AIM8IEM/AIM8Q Computer

User Manual

ADVANTECH

研華科技

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Declaration of Conformity

CE Conformity Statement

Radio products with the CE alert marking comply with the R&TTE Directive (1999/5/EC) issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

• EN 60950-1 (IEC60950-1) - Product Safety
• EN 300 328 Technical requirement for radio equipment
• ET S301 489 General EMC requirements for radio equipment

Products that contain the radio transmitter are labeled with CE alert marking and may also carry the CE logo.

FCC Compliance Statement

15.105

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one 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.

15.21

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

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

End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example: use only shielded interface cables when connecting to computer or peripheral devices).

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.

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment for body-worn configuration in direct contact to the phantom. Portable Device body-SAR contact 0 cm
This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.
RF Exposure Information (SAR)
This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.
The exposure standard for wireless devices employing a unit of measurement is known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg.
The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF
exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of
www.fcc.gov/oet/ea/fccid after searching on FCC ID: M82-AIM8IEM

Result for highest Simultaneous Transmission SAR value is 1.588 W/kg.

IC warning statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance are strictly prohibited for use with this device.

Le present emetteur radio a ete approuve par Industrie Canada pour fonctionner avec les types d'antenne enumeres ci-dessous et ayant un gain admissible maximal et l'impedance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est superieur au gain maximal indique, sont strictement interdits pour l'exploitation de l'emetteur.

IC Radiation Exposure Statement

This EUT is compliance with SAR for general population/uncontrolled exposure limits in IC RSS-102. This equipment should be installed and operated with minimum distance 0 cm between the radiator & your body.

Cet EUT est la conformite avec SAR pour la population generale / les limites d'exposition incontrolees dans IC RSS-102. Cet equipement doit etre installe et utilise a une distance minimale de 0 cm entre le radiateur et votre corps.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The portable device is designed to meet the requirements for exposure to radio waves established by the ISED. These requirements set a SAR limit of 1.6 W/kg averaged over one gram of tissue. The highest SAR value reported under this standard during product certification for use when properly worn on the body.
Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. L'utilisateur final doit suivre les instructions spécifiques pour satisfaire les normes. Cet émetteur ne doit pas être co-implanté ou fonctionner en conjonction avec toute autre antenne ou transmetteur.
Result for highest Simultaneous Transmission SAR value is 1.588 W/kg.

NCC Warning Statement

Article 12

Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.

Article 14

The application of low power frequency electric machineries shall not affect the navigation safety nor interfere a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exists.

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this user manual for later reference.
3. Disconnect this equipment from AC outlet before cleaning. Do not use liquid or spray detergents for cleaning.
4. Keep this equipment away from hazard locations.
5. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
6. Do not leave this equipment in an environment unconditioned where the storage temperature under -20°C or above 60°C, it may damage the equipment.
7. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
8. Place the AC power adapter such a way that people cannot step on it. Do not place anything over the power adapter.
9. All cautions and warnings on the equipment should be noted.
10. If the equipment is not used for long time, disconnect it from the power source to avoid being damaged by transient over-voltage.
11. Never pour any liquid into slots of the AIM8IEM and AIM8Q Series. This could cause fire or electrical shock.
12. Never open or disassemble the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
13. If any of the following situations arises, get the equipment checked by service personnel:
    a. The power adapter plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well or you cannot get it to work according to user manual.
    e. The equipment has obvious signs of breakage.
14. This product is intended to be supplied by a UL Listed Power Adapter or DC power source, rated 5.0 - 5.15 Vdc, 3A min. for model AIM8IEM, rated 9.0 – 9.1 Vdc, 2A min for model AIM8Q and Tma 50 degree C, if need further assistance, please contact Advantech for further information.

Battery Safety

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same type recommended by the manufacturer, discard used batteries according to the manufacturer's instructions.

Attention : Danger d'explosion si la batterie est inexactement remplacée. Remplacez seulement avec la même chose ou le type recommandé par le fabricant, jettent les batteries utilisées instructions de s selon fabricant des'.

Mistreat the battery used in this device may present a risk of fire or chemical burn.
Do not attempt to disassemble the computer or its accessories.
Only qualified personal is allowed to replace the battery.
Do not dispose batteries in a fire and check with local authorities for disposal instructions.

AIM8IEM/AIM8Q can only be equipped with standard battery pack with Getac, AIM-BAT-8, 4900mAH Polymer Lithium Ion Battery. Use of another battery may present a risk of fire or explosion.

Battery Charge Notice

It is important to consider the environment temperature whenever you are charging the Lithium-Ion battery pack. The process is more efficient at normal room temperature or slightly cooler. It is essential that you charge batteries within the stated range of 0°C to 40°C. Charging batteries outside of the specified range could damage the batteries and shorten their charging life cycle.

Storage and Safety Notice

Although charge Lithium-Ion batteries may be left unused for several months, their capacity may be depleted due to the buildup of internal resistance. If this happens they will require recharging prior to use. Lithium Ion batteries may be stored at temperatures between -10°C to 60°C, however they may be depleted more rapidly at the high end of this range. It is recommended to store AIM8IEM/AIM8Q within normal room temperature ranges.

WEEE

EN

Following information is only for EU-member states:

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Technical Support and Assistance

1. Visit the Advantech website at http://support.advantech.com where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

– Product name and serial number
– Description of your peripheral attachments
– Description of your software (operating system, version, application software, etc.)
– A complete description of the problem
– The exact wording of any error messages

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Chapter 1 Introduction

Congratulations on your purchase of the AIM8IEM/AIM8Q Computer.

AIM8IEM/AIM8Q has two variants and the main difference is that AIM8IEM is powered by Intel Atom x5-Z8350 and supports Windows 10 IoT Enterprise while AIM8Q is equipped with Qualcomm APQ8074 and supports Android 6.0 OS.

