IEI Integration Corp.

MODEL:

IOVU-210AD-RK39

10.1" RISC-Based Panel PC with Touchscreen, Rockchip RK3399 On-board SoC, Wi-Fi, Bluetooth, RFID, Digital I/O, PoE, COM, USB, Android 7.1, RoHS Compliant

User Manual

Rev. 1.10 – June 4, 2021

RoHS Lead Free

Revision

Date	Version	Changes
June 4, 2021	1.10	Updated for R11 version
October 8, 2018	1.00	Initial release

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Manual Conventions

WARNING

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

CAUTION

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

NOTE

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

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1

Introduction

1.1 Overview

Figure 1-1: IOVU-210AD-RK39 Panel PC

The IOVU-210AD-RK39 is a 10.1" RISC-based panel PC with Android 7.1 OS. At the heart of the system is the Rockchip RK3399 on-board SoC, offering low power in a powerful package. The IOVU-210AD-RK39 provides rich input capabilities utilizing the projected capacitive touchscreen. Other peripherals include RFID reader, 4-bit digital I/O, two USB 2.0 ports, one USB 3.2 Gen 1 (5Gb/s) port, one RS-232 port, one RS-232/422/485 port and one 10/100/1000 Mbps LAN port with PoE.

1.2 Features

The IOVU-210AD-RK39 features the following:

- Fanless design
- Rockchip RK3399 on-board SoC
- On-board 1866 MHz 2 GB LPDDR3 memory
- 16 GB eMMC NAND flash
- Projected capacitive touchscreen
- Equips with Wi-Fi 802.11a/b/g/n/ac and Bluetooth v4.1
- One 10/100/1000 Mbps Ethernet LAN port with PoE
- One DB-9 RS-232/422/485 port and one DB-9 RS-232 port
- One USB 3.2 Gen 1 (5Gb/s) port and two USB 2.0 ports
- Android 7.1 OS pre-installed
- RoHS compliant

1.3 Front Panel

The front panel of the IOVU-210AD-RK39 contains a 10.1" LCD with projected capacitive touchscreen, 5-megapixel camera, digital microphones and the RFID reader.

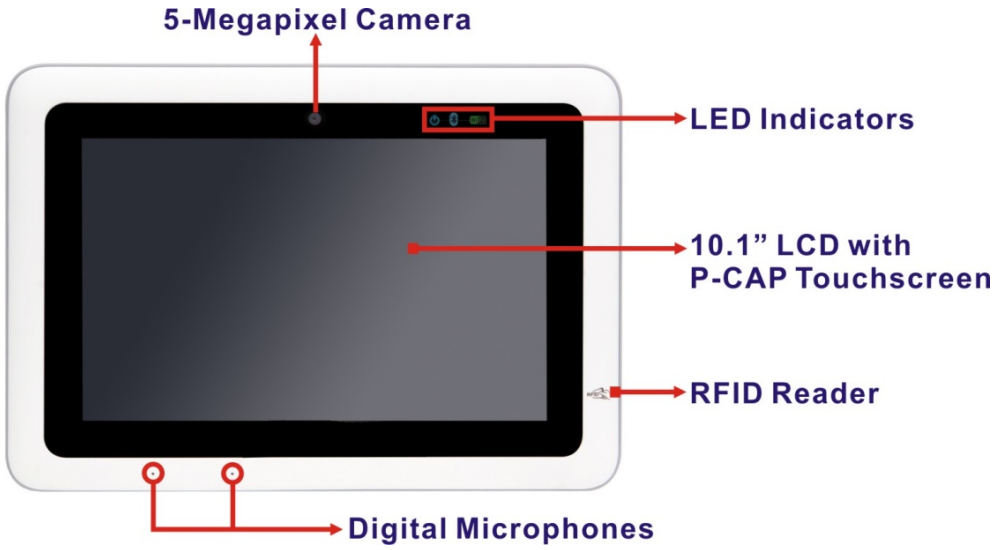


Figure 1-2: Front Panel

The LED indicators on the front panel show the status of power, Bluetooth and Wi-Fi connection.

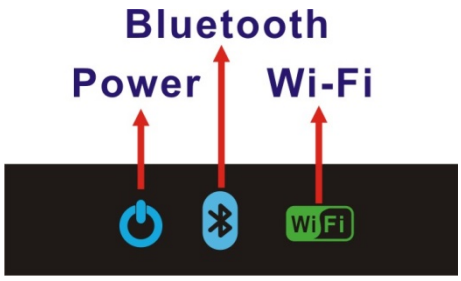


Figure 1-3: LED Indicators

Power LED	Off	The system is turned off.
	Blue	The system is turned on.
Bluetooth LED	Off	Bluetooth is disabled.
	Blue	Bluetooth is enabled.
Wi-Fi LED	Off	Wi-Fi is disabled.
	Green	Wi-Fi is enabled.

1.4 Bottom Panel

The bottom panel contains the I/O interfaces as shown in **Figure 1-4**.

