



MODEL:

AFL2-12A-HM65 Series

Flat Bezel Panel PC with 2nd generation Intel® Core™ i7/i5/i3 or Celeron® CPU, Wi-Fi, Touchscreen, RFID Reader, GbE LAN, RS-232/422/485, Camera, RoHS

User Manual



Revision

Date	Version	Changes
April 23, 2018	1.51	Add Appendix B: Barebone Version Installation
December 6, 2016	1.50	Updated for R15
April 8, 2014	1.12	Modified viewing angle information.
August 8, 2013	1.11	Added information of the CPU temperature alert LED in Section 1.2.1.
July 10, 2012	1.10	Updated for R11 (remove second LAN function)
December 8, 2011	1.00	Initial release



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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！在將系統連接到電源之前，請仔細閱讀使用手冊。
-

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

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- 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冊。

-
- 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。
-

Manual Conventions



WARNING

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



CAUTION

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



NOTE

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



HOT SURFACE

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

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Chapter

1

Introduction

1.1 Overview



Figure 1-1: AFL2-12A-HM65 Flat Bezel Panel PC

The AFL2-12A-HM65 is a 2nd generation Intel® Core™ i7/i5/i3 or Celeron® processor powered flat bezel panel PC with a rich variety of functions and peripherals. The AFL2-12A-HM65 is designed for easy and simplified integration into kiosk and point-of-sales (POS) applications.

An Intel® Core™ i7/i5/i3 processor or Celeron® processor coupled with an Intel® HM65 input/output controller hub ensures optimal memory, graphics, and peripheral I/O support. The system supports DDR3 SDRAM ensuring smooth data throughputs with reduced bottlenecks and fast system access.

Three serial ports, two external USB 2.0 ports and two external USB 3.0 ports ensure simplified connectivity to a variety of external peripheral devices. Wi-Fi capabilities and the RJ-45 Ethernet connector provide the system with smooth connection to an external LAN. An optional MSR card reader can equip the system for scanning credit cards, identification cards, loyalty cards, gift cards, and more.

AFL2-12A-HM65 Series Panel PC

1.1.1 Model Variations

The model variations of the AFL2-12A-HM65 Series are listed below.

Model No.	Touchscreen Type
AFL2-12A-HM65/PC-R15	Projected capacitive
AFL2-12A-HM65/R-R15	5-wire resistive

Table 1-1: Model Variations

1.1.2 Features

The AFL2-12A-HM65 features are listed below:

- 12.1" 600 cd/m² XGA LCD
- 2nd generation Intel® Core™ i7/i5/i3 or Celeron® processor supported
- Intel® HM65 chipset
- One DDR3 SO-DIMM socket supports up to 4 GB of memory
- 5-wire resistive or projected capacitive type touchscreen
- 2-megapixel webcam
- Watchdog timer that triggers a system reset if the system hangs for some reason
- AT or ATX power mode
- Auto-dimming control
- Optional RFID module compatible with EM or MIFARE cards
- IP 64 compliant front panel
- RoHS compliance

1.1.3 Applications

AFL2-12A-HM65 Series panel PCs are elegant, sophisticated systems that can be easily implemented in commercial, industrial and corporate environments.

1.2 Front Panel

The front side of the AFL2-12A-HM65 is a flat bezel panel TFT LCD screen surrounded by an ABS/PC plastic frame.

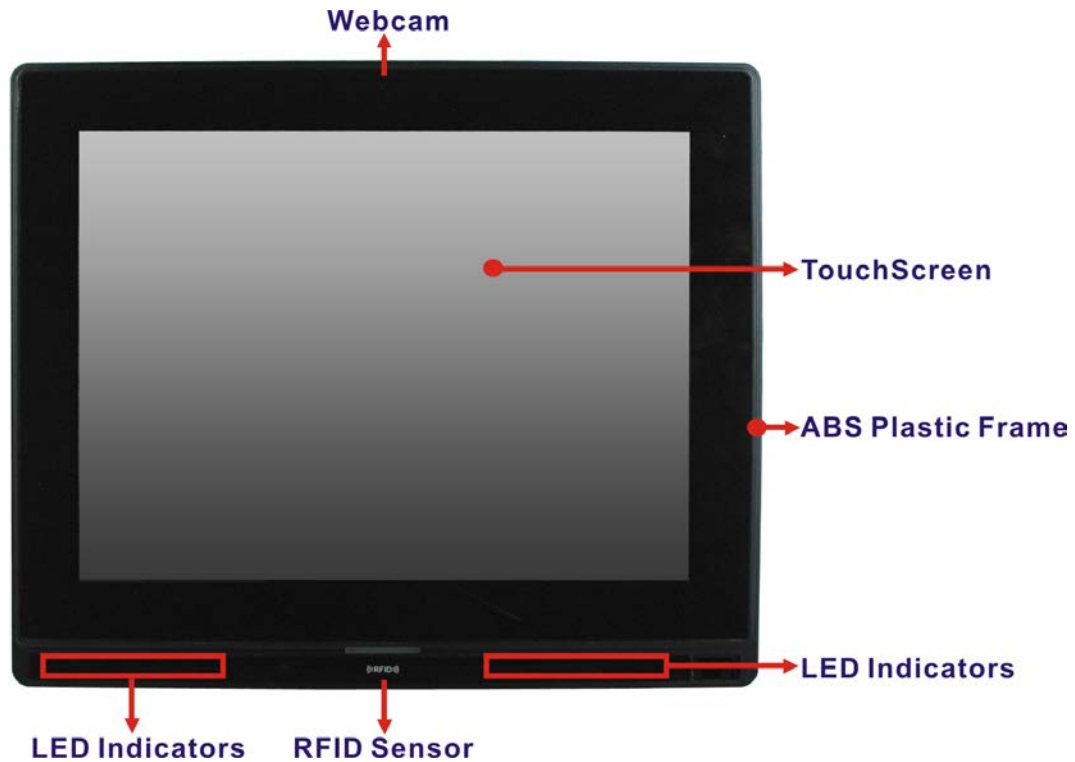


Figure 1-2: AFL2-12A-HM65 Front View

1.2.1 LED Indicators

There are fifteen LED indicator lights located along the front of the LCD screen (Figure 1-3).

AFL2-12A-HM65 Series Panel PC

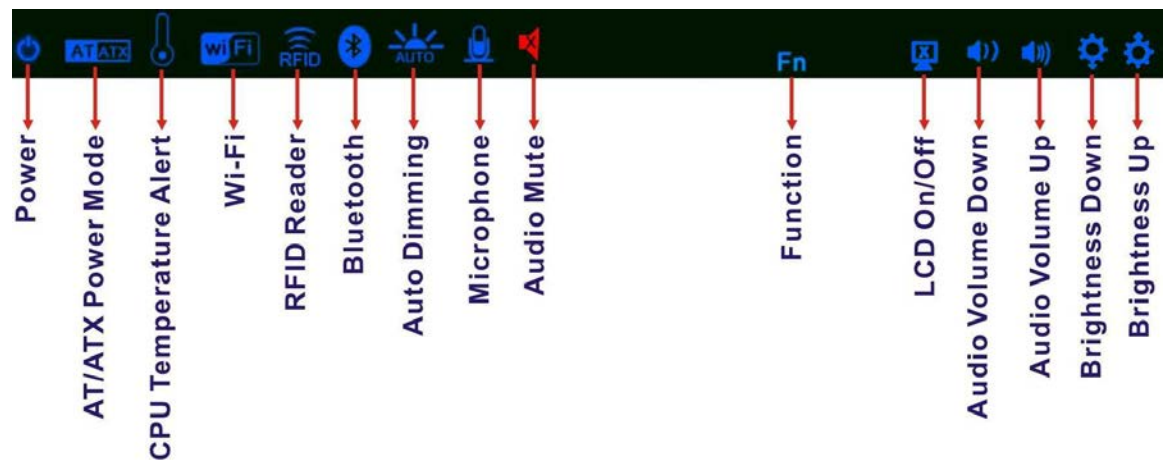


Figure 1-3: LED Indicators

The descriptions of each LED indicator are listed below.

LED Indicator	Description
Power	Shows power on/off status.
AT/ATX Mode	Shows the power mode status. Controlled by the AT/ATX power mode switch.
CPU Temperature Alert	BLUE: CPU temperature is normal. RED: CPU core temperature reaches TJ Max.
Wi-Fi	The Wi-Fi module is enabled or disabled. Controlled by the BIOS. See Section 6.5.1.1
RFID	The optional RFID reader is enabled or disabled. Controlled by the hot keys. See Table 1-3
Bluetooth	The Bluetooth module is enabled or disabled. Controlled by the BIOS. See Section 6.5.1.1
Auto-Dimming	The auto-dimming function is enabled or disabled. Controlled by the remote control
Microphone	The microphone is enabled or disabled. Controlled by the BIOS. See Section 6.5.1.1
Audio Mute	Lights on when the audio is turned off. Controlled by the hot keys. See Table 1-3
Function	Shows the status of the function key below the LED indicator. Blinks when the corresponding button is pushed.
LCD On/Off	

LED Indicator	Description
Audio Volume Down	
Audio Volume Up	
Brightness Down	
Brightness Up	

Table 1-2: LED Indicators



WARNING:

When the CPU's core temperature reaches TJ Max, the CPU temperature LED turns red and the CPU starts to lower its clock speed. At this moment, the user must lower the environments temperature or close some running applications to cool down the CPU.

AFL2-12A-HM65 Series Panel PC

1.2.2 Function Keys

The function keys are located under the bottom right hand corner of the LCD screen (Figure 1-4).



Figure 1-4: Function Keys

The function keys are described in **Table 1-3**:

Key Combination	Function Key Description
Fn + LCD On/Off	RFID Enable/Disable
Fn + Audio Volume Down	Audio Mute
Fn + Audio Volume Up	Camera Enable/Disable
Fn + Brightness Down	Mini USB / microSD Enable/Disable
Fn + Brightness Up	Power On/Off Note: To power on the system, hold down the Fn + Brightness Up buttons for 3 seconds. To power down the system, hold down the FN + Brightness Up buttons for six seconds.

Table 1-3: Function Key Descriptions

1.3 Rear Panel

The rear panel provides access to the HDD bay and the retention screw holes that support the VESA mounting. Refer to **Figure 1-5**.

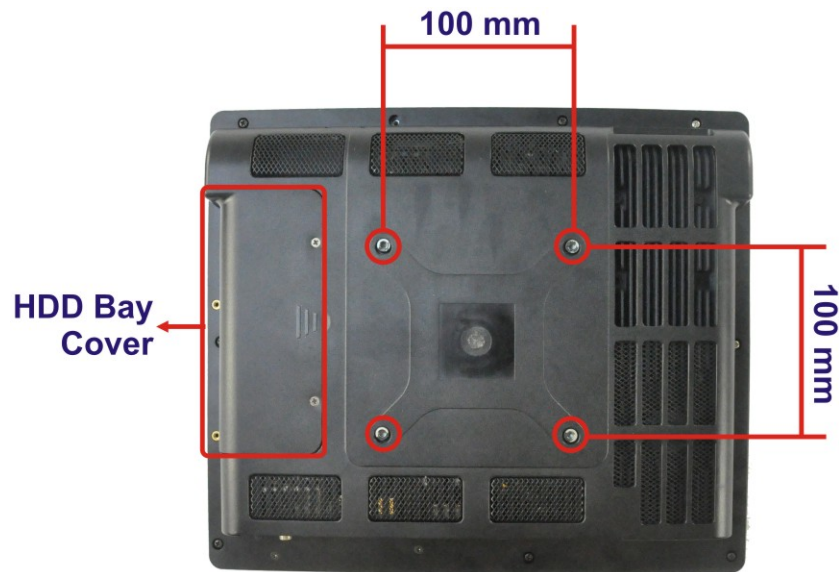


Figure 1-5: AFL2-12A-HM65 Rear View

1.4 I/O Interface Panel

The I/O interface panel located on the bottom of the AFL2-12A-HM65 has the following features:

- 1 x Audio jack
- 1 x 9V ~ 36V DC-IN power jack
- 1 x HDMI port
- 1 x RS-232 D-sub 9 connector
- 1 x RS-232 RJ-45 connector
- 1 x RS-422/485 connector
- 1 x GbE connector
- 2 x USB 2.0 connectors
- 2 x USB 3.0 connectors
- 1 x Power switch
- 1 x Reset button
- 1 x Clear CMOS switch

AFL2-12A-HM65 Series Panel PC

- 1 x AT/ATX Switch
- 6 x Function Keys

The external I/O interface connector panel is shown in **Figure 1-6**.

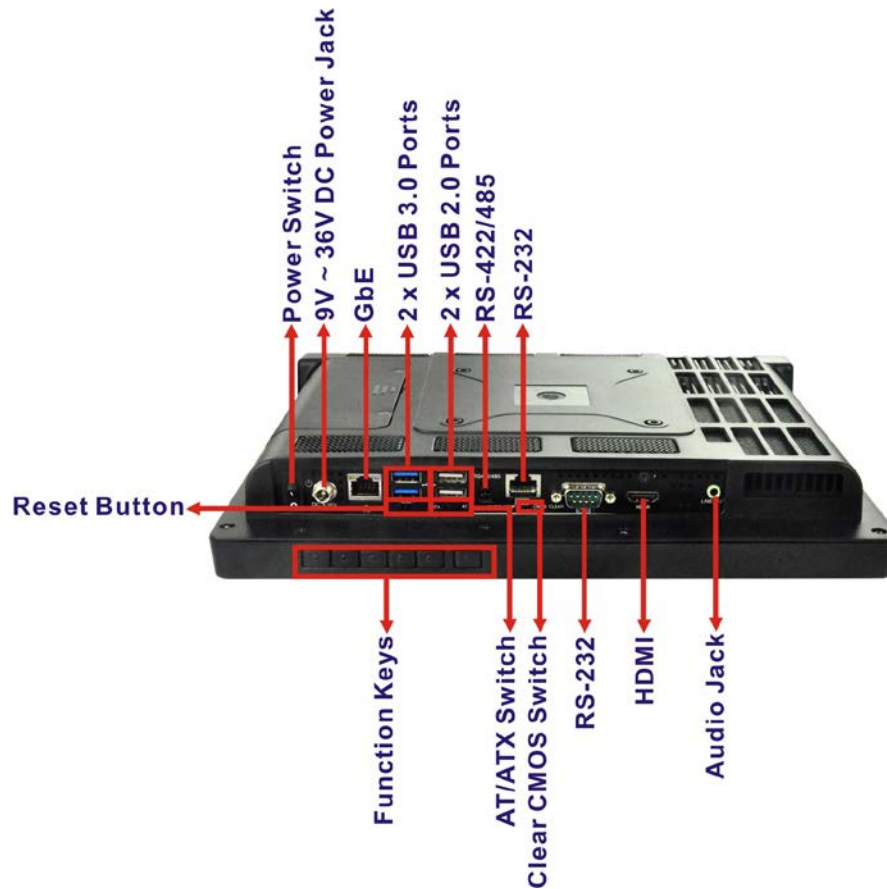


Figure 1-6: AFL2-12A-HM65 I/O Interface Panel



1.5 System Specifications

The technical specifications for the AFL2-12A-HM65 systems are listed in

Table 1-4.

Specification	AFL2-12A-HM65
LCD Size	12.1"
Max. Resolution	1024 (W) x 768 (H)
Brightness (cd/m ²)	600
Contrast Ratio	700:1
LCD Color	16.2M
Pixel Pitch (H x V) (mm)	0.240 (H) x 0.240 (V)
Viewing Angle (H-V)	160 / 140
Backlight MTBF (hr)	50,000
Touchscreen	5-wire resistive type touchscreen (select models only) Projected capacitive type touchscreen (select models only)
SBC Model	AFL2MB-HM65
CPU	2 nd generation Intel® Core™ i7/i5/i3 or Celeron® processor
Chipset	Intel® HM65
Ethernet	Realtek RTL8111E PCIe GbE controller supports ASF2.0
Memory	One 204-pin DDR3 SO-DIMM slot (4 GB system max.)
Drive Bay	One 2.5" SATA 6Gb/s SSD bay
Watchdog Timer	Software Programmable supports 1 sec. ~ 255 sec. system reset
Audio	AMP 3 W + 3 W (built-in stereo speakers)
Camera	Front-facing 2-megapixel camera with low light function
Wi-Fi	802.11b/g/n Wi-Fi PCIe Mini module
RFID	EM or MIFARE card reader (optional)
MSR Module	MSR card reader (optional)
Construction Material	ABS + PC plastic front frame
Mounting	VESA 100 mm x 100 mm for wall, panel, rack, stand or arm mounting
Color	Black
Net Weight	3.8 kg / 6.1 kg
Dimensions (W x H x D) (mm)	310 x 265 x 53.6



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Operation Temperature	-20°C ~ 50°C with SSD
Storage Temperature	-20°C ~ 60°C
IP level	IP 64 compliant front panel
Power Adapter	90W
	Input: 100 V AC ~ 240 V AC @ 50 / 60 Hz
	Output: 19 V DC
Power Requirement	9 V ~ 36 V DC
Power Consumption	19 V @ 2.68 A (Intel® Core™ i5-2510E processor with 4 GB DDR3 memory)
I/O Ports and Switches	1 x RS-232 (D-sub 9 connector)
	1 x RS-232 (RJ-45 connector)
	1 x RS-422/485 (4-pin box header)
	1 x GbE LAN (RJ-45 connector)
	2 x USB 2.0 connector
	2 x USB 3.0 connector
	1 x Mini USB 2.0 connector (on front panel)
	1 x Audio jack (line-out)
	1 x HDMI port
	1 x microSD card slot (on front panel)
	1 x Reset button
	1 x Power switch
	1 x AT/ATX switch
	1 x DC input jack
	1 x Clear CMOS button

Table 1-4: System Specifications

Chapter

2

Detailed Specifications

AFL2-12A-HM65 Series Panel PC

2.1 Dimensions

The AFL2-12A-HM65 dimensions are shown below.

- **Width:** 310.0 mm
- **Height:** 265.0 mm
- **Depth:** 53.6 mm

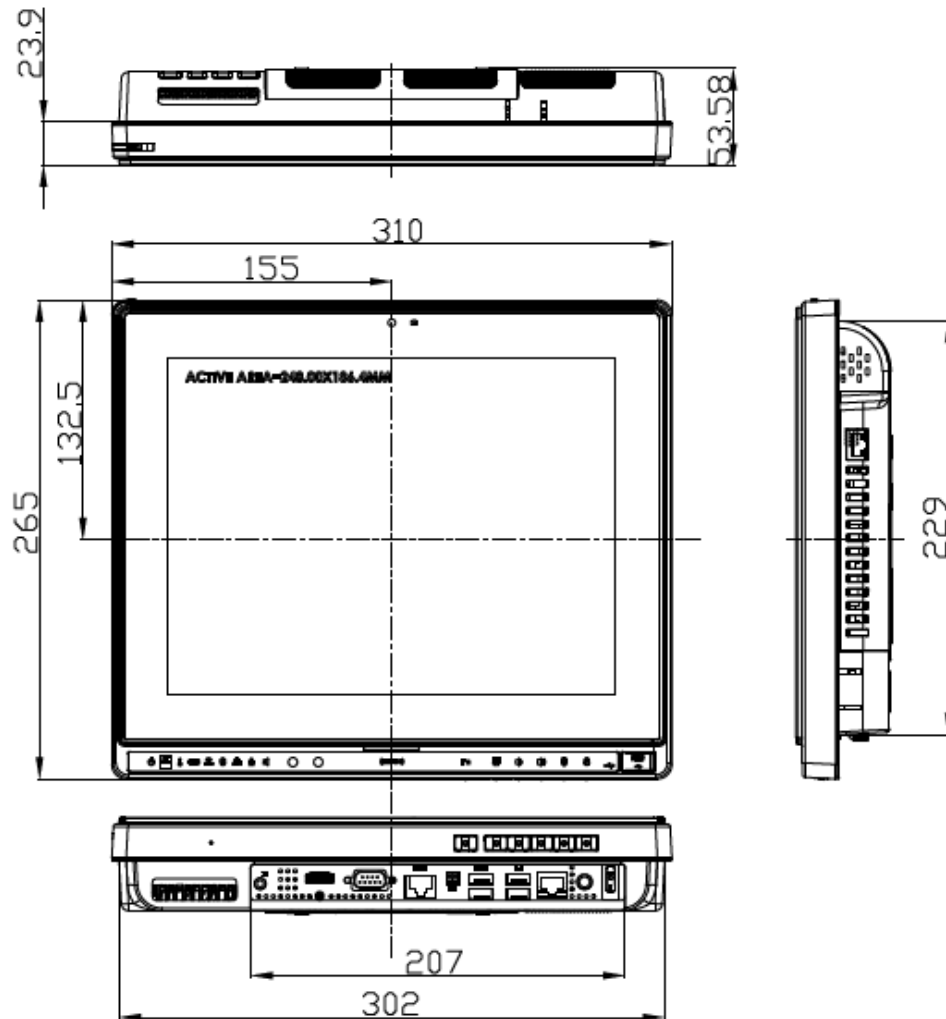


Figure 2-1: AFL2-12A-HM65 Dimensions (mm)



2.2 Intel® Mobile Processor

An Intel® Core™ i7/i5/i3 processor or Celeron® processor is installed in the system. The Intel® mobile processor interfaces with the HM65 chipset through a Direct Media Interface (DMI) with speed of 5 GT/s and a Flexible Display Interface (FDI).