This product combines stylish design with reliable performance and powerful functionality to best suit all your needs, in a wide range of working conditions. This user manual outlines all you need to know to set up and use your AIM8IEM/AIM8Q. If you have any further questions or queries, contact our technical support team via our website:

http://support.advantech.com.tw/

1.1 Symbols Used in this Manual

	Denotes information that must be observed. Failure to do so may result in personal harm or damage to the product.

	Denotes information that must be observed. This is informative notification to have a better experience while using this computer.

1.2 Product Features

- Low power Intel® ATOM™ / Qualcomm® Snapdragon™ processor designed for mobile applications.
- Support Windows 10 IoT Enterprise(AIM8IEM) and Android 6.0 (AIM8Q) OS.
- 8“ WUXGA projected capacitive multi touch display.
- -10°C to 50°C, IP65, MIL-STD 810G / 4ft drop compliant.
- Compact/slim design: 14.5 mm height, 600g weight.
- Seamless communications, including Wi-Fi, BT, NFC, 3G/4G.
- Optional extension modules, including 1D/2D barcode scanner, MSR, RJ45+COM, UHF RFID Reader and more.
- Optional dock stations, including VESA/Vehicle dock & multi charger design.

1.3 Package Contents

Ensure all the following items are present when you receive your AIM8IEM/AIM8Q. If any of these items are missing, contact your dealer immediately.

- AIM8IEM/AIM8Q Computer
- Startup Manual
- AC power adaptor

1.4 Product Specifications

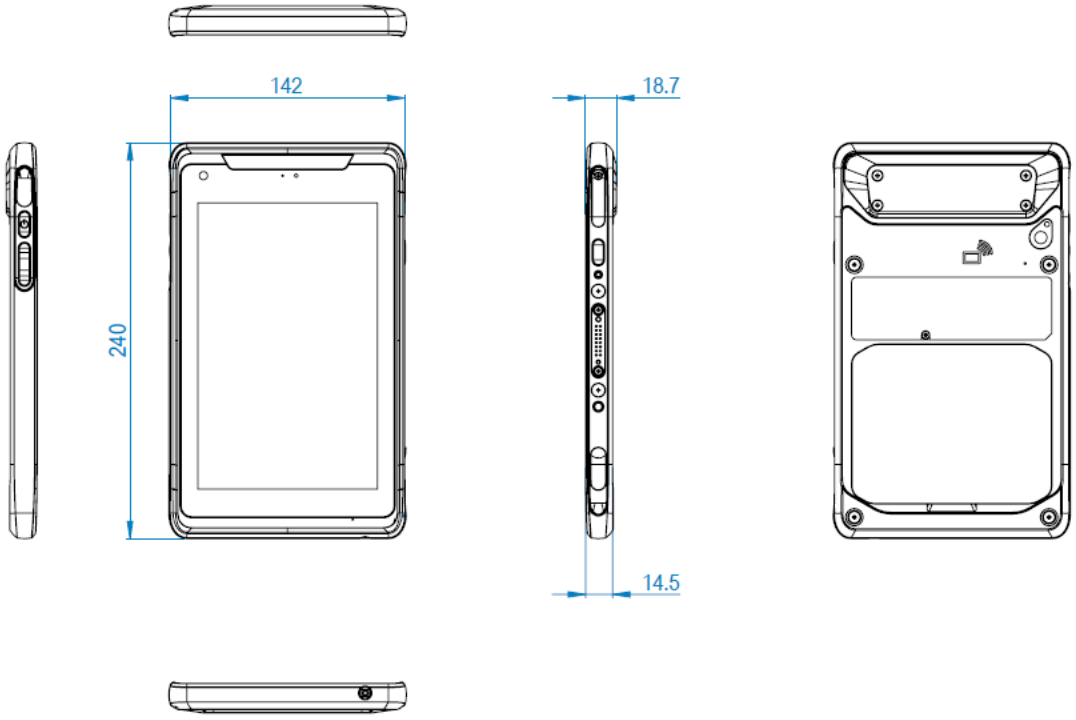
1.4.1 Technical Specifications

Model Name		AIM8IEM	AIM8Q
Computing System	CPU	Intel Atom x5-Z8350	Qualcomm APQ8074
	Max Speed	1.44 GHz	2.2 GHz
	Memory	2GB LPDDR3	
	OS	Windows 10 IoT Enterprise 64 bit	Android 6.0.1 32 bit
Storage	On-board eMMC	32GB/64GB (Default 32GB)	
	Micro-SD	Micro-SD Card Slot for Storage Expansion	
Display	Display Type	8” TFT IPS LCD Panel	
	Max Resolution	WUXGA, 1200x1920, 400 nits	
	Touch Type	Projected Capacitive Multi-Touch	
	Class Type	G/G Direct Bonding, Corning GG3 Glass	
Communication	WIFI	802.11b/g/n (2.4Ghz)	Dual Band : 802.11ac (5Ghz) or 802.11n(2.4Ghz)
	Bluetooth	Bluetooth v4.0 CLASS II/BLE	
	NFC (13.5MHz)	Read/ Write Device Compatible With ISO15693, ISO14443A, ISO14443B, Felica	
	AGPS GPS	AGPS GPS & GLONASS & (Optional) Beidou	AGPS GPS & GLONASS & (Optional) Beidou
	WWAN/ LTE (Optional)	M.2 Module NA Micro-SIM Slot	Mini-PCIe Module EU, NA & China Micro-SIM Slot
Audio		Build-In Digital MIC, x1 80dB 1Watt SPK 0.5M, x1 Audio combo jack	
Connectivity	I/O Port Interfaces	x1 Micro USB 2.0 (Charging)	x1 Micro USB 2.0 (OTG & Charging)
		x1 Micro HDMI: Display x1 AIM Dock 16-pin Pogo Connector: USB 3.0 x1 AIM Extension 14-pin Pogo Connector: USB 2.0 + TX/RX + Power	
Camera	Front	2MP Fixed Focus	5MP Fixed Focus
	Rear	5MP Auto Focus with LED Flash	13MP Auto Focus with LED Flash
Sensor		G-sensor + E-compass, Gyroscope, ALS	