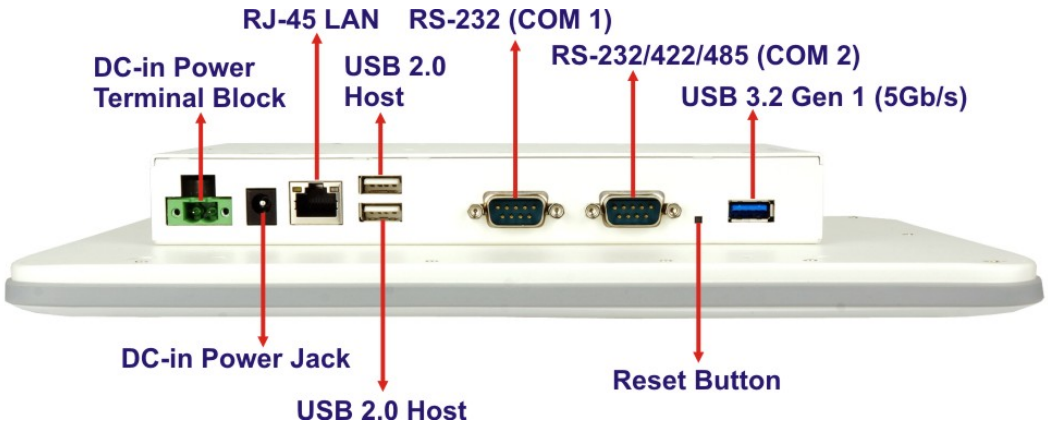


Figure 1-4: Bottom Panel

1.5 Rear Panel

The rear panel has four VESA 75 mounting screw holes.

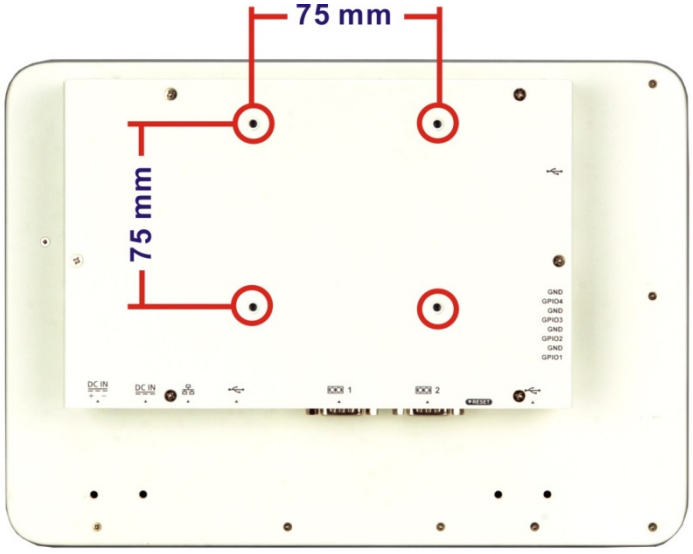


Figure 1-5: Rear Panel

1.6 Side Panels

The left panel has a 2 W speaker, and the right panel has a terminal block for 4-bit digital input and output.

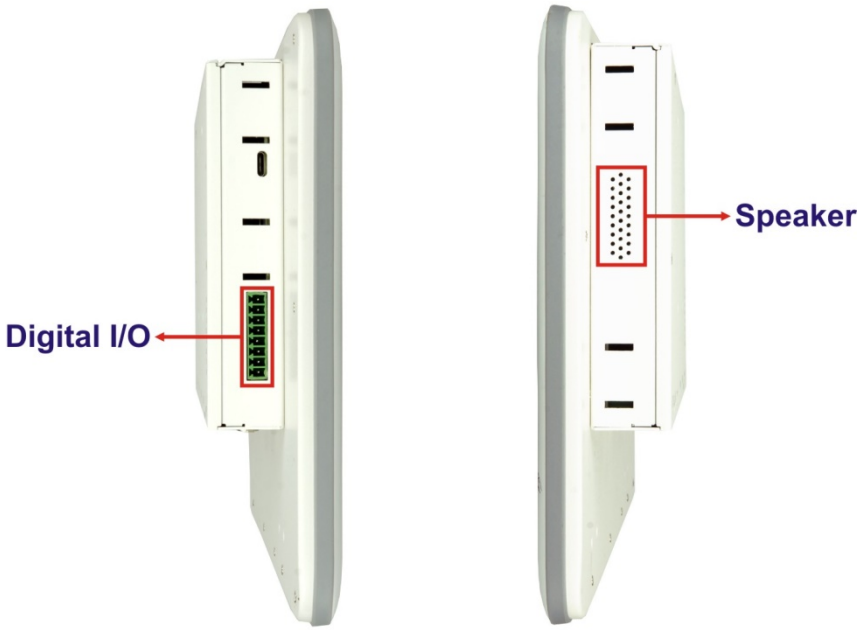


Figure 1-6: Side Panels

1.7 System Specifications

The IOVU-210AD-RK39 technical specifications are listed below.

