touchscreen.

4.1.2.1 Keyboard Navigation

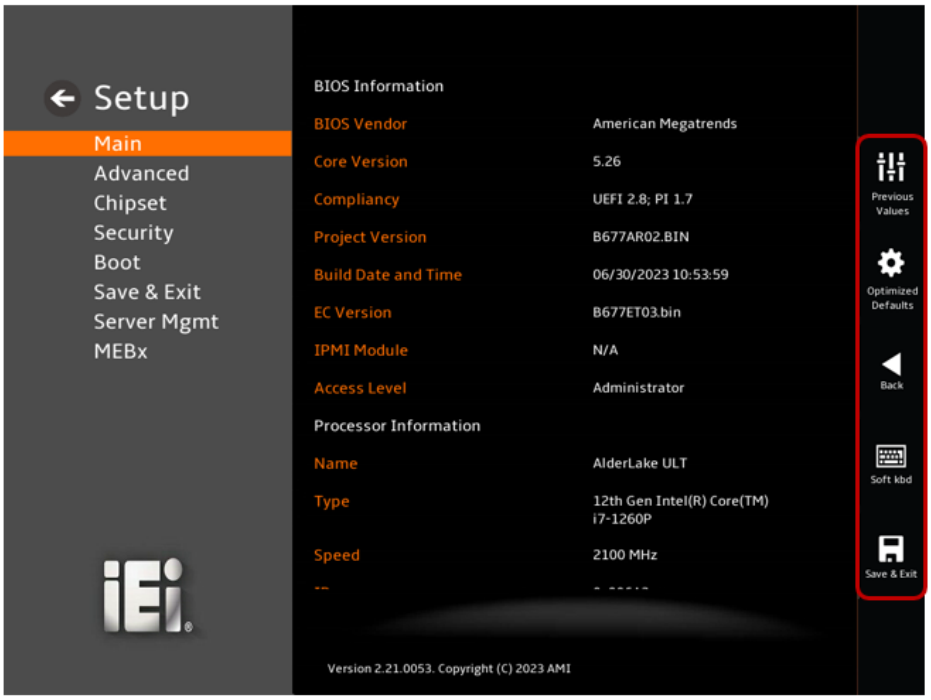
For keyboard navigation, use the navigation keys shown in **Table 4-1**.

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
-	Decrease the numeric value or make changes
Page Up	Move to the previous page
Page Dn	Move to the next page
Esc	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
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Load previous values
F3	Load optimized defaults
F4	Save changes and Exit BIOS
<K>	Scroll help area upwards
<M>	Scroll help area downwards

Table 4-1:BIOS Navigation Keys

4.1.2.2 Touch Navigation

For touchscreen navigation, use the on-screen navigation keys shown below.



On-screen Button	Function
Previous Values	Load the last value you set.
Optimized Defaults	Load the factory default values in order to achieve the best performance.
Back	Return to the previous menu.
Soft kbd	Display the on-screen keyboard.
Save & Exit	Save the changes made to the BIOS options and reset the system.

Table 4-2:BIOS ON-screen Keys

4.1.3 Getting Help

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

4.1.4 Unable to Reboot after Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the jumper described in **Section 3.7**.

4.1.5 BIOS Menu Bar

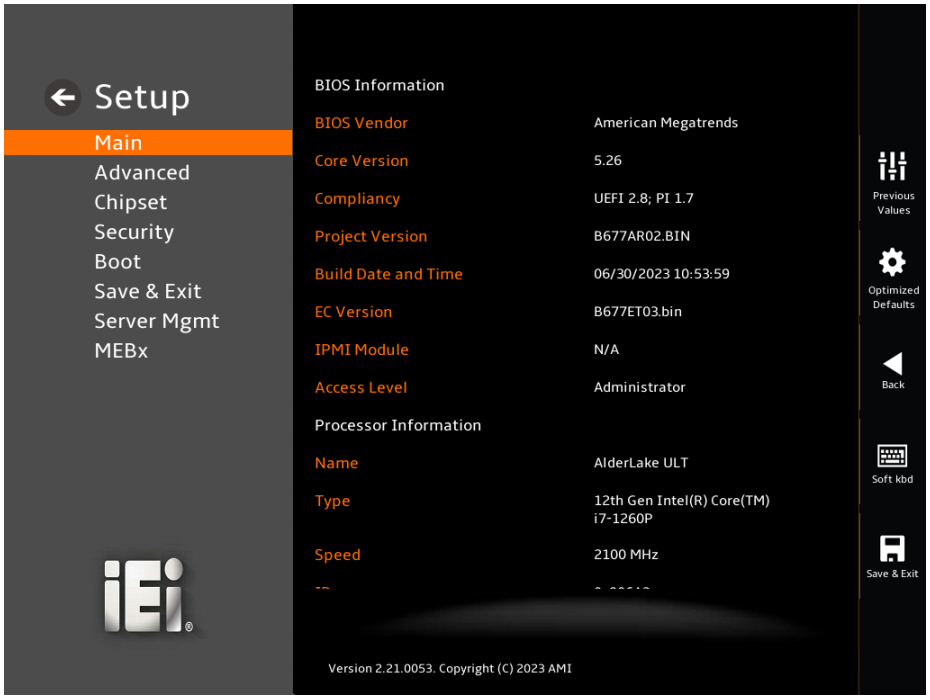
The **menu bar** on top of the BIOS screen has the following main items:

- 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&BIOS Menu 2**) appears when the **BIOS Setup** program is entered. The **Main** menu gives an overview of the basic system information.



BIOS Menu 1:Main (1/2)

BIOS Menu 2: Main(2/2)

➔ **BIOS Information**

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

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version
- **Compliancy:** Current UEFI & PI version
- **Project Version:** the board version
- **Build Date and Time:** Date the current BIOS version was made
- **Access Level: Current BIOS Level**
- **EC Version:** Current EC version
- BIOS Information

➔ **Processor Information**

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

- **Name:** Displays the Processor Details
- **Type:** Displays the Processor Type
- **Speed:** Displays the Processor Speed
- **ID:** Displays the Processor ID
- **Stepping:** Displays the Processor Stepping
- **Package:** Displays the Processor Package
- **Number of Efficient-cores:** Displays number of Efficient-cores cores
- **Number of Performance-cores:** Displays number of Performance-cores
- **Microcode Revision:** CPU Microcode Revision
- **IGFX GOP Version:** Displays the IGFX GOP Version
- **Total Memory:** Total Memory in the System
- **Memory Frequency: Displays the Data Rate of Memory**

➔ **PCH Information**

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

- **Name:** Displays the PCH Name
- **PCH SKU：** Displays the PCH SKU
- **Stepping:** Displays the PCH Stepping
- **TXT Capability of Platform/PCH:** Displays the TXT Capability of Platform/PCH
- **Production Type:** Displays the PCH Production Type
- **ME FW Version:** Displays the ME Firmware Version
- **ME Firmware SKU:** Displays the ME Firmware SKU
- **PMC FW Version:** Displays the PMC Firmware Version

The System Overview field also has two user configurable fields:

➔ **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 3**) to configure the CPU and peripheral devices through the following sub-menus:

WARNING!

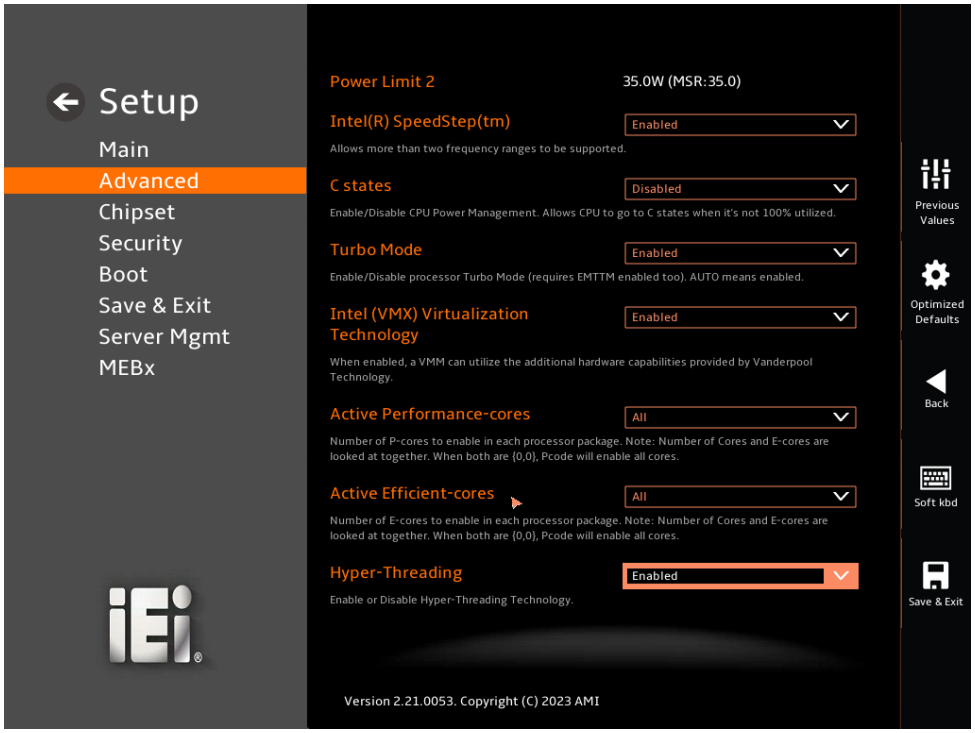
Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

BIOS Menu 3:Advanced

4.3.1 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 4 & BIOS Menu 5 & BIOS Menu 6**) to view detailed CPU specifications or enable the Intel Virtualization Technology.