Hard Buttons	Function	x1 Power Button x2 Volume Control Button x1 Programmable Button (Default as BCR Trigger Key)
System Indicators		x1 Power / Battery Status
Power Input	Micro USB	DC 5V, 3A DC 9V, 2A
Battery	Capacity	Swappable Battery with Battery Meter 3.8Vdc ; 4900mAH ; 18.62Wh
	Operating Temperature	0~40 °C (Charging)
Environment	Temperature	Operating: -10°C ~ +50°C, Storage: -20°C ~ +60°C, System Charging mode: 0~40 °C
	Operating & Storage Humidity	5% ~ 95% @ 40° C (non-condensing)
	Vibration	Operation: (5-500GHz) 1G, Non-operating: (5-500GHz) 0.04PSD
Ingress Protection	Dust/ Water Resistance	IP-65 compliant
Ingress Protection	Dimensions	142 x 240 x 14.5mm (W x H x D)
	Weight	600g
	Color	Black/Orange, Grey/Blue, White/Blue

1.4.2 Product Outlook and Dimensions

All AIM8IEM/AIM8Q Series share the same dimension, the following illustration uses AIM8IEM as example.



1.5 Exploring the AIM8IEM/AIM8Q

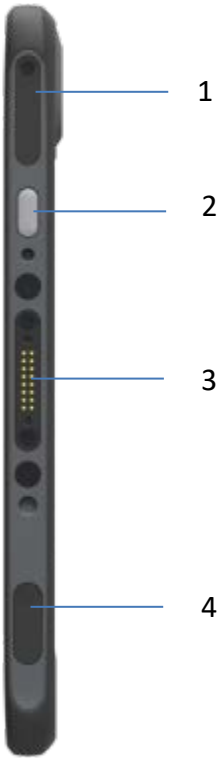
1.5.1 Front View

No.	Component
1	Front Camera
2	Power LED
3	Light Sensor
4	Speaker

1.5.2 Rear View

No.	Component
1	Extension Module
2	NFC
3	Rear Camera with LED Flash
4	Battery Cover

1.5.3 Right View



No.	Component
1	SIM & SD Card Door
2	Programmable Key (Default BCR)
3	Pogo Pin (USB3.0)
4	Micro USB Door

1.5.4 Left View

No.	Component
1	Micro HDMI Door
2	Power Button
3	Volume Key UP/Down

1.5.5 Bottom View

No.	Component
1	Audio Jack (Headset Combo)

Chapter 2 Getting Started

2.1 Charge the Computer

To charge the embedded battery in AIM8IEM/AIM8Q, connect the Micro USB adaptor on the AIM8IEM/AIM8Q computer.

Note	Please charge for at least one hour when you use this computer for the first time.

2.2 Turn on the Computer

Push the Power Button (located at no. 2 of Section 1.5.4 Left View.) for 3 seconds to start the computer.

2.3 Sleep Mode

While the computer is running, push the Power Button for 1 second will move the equipment into sleep mode for power saving. Push the Power Button again will enable the backlight again.

2.4 Operate the computer

AIM8IEM/AIM8Q is equipped with a 8” Capacitive Touch Panel. Use finger to touch the following Active Area to operate the computer.

2.5 LED indicator status

AIM8IEM/AIM8Q is equipped with one LED indicator for battery status. The following shows LED status for different power states.

This power LED has three colors: Red, Green, and Blue.

a) The Red LED blinks when internal battery capacity is below 10% to warn the user to charge.
b) The Blue LED lights up when internal battery is being charged.
c) The Green LED lights up when internal battery has been fully charged.