2.3 Motherboard Components

The following sections describe some of the features on the motherboard.

2.3.1 Memory Support

One 204-pin DDR3 SO-DIMM socket supports up to 4 GB of memory which is controlled by the Intel® mobile CPU installed on the internal motherboard.

2.3.2 Storage Capacity

The AFL2-12A-HM65 comes equipped with a 2.5" SATA 6Gb/s SSD drive bay which can be easily accessed by removing two screws on the HDD cover.

2.4 External Peripheral Interface Connectors

The following section describes the external peripheral interface connectors on the bottom panel of the subsystem.

2.4.1 Serial Port Connectors

The AFL2-12A-HM65 has three serial ports. COM1 and COM3 support only RS-232 serial communications. The other serial port (COM6) can be configured as an RS-422 or RS-485 serial port. Enabling COM devices to be powered through the COM port eliminates unnecessary and messy cabling.



AFL2-12A-HM65 Series Panel PC



Figure 2-2: COM Ports

2.4.2 LAN Connectivity

The AFL2-12A-HM65 has one RJ-45 LAN connector on the bottom panel.



Figure 2-3: RJ-45 Ethernet Connectors

The PCIe LAN from the Intel® HM65 chipset of the AFL2-12A-HM65 is interfaced to the Realtek RTL8111E PCIe gigabit Ethernet (GbE) controllers. The RTL8111E controller is connected directly to the RJ-45 connector on the bottom panel and provides external GbE connectivity.

2.4.3 External USB Connectors

There are two USB 2.0 connectors and two USB 3.0 connectors on the bottom panel of the AFL2-12A-HM65. All USB connectors are interfaced directly to the USB controllers on the HM65 southbridge. All USB connectors are fully compliant with USB specification Revision 2.0 and USB specification Revision 1.1 and can be interfaced to both USB 1.1

and USB 2.0 compliant devices. Only USB 3.0 connectors are compatible with USB 3.0 devices.

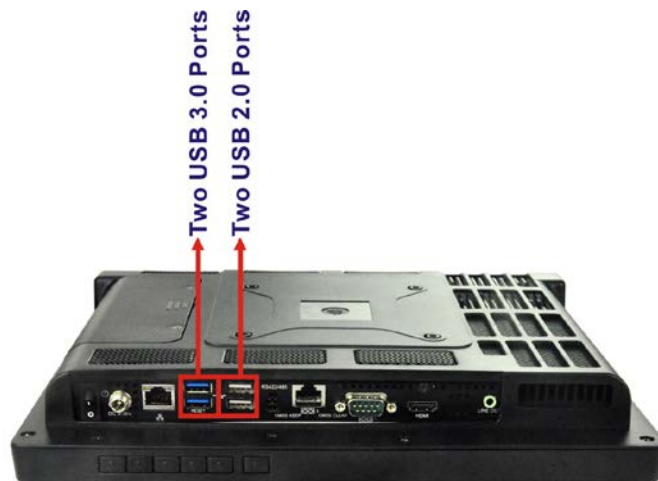


Figure 2-4: External USB Ports

2.5 Touchscreen LCD

2.5.1 Monitor

A 12.1" LCD screen is installed on the front of the AFL2-12A-HM65. The screen is shown in **Figure 2-5** below.

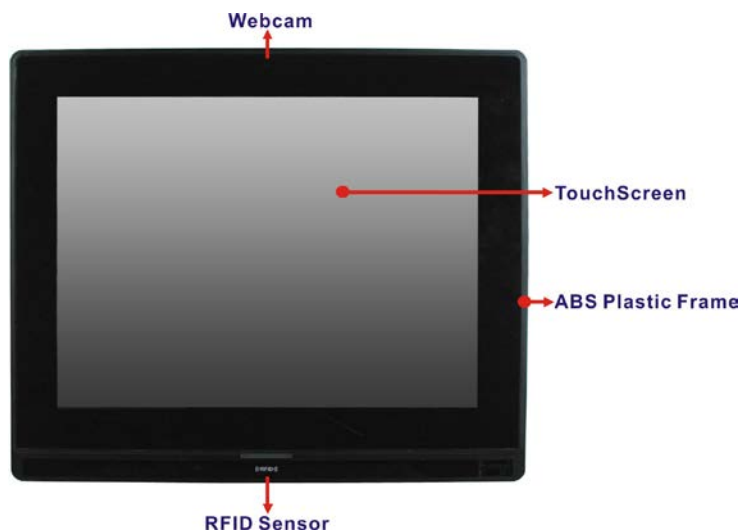


Figure 2-5: LCD Screen

AFL2-12A-HM65 Series Panel PC

2.5.2 Touch-Screen Module

A controller for the touchscreen is installed on the motherboard. The sensitive touchscreen is accurate, reliable and durable.

2.6 Audio

2.6.1 Audio Codec Controller

The integrated HD Audio compliant audio controller on the Intel® HM65 Southbridge is integrated to a Realtek ALC892 audio codec. The Realtek ALC892 is connected to an external audio jack, which is then connected to compliant audio devices. The Realtek ALC892 is a 7.1+2 channel high definition audio codec with ten DAC channels. It supports 7.1 sound playback and 2 channels of independent stereo sound output. The audio connector is shown in **Figure 2-6**.



Figure 2-6: Audio Jack

2.6.2 Stereo Speakers

Two internal 3 W stereo speakers on the sides of the AFL2-12A-HM65 are interfaced to the system.

2.7 System Power

2.7.1 Power Mode

The system can be run in the AT power mode or the ATX power mode. Both these power modes are described below.

2.7.1.1 ATX Power Mode (Default)

With the ATX mode selected, the AFL2-12A-HM65 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

2.7.1.2 AT Power Mode

With the AT mode selected, the power is controlled by a central power unit rather than a power switch. The AFL2-12A-HM65 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

2.7.2 Power Adapter

The system is shipped with a 100 V to 240 V AC power adapter that has a maximum power output of 90 W. The power adapter has a 19 V DC output connector.

Chapter

3

Unpacking



3.1 Unpacking

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



WARNING!

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

- Step 1:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.
- Step 2:** Open the external (second) box.
- Step 3:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.
- Step 4:** Lift the monitor out of the boxes.
- Step 5:** Remove both polystyrene ends, one from each side.
- Step 6:** Pull the plastic cover off the flat bezel panel PC.
- Step 7:** Make sure all the components listed in the packing list are present.

3.2 Packing List

The AFL2-12A-HM65 flat bezel panel PC is shipped with the following components:

Quantity	Item	Image
1	AFL2-12A-HM65 panel PC	





AFL2-12A-HM65 Series Panel PC





1	Power adapter (P/N: 63040-010090-120-RS)	
1	Power cord (P/N: 32702-000401-100-RS)	
1	Power transfer cord (P/N: 32702-000300-100-RS)	
4	M3 screws (P/N: 44013-030041-RS)	
4	M4 screws (P/N: 44403-040061-RS)	
1	Touch pen (P/N: 43125-0002C0-00-RS)	
1	RJ-45 to D-sub 9 COM port cable (P/N: 32005-000200-200-RS)	
1	RS-422 cable (P/N: 32205-002400-100-RS)	
1	IR remote control (P/N: 7Z000-SLPCB005-RS)	

3.3 Optional Items

The following are optional components which may be separately purchased:

Item	Image
Wall mounting kit (P/N: AFLWK-19B)	
Panel mounting kit (P/N: AFLPK-15)	
Rack mounting kit (P/N: AFL2RK-12)	
Arm (P/N: ARM-11-RS)	
Stand (P/N: STAND-A12)	
V-Stand (P/N: VSTAND-A12)	

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Magnetic stripe reader (P/N: AFL2P-12AMSR-U-R10)	
OS: Win XPE (P/N: AFL2-12A-HM65-XPE-R15)	
OS: Win 7 Embedded for projected capacitive touch (P/N: AFL2-12A-HM65-WES7P-R15)	
OS: Win 7 Embedded for resistive touch (P/N: AFL2-12A-HM65-WES7E-R14)	

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

Chapter

4

Installation

AFL2-12A-HM65 Series Panel PC

4.1 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the AFL2-12A-HM65 may result in permanent damage to the AFL2-12A-HM65 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL2-12A-HM65. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL2-12A-HM65 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 AFL2-12A-HM65, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL2-12A-HM65.
- ***Only handle the edges of the PCB:*** - When handling the PCB, hold the PCB by the edges.

4.2 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.

4.3 Installation and Configuration Steps

The following installation steps must be followed.

Step 1: Unpack the flat bezel panel PC

Step 2: Install an HDD

Step 3: Configure the system

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

Step 5: Mount the flat bezel panel PC

4.4 HDD Installation



WARNING:

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

To install the HDD into the AFL2-12A-HM65, please follow the steps below:

Step 1: Loosen two (2) retention screws from the HDD cover (**Figure 4-1**).

AFL2-12A-HM65 Series Panel PC

Figure 4-1: HDD Cover Retention Screws

Step 2: Remove the HDD cover from the device.

Step 3: Loosen the captive screw to release the HDD bracket from the chassis
(Figure 4-2).



Figure 4-2: HDD Bracket Screw



Step 4: Slide the HDD bracket out of the device as shown in **Figure 4-3**.

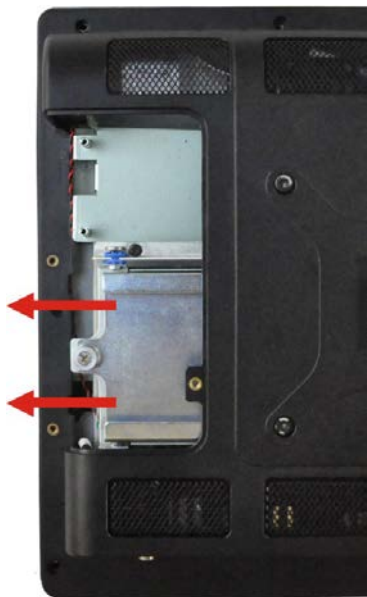


Figure 4-3: Removing the HDD Bracket

Step 5: Insert an HDD into the bracket as shown in **Figure 4-4**.



Figure 4-4: Inserting the HDD



AFL2-12A-HM65 Series Panel PC

Step 6: Secure the HDD to the bracket using four (4) retention screws (two screws on each side) (**Figure 4-5**).



Figure 4-5: Securing the HDD

Step 7: Slide the HDD module back into the device.

Step 8: Tighten the captive screw.

Step 9: Replace the HDD cover and secure it using two (2) retention screws.

4.5 AT/ATX Mode Selection

AT and ATX power modes can both be used on the AFL2-12A-HM65. The selection is made through an AT/ATX switch located on the I/O panel. To select AT mode or ATX mode, follow the steps below.

Step 1: Locate the AT/ATX switch on the I/O panel (**Figure 4-6**).



NOTE:

The system default is ATX power mode.

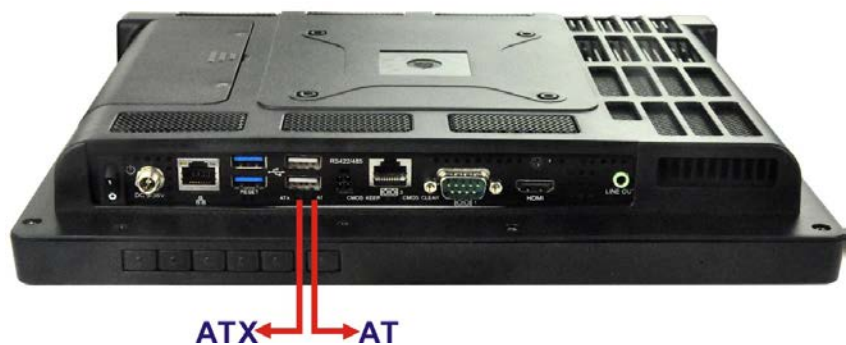


Figure 4-6: AT/ATX Switch Location

Step 2: Adjust the AT/ATX switch.

4.5.1 AT Power Mode

With the AT mode selected, the power is controlled by a central power unit rather than a power switch. The AFL2-12A-HM65 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

4.5.2 ATX Power Mode

With the ATX mode selected, the AFL2-12A-HM65 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



AFL2-12A-HM65 Series Panel PC

4.6 Powering On the System

To power on the system, follow the steps below:

Step 1: Locate the **Function** and **Brightness Up** function keys. See **Section 1.2.2**.

Step 2: Hold down the Function and Brightness Up buttons for **three** seconds to power on the system.

4.7 Powering Off the System

To power off the system, follow the steps below:

Step 1: Locate the **Function** and **Brightness Up** function keys. See **Section 1.2.2**.

Step 2: Hold down the Function and Brightness Up buttons for **six** seconds to power off the system.

4.8 Mounting the System



WARNING!

When mounting the flat bezel panel PC onto an arm, onto the wall or onto a panel, it is better to have more than one person to help with the installation to make sure the panel PC does not fall down and get damaged.

The four methods of mounting the AFL2-12A-HM65 are listed below.

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

The four mounting methods are described below.

4.8.1 Arm Mounting

The AFL2-12A-HM65 is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100mm interface pad. To mount the AFL2-12A-HM65 on an arm, please follow the steps below.

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

**NOTE:**

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 100 mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the AFL2-12A-HM65 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 4-7**).

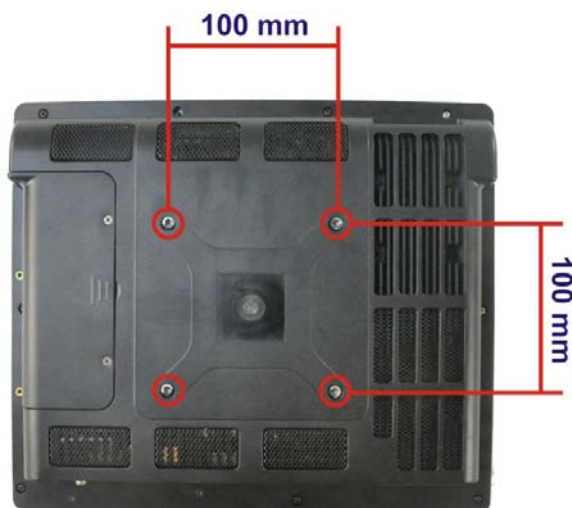


Figure 4-7: Arm Mounting Retention Screw Holes

AFL2-12A-HM65 Series Panel PC

Step 4: Secure the flat bezel panel PC to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the flat bezel panel PC.

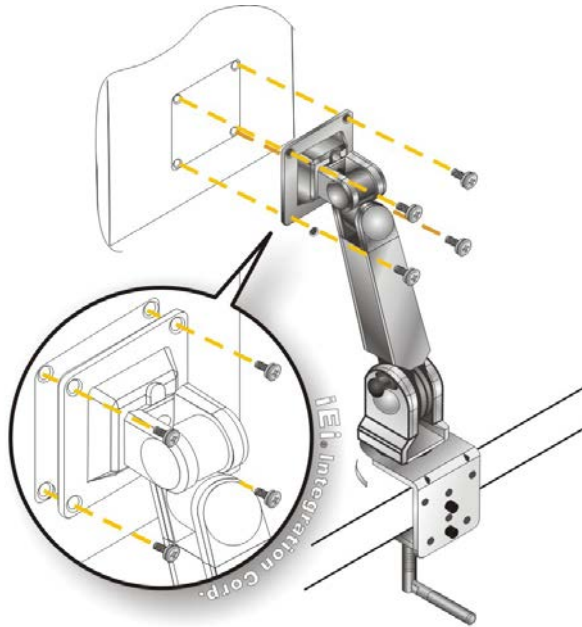


Figure 4-8: Arm Mounting (ARM-11-RS)

4.8.2 Panel Mounting

To mount the AFL2-12A-HM65 into a panel, please follow the steps below.

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

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

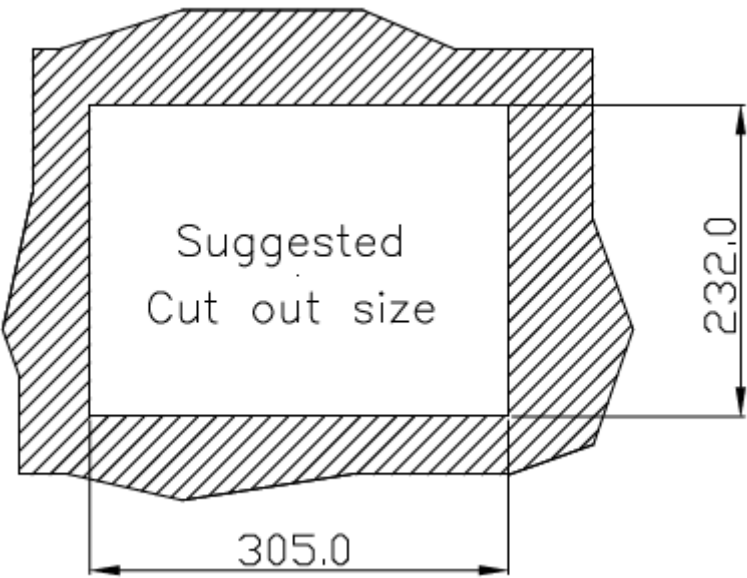


Figure 4-9: Cutout Dimensions

- Step 3:** Slide the flat panel PC through the hole until the frame is flush against the panel.
- Step 4:** Align the panel mounting bracket screw holes with the VESA mounting holes on the rear of the panel PC.
- Step 5:** Secure the two panel mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes (**Figure 4-10 ①**).
- Step 6:** Insert the panel mounting clamps into the pre-formed holes along the two edges of the panel mounting brackets (**Figure 4-10 ②**). There are a total of 4 panel mounting clamps for AFL2-12A-HM65.
- Step 7:** Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 4-10 ③**).

AFL2-12A-HM65 Series Panel PC

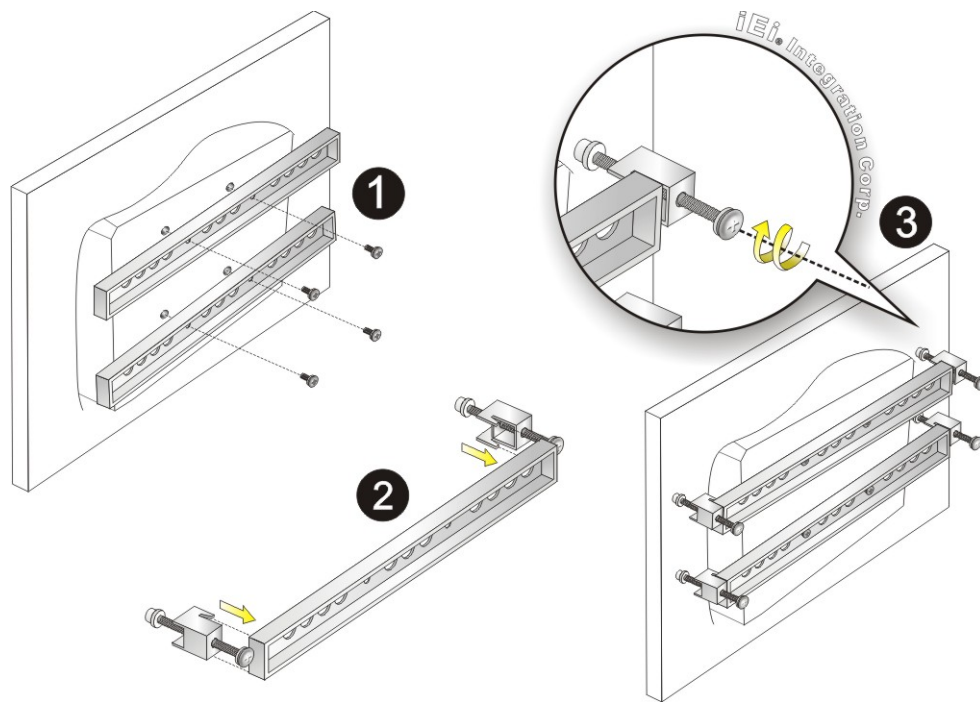


Figure 4-10: Panel Mounting

4.8.3 Rack Mounting

The AFL2-12A-HM65 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 AFL2-12A-HM65 flat bezel panel PC and the rack/cabinet into which the AFL2-12A-HM65 is installed.