BIOS Menu 4:CPU Configuration(1/3)



BIOS Menu 5::CPU Configuration(2/3)

BIOS Menu 6::CPU Configuration(3/3)

➔ **Intel® SpeedStep™ [Enabled]**

Use the **Intel® SpeedStep™** to reduce cpu operating frequency to achieve reduced power consumption technology. Allows more than two frequency ranges to be supported.

➔ **Disabled**		Disables the Intel® SpeedStep™.
➔ **Enabled**	**DEFAULT**	Enables the Intel® SpeedStep™.

➔ **C states [Disabled]**

Use the **C states** option to enable or disable the CPU Power Management.

➔ **Disabled**	**DEFAULT**	Disables CPU to go to C states when it's not 100% utilized.
➔ **Enabled**		Enables CPU to go to C states when it's not 100% utilized.

➔ **Turbo Mode [Enabled]**

Use the **Turbo Mode** option to enable or disable Turbo Mode which requires Intel Speed Step or Intel Speed Shift to be available and enabled.

➔ **Disabled**		Disables Turbo Mode Technology
➔ **Enabled**	**DEFAULT**	Enables Turbo Mode Technology

➔ **Intel (VMX) Virtualization Technology [Enabled]**

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

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

➔ **Active Performance-cores [All]**

Use the **Active Performance-cores** BIOS option to enable numbers of cores in the performance package. Number of cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.

➔	**All**	**DEFAULT**	Enable all cores in the processor package.
➔	**1**		Enable one core in the processor package.
➔	**2**		Enable two cores in the processor package.
➔	**3**		Enable three cores in the processor package.

➔ **Active Efficient-cores [All]**

Use the **Active Efficient-cores** BIOS option to enable numbers of cores in the performance package. Number of cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.

➔	**All**	**DEFAULT**	Enable all cores in the processor package.
➔	**0**		Enable zero cores in the processor package.
➔	**1**		Enable one core in the processor package.
➔	**2**		Enable two cores in the processor package.
➔	**3**		Enable three cores in the processor package.
➔	**4**		Enable four cores in the processor package.
➔	**5**		Enable five cores in the processor package.
➔	**6**		Enable six cores in the processor package.
➔	**7**		Enable seven cores in the processor package.

➔ **Hyper-Threading [Enabled]**

Use the **Hyper-Threading** enables simultaneous batch processing of multiple tasks, allowing a single processor to use thread-level parallel computing while multitasking, thus making it compatible with multithreaded operating systems and software.

➔	**Disabled**	Disables the Hyper-Threading Technology.

➔ **Enabled** **DEFAULT** Enables the Hyper-Threading Technology.

➔ **Power Limit 1**

Use the **Power Limit 1** to set Power Limit in Milli Watts. BIOS will round to the nearest 1/8W when programming. 0 = no custom override. For 12.50W, enter 12500. Overclocking SKU: Value must be between Max and Min Power Limits. Other SKUs: This value must be between Min Power limit and TDP Limit. If value is 0, BIOS will program TDP value.

➔ **Power Limit 2**

Use the **Power Limit 2** to set Power Limit in Milli Watts. BIOS will round to the nearest 1/8W when programming. If the value is 0, BIOS will program this value as 1.25*TDP. For 12.50W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

➔ **Power Limit 1 Time Window**

Power Limit 1 Time Window value in second. The value may vary from 0 to 128.0, 0 = default value (28 sec for mobile and 8 sec for desktop). Defines time window which TDP value should be maintained.

4.3.2 PCH-FW Configuration

Use the **AMT Configuration** menu (**BIOS Menu 7**) to configure settings Intel AMT Supported configurations.

BIOS Menu 7:PCH-FW Configuration

➔ **Intel AMT [Enable]**

Use the **Intel AMT** option to enable or disable access MEBx Setup supported.

➔ **Disabled** Disables Intel AMT are no supported MEBx Setup

➔ **Enabled** **DEFAULT** Enables Intel AMT are able to access MEBx Setup

4.3.3 Trusted Computing

Use the **Trusted Computing** menu (**BIOS Menu 8)** to configure settings related to the Trusted Computing Group (TCG) Trusted Platform Module (TPM).

BIOS Menu 8: Trusted Computing

➔ **Security Device Support [Enable]**

Use the **Security Device Support** option to configure support for the TCG EFI Protocol and INT1A.

➔ **Disable**		Security Device support is disabled.
➔ **Enable**	**DEFAULT**	Security Device support is enabled.

➔ **Pending Operation [None]**

Use the **Pending Operation** option to schedule an operation for the security device.

➔ **None**	**DEFAULT**	TPM information is previous.
➔ **TPM Clear**		TPM information is cleared

4.3.4 IT5571 Super IO Configuration

Use the **IT5571 Super IO Configuration** menu (**BIOS Menu 9**) to set or change the configurations for the parallel ports and serial ports.

BIOS Menu 9: IT5571 IO Configuration

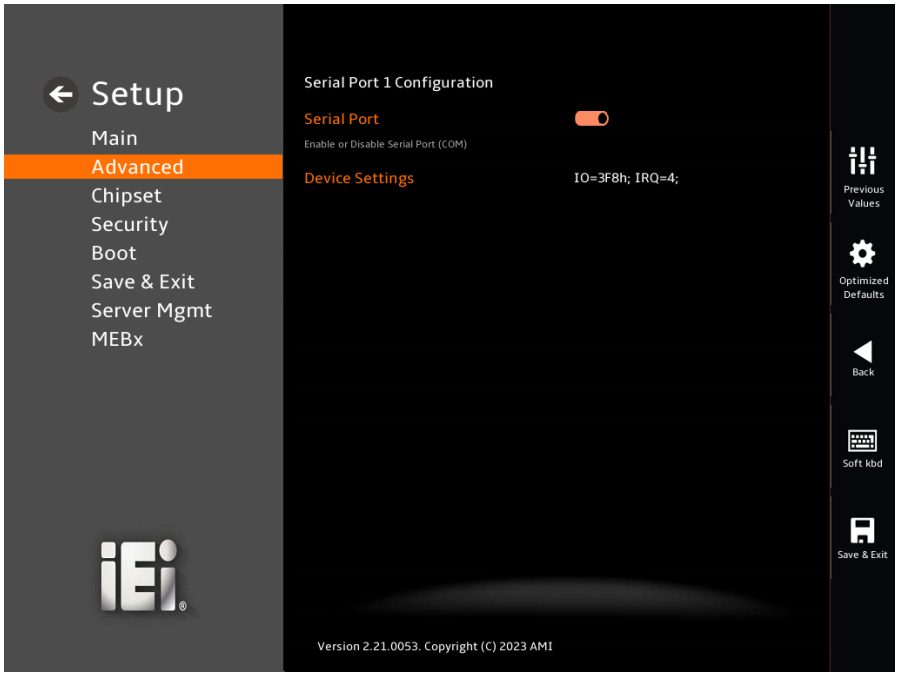
➔ **IT5571 Super IO Configuration**

The **IT5571 Super IO Configuration** lists a brief summary of the Super IO Chip information. The items shown in the system overview include:

- **Serial Port 1 Configuration: Set Parameters of Serial Port 1 (COMA)**
- **Serial Port 2 Configuration: Set Parameters of Serial Port 2 (COMB)**

4.3.4.1 Serial Port 1 Configuration

Use the **Serial Port 1 Configuration** submenu (**BIOS Menu 10**) to configure serial port 1.



BIOS Menu 10: 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

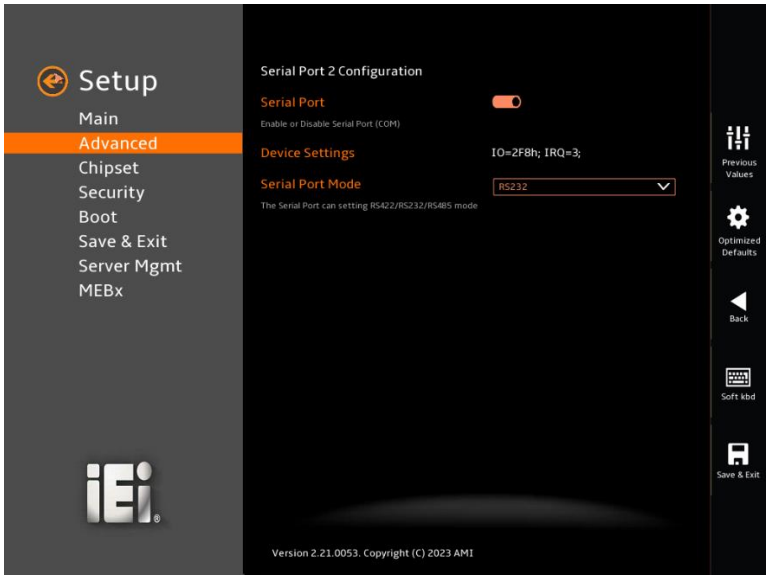
➔ **Device Settings**

The **Device Settings** option shows the serial port IO port address and interrupt address.