Chapter 3 Basic Setups

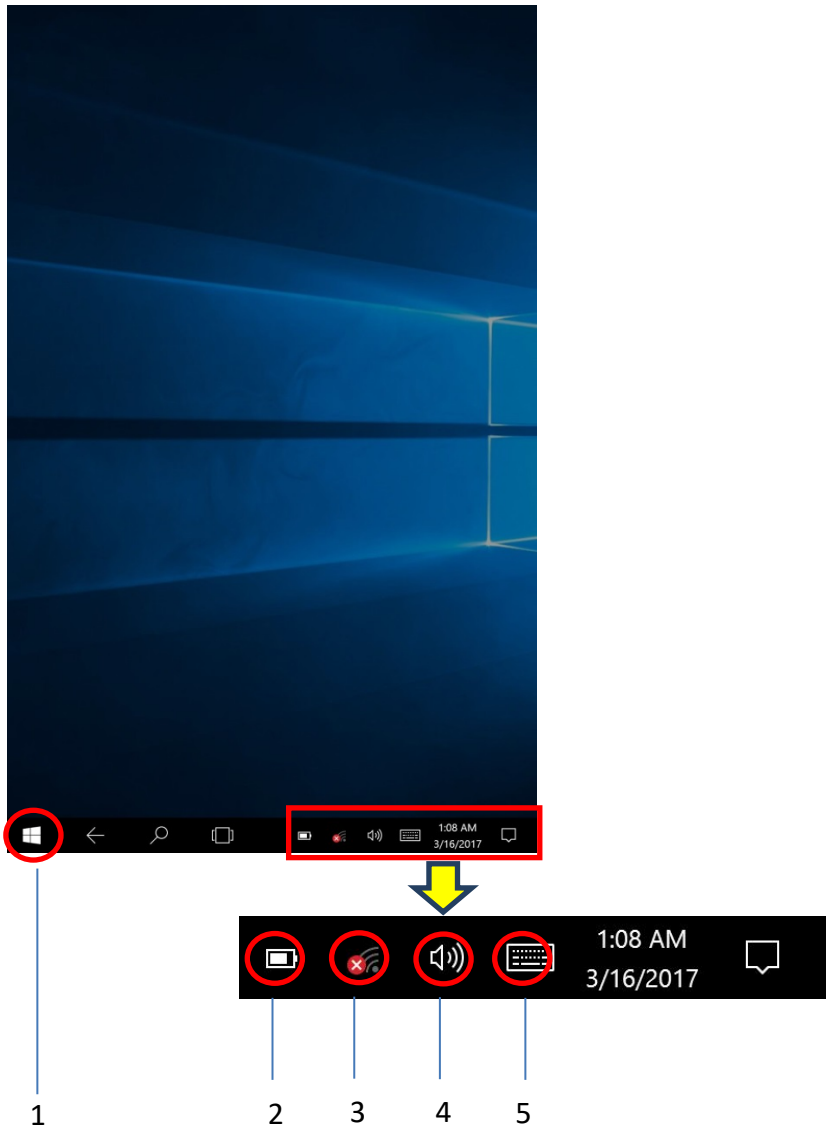
	WLAN access requires a separate purchase of an access point. Contact a wireless service provider for more information.

	Screens used in this manual are for illustrative purposes only. Actual screens may vary depending on your product version and pre-installed Operating System versions.

AIM8IEM system power down when system battery level drops to 7%, whereas AIM8Q system power down when system battery level drops to 0%

3.1 Windows 10 IoT Enterprise Basic Setups

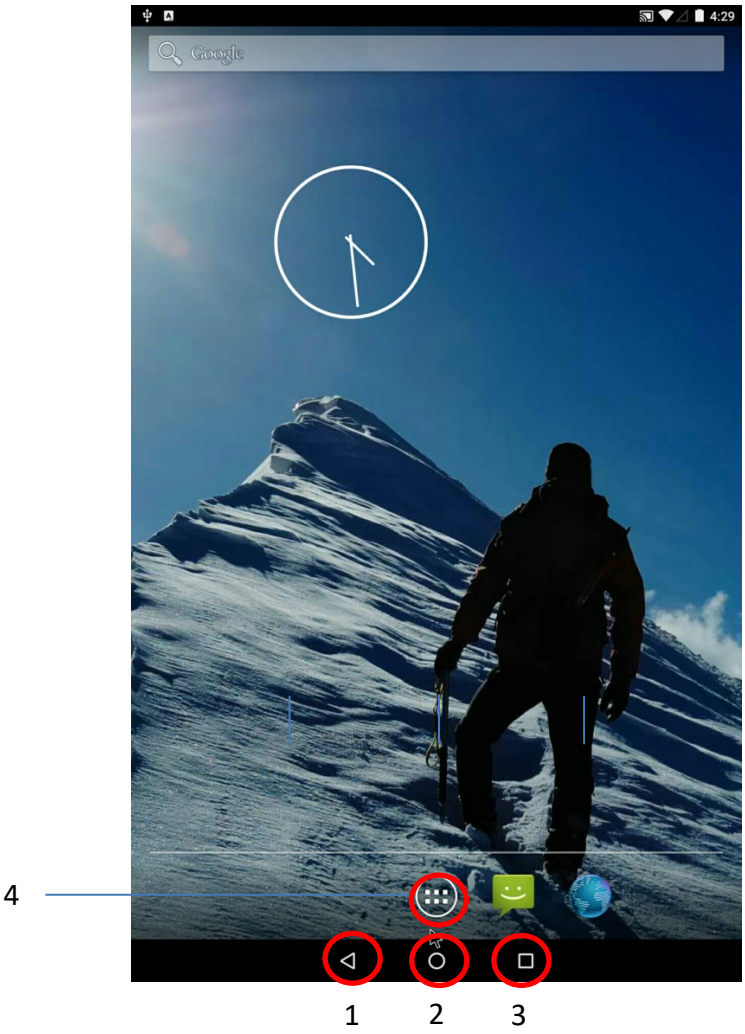
Windows 10 IoT Enterprise Home Screen



No.	Function
1	Program Launcher
2	Battery Status
3	Connect WLAN
4	Adjust Audio Volume
5	Open the On-screen keyboard