Step 1: Slide the rear chassis of the AFL2-12A-HM65 flat bezel panel PC through the rack/cabinet bracket until the aluminum frame is flush against the front of the bracket (**Figure 4-11**).

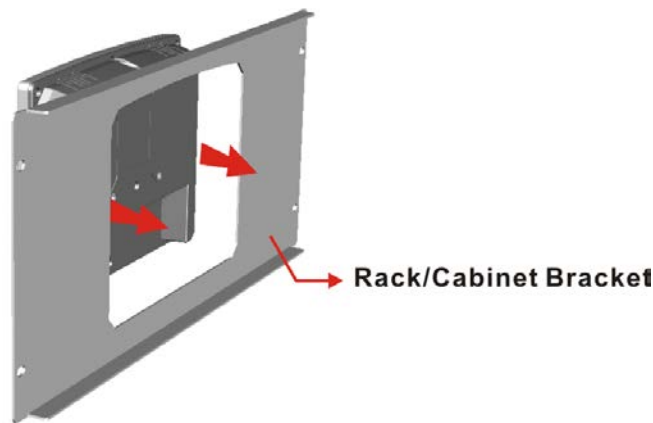


Figure 4-11: The Rack/Cabinet Bracket

- Step 2:** Align the rack mounting bracket screw holes with the VESA mounting holes on the rear of the panel PC.
- Step 3:** Secure the two rack mounting brackets to the rear of the panel PC by inserting the four retention screws into the VESA mounting holes (**Figure 4-12 ①**).
- Step 4:** Insert the rack mounting clamps into the pre-formed holes along the two edges of the rack mounting brackets (**Figure 4-12 ②**). There are a total of 4 rack mounting clamps for the AFL2-12A-HM65.
- Step 5:** Tighten the screws that pass through the rack mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 4-12 ③**).

AFL2-12A-HM65 Series Panel PC

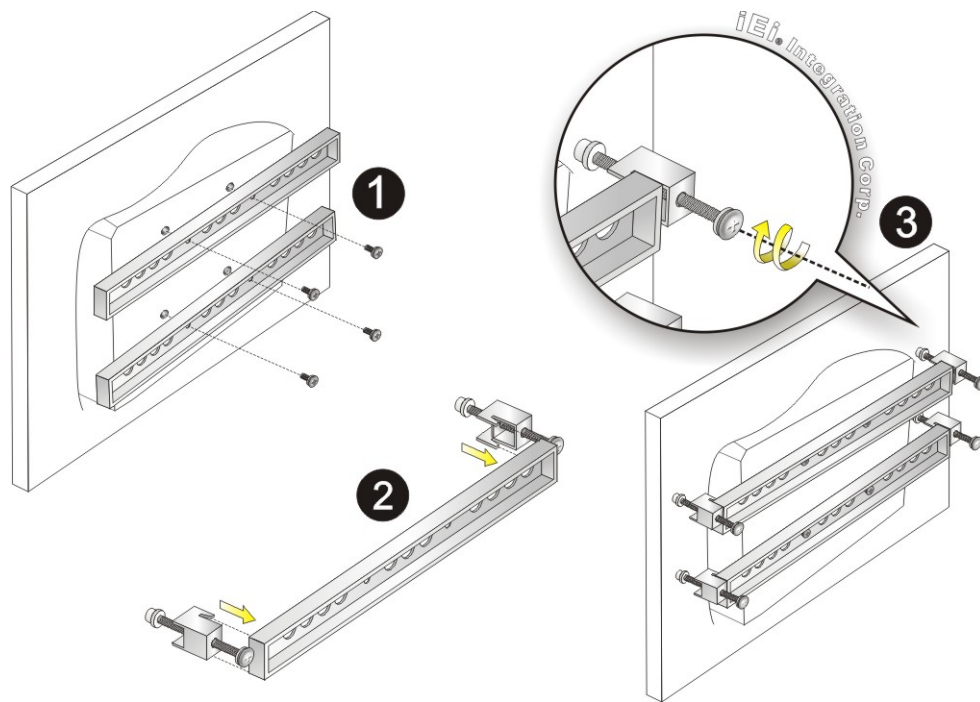


Figure 4-12: Rack Bracket Mounting

Step 6: Slide the flat bezel panel PC with the attached rack/cabinet bracket into a rack or cabinet (**Figure 4-13**).

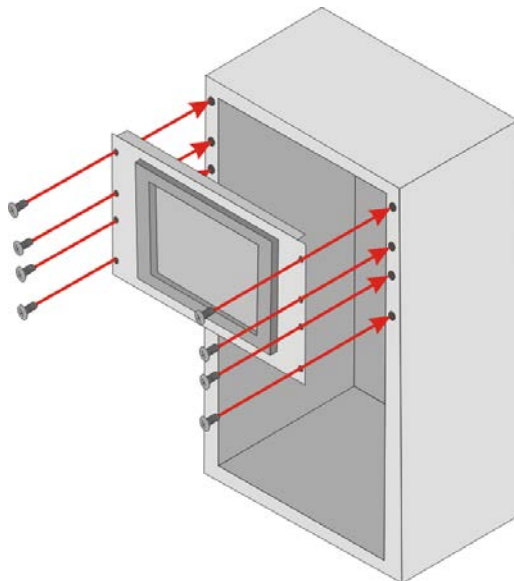


Figure 4-13: Install into a Rack/Cabinet

Step 7: Once the flat bezel panel PC with the attached rack/cabinet bracket has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet (**Figure 4-13**).

4.8.4 Stand Mounting

To mount the AFL2-12A-HM65 using the stand mounting kit, please follow the steps below.

Step 1: Locate the screw holes on the rear of the AFL2-12A-HM65. This is where the bracket will be attached (**Figure 4-14**).



Figure 4-14: Mounting screw location

Step 2: Align the bracket with the screw holes.

Step 3: To secure the bracket to the AFL2-12A-HM65, insert the retention screws into the screw holes and tighten them.

AFL2-12A-HM65 Series Panel PC

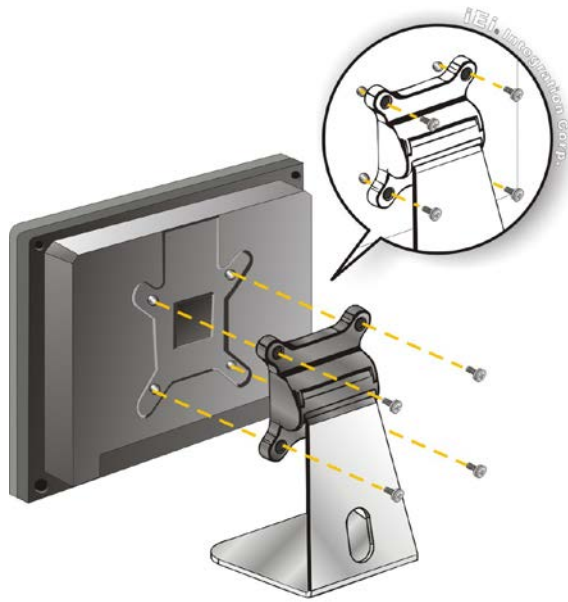


Figure 4-15: Stand Mounting (Stand-A12-RS)

4.8.5 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 4-16**).

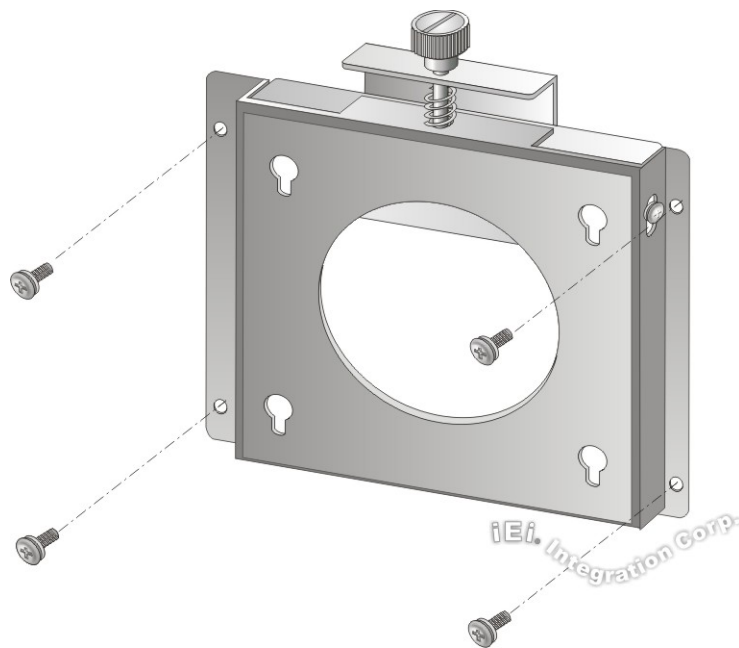


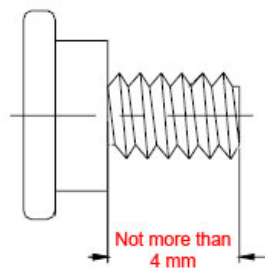
Figure 4-16: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mount kit into the four screw holes on the rear panel of the flat bezel panel PC and tighten until the screw shank is secured against the rear panel (**Figure 4-17**).



WARNING:

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



AFL2-12A-HM65 Series Panel PC

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

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 4-17**). Ensure that all four of the mounting screws fit snugly into their respective slotted holes.



NOTE:

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

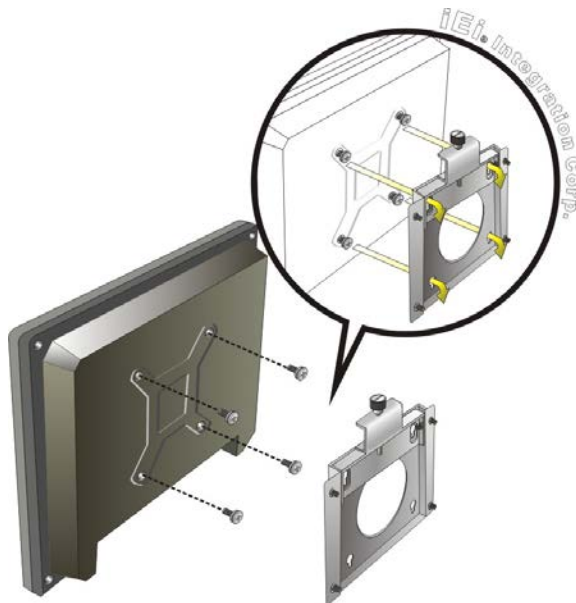


Figure 4-17: Chassis Support Screws

Step 9: Secure the panel PC by fastening the captive screw of the wall-mounting bracket. (**Figure 4-18**).

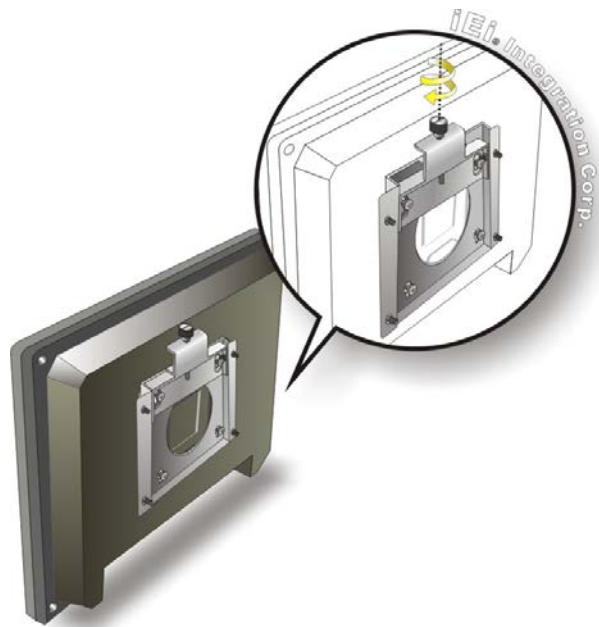


Figure 4-18: Secure the Panel PC

4.9 Bottom Panel Connectors

4.9.1 LAN Connection

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

Step 1: Locate the RJ-45 connector on the bottom panel of the AFL2-12A-HM65.

Step 2: Align the connector. Align the RJ-45 connector on the LAN cable with the RJ-45 connectors on the bottom panel of the AFL2-12A-HM65. See **Figure 4-19**.

AFL2-12A-HM65 Series Panel PC

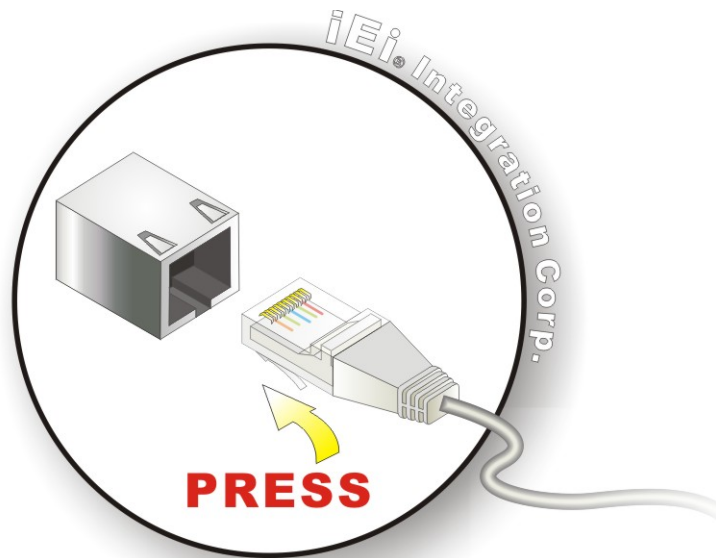


Figure 4-19: LAN Connection

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

4.9.2 Serial Device Connection

The AFL2-12A-HM65 has one male D-sub 9 port connector and one RJ-45 serial port connector on the I/O panel for serial device connection.

4.9.2.1 D-sub 9 Serial Port Connection

Follow the steps below to connect a serial device to the D-sub 9 connector of the AFL2-12A-HM65 panel PC.

Step 1: Locate the D-sub 9 connector. The location of the D-sub 9 connector is shown in Figure 1-6.

Step 2: Insert the serial connector. Insert the D-sub 9 connector of a serial device into the D-sub 9 connector on the bottom panel. See Figure 4-20.

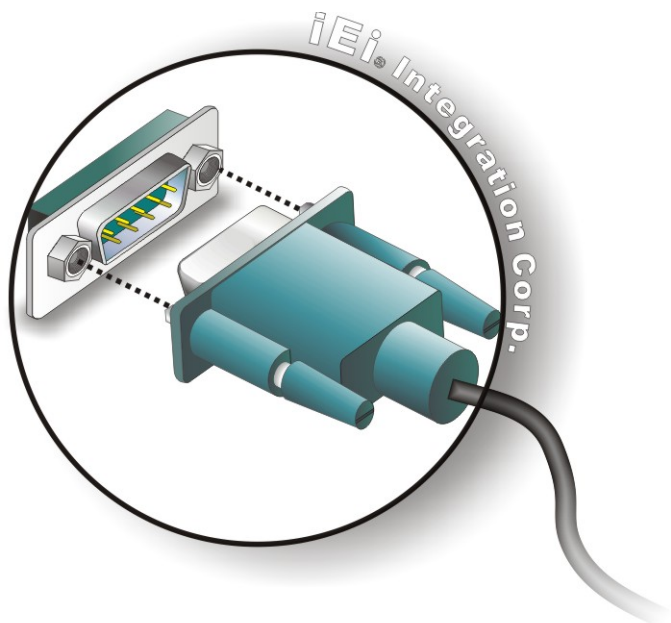


Figure 4-20: D-sub 9 Serial Port Connector

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

4.9.2.2 RJ-45 Serial Port Connection

- CN Label:**COM3
- CN Type:**RJ-45
- CN Pinouts:**See **Table 4-1** and **Figure 4-21**

The RJ-45 serial port connector connects to RS-232 serial devices.

Pin	Description	Pin	Description
1	NDCD3	5	NTXD3
2	NDSR3	6	NCTS3
3	NRXD3	7	NDTR3
4	NRTS3	8	NRI3

Table 4-1: Ethernet Connector Pinouts

AFL2-12A-HM65 Series Panel PC

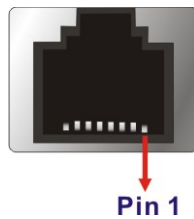


Figure 4-21: Ethernet Connector

Follow the steps below to connect a serial device to the RJ-45 serial port connector of the AFL2-12A-HM65 panel PC.

Step 1: Locate the RJ-45 serial port. The location of the RJ-45 serial port is shown in **Figure 1-6**.

Step 2: Connect the RJ-45 to COM port cable to the panel PC. Insert the RJ-45 connector end of cable into the RJ-45 serial port. See **Figure 4-22**.

Step 3: Connect the serial device. Connect a serial device to the D-sub 9 connector end of the cable. See **Figure 4-22**.

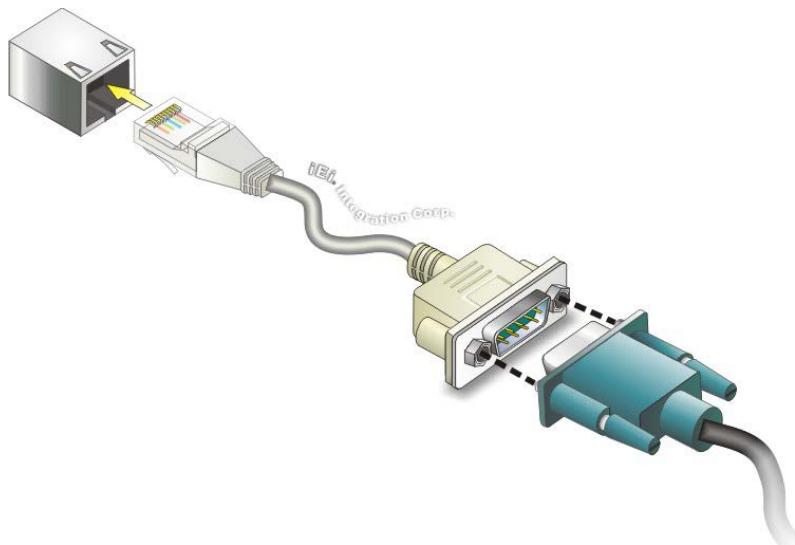


Figure 4-22: RJ-45 Serial Port Connector

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

4.9.3 RS-422/485 Serial Port Connection

- CN Label:COM6
- CN Type:4-pin connector
- CN Pinouts:See Table 4-2 and Figure 4-23

A RS-422/485 serial port device can be connected to the RS-422/485 serial port on the bottom panel. The pinouts of the RS-422/485 serial port are shown below.

Pin	RS-422	RS-485
1	RX+	
2	RX-	
3	TX+	DATA+
4	TX-	DATA-

Table 4-2: RS-422/485 Serial Port Pinouts



Figure 4-23: RS-422/485 Serial Port

To install the RS-422/485 devices, follow the steps below.

- Step 1:** Locate the RS-422/RS485 connector. The location of the RS-422/RS-485 connector is shown in **Figure 1-6**.
- Step 2:** Connect the RS-422/485 connector to the RS-422/485 cable. The RS-422/485 cable can be found in the packing list and is shown in **Figure 4-24**.



Figure 4-24: RS-422/485 Cable

AFL2-12A-HM65 Series Panel PC

Step 3: Insert the serial connector. Insert the D-sub 9 connector of a serial device into the D-sub 9 connector on the RS-422/485 cable.

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

The D-sub 9 connector pinouts are listed below.