➔	**IO=3F8h; IRQ=4**	Serial Port I/O port address is 3F8h and the interrupt address is IRQ4

4.3.4.2 Serial Port 2 Configuration

Use the **Serial Port 2 Configuration** submenu (**BIOS Menu 11**) to configure serial port 2.



BIOS Menu 11: 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

➔ **Device Settings**

The **Device Settings** option shows the serial port IO port address and interrupt address.

➔ **IO=2F8h; IRQ=3**	Serial Port I/O port address is 2F8h and the interrupt address is IRQ3

➔ **Serial Port Mode [RS232]**

Use the **Serial Port Mode** option to change the serial port mode.

➔ **RS232**	**DEFAULT**	The serial port mode is RS-232
RS422 with termination resistor		The serial port mode is RS-422
RS485 with termination resistor		The serial port mode is RS-485

4.3.5 IT5571 H/W Monitor

The **IT5571 H/W Monitor** menu (**BIOS Menu 12**) displays the system temperature and CPU fan speed.

BIOS Menu 12: IT5571 H/W Monitor

➔ **PC Health Status**

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

- CPU Temperature
- System Temperatures
- CPU_CORE

- Voltages:
  - VCCIN
  - P5V
  - P12V
  - VDDR
  - P3V3

➔ **Tcc Activation Offset [0]**

Offset from factoryset Tcc activation temprature at which the Thermal Control Circuit must be activated. Tcc will be activated at: Tcc Activation Temp-Tcc Activation Offset.Tcc Activation Offset range is 0 to 63.

4.3.6 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 13**) configures RTC wake event.

BIOS Menu 13: RTC Wake Settings

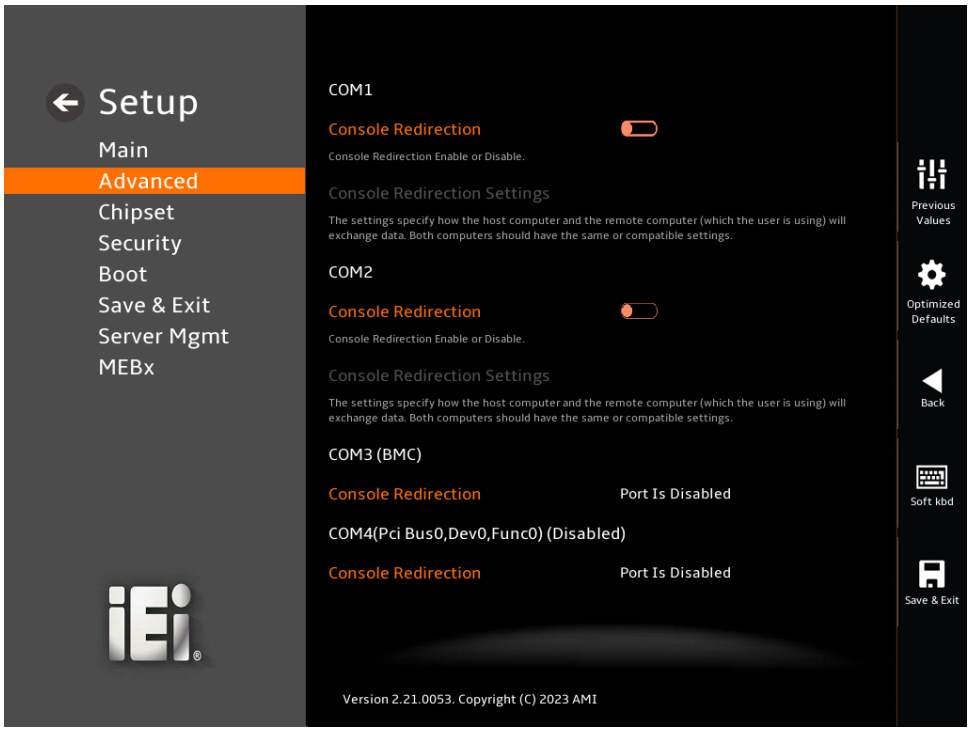
➔ **Wake system with Fixed Time [Disabled]**

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 Serial Port Console Redirection

The **Serial Port Console Redirection** menu **(BIOS Menu 14)** 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 14: Serial Port Console

➔ **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

The **Console Redirection Settings** submenu will be available when the **Console Redirection** option is enabled.

4.3.7.1 Console Redirection Settings

The following options are available in the **Console Redirection Settings** submenu (**BIOS Menu 15**) when the **COM Console Redirection** (for COM1 and COM2) option is enabled.

BIOS Menu 15:COM Console Redirection Settings

➔ **Terminal Type [ANSI]**

Use the **Terminal Type** option to specify the remote terminal type.

➔ **VT100**		The target terminal type is VT100
➔ **VT100+**		The target terminal type is VT100+
➔ **VT-UTF8**		The target terminal type is VT-UTF8
➔ **ANSI**	**DEFAULT**	The target terminal type is ANSI

➔ **Bits per second [115200]**

Use the **Bits per second** option to specify the serial port transmission speed. The speed must match on the other side. Long or noisy lines may require lower speeds.

➔ **9600**	Sets the serial port transmission speed at 9600.

- ➔ **19200** Sets the serial port transmission speed at 19200.
- ➔ **38400** Sets the serial port transmission speed at 38400.
- ➔ **57600** Sets the serial port transmission speed at 57600.
- ➔ **115200** **DEFAULT** Sets the serial port transmission speed at 115200.

➔ **Data Bits [8]**

Use the **Data Bits** option to specify the number of data bits.

- ➔ **7** Sets the data bits at 7.
- ➔ **8** **DEFAULT** Sets the data bits at 8.

➔ **Parity [None]**

Use the **Parity** option to specify the parity bit that can be sent with the data bits for detecting the transmission errors.

- ➔ **None** **DEFAULT** No parity bit is sent with the data bits.
- ➔ **Even** The parity bit is 0 if the number of ones in the data bits is even.
- ➔ **Odd** The parity bit is 0 if the number of ones in the data bits is odd.
- ➔ **Mark** The parity bit is always 1. This option does not allow for error detection.
- ➔ **Space** The parity bit is always 0. T This option does not allow for error detection.

➔ **Stop Bits [1]**

Use the **Stop Bits** option to specify the number of stop bits used to indicate the end of a serial data packet. Communication with slow devices may require more than 1 stop bit.

- ➔ **1** **DEFAULT** Sets the number of stop bits at 1.
- ➔ **2** Sets the number of stop bits at 2.

4.3.8 Network Stack Configuration

Use the **Network Stack** option to enable or disable the **UEFI Network Stack**.

BIOS Menu 16: Network Stack Configuration

➔ **Network Stack [Disabled]**

- ➔ **Disabled** — Disables UEFI Network Stack
- ➔ **Enabled** **DEFAULT** — Enables UEFI Network Stack

4.3.9 NVMe Configuration

Use the **NVMe Configuration** (**BIOS Menu 17**) menu to display the NVMe controller and device information.

BIOS Menu 17: NVMe Configuration

4.4 Chipset

Use the **Chipset** menu (**BIOS Menu 18**) to access the PCH IO and System Agent (SA) configuration menus.

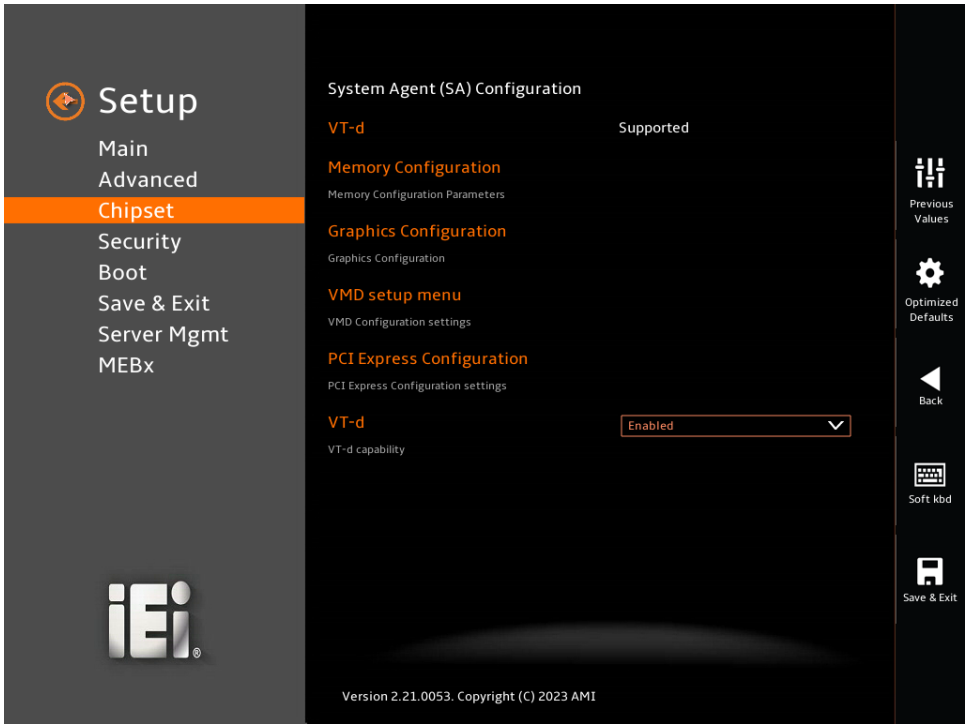
WARNING!