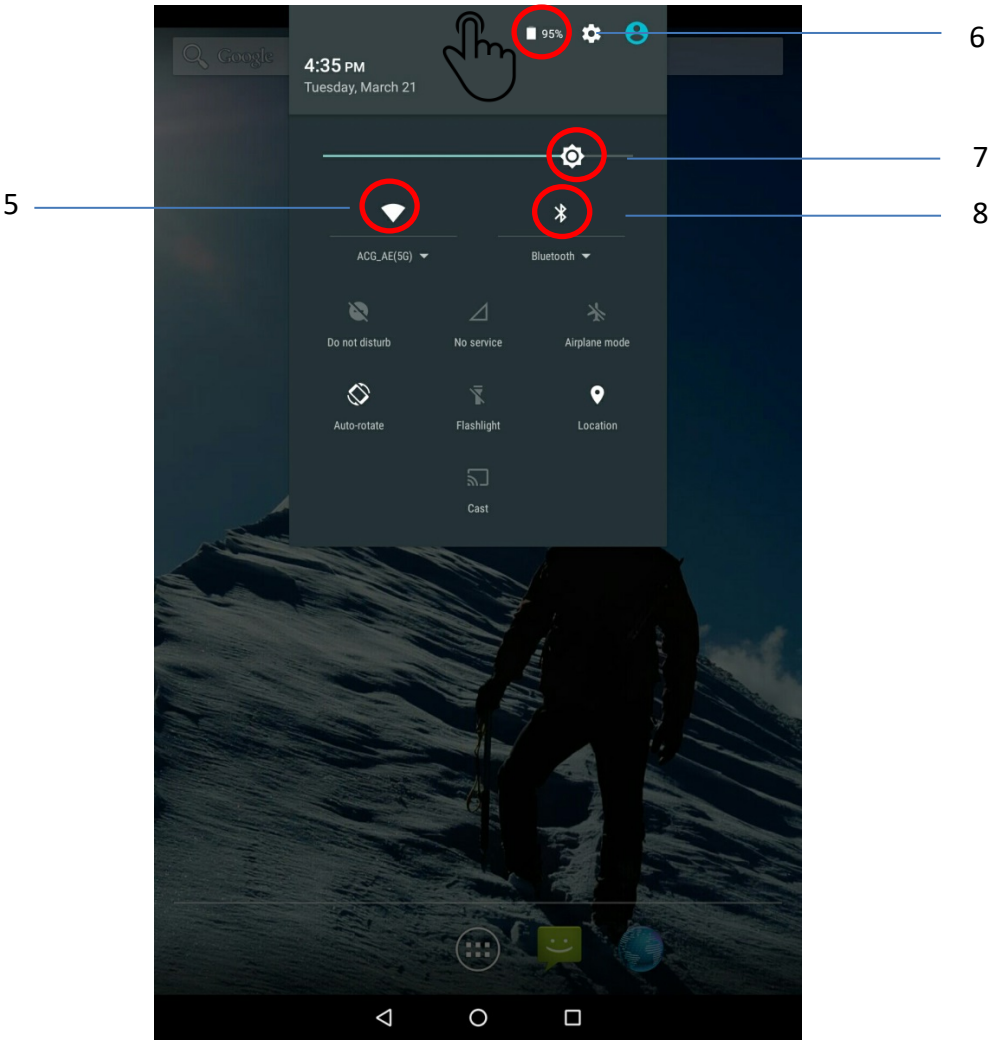
3.2 Android 6.0.1 Basic Settings

Android 6.0.1 Home Screen



No.	Function
1	Back
2	Home
3	Background Applications
4	Program Launcher

Tap top of the screen and scroll down for Settings menu



No.	Function
5	Connect WLAN
6	Battery Status
7	Adjust Backlight
8	Connect Bluetooth

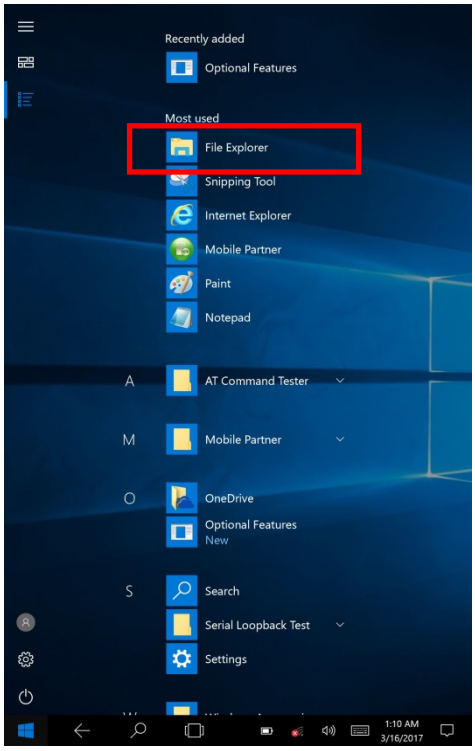
Chapter 4 Running applications

4.1 Installing applications

There are multiple ways to install applications on AIM8IEM/AIM8Q and this section shows the steps to install applications via Micro SD cards.

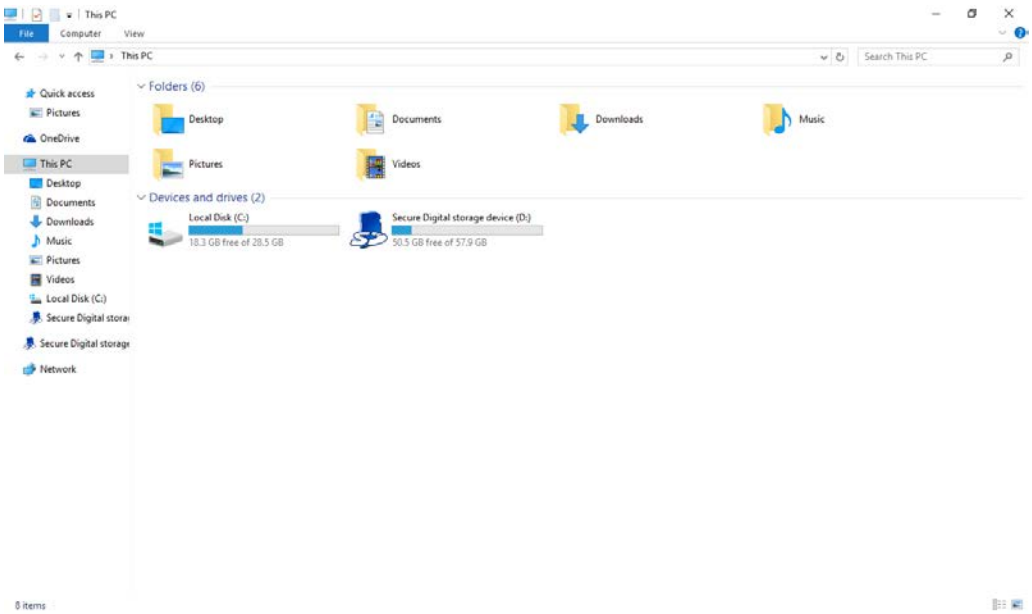
1. Before installation, please ensure your Micro SD card has been correctly formatted with FAT32 file system.
2. Copy .exe (Windows) or .apk (Android) on the Micro SD card.
3. Open the Micro SD card slot on the top of the device and inset the card.