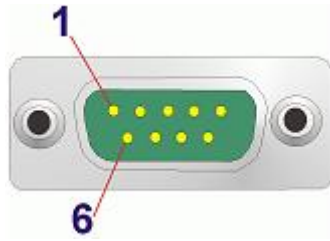


Figure 4-25: D-sub 9 Connector

Pin	RS-422	RS-485
1	TX-	DATA-
2	TX+	DATA+
3	RX+	
4	RX-	

Table 4-3: D-sub 9 Connector Pinouts

4.9.4 USB Device Connection



NOTE:

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

There are two USB 2.0 connectors and two USB 3.0 connectors. All connectors are located on the bottom panel of the AFL2-12A-HM65. To connect a USB device, please follow the instructions below.

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

Step 2: **Align the connectors.** Align the USB device connector with one of the connectors on the bottom panel. See **Figure 4-26**.

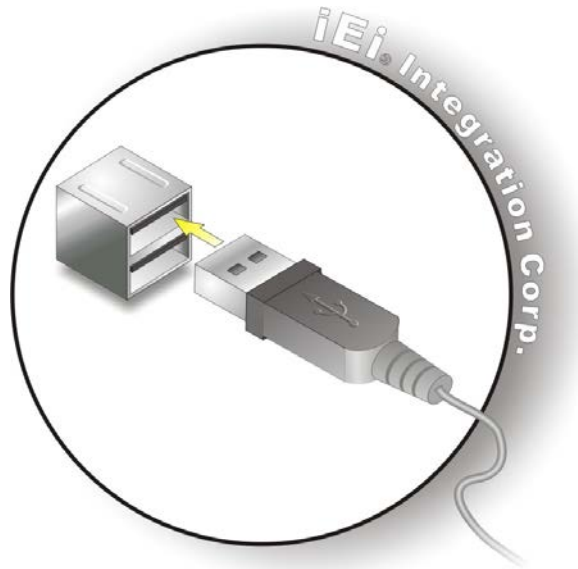


Figure 4-26: USB Device Connection

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

4.9.5 HDMI Device Connection

The HDMI connector transmits a digital signal to compatible HDMI display devices such as a TV or computer screen. To connect the HDMI cable to the AFL2-12A-HM65, follow the steps below.

Step 1: **Locate the HDMI connector.** The location is shown in **Figure 1-6**.

Step 2: **Align the connector.** Align the HDMI connector with the HDMI port. Make sure the orientation of the connector is correct.

AFL2-12A-HM65 Series Panel PC

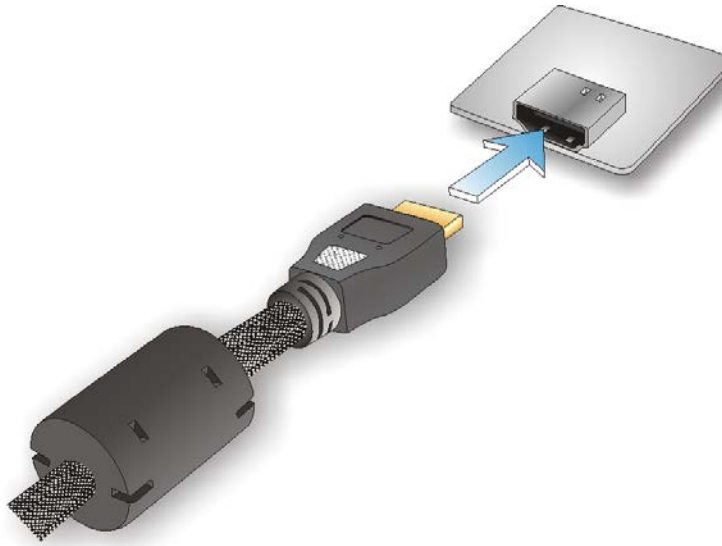


Figure 4-27: HDMI Connection

Step 3: Insert the HDMI connector. Gently insert the HDMI connector. The connector should engage with a gentle push. If the connector does not insert easily, check again that the connector is aligned correctly, and that the connector is being inserted with the right way up.

Chapter

5

System Maintenance

AFL2-12A-HM65 Series Panel PC

5.1 System Maintenance Introduction

If the components of the AFL2-12A-HM65 fail they must be replaced. Components that can be replaced include:

- SO-DIMM module
- WLAN Module

Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions for the AFL2-12A-HM65 are described below.

5.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the AFL2-12A-HM65 may result in permanent damage to the AFL2-12A-HM65 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL2-12A-HM65. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL2-12A-HM65 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 AFL2-12A-HM65, place it on an anti-static pad. This reduces the possibility of ESD damaging the AFL2-12A-HM65.
- ***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.

To power off the system, follow the steps below:

Step 1: Locate the **Function** and **Brightness Up** function keys. See **Section 1.2.2**.

Step 2: Hold down the Function and Brightness Up buttons for **six** seconds to power off the system.

5.4 Opening the System

5.4.1 Removing the Back Cover



WARNING:

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

To access the AFL2-12A-HM65 internally the back cover must be removed. To remove the back cover, please follow the steps below.

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

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

AFL2-12A-HM65 Series Panel PC

Step 3: Remove a total of nine (9) retention screws from the back cover (**Figure 5-1**).



Figure 5-1: Back Cover Retention Screws

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

5.4.2 Removing the Internal Aluminum Cover

To remove the internal aluminum cover, follow the steps below.

Step 1: Remove the seven (7) retention screws securing the internal aluminum cover to the chassis (**Figure 5-2**).

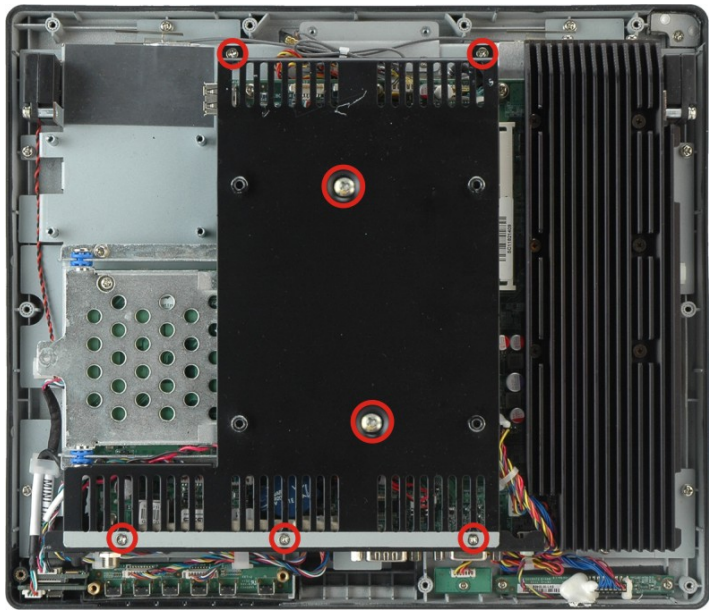


Figure 5-2: Internal Cover Retention Screws

Step 2: Lift the aluminum cover off the AFL2-12A-HM65.

5.5 Replacing Components

5.5.1 Memory Module Replacement

The flat bezel panel PC may be preinstalled with a DDR3 memory module. If the memory module fails, follow the instructions below to replace the memory module.

- Step 1:** Follow all anti-static procedures. See **Section 5.2**.
- Step 2:** Turn off the power. See **Section 5.3**.
- Step 3:** Remove the back cover. See **Section 5.4.1** above.
- Step 4:** Remove the internal aluminum back cover. See **Section 5.4.2** above.
- Step 5:** Locate the DDR3 SO-DIMM on the motherboard.
- Step 6:** Remove the DDR3 memory module by pulling both the spring retainer clips outward from the socket.



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- Step 7:** Grasp the DDR3 memory module by the edges and carefully pull it out of the socket.
- Step 8:** Install the new DDR3 memory module by pushing it into the socket at an angle (Figure 5-3).
- Step 9:** Gently pull the spring retainer clips of the SO-DIMM socket out and push the rear of the DDR memory module down (Figure 5-3).
- Step 10:** Release the spring retainer clips on the SO-DIMM socket. They clip into place and secure the DDR memory module in the socket.

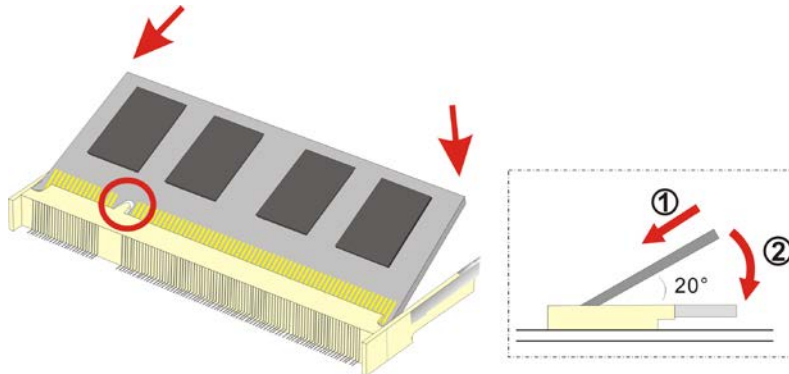


Figure 5-3: DDR SO-DIMM Module Installation

- Step 11:** Replace the internal aluminum cover and secure it to the chassis using six (6) retention screws.
- Step 12:** Replace the back cover and secure it using nine (9) previously removed retention screws.

5.5.2 WLAN Card Replacement

The AFL2-12A-HM65 has one WLAN card slot. To replace the WLAN card, follow the instructions below.

- Step 1:** Follow all anti-static procedures. See **Section 5.2**.
- Step 2:** Turn off the power. See **Section 5.3**.
- Step 3:** Remove the back cover. See **Section 5.4.1**.

Step 4: Remove the internal aluminum back cover. See **Section 5.4.2**.

Step 5: Locate the WLAN card.

Step 6: Disconnect the main and auxiliary antennas on the WLAN module (**Figure 5-4**).

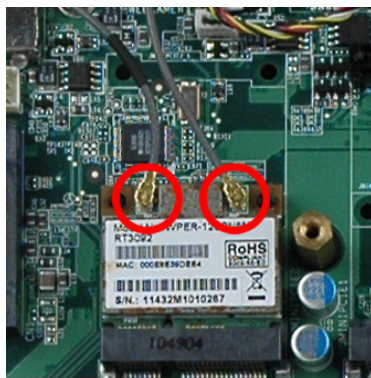


Figure 5-4: Removing the Antennas

Step 7: Push the two spring clips in to release the WLAN card.

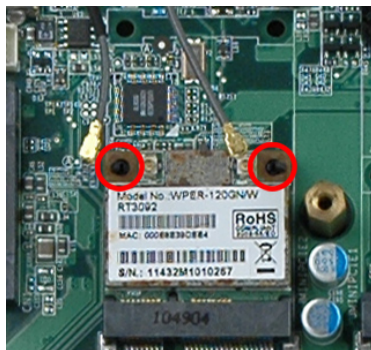


Figure 5-5: Releasing the WLAN Card

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Step 8: Grasp the WLAN card by the edges and carefully pull it out of the socket (Figure 5-6).

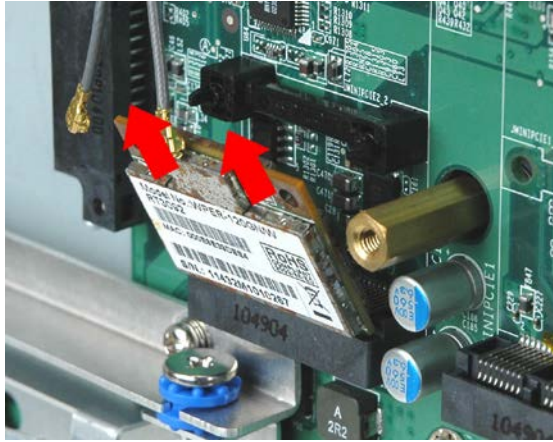


Figure 5-6: Removing the WLAN card

Step 9: Install a new WLAN card by inserting the card into the slot at an angle

Step 10: Push the WLAN card down until the spring retainer clips lock into place.

Step 11: Connect the main (1) and auxiliary (2) antennas. The main antenna is indicated with a strip of black electrical tape. See **Figure 5-7**.

**NOTE:**

To ensure the WLAN module functions correctly, please make sure the WLAN antennas are attached in the proper configuration.



Figure 5-7: Attaching the Antennas

Step 12: Replace the internal aluminum cover and secure it to the chassis using six (6) retention screws.

Step 13: Replace the back cover and secure it using nine (9) previously removed retention screws.

5.6 Reinstalling the Covers



WARNING:

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

When maintenance procedures are complete, please make sure all the covers are replaced, including the following:

- Aluminum internal cover
- Plastic back cover
- Plastic HDD cover

Chapter

6

AMI BIOS Setup



6.1 Introduction

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



NOTE:

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

6.1.1 Starting Setup

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

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

If the message disappears before the **F2 OR DEL** key is pressed, restart the computer and try again.

6.1.2 Using Setup

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

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



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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 key	Move to the next page
Page Dn key	Move to the previous page
Esc key	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Load previous values
F3 key	Load optimized defaults
F4 key	Save changes and Exit BIOS

Table 6-1: BIOS Navigation Keys

6.1.3 Getting Help

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

6.1.4 Unable to Reboot After Configuration Changes

If the computer cannot boot after changes to the system configuration are made, CMOS defaults. Use the jumper described in **Chapter 4**.

6.1.5 BIOS Menu Bar

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

- **Main** Changes the basic system configuration.
- **Advanced** Changes the advanced system settings.
- **Chipset** Changes the chipset settings

- **Boot** Changes the system boot configuration.
- **Security** Sets User and Supervisor Passwords.
- **Save & Exit** Selects exit options and loads default settings

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

6.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered.

The **Main** menu gives an overview of the basic system information.

Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.		
Main	Advanced	Chipset
Boot		
Security		
Save & Exit		
BIOS Information BIOS Vendor American Megatrends Core Version 4.6.4.0 0.15 Compliency UEFI 2.1 Project Version SC99AR14.ROM Build Date and Time 11/01/2011 16:55:39		
iWDD Vendor ICP iWDD Version SC99ER13.bin		
System Date [Mon 01/10/2011] System Time [10:55:27]		
Access Level Administrator		
Set the Date. Use Tab to switch between Data elements. ----- ←→: Select Screen ↑ ↓: Select Item EnterSelect +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.		

BIOS Menu 1: Main

→ System Overview

The **System Overview** lists a brief summary of different system components. The fields in **System Overview** cannot be changed. The items shown in the system overview include:

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version
- **Compliency:** Current BIOS compliant version
- **Project Version:** The board version
- **Build Date and Time:** Date the current BIOS version was made

AFL2-12A-HM65 Series Panel PC

- **Access Level:** User access level

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.

6.3 Advanced

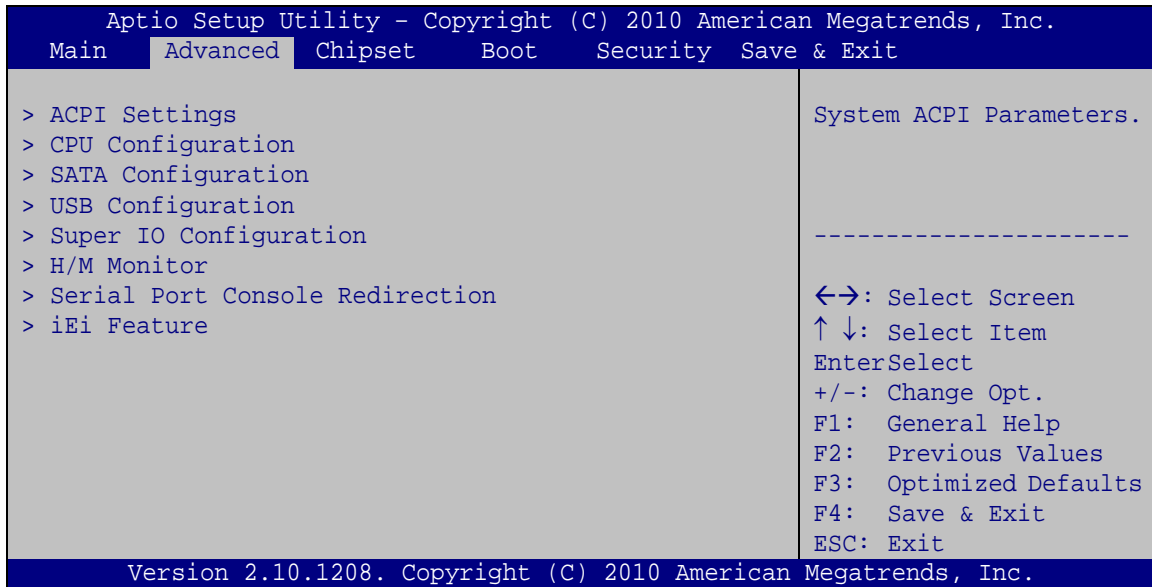
Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:



WARNING:

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

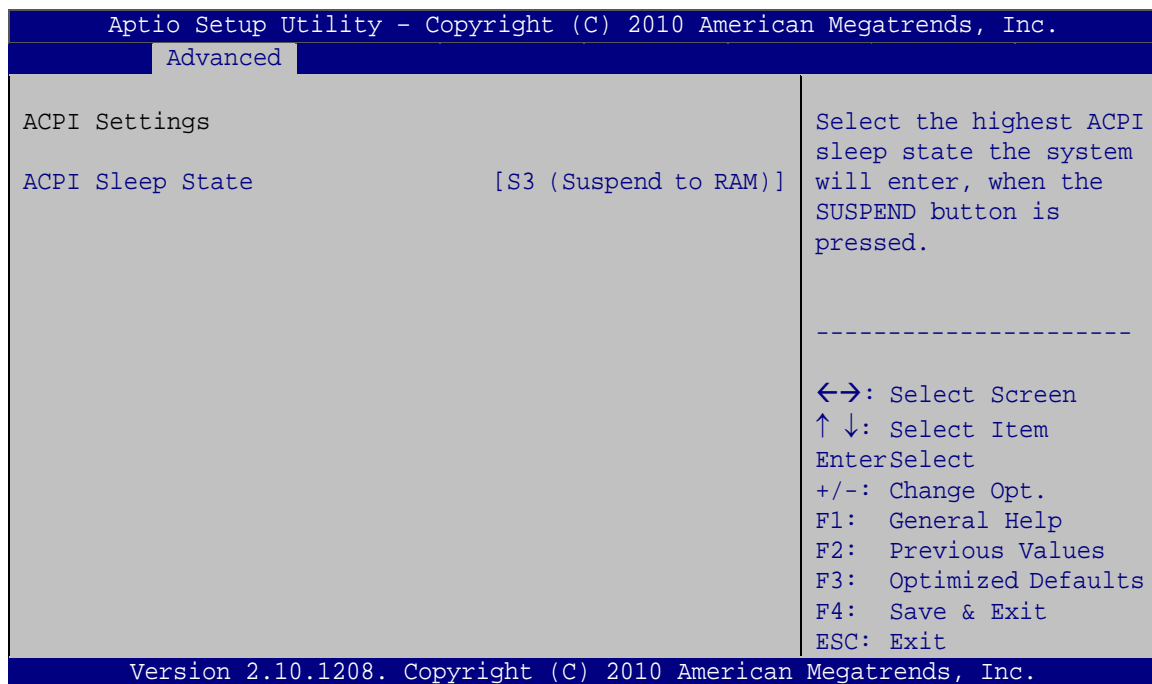
- ACPI Settings
- CPU Configuration
- SATA Configuration
- USB Configuration
- Super IO Configuration
- H/W Monitor
- Serial Port Console Redirection
- IEI Feature



BIOS Menu 2: Advanced

6.3.1 ACPI Settings

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



BIOS Menu 3: ACPI Configuration

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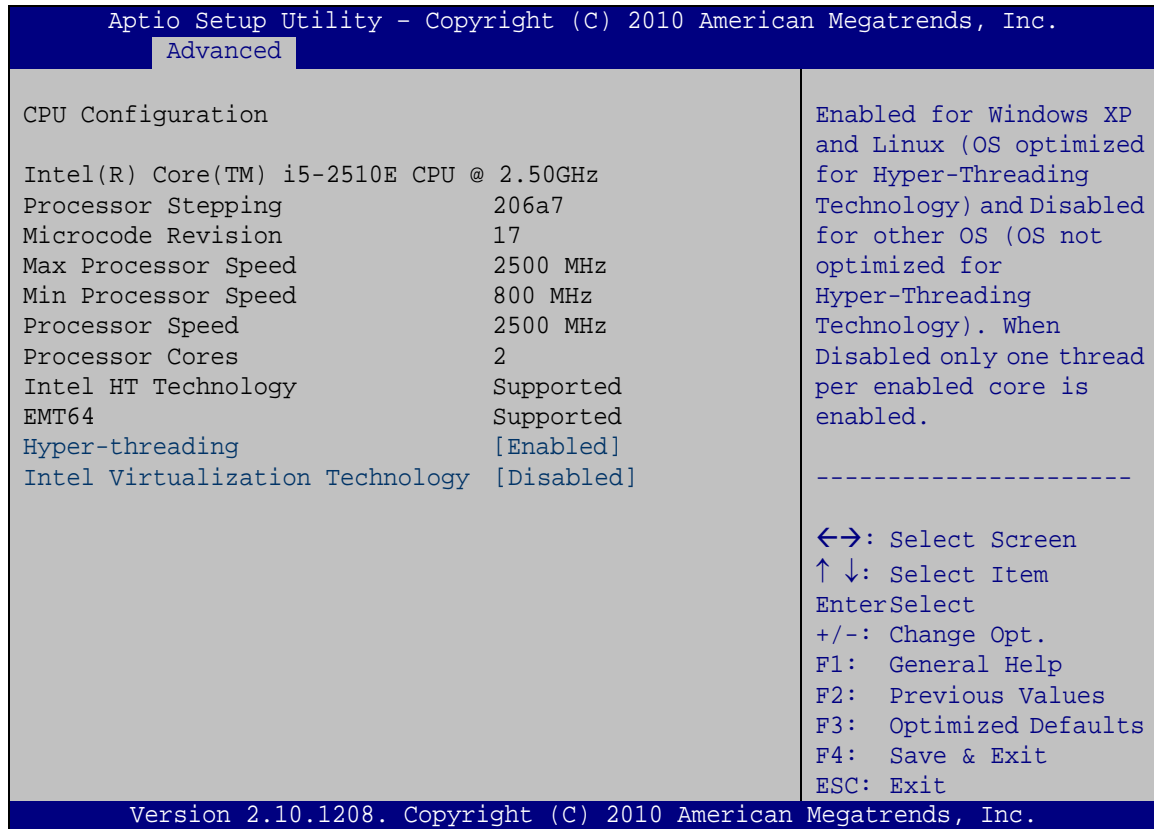
→ ACPI Sleep State [S3 (Suspend to RAM)]

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

- | | |
|--------------------------------------|---|
| → Suspend Disabled | Suspend function disabled. |
| → S1 (CPU Stop Clock) | The system enters S1 (POS) sleep state. The system appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode. |
| → S3 (Suspend to DEFAULT RAM) | The caches are flushed and the CPU is powered off. Power to the RAM is maintained. The computer returns slower to a working state, but more power is saved. |

6.3.2 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 4**) to view detailed CPU specifications and configure the CPU.