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

BIOS Menu 18: Chipset

4.4.1 System Agent (SA) Configuration

Use the **System Agent (SA) Configuration** menu (**BIOS Menu 19**) to configure the System Agent (SA) parameters.



BIOS Menu 19: System Agent (SA) Configuration

➔ **VT-d [Enabled]**

Use the **VT-d** option to enable or disable the VT-d capability.

➔	**Disabled**		Disable the VT-d capability
➔	**Enabled**	**DEFAULT**	Enable the VT-d capability

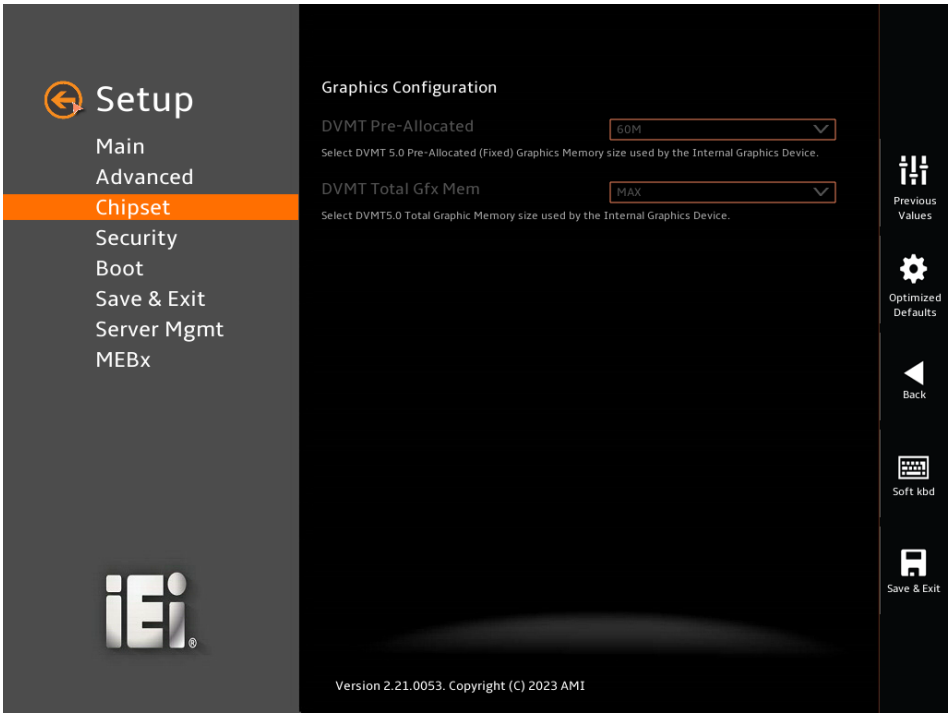
4.4.1.1 Memory Configuration

Use the **Memory Configuration** submenu (**BIOS Menu 20**) to view memory information.

BIOS Menu 20: Memory Configuration

4.4.1.2 Graphics Configuration

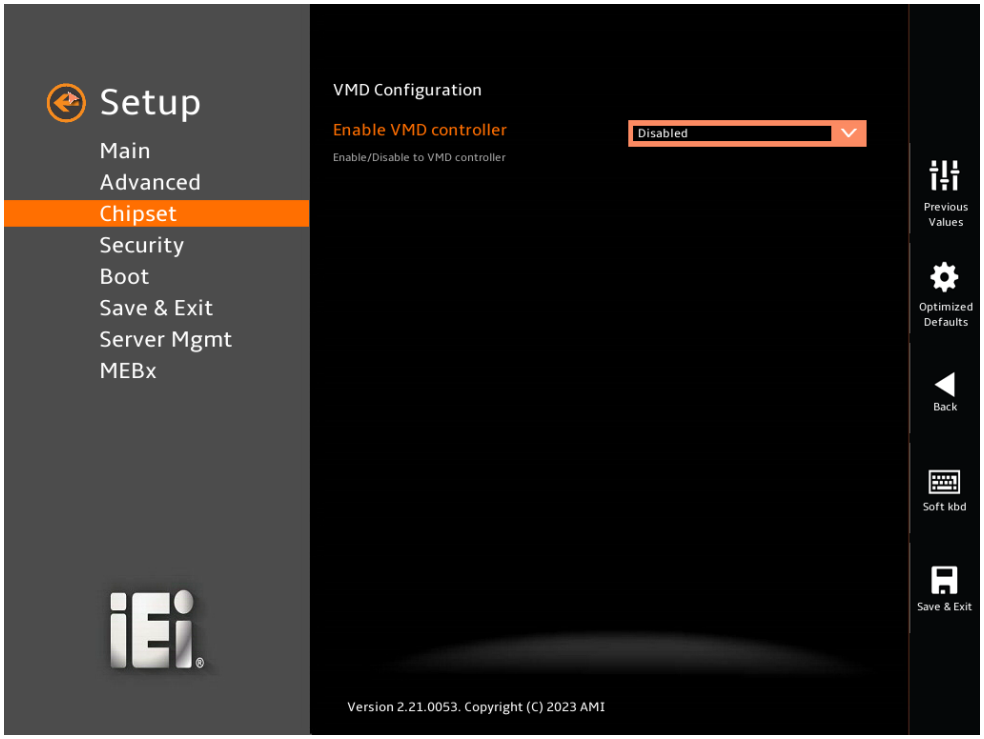
Use the **Graphics Configuration** (**BIOS Menu 21**) menu to view configuration of the video device connected to the system.



BIOS Menu 21: Graphics Configuration

4.4.1.3 VMD setup menu

Use the **VMD Configuration** to Enable or Disable to VMD controller.



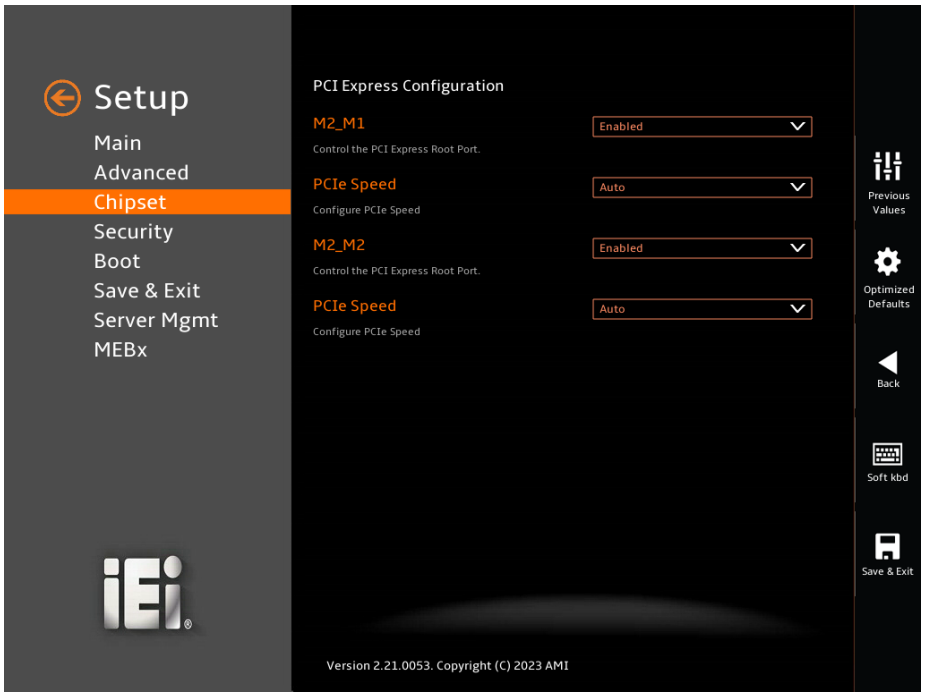
BIOS Menu 22: VMD setup menu

➔ **Enable VMD Controller [Disabled]**

- ➔ **Disabled** **DEFAULT** Disable the VMD controller
- ➔ **Enabled** Enable the VMD controller

4.4.1.4 PCI Express Configuration

Use the **PCI Express Configuration** (**BIOS Menu 23)** menu to configure PCI Express root port settings.



BIOS Menu 23: PCI Express Configuration

➔ **M2_M1 [Enabled]**

Use **M2_M1** to control the PCI Express root port**.**

➔	**Enabled**	**DEFAULT**	Enable the M2_M1
➔	**Disabled**		Disable the M2_M1

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed. Configuration options are listed below.

➔	**Auto**	**DEFAULT**	Auto mode.
➔	**Gen1**		Configure PCIe Speed to Gen1.

- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.
- ➔ **Gen4** Configure PCIe Speed to Gen4.
- ➔ **Gen5** Configure PCIe Speed to Gen5.

➔ **M2_M2 [Enabled]**

Use the **M2_M2** to control the PCI Express root port**.**

- ➔ **Disabled** Disable the M2_M2
- ➔ **Enabled** **DEFAULT** Enable the M2_M2

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed. Configuration options are listed below.

- ➔ **Auto** **DEFAULT** Auto mode.
- ➔ **Gen1** Configure PCIe Speed to Gen1.
- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.
- ➔ **Gen4** Configure PCIe Speed to Gen4.
- ➔ **Gen5** Configure PCIe Speed to Gen5.