System	
CPU	Rockchip RK3399 on-board SoC (dual-core Cortex-A72 + quad-core Cortex-A53, 64-bit)
Memory	2 GB 1866 MHz LPDDR3L on-board memory
Storage	16 GB eMMC NAND flash One microSD card slot (internal)
Audio	1 x Speaker (2 W) 2 x Digital microphone
Camera	5-megapixel front-facing camera
Thermal Solution	Fanless
Watchdog Timer	Yes
Real-time Clock	Battery backup RTC
OS	Android 7.1
Display	
LCD Size	10.1"
Max. Resolution	800 x 1280
Brightness (cd/m2)	250 (typ.)
Contrast Ratio	800:1 (typ.)
Pixel Pitch (mm)	0.0564 (H) x 0.1692 (V)
Viewing Angle	85/85/85/85 degree
Touchscreen	Projected capacitive touchscreen
Communication	
Wireless LAN	802.11a/b/g/n/ac
Bluetooth	Bluetooth v4.1
RFID	13.56 MHz ISO4443 A/B, read-write capable, ISO 14443A (MIFARE), ISO 14443B (FeliCa)
Power	
Power Input	9 V ~ 30 V DC DC input: φ2.5/5.5mm DC jack or terminal block PoE: IEEE 802.3 at standard (power device)

Physical Character	
Construction Material	PC+ABS plastic front cover and metal rear cover
Color	White
Mounting	VESA 75 mm x 75 mm
Dimensions (W x H x D)	293 mm x 209.5 mm x 44.5 mm
Operation Temperature	-10°C ~ 50°C with air flow
Storage Temperature	-20°C ~ 60°C
Humidity	10% ~ 95%, non-condensing
Weight (Net)	1.84 kg
Certifications	CE, FCC Class A
Connectors, Buttons and Indicators	
I/O Connector	1 x USB 3.2 Gen 1 (5Gb/s) Type-A port 2 x USB 2.0 Type-A port 1 x RJ-45 GbE with PoE 1 x DB-9 RS-232 (COM 1) 1 x DB-9 RS-232/422/485 (COM 2) 2-bit digital input 2-bit digital output
Button	1 x Reset button
LED Indicators	Power, Bluetooth and Wi-Fi

Table 1-1: Technical Specifications

NOTE:

When both DC-in and PoE are connected to the device, the connection with higher voltage will be the main power source.

1.8 Dimensions

The dimensions are shown below.

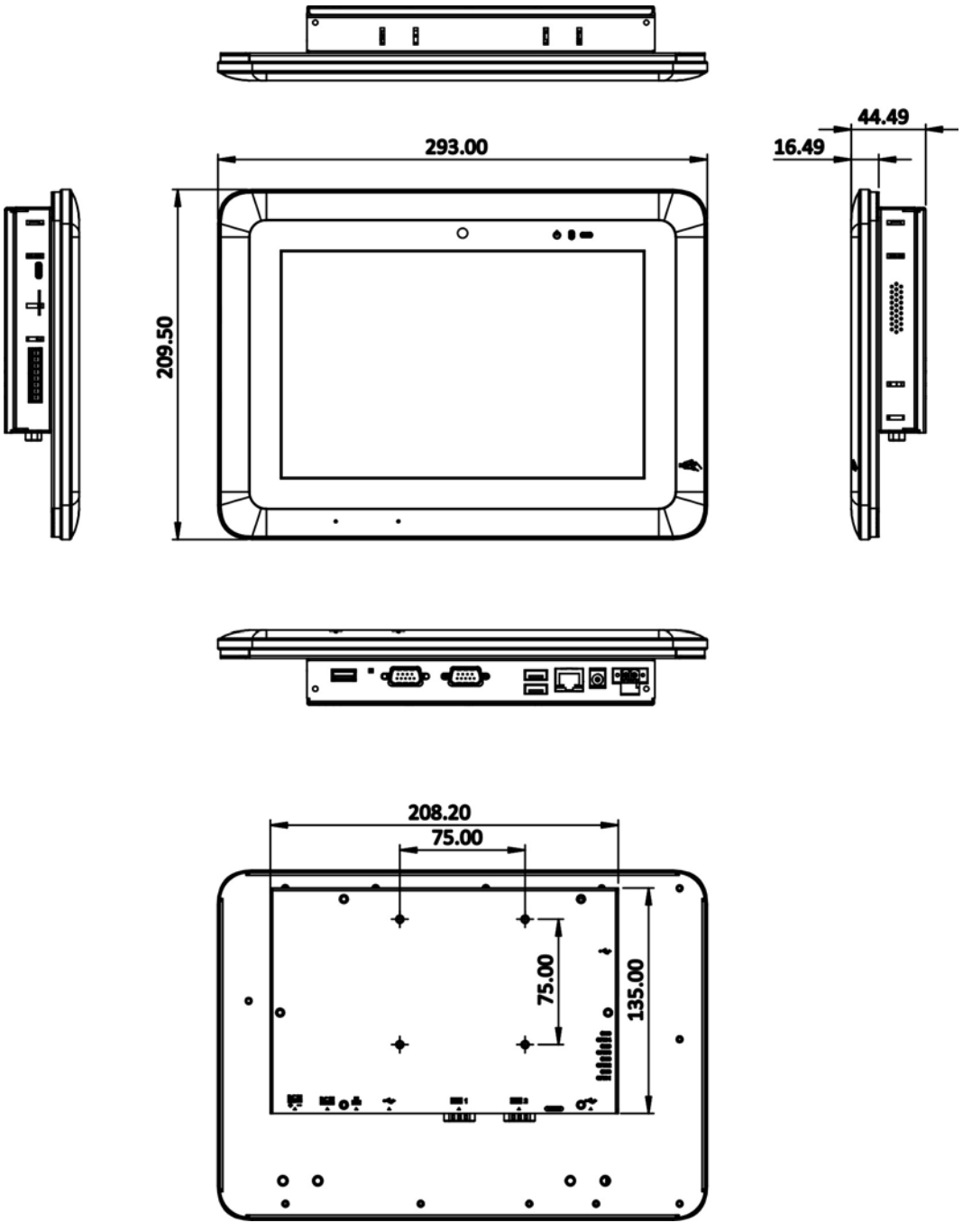


Figure 1-7: Dimensions (unit: mm)

Chapter

2

Unpacking

To unpack the 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 system has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 2: Open the box.