BIOS Menu 4: CPU Configuration

The CPU Configuration menu (**BIOS Menu 4**) lists the following CPU details:

- Processor Stepping: Lists the CPU processing stepping
- Microcode Revision: Lists the microcode revision
- Max Processor Speed: Lists the Max CPU processing speed
- Min Processor Speed: Lists the Min CPU processing speed
- Processor Speed: Lists the CPU processing speed
- Processor Cores: Lists the number of the processor cores
- Intel HT Technology: Indicates if Intel HT Technology is supported by the CPU.
- EMT64: Indicates if EM64T is supported by the CPU.

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→ Hyper Threading Function [Enabled]

Use the Hyper Threading function to enable or disable the CPU hyper threading function.

- **Disabled** Disables the use of hyper threading technology
- **Enabled DEFAULT** Enables the use of hyper threading technology

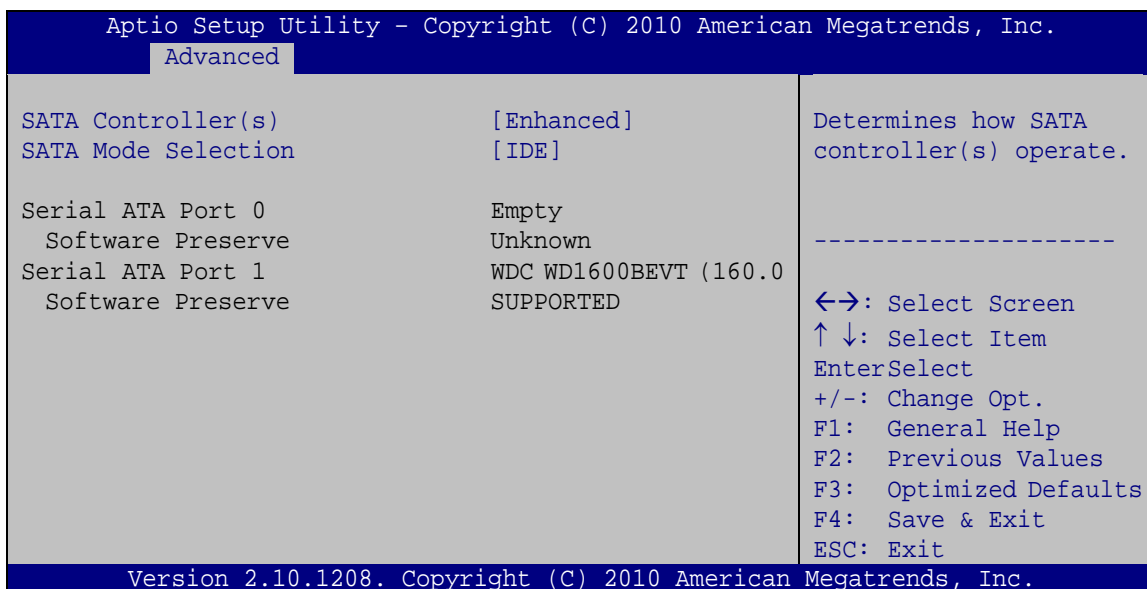
→ Intel® Virtualization Technology [Disabled]

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

- **Disabled DEFAULT** Disables the use of Intel Virtualization technology
- **Enabled** Enables the use of Intel Virtualization technology

6.3.3 SATA Configuration

Use the **IDE Configuration** menu (**BIOS Menu 5**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 5: SATA Configuration

→ SATA Controller(s) [Enhanced]

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

- | | | |
|---------------------|----------------|--|
| → Disabled | | Disables the on-board SATA controller. |
| → Compatible | | Configures the on-board SATA controller to be in compatible mode. In this mode, a SATA channel will replace one of the IDE channels. This mode supports up to 6 storage devices. |
| → Enhanced | DEFAULT | Configures the on-board SATA controller to be in Enhanced mode. In this mode, IDE channels and SATA channels are separated. |

→ SATA Mode Selection [IDE]

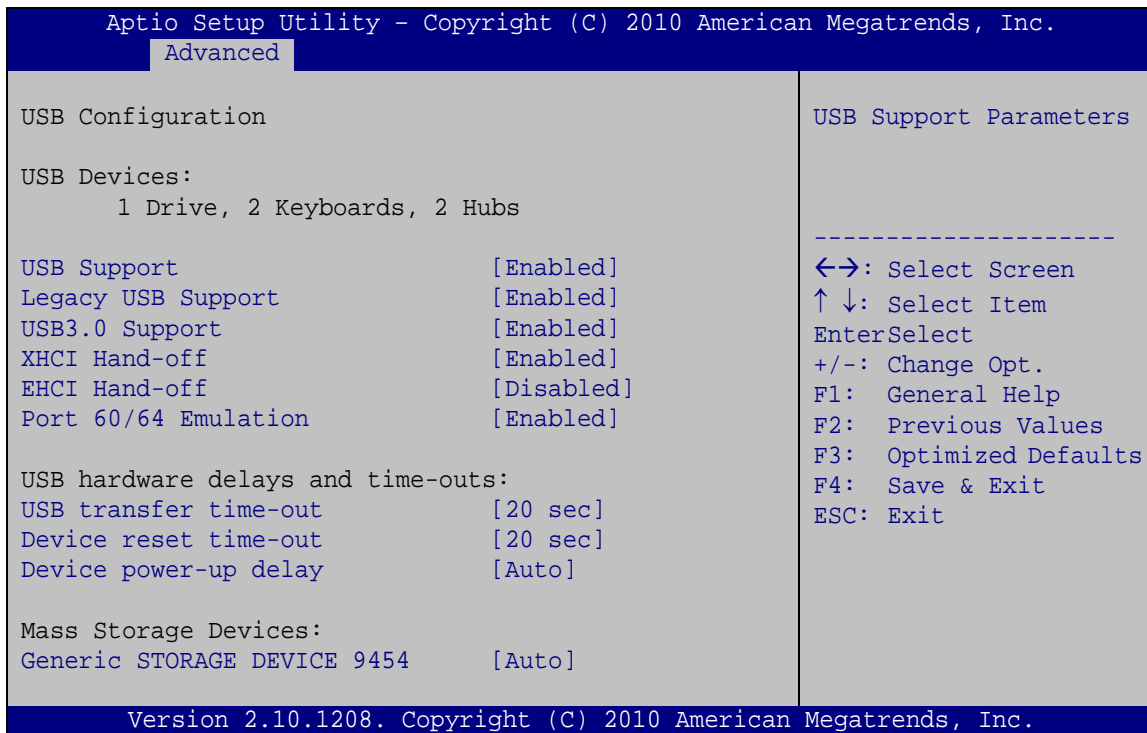
Use the **SATA Mode Selection** option to configure SATA devices as normal IDE devices.

- | | | |
|---------------|----------------|---|
| → IDE | DEFAULT | Configures SATA devices as normal IDE device. |
| → AHCI | | Configures SATA devices as AHCI device. |

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6.3.4 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 6**) to read USB configuration information and configure the USB settings.

**BIOS Menu 6: USB Configuration**➔ **USB Devices**

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

➔ **USB Support [Enabled]**

Use the **USB Support** BIOS option to enable USB support.

- ➔ **Enabled** **DEFAULT** USB support enabled
- ➔ **Disabled** USB support disabled

➔ **Legacy USB Support [Enabled]**

Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard



does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

- ➔ **Enabled** **DEFAULT** Legacy USB support enabled
- ➔ **Disabled** Legacy USB support disabled
- ➔ **Auto** Legacy USB support disabled if no USB devices are connected

➔ **USB 3.0 Support [Enabled]**

Use the **USB 3.0 Support** BIOS option to enable USB 3.0 support.

- ➔ **Enabled** **DEFAULT** USB 3.0 support enabled
- ➔ **Disabled** USB 3.0 support disabled

➔ **XHCI Hand-off [Enabled]**

Use the **XHCI Hand-off** BIOS option to enable XHCI Hand-off support. This is a workaround for OSeS without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.

- ➔ **Enabled** **DEFAULT** XHCI Hand-off enabled
- ➔ **Disabled** XHCI Hand-off disabled

➔ **EHCI Hand-off [Disabled]**

Use the **EHCI Hand-off** BIOS option to enable EHCI Hand-off support. This is a workaround for OSeS without EHCI hand-off support. The EHCI ownership change should be claimed by the EHCI driver.

- ➔ **Enabled** EHCI Hand-off enabled
- ➔ **Disabled** **DEFAULT** EHCI Hand-off disabled



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→ Port 60/64 Emulation [Enabled]

Use the **Port 60/64 Emulation** BIOS option to enable Port 60-/64 Emulation support. This should be enabled for complete USB keyboard legacy support for non-USB aware OSes.

- **Enabled** **DEFAULT** Port 60-/64 Emulation enabled
- **Disabled** Port 60-/64 Emulation disabled

→ USB transfer time-out [20 sec]

Use the **USB transfer time-out** BIOS option to configure the USB transfer timeout.

- **1 sec** Sets the USB transfer time-out to 1 second.
- **5 sec** Sets the USB transfer time-out to 5 seconds.
- **10 sec** Sets the USB transfer time-out to 10 seconds.
- **20 sec** **DEFAULT** Sets the USB transfer time-out to 20 seconds.

→ Device reset time-out [20 sec]

Use the **Device reset time-out** BIOS option to configure the device reset timeout.

- **10 sec** Sets the Device reset time-out to 10 seconds.
- **20 sec** **DEFAULT** Sets the Device reset time-out to 20 seconds.
- **30 sec** Sets the Device reset time-out to 30 seconds.
- **40 sec** Sets the Device reset time-out to 40 seconds.

→ Device power-up delay [Auto]

Use the **Device power-up delay** BIOS option to configure the device reset timeout.

- **Auto** **DEFAULT** Device power-up delay function is automatic
- **Manual** Device power-up delay function is manual



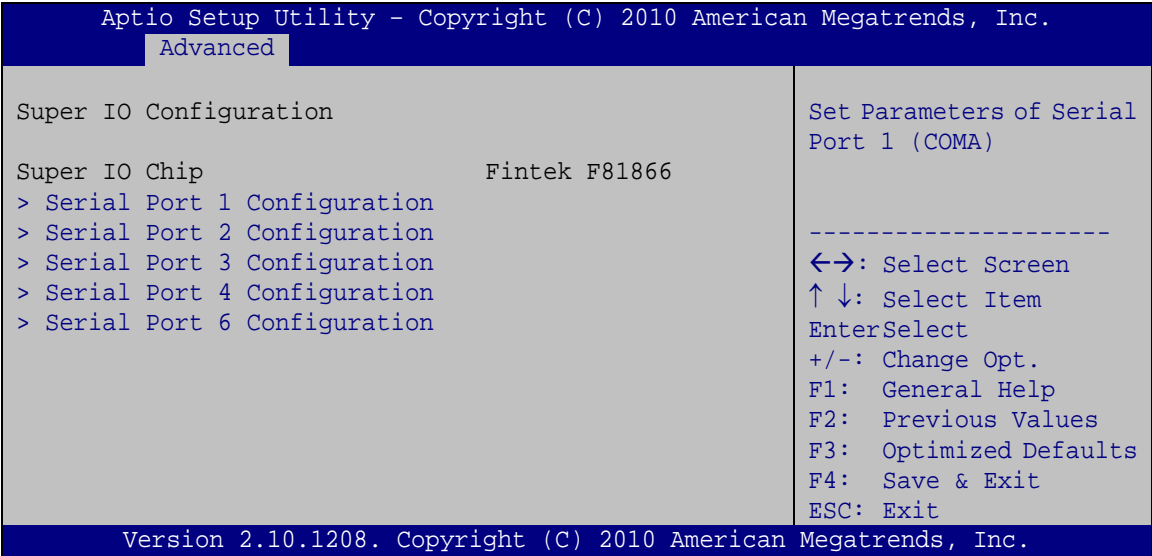
➔ **Generic Storage Device 9454 [Auto]**

Use the Generic Storage Device 9454 BIOS option to configure the mass storage device.

- ➔ **Auto** **DEFAULT** Sets the mass storage device to automatically detect settings

6.3.5 Super IO Configuration

Use the **Super IO Configuration** menu (**BIOS Menu 7**) to set or change the configurations for the FDD controllers, parallel ports and serial ports.



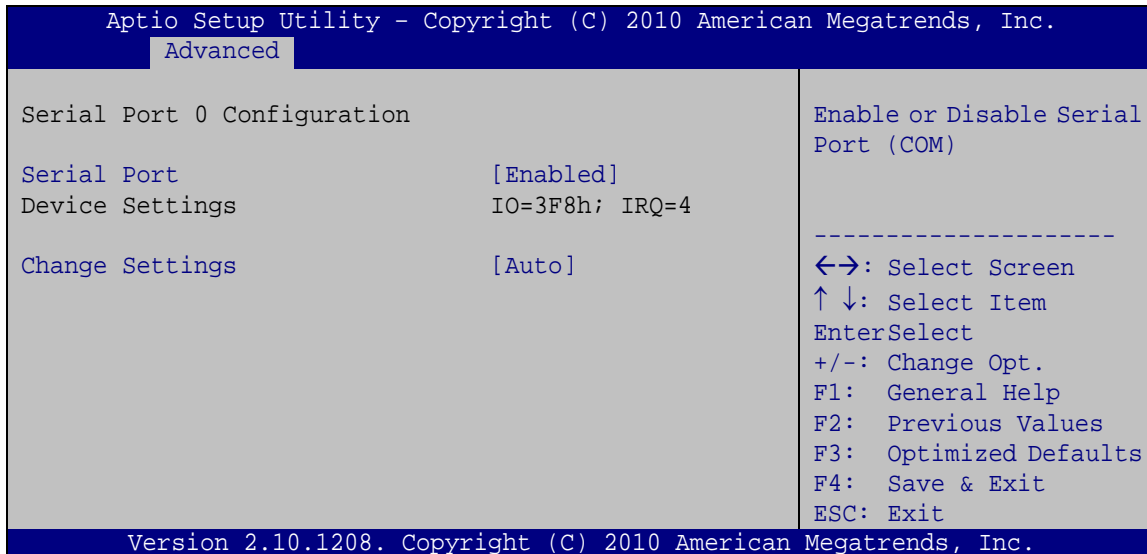
BIOS Menu 7: Super IO Configuration



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6.3.5.1 Serial Port n Configuration

Use the **Serial Port n Configuration** menu (**BIOS Menu 8**) to configure the serial port n.



BIOS Menu 8: Serial Port n Configuration Menu

6.3.5.1.1 Serial Port 1 Configuration

➔ Serial Port [Enabled]

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

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

➔ Change Settings [Auto]

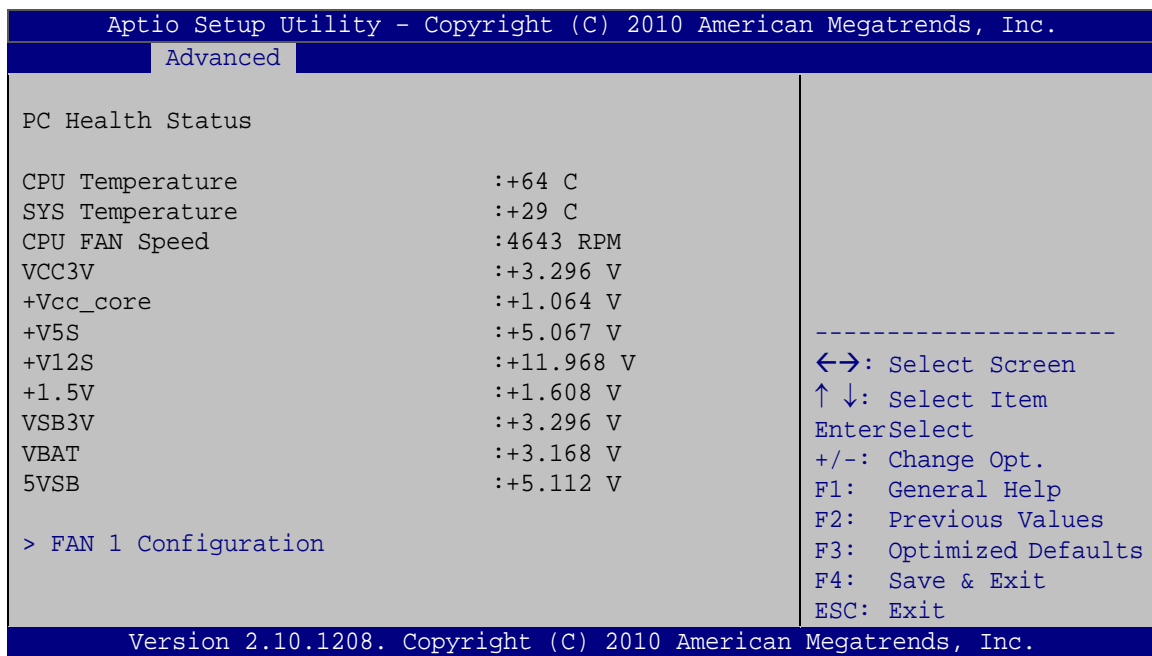
Use the **Change Settings** option to change the serial port IO port address and interrupt address.

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

- ➔ **IO=3F8h;** Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
IRQ=3, 4
- ➔ **IO=2F8h;** Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4
IRQ=3, 4

6.3.6 H/W Monitor

The H/W Monitor menu (**BIOS Menu 9**) shows the operating temperature, fan speeds and system voltages.