4.4.2 PCH-IO Configuration

Use the **PCH-IO Configuration** menu (**BIOS Menu 24**) to configure the PCH parameters.

BIOS Menu 24: PCH-IO Configuration

➔ **Auto Power Button Function [Disabled(ATX)]**

The **Auto Power Button Function** BIOS option to show the power mode state is ATX

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

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

➔ **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.

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

Use the **Power Saving Function (EUP)** 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.

➔ **USB Power SW1 [+5V DUAL]**

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

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

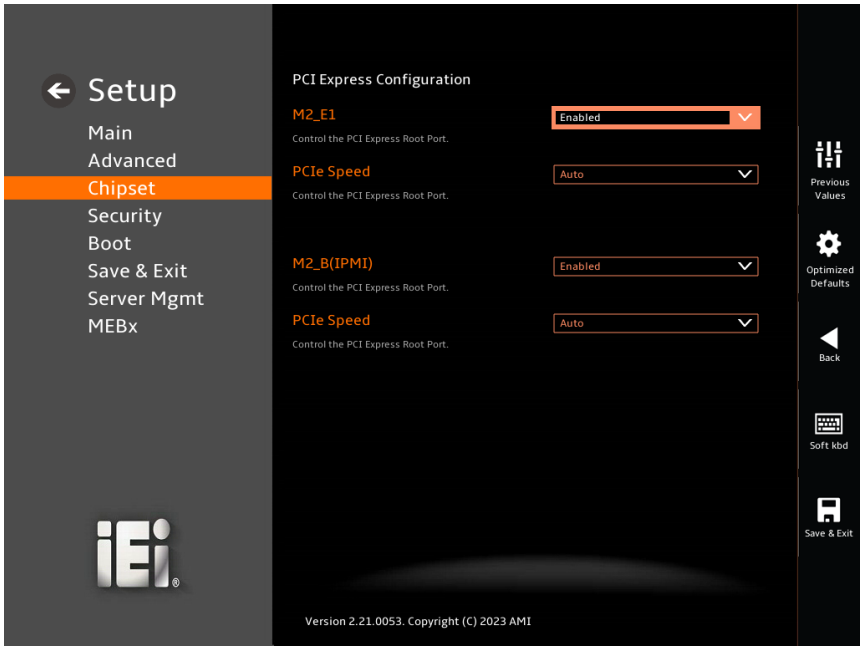
➔ **USB Power SW2 [+5V DUAL]**

Use the **USB Power SW2** BIOS option to configure the USB power source for the corresponding USB connectors.

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

4.4.2.1 PCI Express Configuration

Use the **PCI Express Configuration** submenu (**BIOS Menu 25)**to configure the PCI Express slots.



BIOS Menu 25: PCI Express Configuration

➔ **M2_E1 [Enabled]**

Use **M2_E1** to control the PCI Express root port**.**

➔	**Enabled**	**DEFAULT**	Enable the M2_E1
➔	**Disabled**		Disable the M2_E1

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed. Configuration options are listed below.

➔	**Auto**	**DEFAULT**	Auto mode.
➔	**Gen1**		Configure PCIe Speed to Gen1.
➔	**Gen2**		Configure PCIe Speed to Gen2.

- ➔ **Gen3** Configure PCIe Speed to Gen3.
- ➔ **Gen4** Configure PCIe Speed to Gen4.
- ➔ **Gen5** Configure PCIe Speed to Gen5.

➔ **M2_B(IPMI) [Enabled]**

Use the **M2_B(IPMI)** to control the PCI Express root port**.**

- ➔ **Disabled** Disable the M2_B
- ➔ **Enabled** **DEFAULT** Enable the M2_B

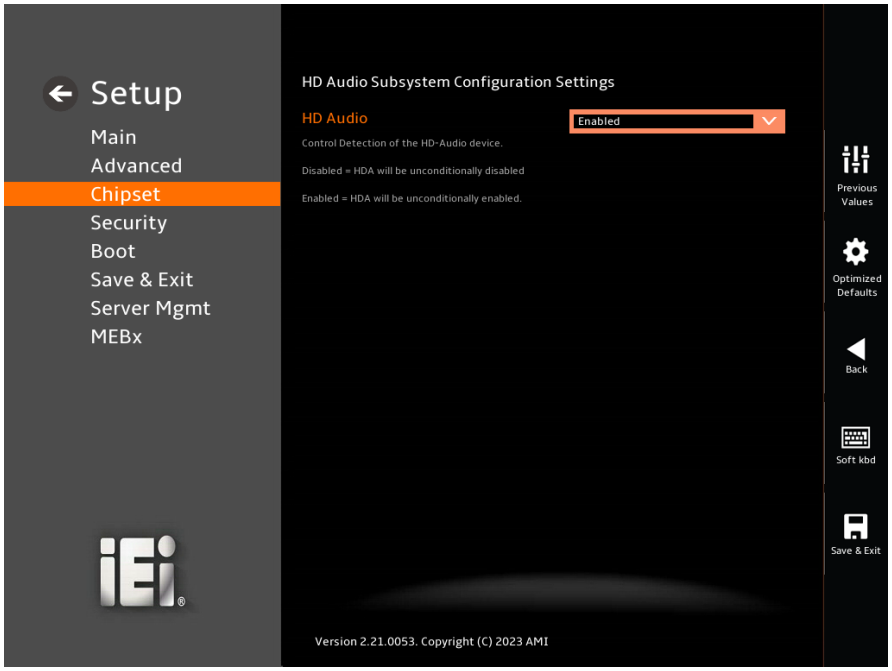
➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed. Configuration options are listed below.

- ➔ **Auto** **DEFAULT** Auto mode.
- ➔ **Gen1** Configure PCIe Speed to Gen1.
- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.
- ➔ **Gen4** Configure PCIe Speed to Gen4.
- ➔ **Gen5** Configure PCIe Speed to Gen5.

4.4.2.2 HD Audio Configuration

Use the **HD Audio Configuration** submenu (**BIOS Menu 26**) to configure the High Definition Audio codec.



BIOS Menu 26:HD Audio Configuration

➔ **HD Audio [Enabled]**

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

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

4.4.2.3 SATA Configuration

Use the **SATA Configuration** menu (**BIOS Menu 27**) to change and/or set the configuration of the SATA devices installed in the system.

BIOS Menu 27:SATA Configuration

➔ **SATA Controller(s) [Enabled]**

Use the **SATA Controller(s)** option to configure the SATA controller(s).

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

➔ **Disabled** Disables the on-board SATA controller(s).

➔ **SATA Mode Selection [AHCI]**

Use the **SATA Mode Selection** option to determine how the SATA devices operate.

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

➔ **Serial ATA Port 0 [Empty]**

➔ **Serial ATA Port 1 [Empty]**

4.5 Security

Use the **Security** menu (**BIOS Menu 28 & BIOS Menu 29**) to set system and user passwords.

BIOS Menu 28:Security(1/2)

BIOS Menu 29:Security(2/2)

➔ **Administrator Password**

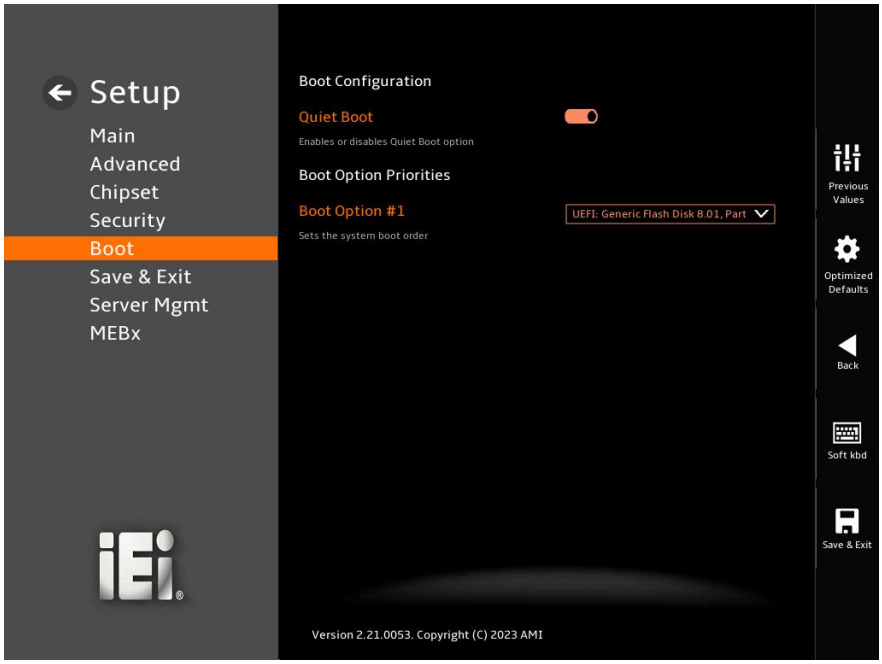
Use the **Administrator Password** to set or change a administrator password.

➔ **User Password**

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

4.6 Boot

Use the **Boot** menu (**BIOS Menu 30)** to configure system boot options.