Step 3: Lift the IOVU-210AD-RK39 out of the box.

Step 4: Make sure all the components listed in the packing list are present.

2.1 Packing List

NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the IOVU-210AD-RK39 was purchased from or contact an IEI sales representative directly by sending an email to sales@ieiworld.com.

The IOVU-210AD-RK39 is shipped with the following components:

Quantity	Item	Image
1	IOVU-210AD-RK39 panel PC	

Table 2-1: Packing List

2.2 Optional Items

The following are optional components which may be separately purchased:

Item	Image
90V~264V AC input, 12V/60W DC power adapter (**P/N**: 63040-010060-120-RS)	
Wall mounting kit (**P/N**: AFLWK-19B)	
Arm kit (**P/N**: ARM-11-RS)	
Stand (**P/N**: STAND-A12-RS)	

Table 2-2: Optional Items

Chapter

3

Installation

3.1 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance of the IOVU-210AD-RK39 may result in permanent damage to the IOVU-210AD-RK39 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the IOVU-210AD-RK39. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the IOVU-210AD-RK39 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 IOVU-210AD-RK39, place it on an anti-static pad. This reduces the possibility of ESD damaging the IOVU-210AD-RK39.
- ***Only handle the edges of the PCB***: - When handling the PCB, hold the PCB by the edges.

3.2 Installation Precautions

CAUTION:

The IOVU-210AD-RK39 series has more than one power supply connection point.

To reduce the risk of electric shock, disconnect all power sources before installing or servicing the IOVU-210AD-RK39 series.

NOTE:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

When installing the flat panel PC, please follow the precautions listed below:

- **Power turned off**: When installing the flat 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**: Never open the equipment. For safety reasons, the equipment should be opened only by qualified skilled person.
- **Anti-static Discharge**: If a user open the rear panel of the flat panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear and anti-static wristband.

3.3 External I/O Connectors

This section provides an overview of the external I/O connectors of the IOVU-210AD-RK39.

3.3.1 Power Input Interfaces

The IOVU-210AD-RK39 supports 9 V ~ 30 V DC power input and provides two kinds of power input interfaces (**Figure 3-1**).

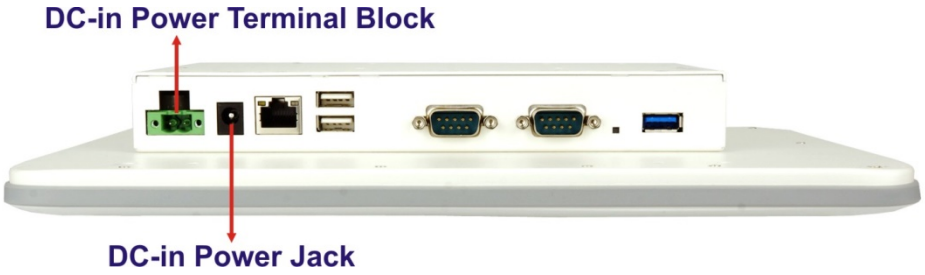


Figure 3-1: Power Input Interfaces

The pinouts for the power terminal block are listed in the figure and table below.

Pin	Description
1	GND
2	EXT_VIN

Table 3-1: Power Terminal Block Pinouts

Figure 3-2: Power Terminal Block

3.3.2 Ethernet Connector

There is one external RJ-45 LAN connector. The RJ-45 connector enables connection to an external network and supports PoE.

The Ethernet connector pinouts are shown below.

Pin	Description
1	LAN1_MDX0+
2	LAN1_MDX0-
3	LAN1_MDX1+
4	LAN1_MDIX2+
5	LAN1_MDX2-
6	LAN1_MDX1-
7	LAN1_MDIX3+
8	LAN1_MDX3-

Table 3-2: Ethernet Connector Pinouts

The RJ-45 Ethernet connector has two status LEDs, one green and one yellow. The green LED indicates activity on the port and the yellow LED indicates the port is linked (**Table 3-3**).

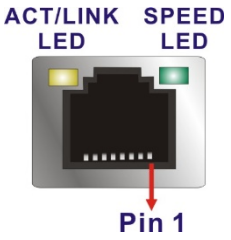


Figure 3-3: Ethernet Connector

SPEED LED		LINK LED	
Status	**Description**	**Status**	**Description**
Green	10/100 Mbps	Yellow	On: Linked Flashing: Activity
Orange	1000 Mbps		

Table 3-3: Ethernet Connector LEDs

3.3.3 Serial Interfaces

The system has an RS-232 and an RS-232/422/485 serial port connector. Pinouts of the two connectors are shown in the following two tables.