BIOS Menu 9: Hardware Health Configuration

➔ PC Health Status

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

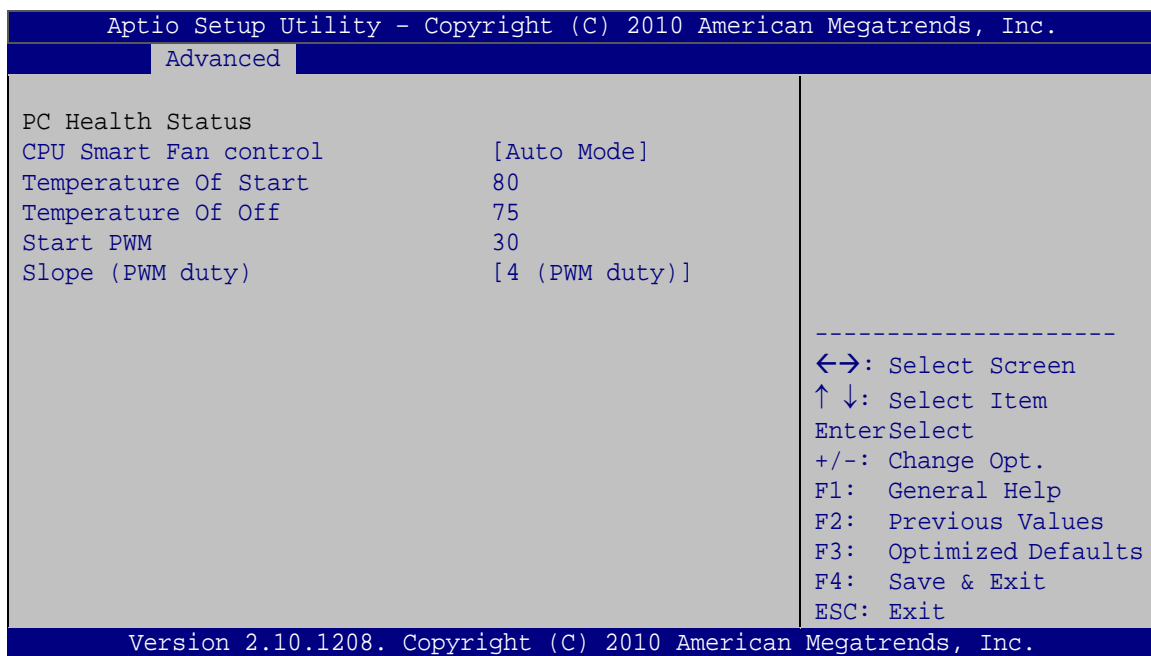
- System Temperatures:
 - CPU Temperature
 - System Temperature
- Fan Speeds:
 - CPU Fan Speed

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- Voltages:
 - VCC3V
 - +Vcc_core
 - +V5S
 - +V12S
 - +1.5V
 - VSB3V
 - VBAT
 - 5VSB

6.3.6.1 Fan 1 Configuration

The **Fan 1 Configuration** submenu (**BIOS Menu 10**) allows user to configure the CPU Smart fan settings.



BIOS Menu 10: Hardware Health Configuration



➔ CPU Smart Fan control [Auto Mode]

Use the **CPU Smart Fan control** BIOS option to configure the CPU Smart Fan.

- | | | | |
|---|--------------------|---------|---|
| ➔ | Full Mode | | Fan is on all the time |
| ➔ | Manual Mode by PWM | | The fan spins at the speed set in:
Fan PWM control |
| ➔ | Auto Mode | DEFAULT | The fan adjusts its speed using these settings:
Temp. Limit of OFF
Temp. Limit of Start
Fan Start PWM
Slope PWM 1 |

➔ Temperature of Start [80]

The **Temperature of Start** field allows user to set the starting temperature using the + and - keys.

➔ Temperature of Off [75]

The **Temperature of Off** field allows user to set the off temperature using the + and – keys.

➔ Start PWM [30]

The **Start PWM** field allows user to set the start PWM speed using the + and – keys.

➔ Slope (PWM duty) [4 (PWM duty)]

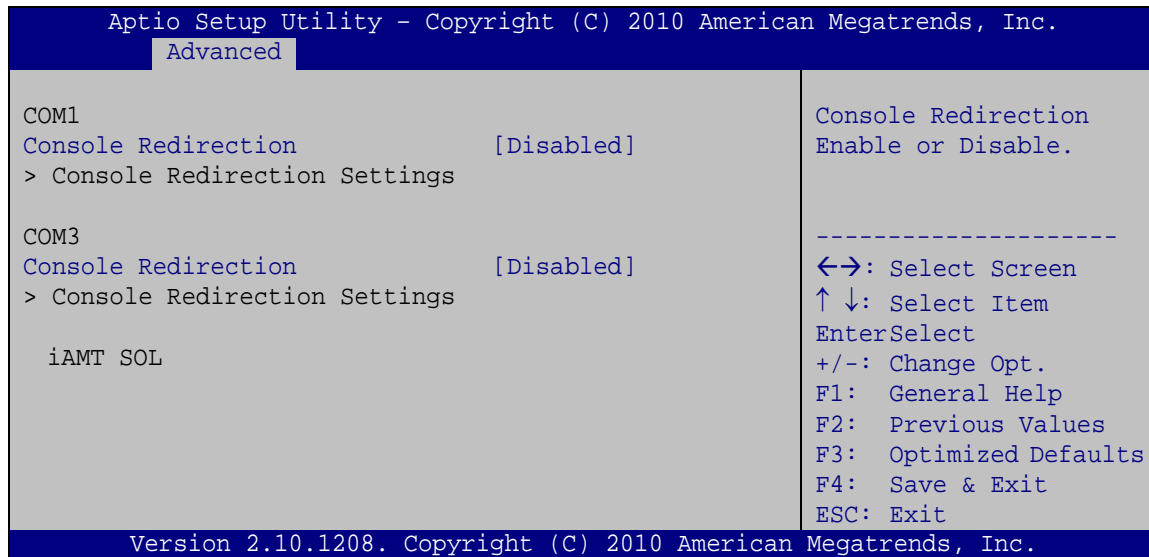
The **Slope (PWM duty)** field allows user to set the slope fan speed.



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6.3.7 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 11**) allows the console redirection options to be configured. Console redirection allows users to maintain a system remotely by re-directing keyboard input and text output through the serial port.



BIOS Menu 11: Serial Port Console Redirection

➔ Console Redirection [Disabled]

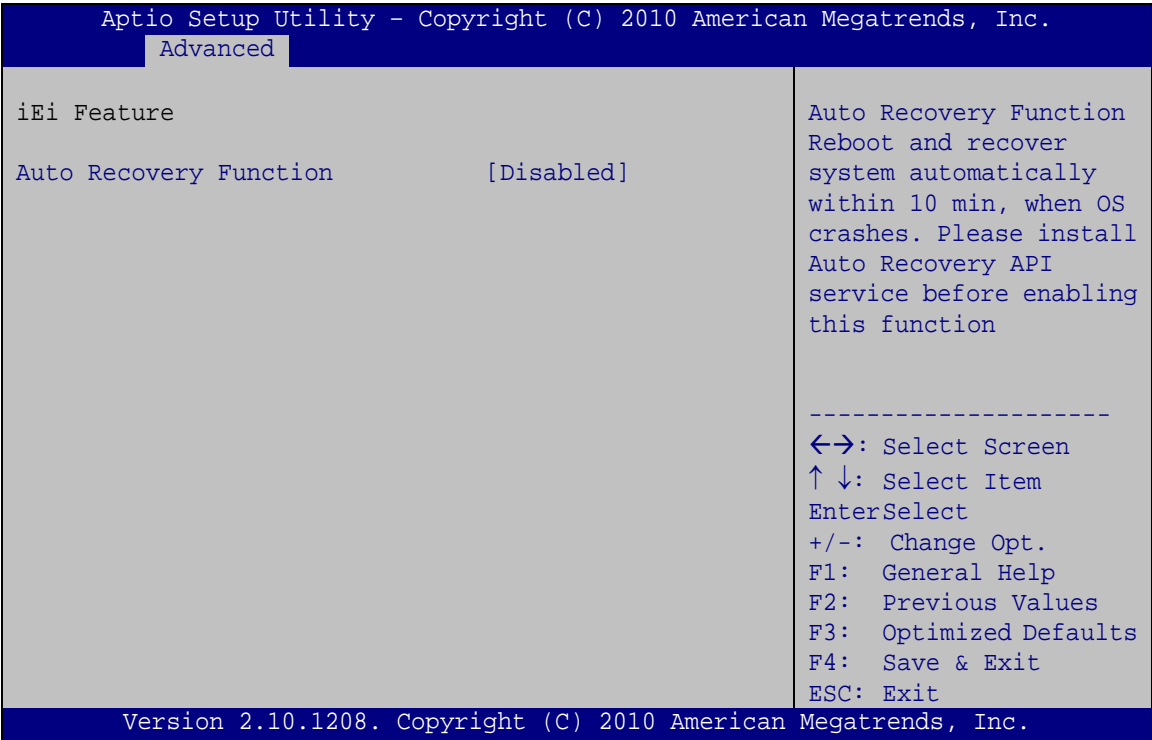
Use **Console Redirection** option to enable or disable the console redirection function.

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



6.4 IEI Feature

Use the **IEI Feature** menu (**BIOS Menu 12**) to configure the auto recovery function.



BIOS Menu 12: IEI Feature

➔ **Auto Recovery Function [Disabled]**

Use the **Auto Recovery Function** option to enable or disable auto recovery on the system.

- ➔ **Disabled** **DEFAULT** Auto Recovery Function support disabled
- ➔ **Enabled** Auto Recovery Function support enabled



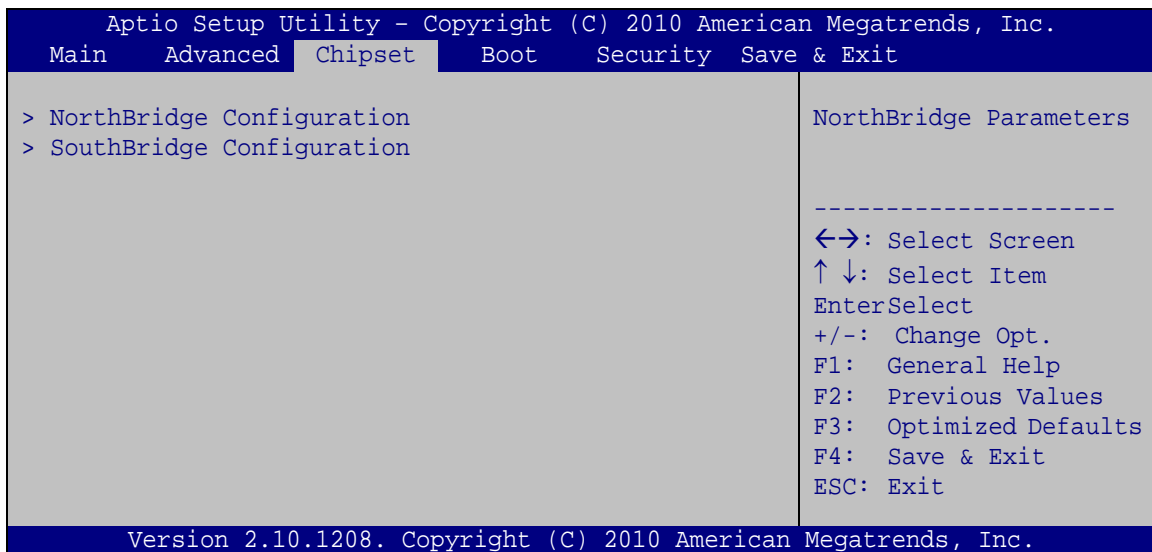
AFL2-12A-HM65 Series Panel PC

6.5 Chipset

Use the **Chipset** menu (**BIOS Menu 13**) to access the Northbridge and Southbridge configuration menus

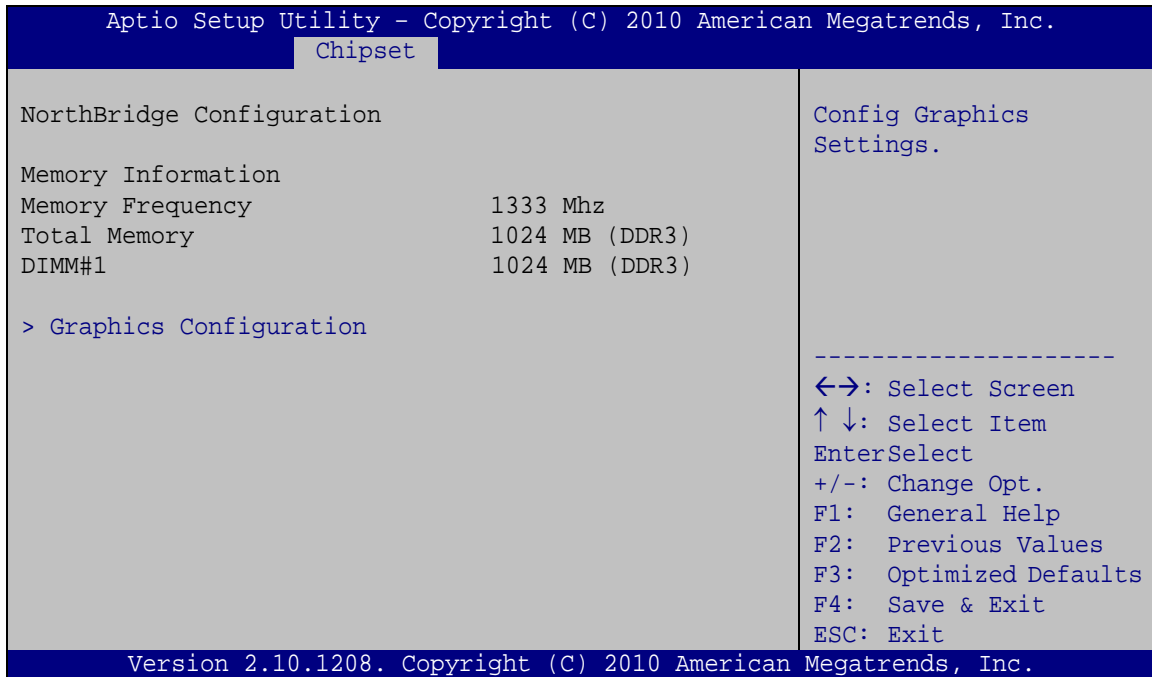
**WARNING!**

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

**BIOS Menu 13: Chipset**

6.5.1 NorthBridge Configuration

Use the **NorthBridge Configuration** menu (**BIOS Menu 14**) to configure the northbridge chipset.

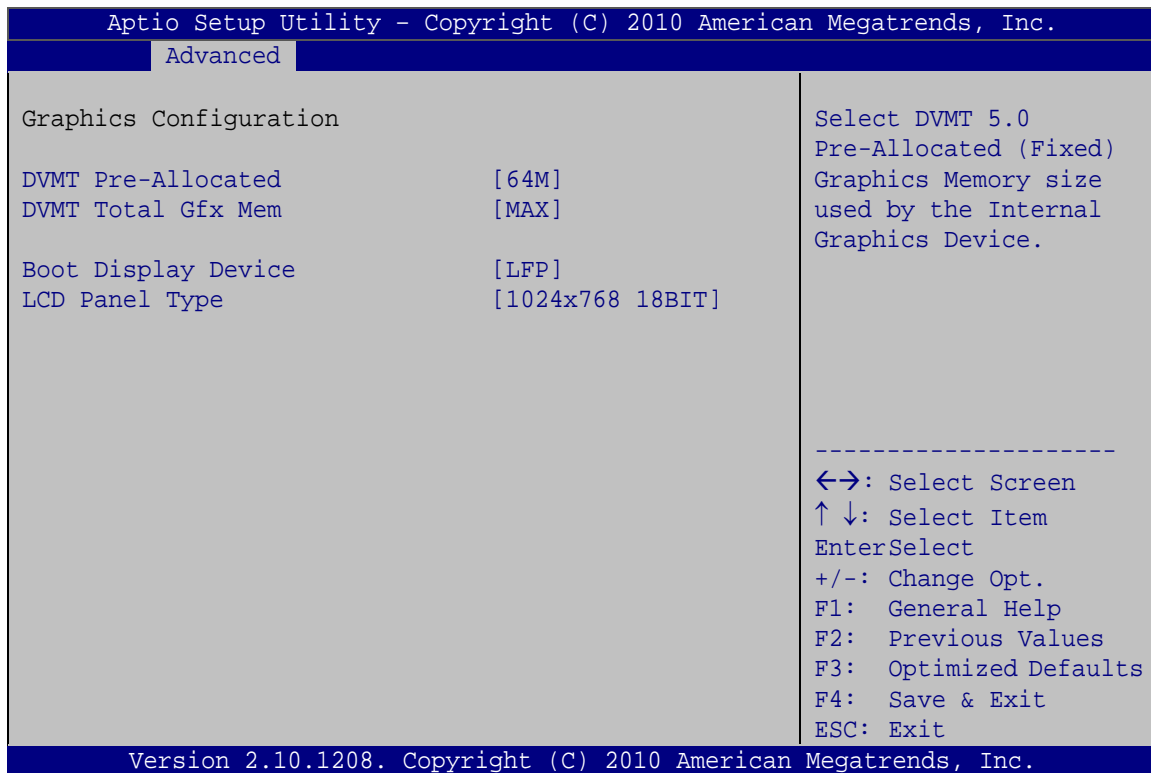


BIOS Menu 14: Host Bridge Chipset Configuration

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6.5.1.1 Graphics Configuration

The **Graphics Configuration** submenu (**BIOS Menu 15**) allows user to configure graphics settings.

**BIOS Menu 15: Hardware Health Configuration**➔ **DVMT Pre-Allocated [64M]**

Use the **DVMT Pre-Allocated** BIOS option to configure the CPU Smart Fan.

- | | | | |
|---|-------------|----------------|--------------------------------|
| ➔ | 0M | | DVMT memory size set at 0 MB |
| ➔ | 32M | | DVMT memory size set at 32 MB |
| ➔ | 64M | DEFAULT | DVMT memory size set at 64 MB |
| ➔ | 96M | | DVMT memory size set at 96 MB |
| ➔ | 128M | | DVMT memory size set at 128 MB |
| ➔ | 160M | | DVMT memory size set at 160 MB |



- ➔ 192M DVMT memory size set at 192 MB
- ➔ 224M DVMT memory size set at 224 MB
- ➔ 256M DVMT memory size set at 256 MB
- ➔ 288M DVMT memory size set at 288 MB
- ➔ 320M DVMT memory size set at 320 MB
- ➔ 352M DVMT memory size set at 352 MB
- ➔ 384M DVMT memory size set at 384 MB
- ➔ 416M DVMT memory size set at 416 MB
- ➔ 448M DVMT memory size set at 448 MB
- ➔ 480M DVMT memory size set at 480 MB
- ➔ 512M DVMT memory size set at 512 MB

➔ DVMT Total Gfx Mem [MAX]

Use the **DVMT Total Gfx Mem** BIOS option to configure the DVMT total graphics memory size.

- ➔ 128 M Sets the DVMT Total Gfx Mem size to 128 MB.
- ➔ 256 M Sets the DVMT Total Gfx Mem size to 256 MB.
- ➔ MAX DEFAULT Sets the DVMT Total Gfx Mem size to maximum.

➔ Boot Display Device [LFP]

Use the **Boot Display Device** BIOS option to configure the boot display device.

- ➔ HDMI Sets the boot display device to HDMI
- ➔ LFP DEFAULT Sets the boot display device to LFP

➔ LCD Panel Type [1024x768 18BIT]

Use the **LCD Panel Type** BIOS option to configure the LCD panel type.