4.1.1 Install applications with Windows 10 IoT Enterprise



a) Go to Program Launcher

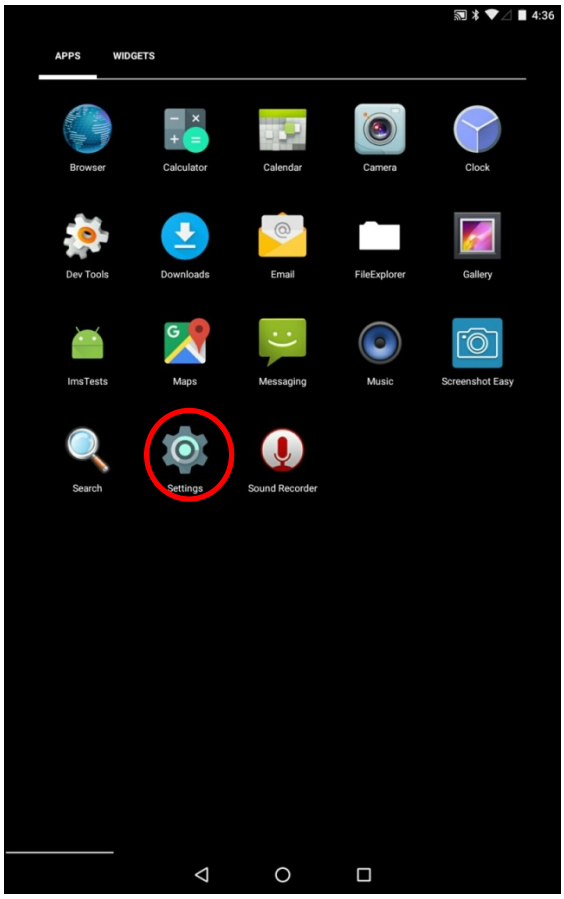
b) Launch File Explorer and will find Secure Digital storage device (D:)

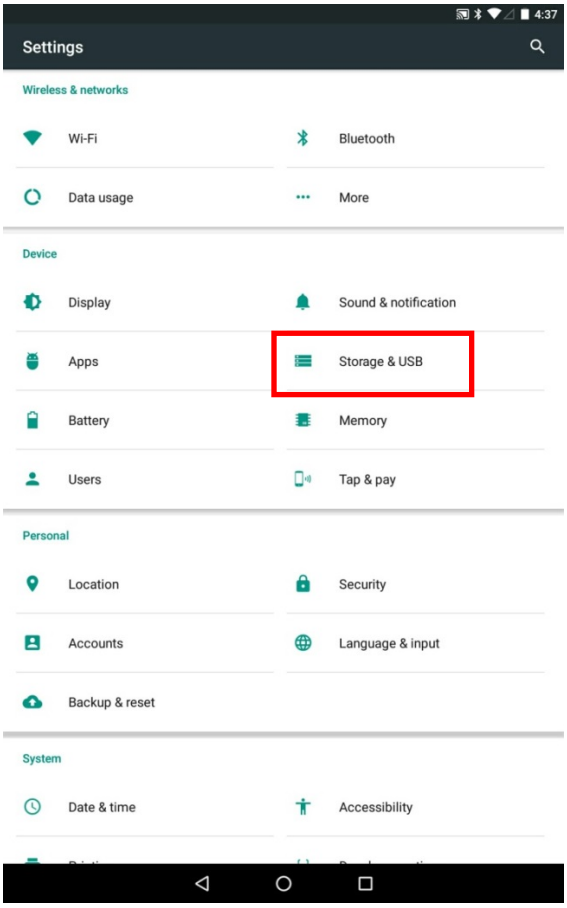


c) Tap Secure Digital storage device (D:) to find .exe executable file.

d) Tap .exe file to install the application.