BIOS Menu 30: 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**

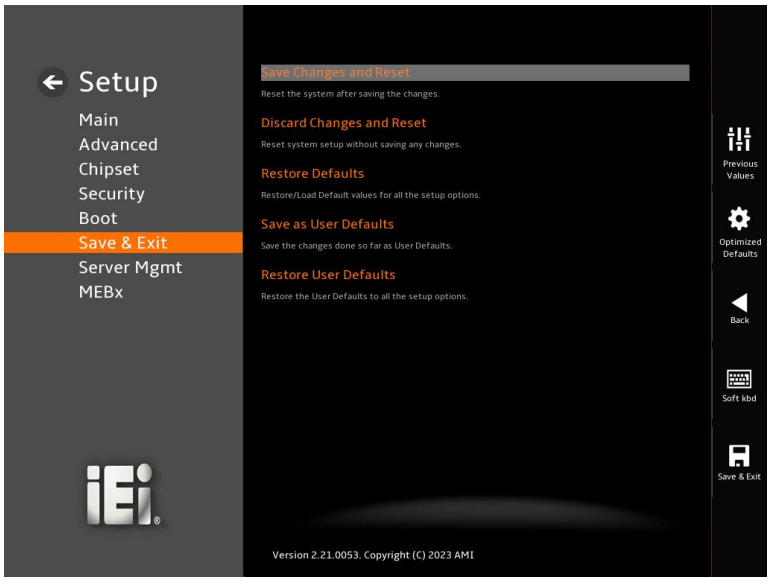
Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.

➔ **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 31**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 31:Save & Exit menu

➔ **Save Changes and Reset**

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

➔ **Discard Changes and Reset**

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

➔ **Restore Defaults**

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

➔ **Save as User Defaults**

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

➔ **Restore User Defaults**

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

Chapter

5

System Maintenance

5.1 System Maintenance Introduction

If the components of the AFL3-W15C/W19C/W22C-ADLP fail they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions for the AFL3-W15C/W19C/W22C-ADLP are described below.

5.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance of the AFL3-W15C/W19C/W22C-ADLP may result in permanent damage to the AFL3-W15C/W19C/W22C-ADLP and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W15C/W19C/W22C-ADLP. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL3-W15C/W19C/W22C-ADLP.
- ***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-W15C/W19C/W22C-ADLP 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).

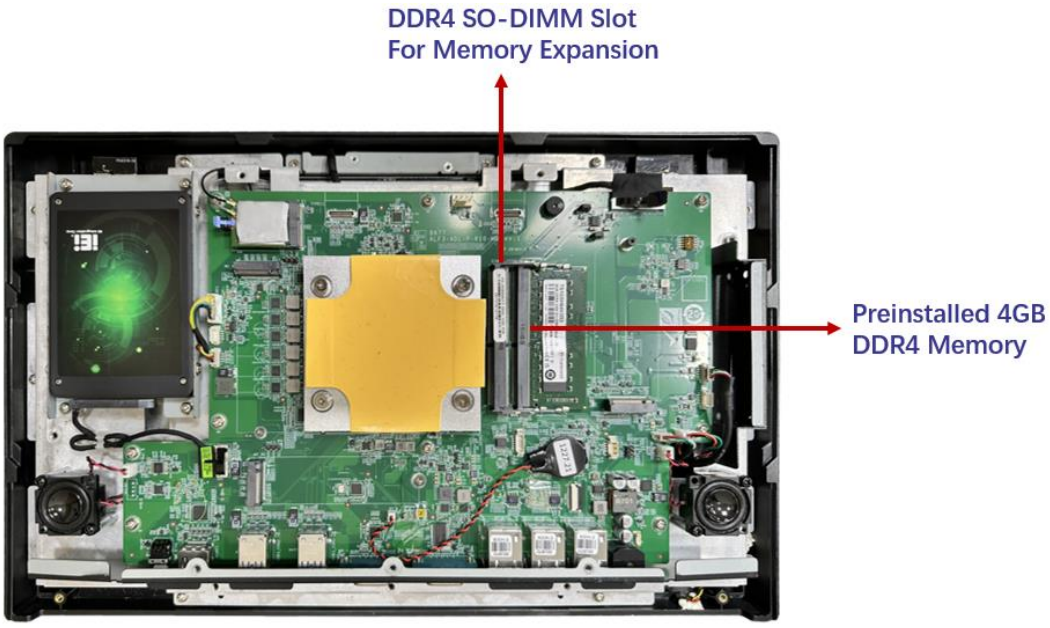


Figure 5-1: SO-DIMM module Location

Step 5: Remove the DDR4 memory module by pulling both the spring retainer clips outward from the socket.

Step 6: Grasp the DDR4 memory module by the edges and carefully pull it out of the socket.

Step 7: Install the new DDR4 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**).

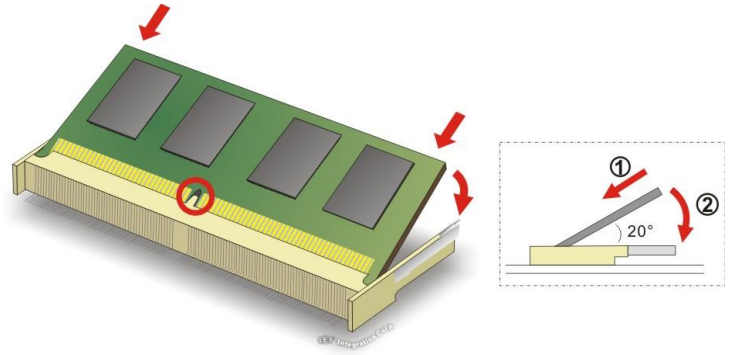


Figure 5-2: SO-DIMM Installation

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-W15C/W19C/W22C-ADLP panel PC motherboard comes with a number of peripheral interface connectors and configuration jumpers. The connector locations are shown in **Figure 6-1**. The connector pinouts for these connectors are listed in the following sections.

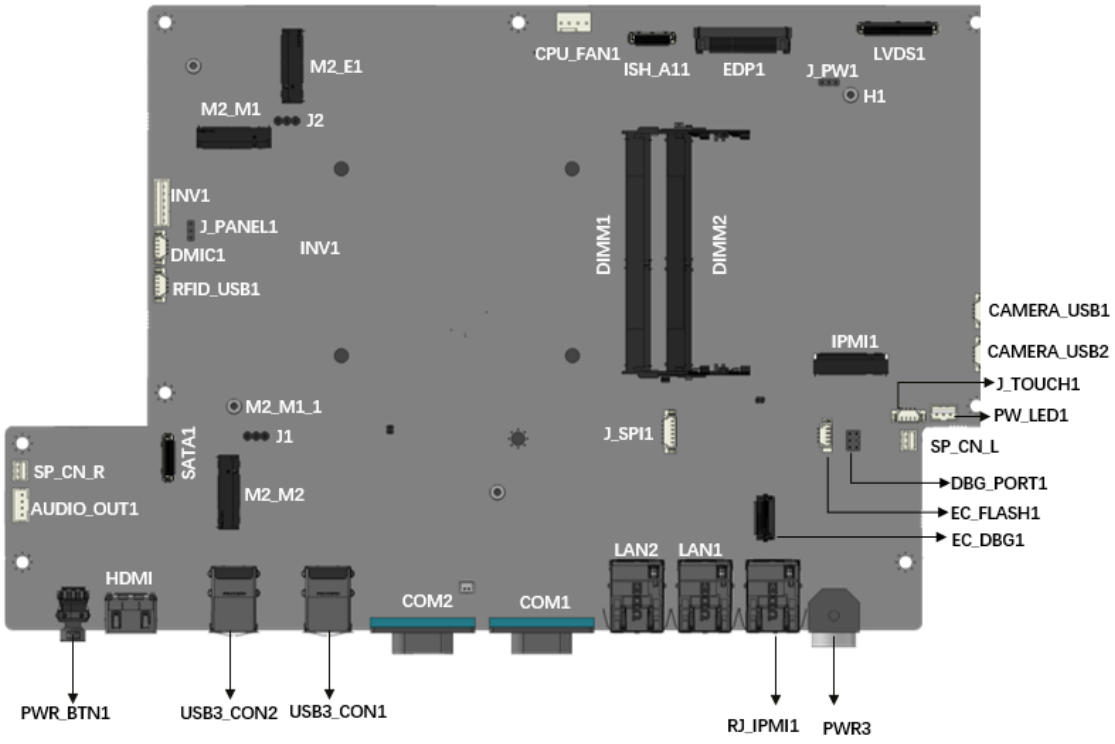


Figure 6-1:Main Board Layout Diagram

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
M.2 M-key Slot	75-pin wafer	M2_M1, M2_M2, M2_E1
Set Voltage Connector	6-pin wafer	INV1
LVDS VDD Power Selection	3-pin wafer	J_PANEL1, J_PW1
Audio Module Connector	2-pin wafer	SP_CN_L, SP_CN_R
SATA Connector	20-pin wafer	SATA 1
VR Power Debug Connector	3-pin Header	J1, J2
SPI Connector	6-pin wafer	J_SPI1
EC Debug Port Connector	22-pin wafer	EC_DBG1
Flash SPI ROM	4-pin wafer	EC_FLASH1
Debug Connector	6-pin Header	DBG_PORT1
Audio Speaker Connector	2-pin wafer	SP_CN_L, SP_CN_R
IPMI Connector	67-pin wafer	IPMI1
Power LED Connector	3-pin wafer	PW_LED1
LVDS Panel Connector	40-pin wafer	LVDS1
EDP Connector	40-pin wafer	EDP1
CPU Fan Connector	4-pin wafer	CPU_FAN1
USB connectors	4-pin wafer	CAMERA_USB2 CAMERA_USB1 RFID_USB1 DMIC1 J_TOUCH1