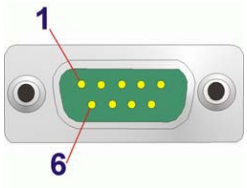
Pin Arrangement	Pin	Description
	1	RS-232_DCD1
	2	RS-232_RXD1
	3	RS-232_TXD1
	4	RS-232_DTR1
	5	GND
	6	RS-232_DSR1
	7	RS-232_RTS1
	8	RS-232_CTS1
	9	RS-232_RI1

Table 3-4: RS-232 Serial Port (COM1) Pinouts

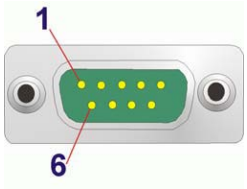
Pin Arrangement	Pin	RS-232	RS-422	RS-485
	1	RS-232_DCD2	RS-422_TX-	RS-485_TX-
	2	RS-232_RXD2	RS-422_TX+	RS-485_TX+
	3	RS-232_TXD2	RS-422_RX+	
	4	RS-232_DTR2	RS-422_RX-	
	5	GND		
	6	RS-232_DSR2		
	7	RS-232_RTS2		
	8	RS-232_CTS2		
	9	RS-232_RI2		

Table 3-5: RS-232/422/485 Serial Port (COM2) Pinouts

3.3.4 Digital I/O Connector

The digital I/O connector on the system side panel provides 4-bit input/output connection. Pinouts of the digital I/O connector are shown in the following figure.

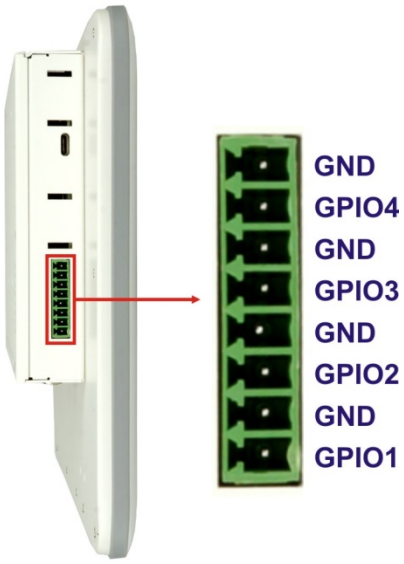


Figure 3-4: Digital I/O Connector Pinouts

3.3.5 USB 2.0 Host Connectors

The external USB Series "A" receptacle connectors provide easier and quicker access to external USB devices.

Figure 3-5: USB 2.0 Host Connectors

3.4 Mounting the System

WARNING!

When mounting the panel PC, 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.

Four methods of mounting the IOVU-210AD-RK39 are listed below.

- Wall mounting
- Arm mounting
- Stand mounting

The four mounting methods are described below.

3.4.1 Wall Mounting

To mount the IOVU-210AD-RK39 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 four retention screws (M4*8) into the four pilot holes and tightening them (**Figure 3-6**).

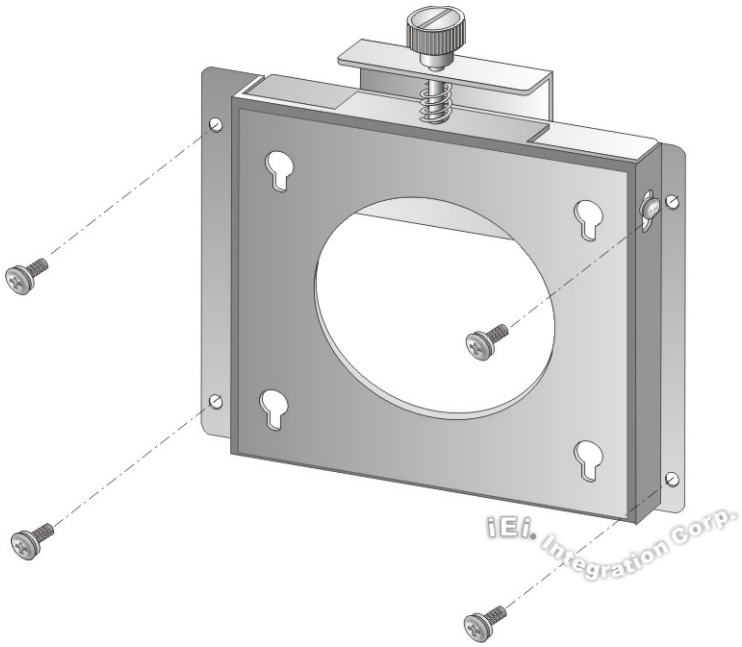


Figure 3-6: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws (M4*6) provided in the wall mounting kit into the four screw holes on the real panel of the IOVU-210AD-RK39 and tighten until the screw shank is secured against the rear panel (**Figure 3-7**).

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

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 3-7**). Ensure that all four of the mounting screws fit snuggly into their respective slotted holes.