4.1.2 Install applications with Android 6.0.1

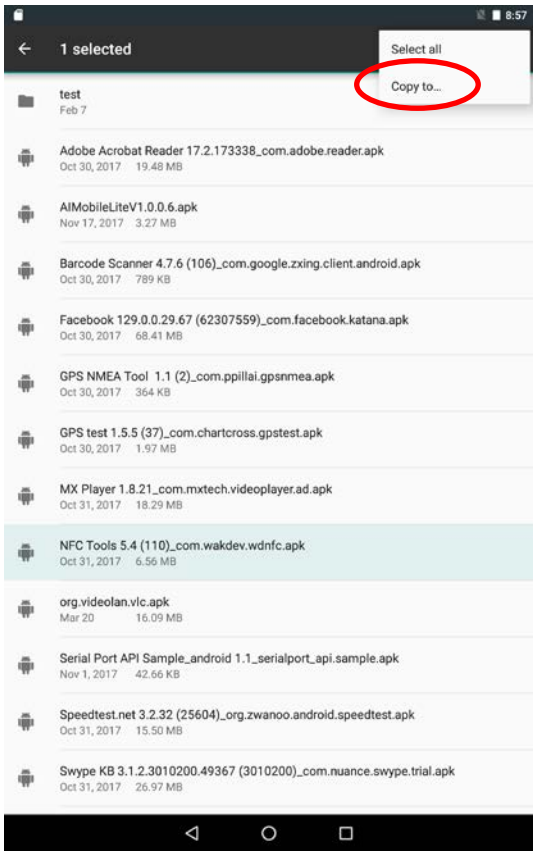




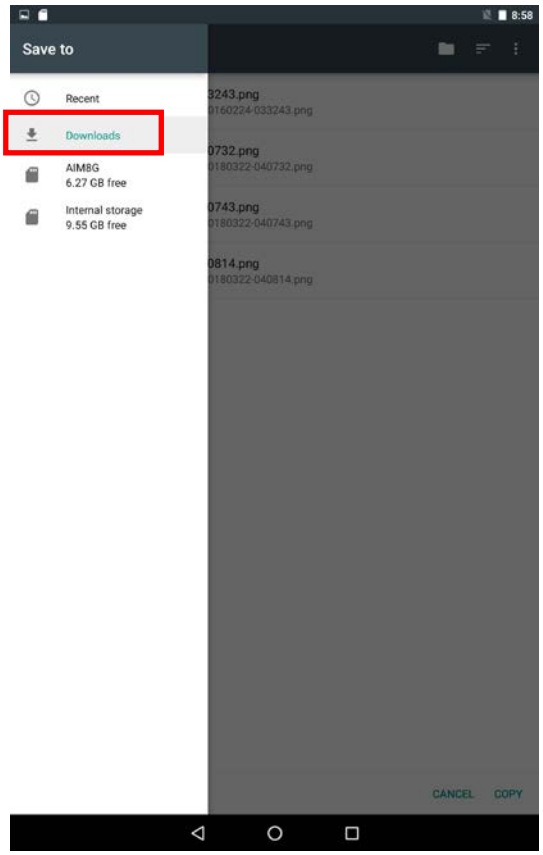
a) Go to Settings

b) Go to Storage & USB

c) Go to SD card

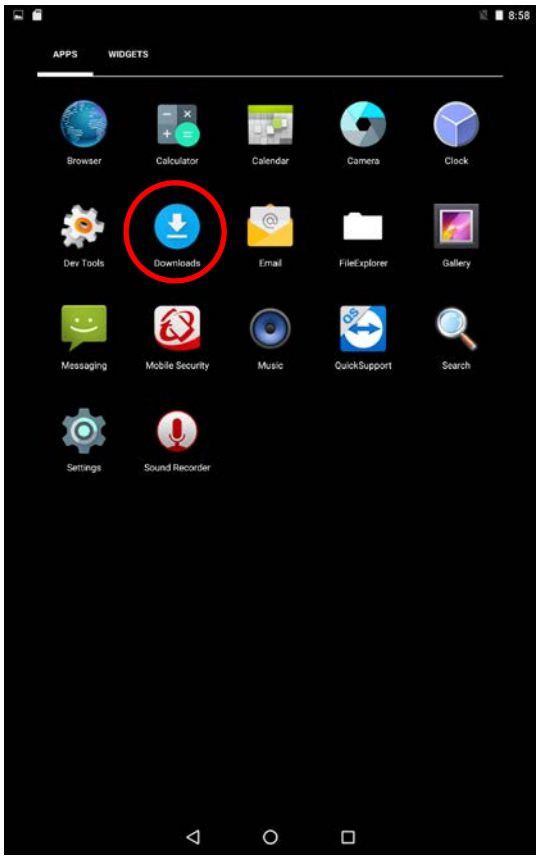


d) Long press the apk file and press “copy to…”

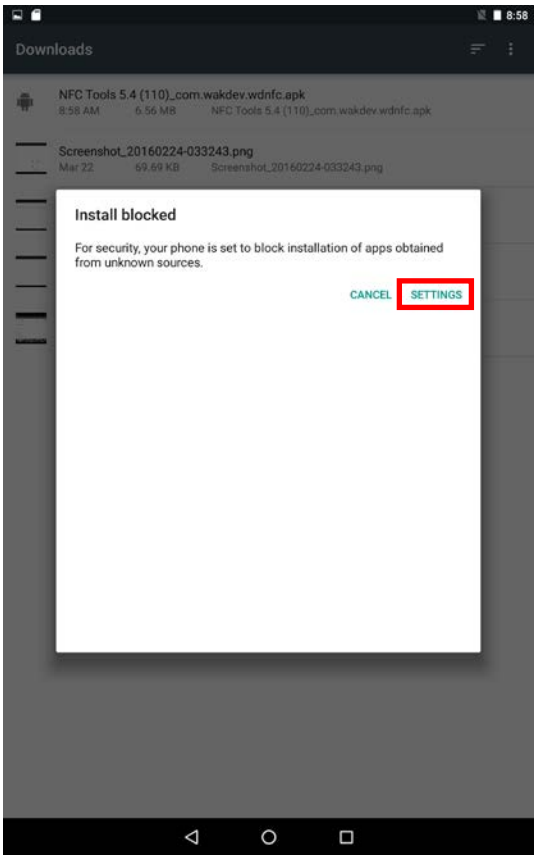


e) Select “Downloads”