Table 6-1:Peripheral Interface Connectors

6.2.1 M.2 M-key Slot (M2_M1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC3
3	GND	4	VCC3
5	PCIE_TXN4	6	N/C

7	PCIE_TXP4	8	N/C
9	GND	10	N/C
11	PCIE_RXN4	12	VCC3
13	PCIE_RXP4	14	VCC3
15	GND	16	VCC3
17	PCIE_TXN3	18	VCC3
19	PCIE_TXP3	20	N/C
21	GND	22	N/C
23	PCIE_RXN3	24	N/C
25	PCIE_RXP3	26	N/C
27	GND	28	N/C
29	PCIE_TXN2	30	N/C
31	PCIE_TXP2	32	N/C
33	GND	34	N/C
35	PCIE_RXN2	36	N/C
37	PCIE_RXP2	38	N/C
39	GND	40	N/C
41	PCIE_TXN1	42	N/C
43	PCIE_TXP1	44	N/C
45	GND	46	N/C
47	PCIE_RXN1	48	N/C
49	PCIE_RXP2	50	PLT_RST#
51	GND	52	PCIeX4_CLKREQ
53	CLK_PCIEX4_N	54	LAN_WAKE#
55	CLK_PCIEX4_P	56	N/C
57	GND	58	N/C
59	N/C	60	N/C
61	N/C	62	N/C
63	N/C	64	N/C
65	N/C	66	N/C
67	N/C	68	N/C
69	N/C	70	GND
71	GND	72	GND

73	GND	74	GND
75	GND		

Table 6-2:M.2 M-key Slot (M2_M_KEY) Pinouts

6.2.2 Set Voltage Connector(INV1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	12V	2	12V
3	ON/OFF	4	ADJ
5	GND	6	GND

Table 6-3:Set Voltage Connector(INV1) Pinouts

6.2.3 LVDS VDD Power Selection (J_PANEL1, J_PW1)

J_PANEL1

PIN NO.	DESCRIPTION
1-2	LVDS Panel
2-3	VDC Panel

J_PW1

PIN NO.	DESCRIPTION
1-2	LVDS Panel
2-3	VDC Panel

Table 6-4:LVDS VDD Power Selection (J_PANEL1, J_PW1) Pinouts

6.2.4 Audio Module Connector (SP_CN_L, SP_CN_R)

SP_CN_L

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPK_OUT_P_L	2	SPK_OUT_N_L

SP_CN_R

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPK_OUT_N_R	2	SPK_OUT_P_R

Table 6-5:Audio Module Connector (SP_CN_L, SP_CN_R) Pinouts

6.2.5 SATA Connector (SATA 1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	GND	4	GND
5	GND	6	GND
7	+5V	8	+5V
9	+5V	10	+5V
11	+5V	12	N/C
13	N/C	14	GND
15	RX+	16	RX+-
17	GND	18	TX-
19	TX+	20	GND

Table 6-6:SATA Connector (SATA1) Pinouts

6.2.6 VR Power Debug Connector (J1, J2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PM_SCL	2	PM_SDA
3	GND		

Table 6-7:VR Power Connector (J1, J2) Pinouts

6.2.7 SPI Connector(J_SPI1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V_SPI_CON	2	FLASH_SPI_CS#
3	FLASH_SPI_MISO	4	FLASH_SPI_CLK
5	FLASH_SPI_MOSI	6	GND

Table 6-8:SPI Connector (J_SPI1) Pinouts

6.2.8 EC Debug Port Connector (EC_DBG1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	KSI0	2	KSO0
3	KSO1	4	KSO2
5	KSO3	6	KSO4
7	KSO5	8	KSO6
9	KSO7	10	KSO8
11	KSO9	12	KSO10
13	KSO12	14	KSL1
15	KSO11	16	KSI2
17	KSI3	18	GND
19	GND	20	GND
21	N/C	22	GND

Table 6-9:EC Debug Connector (EC_DBG1) Pinouts

6.2.9 Flash SPI ROM (EC_FLASH1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	EC_FLASH_DAT
3	EC_FLASH_CLK	4	NC

Table 6-10:Flash SPI ROM(EC_FLASH1) Pinouts

6.2.10 Debug Connector (DBG_PORT1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMCLK2_EC
3	NC	4	SMDAT2_EC
5	GND	6	BUF_PLT_RST#

Table 6-11:Debug Connector (DBG_PORT1) Pinouts

6.2.11 IPMI1 Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CONFIG_3	2	3.3V_2
3	GND_3	4	3.3V_4
5	GND_5	6	FULL_CARD_POWER _OFF_N
7	SUD_D+	8	W_DISABLE_N
9	SUB_D-	10	GPIO_9/DAS/DSS_N
11	GDN_11	12	NC<5>
13	NC<1>	14	NC<6>
15	NC<2>	16	NV<7>
17	NV<3>	18	NC<8>
19	NC<4>	20	GPIO_5
21	CONFIG_0	22	GPIO_6
23	GPIO_11	24	GPIO_7
25	DPR	26	GPIO_10
27	GND_27	28	GPIO_8
29	PERN1/USB3.0-RX-	30	UIM_RESET
31	PERN1/USB3.0-RX+	32	UIM_CLK
33	GND_33	34	UIM_DATA
35	PERN1/USB3.0-TX-	36	UIM_PWR
37	PERN1/USB3.0-TX-	38	DEVSLP
39	GND_39	40	GPIO_0
41	PERN0/SATA-B+	42	GPIO_1

43	PERN0/SATA-B-	44	GPIO_2
45	GND_45	46	GPIO_3
47	PERN0/SATA-A+	48	GPIO_4
49	PERN0/SATA-A+	50	PERST_N
51	GND_51	52	CLKREQ_N
53	REFCLKN	54	PEWAKE_N
55	REFCLKN	56	NC_56
57	GND_57	58	NC_58
59	ANTCTL0	60	COEX3
61	ANTCTL1	62	COEX2
63	ANTCTL2	64	COEX1
65	ANTCTL3	66	SIM_DETECT
67	PESET_N	68	SSCLIK
69	PESET_OC-PCIE/GND-SATA	70	3.3V_70
71	GND_71	72	3.3V_72
73	GND_73	74	3.3V_74
75	USB3.0IND-OTHER		

Table 6-12: IPMI1 Connector pinouts

6.2.12 Power LED Connector(PW_LED1)

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

Table 6-13:Power LED Connector(PW_LED1) Pinouts

6.2.13 LVDS Panel Connector (LVDS1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+VCC_LCD2	2	+VCC_LCD2
3	+VCC_LCD2	4	+VCC_LCD2
5	+VCC_LCD2	6	NC

7	LVDS_DET_N	8	GND
9	GND	10	GND
11	GND	12	CLK2P_L
13	CLK2M_L	14	GND
15	A7P_L	16	A7M_L
17	GND	18	A6P_L
19	A6M_L	20	GND
21	A5P_L	22	A5M_L
23	GND	24	A4P_L
25	A4M_L	26	GND
27	A3P_L	28	A3M_L
29	GND	30	CLK1P_L
31	CLK1M_L	32	GND
33	A2P_L	34	A2M_L
35	GND	36	A1P_L
37	A1M_L	38	GND
39	A0P_L	40	A0M_L

Table 6-14:LVDS Panel Connector (LVDS1) Pinouts

6.2.14 EDP Connector EDP1

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	2	GND
3	(eDP_TX3-)	4	(eDP_TX3+)
5	GND	6	(eDP_TX2-)
7	(eDP_TX2+)	8	GND
9	(eDP_TX1-)	10	(eDP_TX1+)
11	GND	12	(eDP_TX0-)
13	(eDP_TX0+)	14	GND
15	(eDP_AUX+)	16	(eDP_AUX-)
17	GND	18	VCC_LCD
19	VCC_LCD	20	VCC_LCD
21	VCC_LCD	22	N/C

23	GND	24	GND
25	GND	26	GND
27	eDP_HPD	28	GND
29	GND	30	GND
31	GND	32	(eDP_BKLT_EN)
33	(eDP_BKLT_CRTL)	34	N/C
35	N/C	36	BKLT_PWR
37	BKLT_PWR	38	BKLT_PWR
39	BKLT_PWR	40	N/C

Table 6-15:EDP Connector(EDP1) Pinouts

6.2.15 CPU Fan Connector (CPU_FAN1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIO	4	PWM

Table 6-16:CPU Fan Connector (CPU_FAN1) Pinouts

6.2.16 USB Connector (CAMERA_USB2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5A	2	HUB_D4F-
3	HUB_D4F+	4	GND

Table 6-17:USB Connector (CAMERA_USB2) Pinouts

6.2.17 USB Connector (CAMERA_USB1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5A	2	HUB_D1F-
3	HUB_D1F+	4	GND

Table 6-18:USB Connector (CAMERA_USB2) Pinouts

6.2.18 USB Connector (RFID_USB1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	HUB_D3F-
3	HUB_D3F+	4	GND

Table 6-19:USB Connector (RFID_USB1)

6.2.19 USB Connector (DMIC1)

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

Table 6-20:USB Connector (DMIC1)