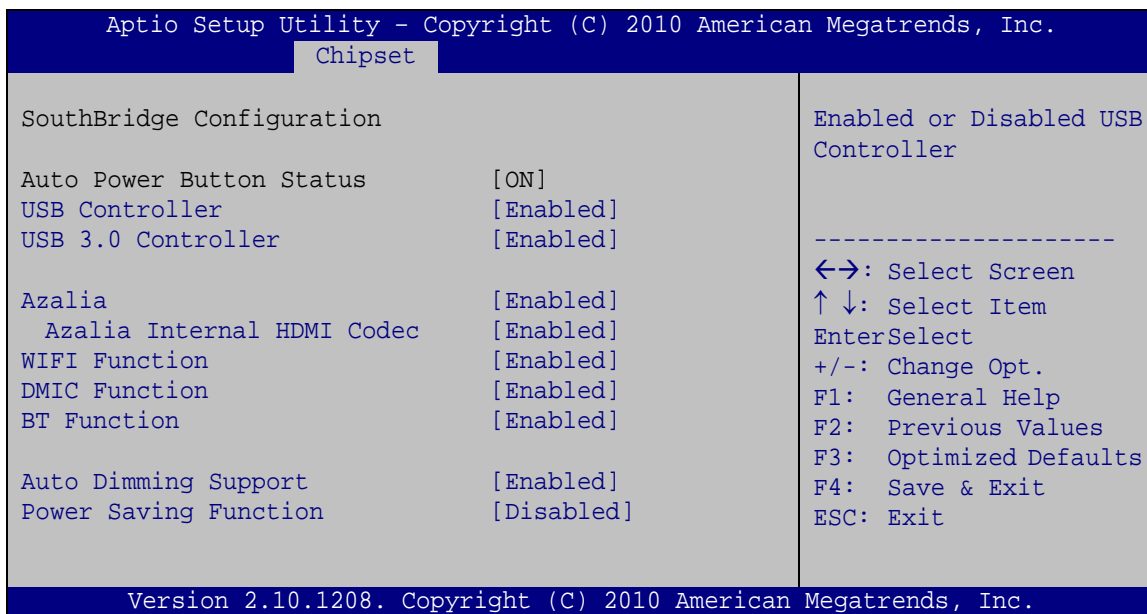


AFL2-12A-HM65 Series Panel PC

- ➔ **800x600 18BIT** Sets the panel resolution at 800x600 (18-bit)
- ➔ **1024x768 18BIT** **DEFAULT** Sets the panel resolution at 1024x768 (18-bit)
- ➔ **1024x768 24BIT** Sets the panel resolution at 1024x768 (24-bit)

6.5.2 South Bridge Configuration

Use the **South Bridge Configuration** menu (**BIOS Menu 16**) to configure the southbridge chipset.



BIOS Menu 16: Southbridge Chipset Configuration

➔ **USB Function [Enabled]**

Use the **USB Function** BIOS option to enable or disable USB function support.

- ➔ **Disabled** USB function support disabled
- ➔ **Enabled** **DEFAULT** USB function support enabled



➔ **USB 3.0 Controller [Enabled]**

Use the **USB 3.0 Controller** BIOS option to enable or disable the USB 3.0 controller

- ➔ **Disabled** USB 3.0 controller disabled
- ➔ **Enabled** **DEFAULT** USB 3.0 controller enabled

➔ **Azalia [Enabled]**

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

- ➔ **Disabled** The onboard High Definition Audio controller is disabled
- ➔ **Enabled** **DEFAULT** The onboard High Definition Audio controller automatically detected and enabled

➔ **Azalia Internal HDMI Codec [Enabled]**

Use the **Azalia Internal HDMI Codec** option to enable or disable the HDMI.

- ➔ **Disabled** HDMI codec is disabled
- ➔ **Enabled** **DEFAULT** HDMI codec automatically detected and enabled

➔ **WIFI Function [Enabled]**

Use the **WIFI Function** option to enable or disable the Wi-Fi function.

- ➔ **Disabled** Wi-Fi function disabled
- ➔ **Enabled** **DEFAULT** Wi-Fi function enabled

➔ **DMIC Function [Enabled]**

Use the **DMIC Function** option to enable or disable the DMIC function.

- ➔ **Disabled** DMIC function disabled
- ➔ **Enabled** **DEFAULT** DMIC function enabled



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→ BT Function [Enabled]

Use the **BT Function** option to enable or disable the BT function.

→ **Disabled** BT function disabled

→ **Enabled** **DEFAULT** BT function enabled

→ Auto Dimming Support [Enabled]

Use the **Auto Dimming Support** option to enable or disable auto dimming support.

→ **Disabled** Auto dimming support disabled

→ **Enabled** **DEFAULT** Auto dimming support enabled

→ Power Saving Function [Disabled]

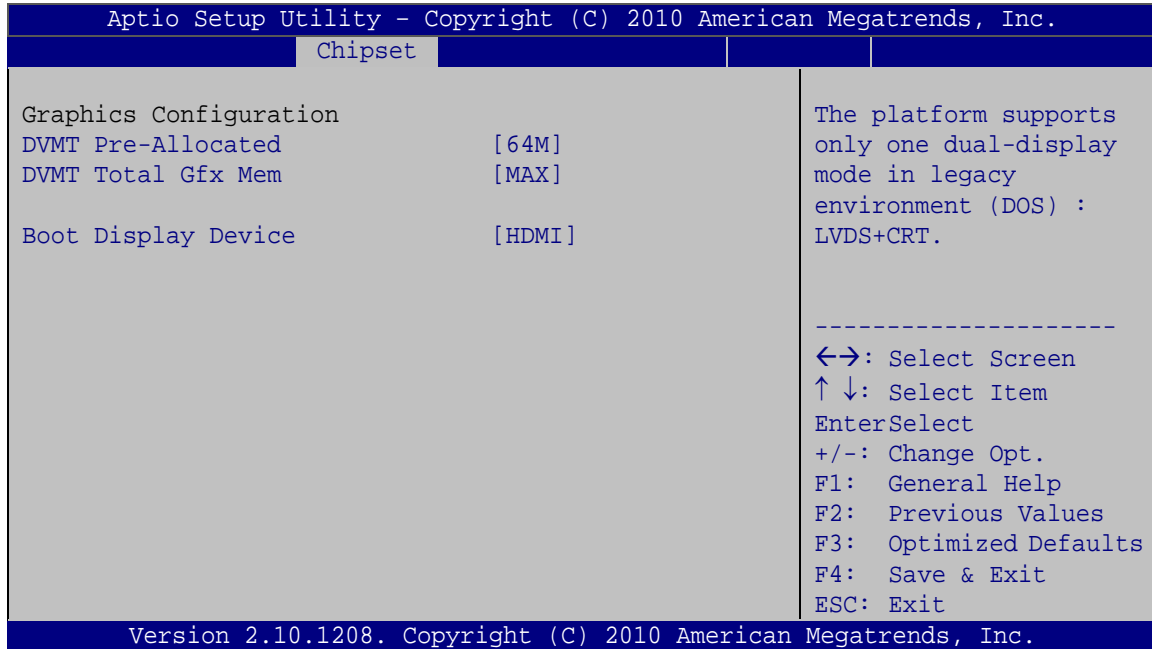
Use the **Power Saving Function** option to enable or disable the power saving function.

→ **Disabled** **DEFAULT** Power saving function disabled

→ **Enabled** Power saving function enabled

6.5.3 Graphics Configuration

Use the **Graphics Configuration** menu (**BIOS Menu 17**) to configure the video device connected to the system.



BIOS Menu 17: Graphics Configuration

→ DVT Pre-Allocated [64M]

Use the **DVT Pre-Allocated** BIOS option to configure the CPU Smart Fan.

- | | | | |
|---|------|---------|-------------------------------|
| → | 0M | | DVT memory size set at 0 MB |
| → | 32M | | DVT memory size set at 32 MB |
| → | 64M | DEFAULT | DVT memory size set at 64 MB |
| → | 96M | | DVT memory size set at 96 MB |
| → | 128M | | DVT memory size set at 128 MB |
| → | 160M | | DVT memory size set at 160 MB |
| → | 192M | | DVT memory size set at 192 MB |
| → | 224M | | DVT memory size set at 224 MB |
| → | 256M | | DVT memory size set at 256 MB |
| → | 288M | | DVT memory size set at 288 MB |
| → | 320M | | DVT memory size set at 320 MB |
| → | 352M | | DVT memory size set at 352 MB |

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- ➔ **384M** DVMT memory size set at 384 MB
- ➔ **416M** DVMT memory size set at 416 MB
- ➔ **448M** DVMT memory size set at 448 MB
- ➔ **480M** DVMT memory size set at 480 MB
- ➔ **512M** DVMT memory size set at 512 MB

➔ **DVMT Total Gfx Mem [MAX]**

Use the **DVMT Total Gfx Mem** BIOS option to configure the DVMT total graphics memory size.

- ➔ **128 M** Sets the DVMT Total Gfx Mem size to 128 MB.
- ➔ **256 M** Sets the DVMT Total Gfx Mem size to 256 MB.
- ➔ **MAX** **DEFAULT** Sets the DVMT Total Gfx Mem size to maximum.

➔ **Boot Display Device [HDMI]**

Use the **Boot Display Device** BIOS option to configure the boot display device.

- ➔ **HDMI** **DEFAULT** Sets the boot display device to HDMI
- ➔ **LFP** Sets the boot display device to LFP



6.6 Boot

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

Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.		
Main	Advanced	Chipset
	Boot	Security
	Save & Exit	
Boot Configuration		
Bootup NumLock State	[On]	Select the keyboard NumLock state
Quiet Boot	[Enabled]	
Launch PXE OpROM	[Disabled]	-----
Boot Option Priorities		←→: Select Screen
Boot Option #1	[Generic STORAGE DE...]	↑ ↓: Select Item
Floppy Drive BBS Priorities		Enter>Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.		

BIOS Menu 18: Boot

➔ **Bootup NumLock State [On]**

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

- ➔

On

DEFAULT

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

Off

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



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→ Quiet Boot [Enabled]

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

- | | | | |
|---|-----------------|----------------|---|
| → | Disabled | | Normal POST messages displayed |
| → | Enabled | DEFAULT | OEM Logo displayed instead of POST messages |

→ Launch PXE OpROM [Disabled]

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

- | | | | |
|---|-----------------|----------------|----------------------------|
| → | Disabled | DEFAULT | Ignore all PXE Option ROMs |
| → | Enabled | | Load PXE Option ROMs |

→ Boot Option #1 [Generic STORAGE DE...]

Use **Boot Option #1** to enable or disable booting from the detected drive.

- | | | | |
|---|----------------------------------|----------------|---|
| → | Generic
STORAGE DE... | DEFAULT | Enables booting from the detected storage device. |
| → | Disabled | | Disables boot option. |

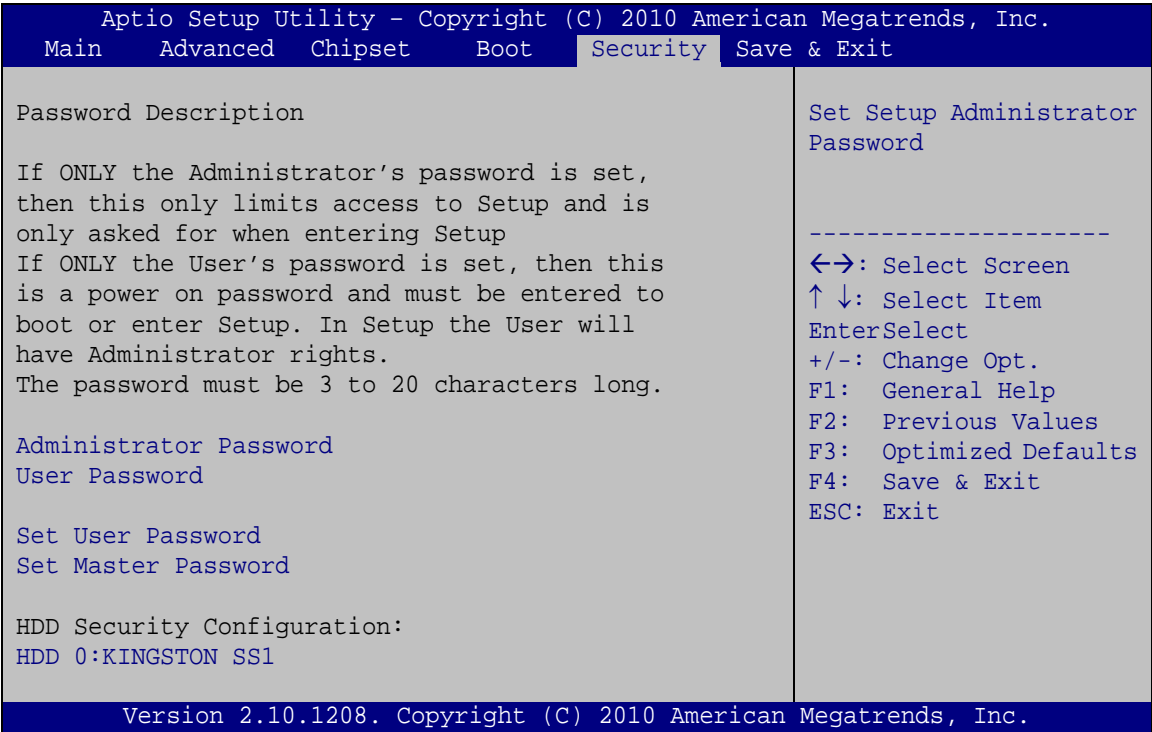
→ Hard Drive BBS Priorities

Use **Hard Drive BBS Priorities** option to set the system boot order.



6.7 Security

Use the **Security** menu (**BIOS Menu 19**) to set system and user passwords.



BIOS Menu 19: Security

➔ **Administrator Password**

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

➔ **User Password**

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

➔ **Set User Password**

Use the **Set User Password** field to set or change an HDD user password.



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NOTE:

It is recommended that the system be reset after setting a new HDD password.

→ Set Master Password

Use the **Set Master Password** field to set or change the master HDD password.



NOTE:

It is recommended that the system be reset after setting a new master HDD password.

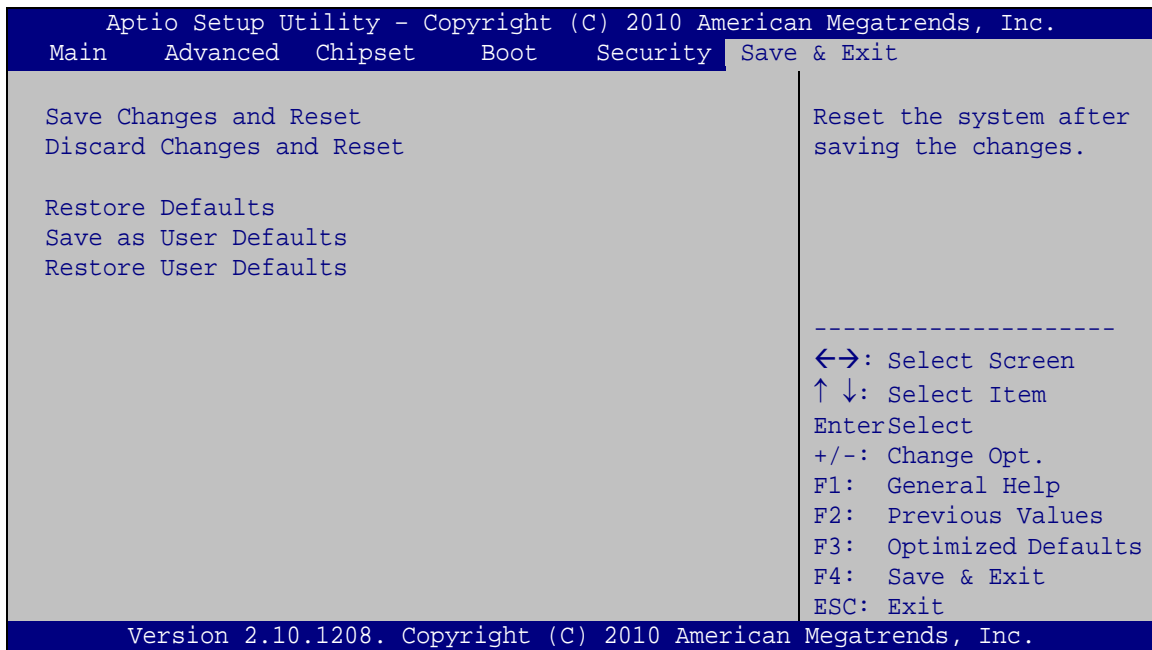
→ HDD Password Configuration

The **HDD 0:KINGSTON SS1** submenu displays the HDD password security features supported by the system.

- **Security Supported:** Yes
- **Security Enabled:** No
- **Security Locked:** No
- **Security Frozen:** No
- **HDD User Pwd Status:** Not installed
- **HDD Master Pwd Status:** Installed

6.8 Save & Exit

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



BIOS Menu 20: Exit

→ Save Changes and Reset

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

→ Discard Changes and Reset

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

→ Restore Defaults

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

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➔ 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

7

Software Drivers

AFL2-12A-HM65 Series Panel PC

7.1 Available Drivers

All the drivers for the AFL2-12A-HM65 are available on IEI Resource Download Center (<https://download.ieiworld.com>). Type AFL2-12A-HM65 and press Enter to find all the relevant software, utilities, and documentation.

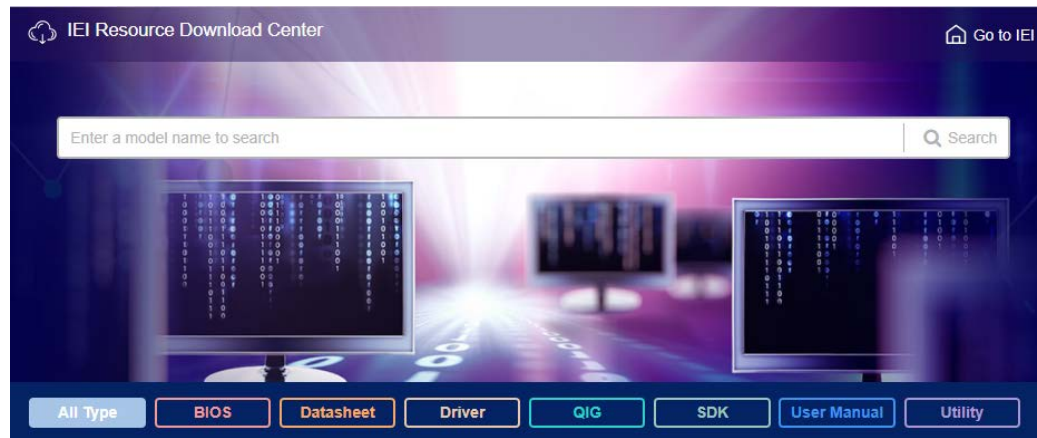


Figure 7-1: IEI Resource Download Center

IEI provides the following drivers for Windows 7 operating systems.

- Chipset
- Graphic
- Touchscreen
- Audio
- LAN
- USB 3.0
- AHCI
- Wi-Fi
- Bluetooth



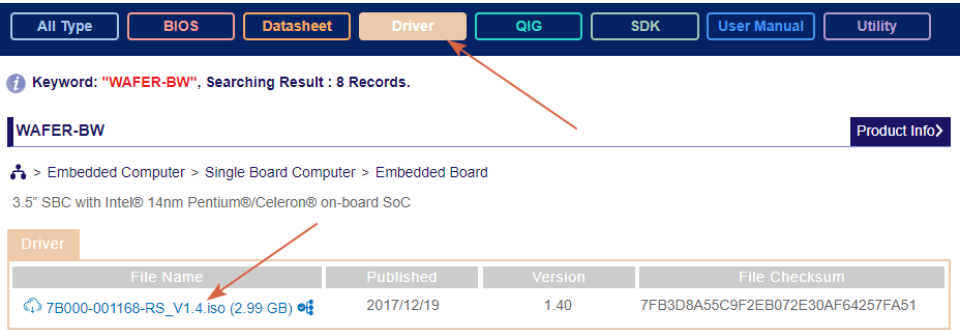
7.2 Driver Download

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

Step 1: Go to <https://download.ieiworld.com>. Type AFL2-12A-HM65AFL2-12A-HM65AFL2-12A-HM65 and press Enter.



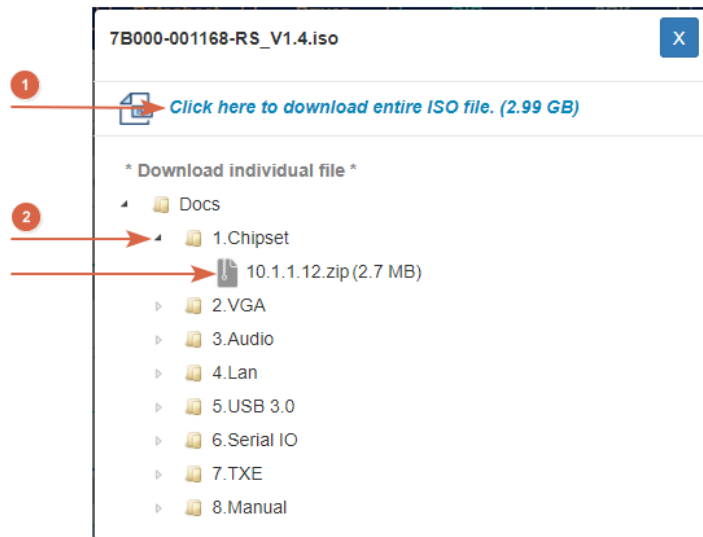
Step 2: All product-related software, utilities, and documentation will be listed. You can choose **Driver** to filter the result.