NOTE:

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

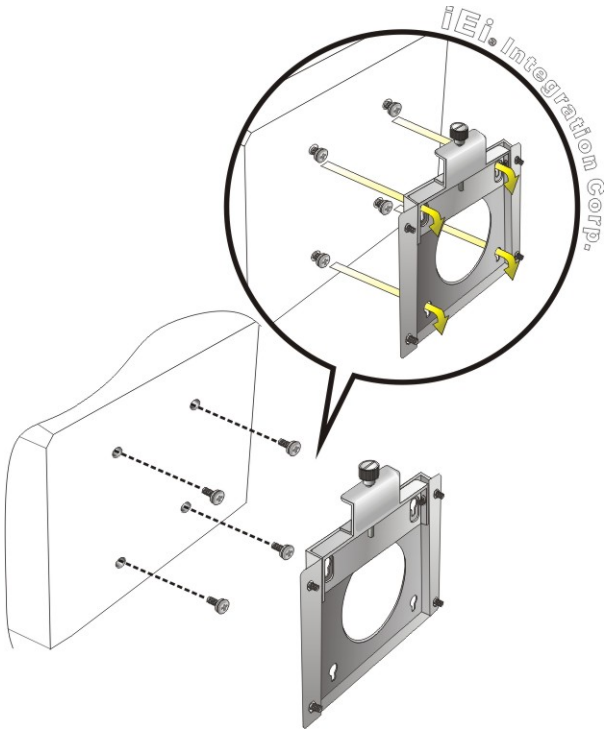


Figure 3-7: Chassis Support Screws

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket (**Figure 3-8**).

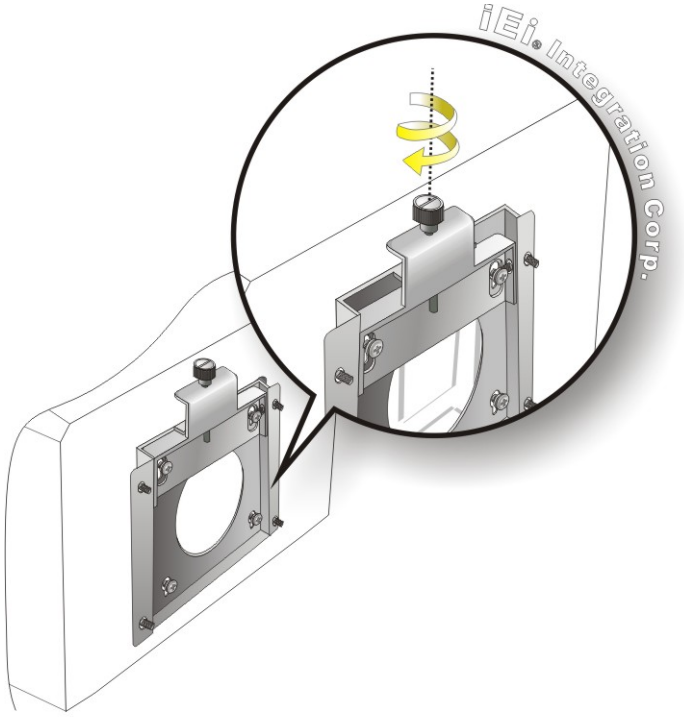


Figure 3-8: Securing the IOVU-210AD-RK39

3.4.2 Arm Mounting

The IOVU-210AD-RK39 is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75 mm interface pad. To mount the IOVU-210AD-RK39 on an arm, please follow the steps below.

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

NOTE:

When purchasing the arm, please ensure that it is VESA compliant and that the arm has a 75 mm interface pad. If the mounting arm is not VESA compliant, it cannot be used to support the IOVU-210AD-RK39.

Step 2: Once the mounting arm has been firmly attached to the surface, lift the IOVU-210AD-RK39 onto the interface pad of the mounting arm.

Step 3: Align the retention screw holes on the mounting arm interface with those in the IOVU-210AD-RK39, as shown in **Figure 3-9**.

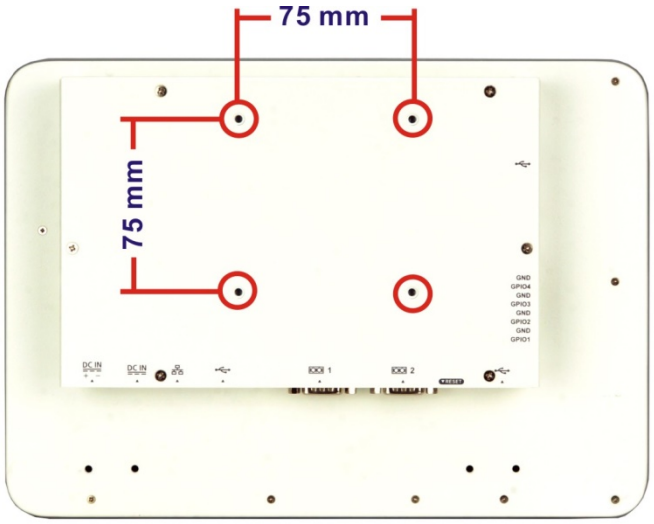


Figure 3-9: Arm Mounting Retention Screw Holes

Step 4: Secure the IOVU-210AD-RK39 to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the IOVU-210AD-RK39 (**Figure 3-10**).