6.2.20 USB Connector (J_TOUCH1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5A	2	HUB_D2F-
3	HUB_D2F+	4	GND

Table 6-21:USB Connector (J_TOUCH1)

6.3 External Interface Panel Connectors

The table below lists the rear panel connectors on the AFL-W15C/W19C/W22C-ADLP motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Power Button Connector	Power jack	PWR_BTN1
HDMI Connector	HDMI connector	HDMI1
Internal USB 3.1 Connectors	USB 3.2 Gen 1 port	USB3_CON2 USB3_CON1
RS-232 serial port	D-sub 9	COM2
RS-232/422/485 serial port	D-sub 9	COM1
RJ45 LAN Connector (I225)	RJ-45	LAN1
RJ45 LAN Connector (I225)	RJ-45	LAN2
RJ45 LAN Connector (IPMI)	RJ-45	RJ_IPMI1
ADAPTER DC12V Power IN	Power jack	PWR3

Table 6-22:Rear Panel Connectors

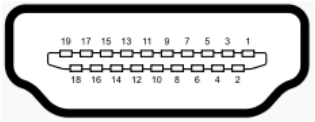
6.3.1 Power Button (PWR_BTN1)

PIN NO.	DESCRIPTION
1	PW_BN
2	GND

Table 6-23： Power Button (PW_BT1)

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 6-24：HDMI Connector (HDMI1) Pinouts

6.3.3 USB 3.2 Gen 1 Connectors (USB3_CON1)

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+

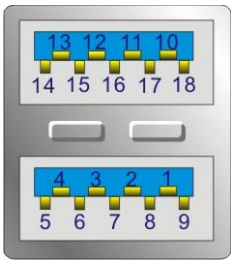
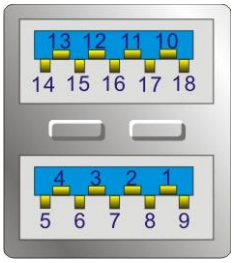


Table 6-25: USB 3.2 Gen 1 Connectors (USB3_COM1) Pinouts

6.3.4 USB 3.2 Gen 1 Connectors (USB3_CON2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5Vsus	10	+5Vsus
2	DATA2-	11	DATA3-
3	DATA2+	12	DATA3+
4	GND	13	GND
5	SSRX2-	14	SSRX3-
6	SSRX2+	15	SSRX3+
7	GND	16	GND



8	SSTX2-	17	SSTX3-
9	SSTX2+	18	SSTX3+

Table 6-26: USB 3.2 Gen 1 Connectors (USB3_CON2) Pinouts

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

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD2	6	NDSR2
2	NSIN2	7	NRTS2
3	NSOUT2	8	NCTS2
4	NRTS2	9	XRI2
5	GND		

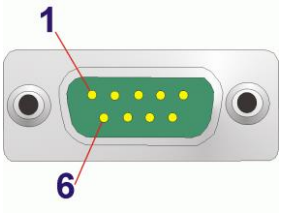


Table 6-27: RS-232 RJ-45 Serial Port (COM2) Pinouts

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

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	6	NDSR1
2	NSIN1	7	NRTS1
3	NSOUT1	8	NCTS1
4	NDTR1	9	XRI1
5	GND		

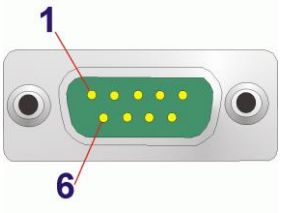


Table 6-28: RS-232/422/485 DB-9 Serial Port (COM1) Pinouts

6.3.7 RJ45 LAN Connector (LAN 2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	10	MDI3-
2	MDI0-	11	+3.3V sus
3	MDI1+	12	ACT-1
4	MDI1-	13	LINK 1000 +3.3V sus
5	N/A	14	LINK 1000 +3.3V sus
6	N/A	15	GND
7	MDI2+	17	GND
8	MDI2-	18	N/A
9	MDI3+	19	N/A

Table 6-29：RJ45 LAN Connector (LAN 2)

6.3.8 RJ45 LAN Connector (LAN 1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	10	MDI3-
2	MDI0-	11	+3.3V sus
3	MDI1+	12	ACT-1
4	MDI1-	13	LINK 1000 +3.3V sus
5	N/A	14	LINK 1000 +3.3V sus
6	N/A	15	GND
7	MDI2+	17	GND
8	MDI2-	18	N/A
9	MDI3+	19	N/A

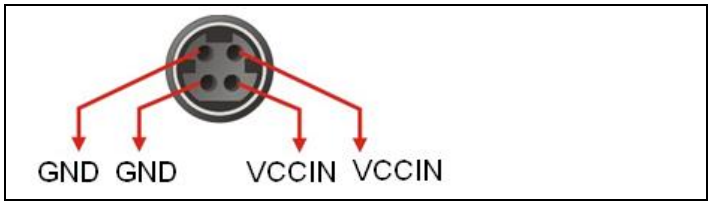
Table 6-30：RJ45 LAN Connector (LAN 1)

6.3.9 RJ45 LAN Connector(RJ-IPMI1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	10	MDI3-
2	MDI0-	11	+3.3V sus
3	MDI1+	12	ACT-1
4	MDI1-	13	LINK 1000 +3.3V sus
5	N/A	14	LINK 1000 +3.3V sus
6	N/A	15	GND
7	MDI2+	17	GND
8	MDI2-	18	N/A
9	MDI3+	19	N/A

Table 6-31：RJ45 LAN Connector(RJ-IPMI1)

6.3.10 Power Connector (PWR3)



6.4 Preconfigured Jumper Settings

CAUTION:

The following jumpers are preconfigured for the AFL3-W15C/W19C/W22C-ADLP. Users should not change these jumpers .

Jumper Name	Type	Label
LVDS voltage selection	3-pin header	J_VLVDS1
LVDS panel resolution selection	Switch	SW1

Table 6-32: Preconfigured Jumpers

6.4.1 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 6-33: LVDS Voltage Selection Jumper (J_VLVDS1) Settings

6.4.2 LVDS Panel Resolution Selection Jumper (SW1)

* ON=0, OFF=1; Single=S, Dual=D

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

SW1 (4-3-2-1)	Description

Table 6-35: 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.

Hereby, IEI INTEGRATION CORP declares that the radio equipment type AFL3-W15C-ADLP 、 AFL4-W19C-ADLP 、 AFL4-22C-ADLP are in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internetaddress:

https://www.ieiworld.com

AT	BE	BG	CH	CY	CZ	DE	DK
EE	EL	ES	FI	FR	HR	HU	IE
IS	IT	LI	LT	LU	LV	MT	NL
NO	PL	PT	RO	SE	SI	SK	

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 og øvrige relevante krav i direktiv 2014/53/EU.
Deutsch [German] IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/53/EU.
Eesti [Estonian] IEI Integration Corp deklareerib seadme seadme vastavust direktiivi 2014/53/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Español [Spanish] IEI Integration Corp declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU.
Ελληνική [Greek] IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU.
Français [French] IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU.
Italiano [Italian] IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.
Latviski [Latvian] IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 2014/53/EU.
Lietuvių [Lithuanian] IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 2014/53/EU Direktyvos nuostatas.
Nederlands [Dutch] IEI Integration Corp dat het toestel toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.

Malti [Maltese] IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/EU.
Magyar [Hungarian] IEI Integration Corp nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 2014/53/EU irányelv egyéb elõírásainak.
Polski [Polish] IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU.
Português [Portuguese] IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.
Româna [Romanian] IEI Integration Corp declară că acest echipament este in conformitate cu cerinţele esenţiale şi cu celelalte prevederi relevante ale Directivei 2014/53/EU.
Slovensko [Slovenian] IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Slovensky [Slovak] IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.
Suomi [Finnish] 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-W15C/W19C/W22C-ADLP.

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-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP.

- ***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-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP may result in permanent damage to the AFL3-W15C/W19C/W22C-ADLP and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL3-W15C/W19C/W22C-ADLP. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL3-W15C/W19C/W22C-ADLP 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.

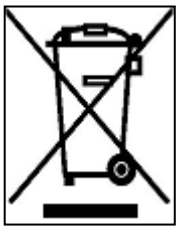
B.1.3 Product Disposal

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-W15C/W19C/W22C-ADLP, 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-W15C/W19C/W22C-ADLP, 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-W15C/W19C/W22C-ADLP 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-W15C/W19C/W22C-ADLP.

- ***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

Error Beep Code

E.1 PEI Beep Codes

Number of Beeps	Description
1	Memory not Installed
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

E.2 DXE Beep Codes

Number of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

NOTE:

If you have any question, please contact IEI for further assistance.

Appendix

F

Hazardous Materials Disclosure

F.1 RoHS II Directive (2015/863/EU)

The details provided in this appendix are to ensure that the product is compliant with the RoHS II Directive (2015/863/EU). The table below acknowledges the presences of small quantities of certain substances in the product, and is applicable to RoHS II Directive (2015/863/EU).

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)	Bis(2-ethylhexyl) phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
Housing	O	O	O	O	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O	O	O	O	O
Battery	O	O	O	O	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 Directive (EU) 2015/863.

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 Directive (EU) 2015/863.

F.2 China RoHS

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
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/T11364-2014 與 GB/T26572-2011 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/T11364-2014 與 GB/T26572-2011 标准规定的限量要求。