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).



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**NOTE:**

To install software from the downloaded ISO image file in Windows 7 system, an additional tool (such as Virtual CD-ROM Control Panel from Microsoft) is needed to mount the file.

Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY



This equipment is in conformity with the following EU directives:

- EMC Directive (2004/108/EC, 2014/30/EU)
- Low-Voltage Directive (2006/95/EC, 2014/35/EU)
- RoHS II Directive (2011/65/EU, 2015/863/EU)
- Ecodesign Directive 2009/125/EC

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

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

English

IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Български [Bulgarian]

IEI Integration Corp. декларира, че този оборудване е в съответствие със съществения изисквания и другите приложими правила на Директива 2014/53/EU.

Česky [Czech]

IEI Integration Corp tímto prohlašuje, že tento zařazení 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 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 alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.

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.



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Româna [Romanian]

IEI Integration Corp declară că acest echipament este în conformitate cu cerințele esențiale și 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 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 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 or more of the following measures:

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

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

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

For products available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Appendix

B

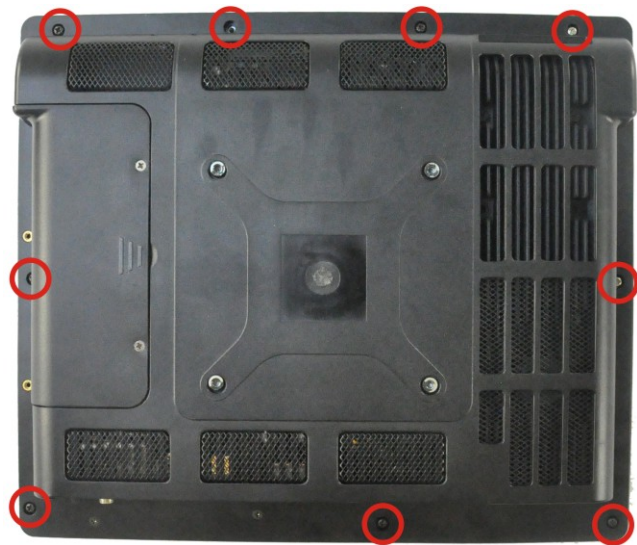
Barebone Version Installation



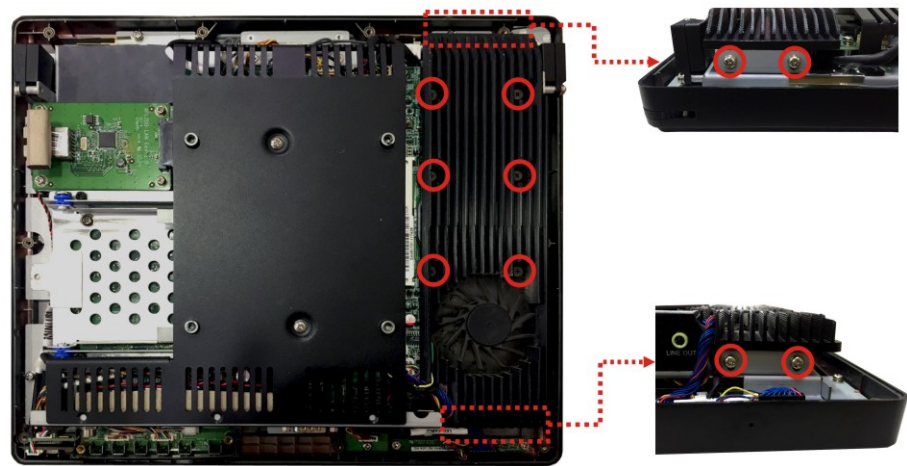
AFL2-12A-HM65 Series Panel PC

The package of barebone version (without CPU and memory module) contains two thermal pads and one syringe with thermal paste. This section gives instruction on how to install thermal pads and apply thermal paste to the CPU.

Step 1: Remove the rear cover by removing the screws shown below.



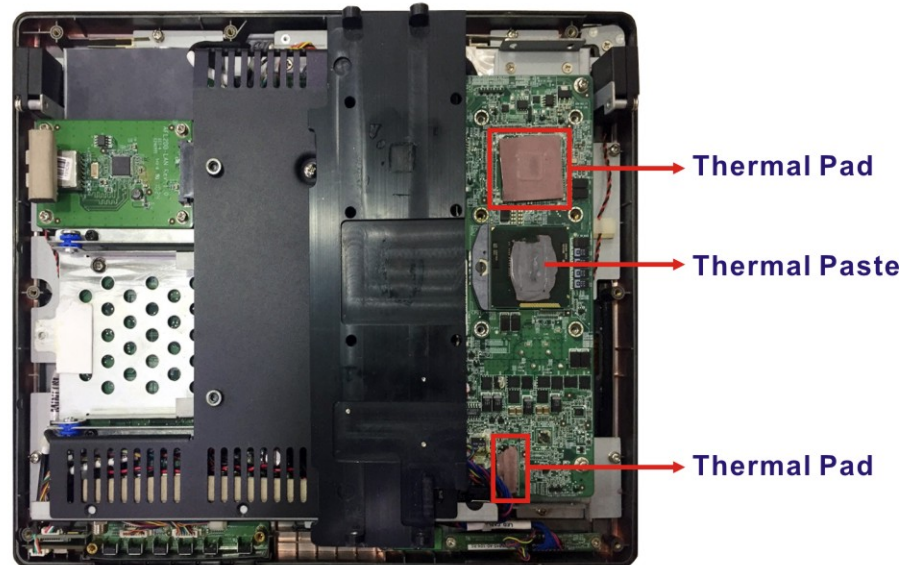
Step 2: Remove the system heat sink: 1) Remove the fan filter. 2) Remove the 10 retention screws shown below. 3) Lift the system heat sink off the system.



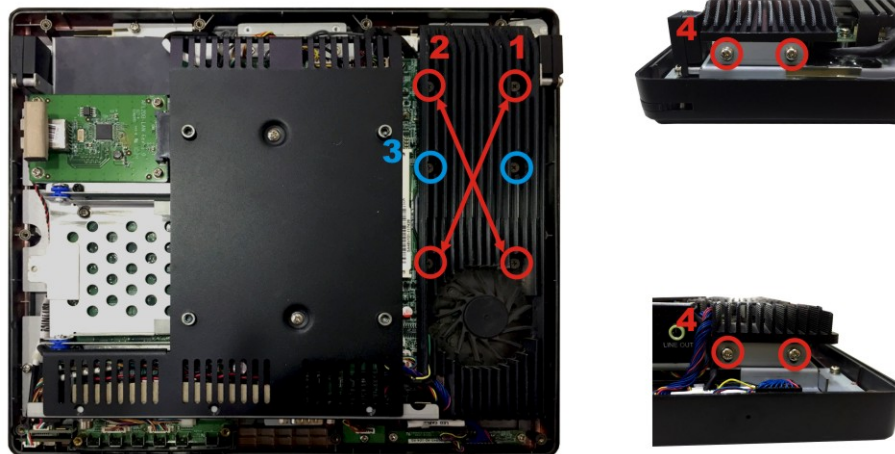
AFL2-12A-HM65 Series Panel PC

Step 3: Place the thermal pads on the internal components circled below.

Step 4: Install a CPU in the CPU socket. Apply thermal paste on the CPU.



Step 5: Re-install the system heat sink by following the sequence shown below. Do not tighten the middle two screws (circled in blue) too tight.



Step 6: Re-install the rear cover by using the previously removed screws.

Appendix

C

Interface Connectors

AFL2-12A-HM65 Series Panel PC

C.1 Peripheral Interface Connectors

The AFL2-12A-HM65 panel PC motherboard comes with a number of peripheral interface connectors and configuration jumpers. The pinouts for these connectors are listed below:

PIN NO.	DESCRIPTION
1	RXD422+
2	RXD422-
3	TXD422+/TXD485+
4	TXD422-/TXD485-

Table C-1: RS-422/485 Connector (COM6) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD3	2	DSR3
3	RXD3	4	RTS3
5	TX3	6	CTS3
7	DTR3	8	RI3

Table C-2: RJ-45 COM Port Connector (COM3) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	2	RX1
3	TX1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

Table C-3: D-sub 9 COM Port Connector (COM1) Pinouts

PIN NO.	DESCRIPTION
1	SPK_OUT_P_L
2	SPK_OUT_N_L
3	SPK_OUT_N_R
4	SPK_OUT_P_R

Table C-4: Speaker Connector (CN8) Pinouts



PIN NO.	DESCRIPTION
1	PWRBTN_SW#
2	GND

Table C-5: Power Button Connector (PW_BT1) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	-DATA5
3	+DATA5
4	GND

Table C-6: RFID USB Connector (RFID_USB1) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	SIN2
3	SOUT2
4	GND

Table C-7: RFID COM Connector (RFID_COM1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	KEYLED1	2	KEYLED2
3	KEYLED3	4	KEYLED4
5	KEYLED4	6	KEYLED6
7	GND	8	VCC3

Table C-8: Hotkey LED Connector (HOTKEYLEDCN1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	EC_KSO0	2	EC_KSO1
3	EC_KSO2	4	EC_KSO3
5	EC_KSO4	6	EC_KSO5
7	EC_KSI6	8	EC_KSI7
9	GND	1	

Table C-9: Hotkey Connector (HOTKEYCN1) Pinouts



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PIN NO.	DESCRIPTION
1	VCC
2	-DATA
3	+DATA
4	GND

Table C-10: Mini USB Connector (MINUSB2) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	-DATA
3	+DATA
4	GND
5	3VCC

Table C-11: Mini USB Connector (MINUSB1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPI_VCC	2	FSCE#
3	FMISO	4	FSCCK
5	FMOSI	6	GND

Table C-12: EC Firmware Connector (JSPI2) Pinouts

PIN NO.	DESCRIPTION
1	DMIC_CLK
2	DMIC_DATA
3	VCC3
4	GND

Table C-13: DMIC Connector (DMIC1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	AUDIO_LED#	2	PWRLED01#
3	MIC_LED#	4	PWRLED02#
5	CPU_LED02#	6	AT_LED#
7	CPU_LED01#	8	ATX_LED#



9	AD_LED#	10	VCC3
11	WiFi_LED#	12	VCC3
13	BT_LED#	14	+V3.3A_EC
15	VCC_RFID	16	GROUND

Table C-14: LED Connector (LEDCN1) Pinouts

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

Table C-15: EC Debug Connector (CN4) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	2	VCC5DUAL
3	VCC5DUAL	4	IRRX
5	GROUND	6	AUTO_CLK
7	NC	8	AUTO_DATA
9	NC	10	GROUND

Table C-16: Auto-dimming Connector (JP6) Pinouts

PIN NO.	DESCRIPTION
1	VCC12
2	GND
3	GND
4	VCC5

Table C-17: SATA Power Connector (CN5) Pinouts



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PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC12
3	NC	4	VCC12
5	NC	6	NC
7	GND	8	VCC5
9	SATA_RXP0_C	10	VCC5
11	SATA_RXN0_C	12	VCC5
13	GND	14	VCC5
15	SATA_TXN0_C	16	GND
17	SATA_TXP0_C	18	VCC3
19	GND	20	VCC3

Table C-18: SATA Connector (JSATA1) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	-DATA
3	+DATA
4	GND

Table C-19: Bluetooth USB Connector (BLUETOOTH1) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	-DATA
3	+DATA
4	GND

Table C-20: WebCAM USB Connector (WEBCAMER1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	X+	2	X-
3	Y+	4	SENSE
5	X+	6	X-
7	Y+	8	Y-
9	GND	10	

Table C-21: Touch Panel Connector (TS1) Pinouts



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPI_VCC	2	FSCE#
3	FMISO	4	FSCK
5	FMOSI	6	GND

Table C-22: Flash SPI Connector (JSPI1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	BKL_POWER	2	BKL_POWER
3	ENABKL	4	BRIGHTNESS
5	GND	6	GND

Table C-23: Backlight Inverter Connector (INVERTER1) Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	LVDSA_DATA0	4	LVDSA_DATA#0
5	LVDSA_DATA1	6	LVDSA_DATA#1
7	LVDSA_DATA2	8	LVDSA_DATA#2
9	LVDSA_CLK	10	LVDSA_CLK#
11	NC	12	NC
13	GND	14	GND
15	L_DDC_DATA	16	L_DDC_CLK
17	VCC_LCD	18	VCC_LCD
19	VCC_LCD	20	VCC_LCD

Table C-24: LVDS Connector (LVDS1) Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	-DATA
3	+DATA
4	GND

Table C-25: Touch Panel Connector (TOUCH1) Pinouts



Appendix

D

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 AFL2-12A-HM65.

D.1 Safety Precautions

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

D.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 AFL2-12A-HM65 is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the AFL2-12A-HM65 is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range.***
Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the AFL2-12A-HM65 chassis is opened when the AFL2-12A-HM65 is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the AFL2-12A-HM65.
- ***If considerable amounts of dust, water, or fluids enter the AFL2-12A-HM65,*** turn off the power supply immediately, unplug the power cord, and contact the AFL2-12A-HM65 vendor.
- **DO NOT:**
 - Drop the AFL2-12A-HM65 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

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D.1.2 CPU Temperature Warning



WARNING:

When the CPU's core temperature reaches TJ Max, the CPU temperature alert LED turns **RED** and the CPU starts to lower its clock speed. At this moment, the user must lower the environments temperature or close some running applications to cool down the CPU.

D.1.3 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the AFL2-12A-HM65 may result in permanent damage to the AFL2-12A-HM65 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AFL2-12A-HM65. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AFL2-12A-HM65 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.

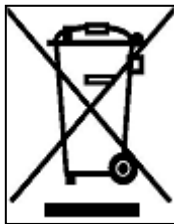
D.1.4 Product Disposal

**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.

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D.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the AFL2-12A-HM65, please follow the guidelines below.

D.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the AFL2-12A-HM65, 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 AFL2-12A-HM65X does not require cleaning. Keep fluids away from the AFL2-12A-HM65 interior.
- Be cautious of all small removable components when vacuuming the AFL2-12A-HM65.
- Turn the AFL2-12A-HM65 off before cleaning the AFL2-12A-HM65.
- Never drop any objects or liquids through the openings of the AFL2-12A-HM65.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the AFL2-12A-HM65.
- Avoid eating, drinking and smoking within vicinity of the AFL2-12A-HM65.

D.2.2 Cleaning Tools

Some components in the AFL2-12A-HM65 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 AFL2-12A-HM65.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the AFL2-12A-HM65.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol can be used to clean the AFL2-12A-HM65.
- **Using solvents** – The use of solvents is not recommended when cleaning the AFL2-12A-HM65 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 AFL2-12A-HM65. Dust and dirt can restrict the airflow in the AFL2-12A-HM65 and cause its circuitry to corrode.
- **Cotton swabs** - Cotton swabs 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

E

BIOS Configuration Options



E.1 BIOS Configuration Options

Below is a list of BIOS configuration options described in **Chapter 6**.

<input type="checkbox"/> System Overview	62
<input type="checkbox"/> System Date [xx/xx/xx]	63
<input type="checkbox"/> System Time [xx:xx:xx]	63
<input type="checkbox"/> ACPI Sleep State [S3 (Suspend to RAM)]	65
<input type="checkbox"/> Hyper Threading Function [Enabled]	67
<input type="checkbox"/> Intel® Virtualization Technology [Disabled]	67
<input type="checkbox"/> SATA Controller(s) [Enhanced]	68
<input type="checkbox"/> SATA Mode Selection [IDE]	68
<input type="checkbox"/> USB Devices	69
<input type="checkbox"/> USB Support [Enabled]	69
<input type="checkbox"/> Legacy USB Support [Enabled]	69
<input type="checkbox"/> USB 3.0 Support [Enabled]	70
<input type="checkbox"/> XHCI Hand-off [Enabled]	70
<input type="checkbox"/> EHCI Hand-off [Disabled]	70
<input type="checkbox"/> Port 60/64 Emulation [Enabled]	71
<input type="checkbox"/> USB transfer time-out [20 sec]	71
<input type="checkbox"/> Device reset time-out [20 sec]	71
<input type="checkbox"/> Device power-up delay [Auto]	71
<input type="checkbox"/> Generic Storage Device 9454 [Auto]	72
<input type="checkbox"/> Serial Port [Enabled]	73
<input type="checkbox"/> Change Settings [Auto]	73
<input type="checkbox"/> PC Health Status	74
<input type="checkbox"/> CPU Smart Fan control [Auto Mode]	76
<input type="checkbox"/> Temperature of Start [80]	76
<input type="checkbox"/> Temperature of Off [75]	76
<input type="checkbox"/> Start PWM [30]	76
<input type="checkbox"/> Slope (PWM duty) [4 (PWM duty)]	76
<input type="checkbox"/> Console Redirection [Disabled]	77
<input type="checkbox"/> Auto Recovery Function [Disabled]	78
<input type="checkbox"/> DVMT Pre-Allocated [64M]	81
<input type="checkbox"/> DVMT Total Gfx Mem [MAX]	82



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<input type="checkbox"/> Boot Display Device [LFP]	82
<input type="checkbox"/> LCD Panel Type [1024x768 18BIT]	82
<input type="checkbox"/> USB Function [Enabled]	83
<input type="checkbox"/> USB 3.0 Controller [Enabled]	84
<input type="checkbox"/> Azalia [Enabled]	84
<input type="checkbox"/> Azalia Internal HDMI Codec [Enabled]	84
<input type="checkbox"/> WIFI Function [Enabled]	84
<input type="checkbox"/> DMIC Function [Enabled]	84
<input type="checkbox"/> BT Function [Enabled]	85
<input type="checkbox"/> Auto Dimming Support [Enabled]	85
<input type="checkbox"/> Power Saving Function [Disabled]	85
<input type="checkbox"/> DVMT Pre-Allocated [64M]	86
<input type="checkbox"/> DVMT Total Gfx Mem [MAX]	87
<input type="checkbox"/> Boot Display Device [HDMI]	87
<input type="checkbox"/> Bootup NumLock State [On]	88
<input type="checkbox"/> Quiet Boot [Enabled]	89
<input type="checkbox"/> Launch PXE OpROM [Disabled]	89
<input type="checkbox"/> Boot Option #1 [Generic STORAGE DE...]	89
<input type="checkbox"/> Hard Drive BBS Priorities	89
<input type="checkbox"/> Administrator Password	90
<input type="checkbox"/> User Password	90
<input type="checkbox"/> Set User Password	90
<input type="checkbox"/> Set Master Password	91
<input type="checkbox"/> HDD Password Configuration	91
<input type="checkbox"/> Save Changes and Reset	92
<input type="checkbox"/> Discard Changes and Reset	92
<input type="checkbox"/> Restore Defaults	92
<input type="checkbox"/> Save as User Defaults	93
<input type="checkbox"/> Restore User Defaults	93

Appendix

F

Watchdog Timer

**NOTE:**

The following discussion applies to DOS environment. IEI support is contacted or the IEI website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

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 F-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. While 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:**

When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

Example program:

; INITIAL TIMER PERIOD COUNTER

;

W_LOOP:

```
MOV    AX, 6F02H    ;setting the time-out value
MOV    BX, 05        ;time-out value is 5 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     BX, 0        ;
INT     15H
```

;

; EXIT ;

Appendix

G

Hazardous Materials Disclosure



AFL2-12A-HM65 Series Panel PC

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

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

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O
Battery	O	O	O	O	O	O
O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006 (now replaced by GB/T 26572-2011).						
X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006 (now replaced by GB/T 26572-2011).						



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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	○	○	○	○	○	○
显示	○	○	○	○	○	○
印刷电路板	○	○	○	○	○	○
金属螺帽	○	○	○	○	○	○
电缆组装	○	○	○	○	○	○
风扇组装	○	○	○	○	○	○
电力供应组装	○	○	○	○	○	○
电池	○	○	○	○	○	○
<p>○: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T 11363-2006 (现由 GB/T 26572-2011 取代) 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 (现由 GB/T 26572-2011 取代) 标准规定的限量要求。</p>						