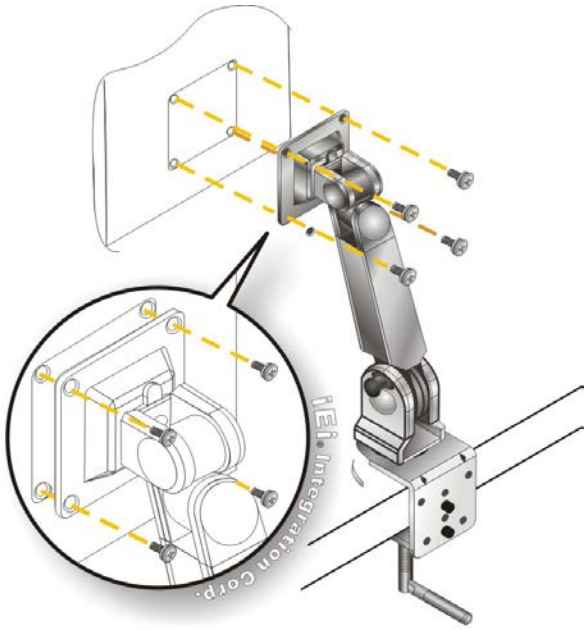


Figure 3-10: Arm Mounting

3.4.3 Stand Mounting

The IOVU-210AD-RK39 has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The monitor stand mounting plate has a matching VESA hole pattern. To mount the IOVU-210AD-RK39 onto a stand, please follow the steps below.

Step 1: Line up the threaded holes on the system rear panel (**Figure 3-9**) with the screw holes on the monitor stand mounting plate.

Step 2: Secure the system to the stand with the supplied retention screws (**Figure 3-11**).

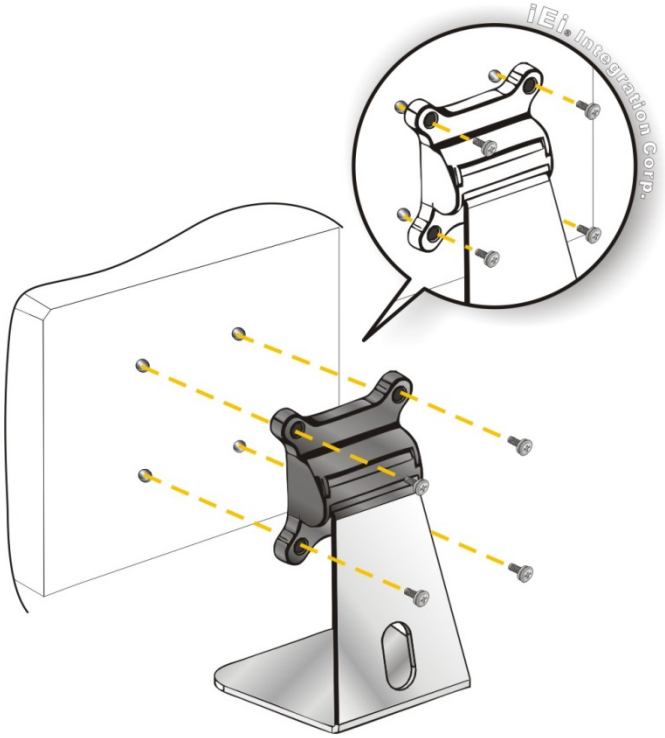


Figure 3-11: Stand Mounting

3.5 Power-On/Off Procedure

WARNING:

Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.

Ensure to connect the power cord to a socket-outlet with earthing connection.

To power-on, connect the IOVU-210AD-RK39 to a power source either through the power jack or the power input terminal block. Once connected, the system will automatically turn on and the power LED on the front panel will light up in blue.

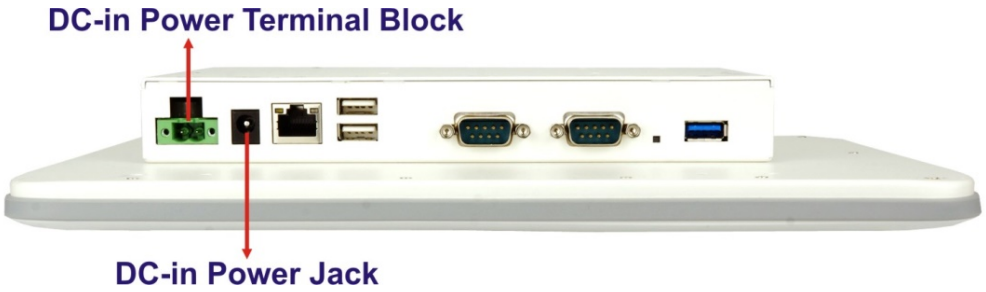


Figure 3-12: Power Connectors

3.6 Online Resources

All the resources for the IOVU-210AD-RK39 are available on IEI Resource Download Center (https://download.ieiworld.com). Type IOVU-210AD-RK39 and press Enter to find all the relevant software, utilities, and documentation.