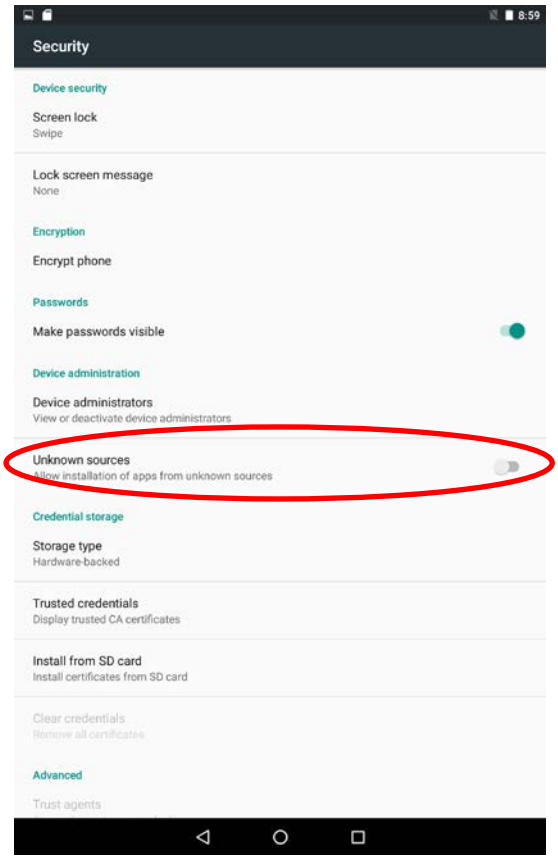
f) Click “Copy” on the lower right corner



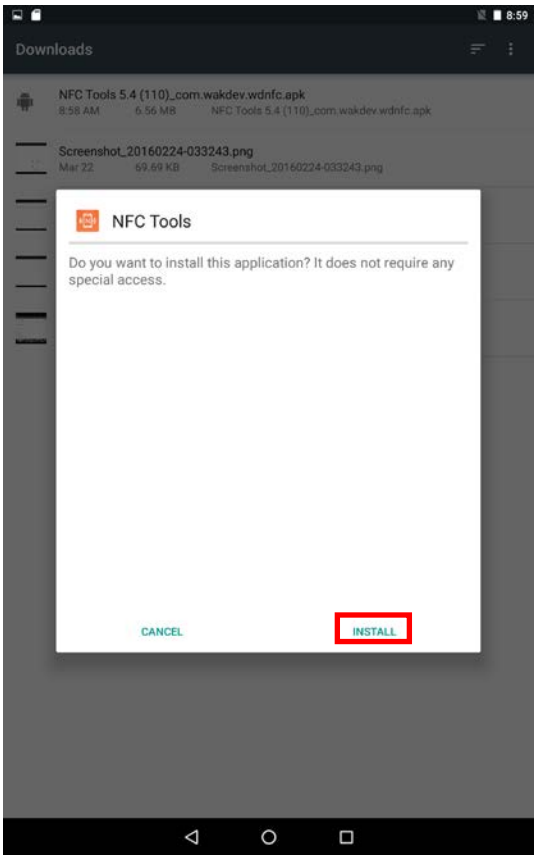
g) Go to “Downloads” on the menu



h) Select the apk, and click Settings(first time install)



i) Turn on the “Unknown sources”



j) Then go back to “Downloads”, and install the apk

Chapter 5 Maintenance

5.1 Maintaining the LCD Display

• Do not scratch the surface of the screen with any hard objects.
• Do not spray liquid directly on the screen or allow excess liquid to drip down inside the device.
• Do not place anything, such as food and drink, on the screen at any time to prevent damage to the screen.
• Clean the LCD display only with a soft cloth dampened with denatured alcohol or a proprietary LCD screen cleaner.

5.2 Cleaning the AIM8IEM/AIM8Q

1. Turn off the device and unplug the power cord.
2. Wipe the screen and exterior with a soft, damp cloth moistened only with water. Do not use liquid or aerosol cleaners on the screen, as these will discolor the finish and damage the screen.

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5.3 Trouble Shooting

When System behaves abnormally, such as

1. Failure to power on.
2. Failure to power off.
3. Power LED does not light up when DC power plug in.
4. System does not respond to touch behaviors.

Contact your distributer, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number.
- Descriptions of your peripheral attachments.
- Descriptions of your software (operating system, version, application software, etc.)

- A complete description of the problem.
- The exact wording of any error messages.
- Symptoms, photo or video if available.

5.4 ENERGY STAR

An ENERGY STAR qualified computer delivers substantial savings over a conventional computer. Desktop, integrated desktop, and notebook (laptop) computers, workstations, small-scale servers, and thin clients are all eligible to earn the ENERGY STAR, and those that do are now more efficient than ever.
It is an honor for Advantech to provide you such products.

What is ENERGY STAR?

ENERGY STAR is a U.S. Environmental Protection Agency (EPA) voluntary program that helps businesses and individuals save money and protect our climate through superior energy efficiency.
The ENERGY STAR program was established by EPA in 1992, under the authority of the Clean Air Act Section 103(g). Section103(g) of the Clean Air Act directs the Administrator to "conduct a basic engineering research and technology program to develop, evaluate, and demonstrate non–regulatory strategies and technologies for reducing air pollution."

In 2005, Congress enacted the Energy Policy Act. Section 131 of the Act amends Section 324 (42 USC 6294) of the Energy Policy and Conservation Act, and "established at the Department of Energy and the Environmental Protection Agency a voluntary program to identify and promote energy–efficient products and buildings in order to reduce energy consumption, improve energy security, and reduce pollution through voluntary labeling of or other forms of communication about products and buildings that meet the highest energy efficiency standards."

For more information, please visit www.energystar.gov

AIM8IEM is to enter display sleep mode after 4 minutes and computer sleep mode

after 10 minutes in default; AIM8Q display goes to dark and enter suspend mode after 1 min idle. To wake it from sleep mode, simply press the power button on the back cover, while under sleep mode it allows the device to save 80% or more energy.

Power Management System:

Lists of default power management systems

Balanced (Default)	*AIM8IEM: Idle 4 mins. closes screen, 10 min. enters sleep mode.* *AIM8Q: Idle 1 min. closes screen and enter sleep mode.*
High performance	*Never idle and never enters sleep mode.*