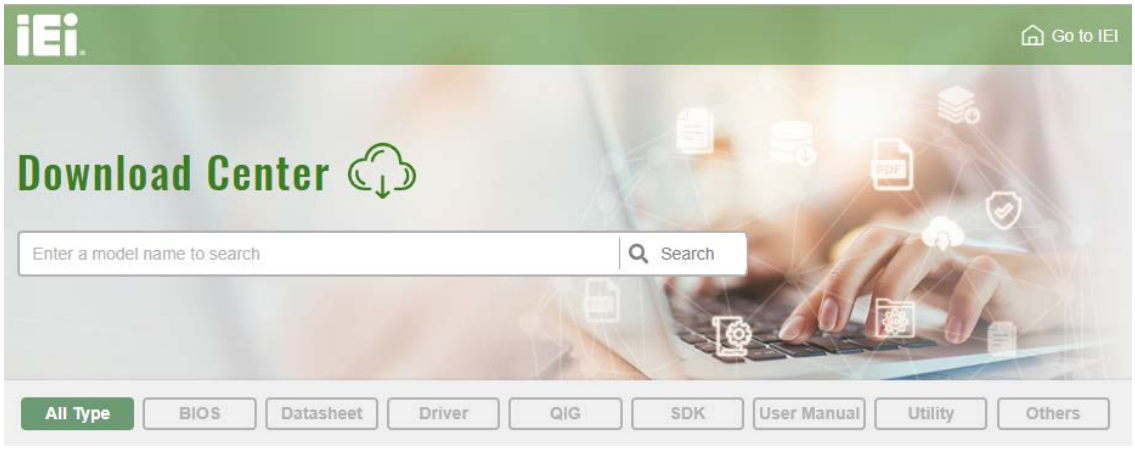


Figure 3-13: IEI Resource Download Center

3.7 System Maintenance

If the components of the IOVU-210AD-RK39 fail, they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts.

NOTE:

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to IEI to be replaced. Please contact the system vendor, reseller or an IEI sales person directly.

Chapter

4

Android OS

The IOVU-210AD-RK39 comes with Android OS pre-installed. This chapter introduces the user interface and basic functions of Android OS installed in the IOVU-210AD-RK39.

4.1 Home Screen

Android OS supports multiple home screens allowing users to customize the screen with widgets, apps and shortcuts. The following sections describe the basic technique to manage the home screen.

4.1.1 Adding a Home Screen

To add a home screen, touch and hold an app/widget icon. The following screen appears, indicating that a new home screen is available. Drag and release the icon to the new home screen.

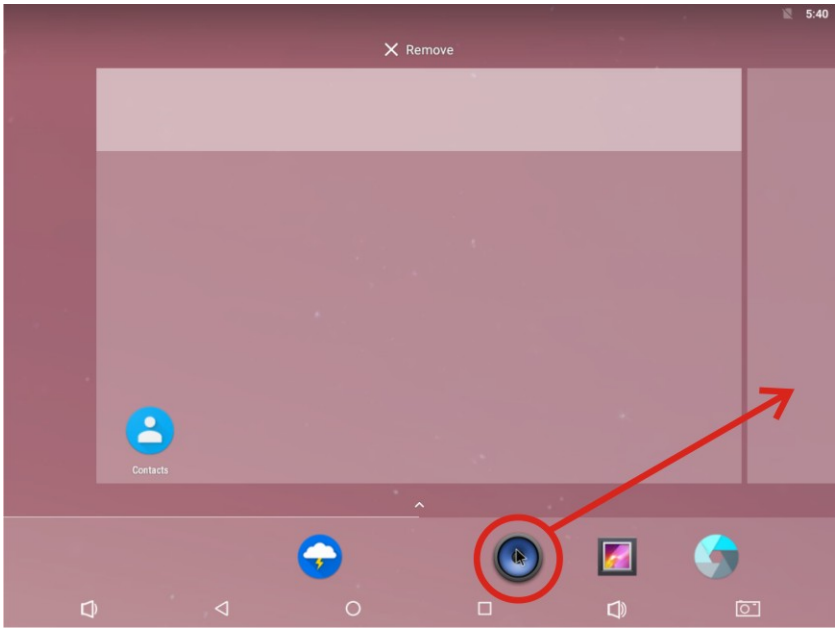


Figure 4-1: Adding a Home Screen

4.1.2 Switching between Home Screens

Swipe right or left to switch between home screens.

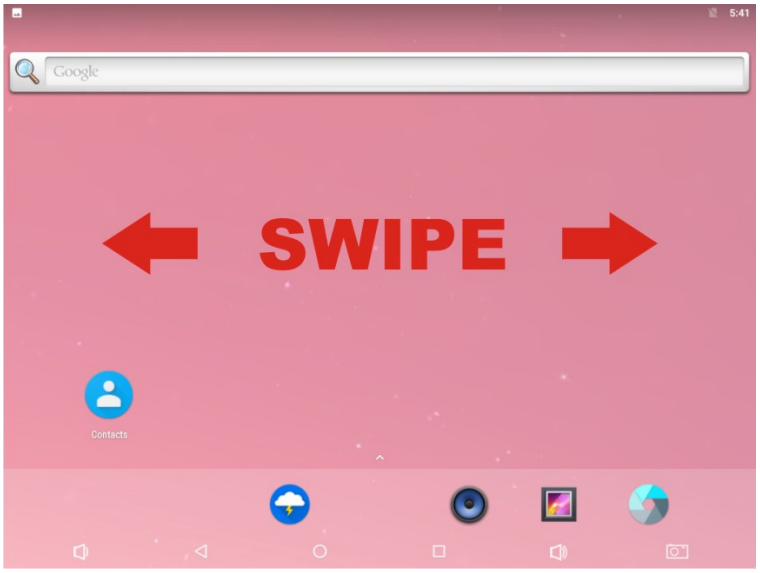


Figure 4-2: Multiple Home Screens

4.1.3 Favorites Tray

The Favorites tray at the bottom of each home screen allows users to keep the most important or frequently used shortcuts.

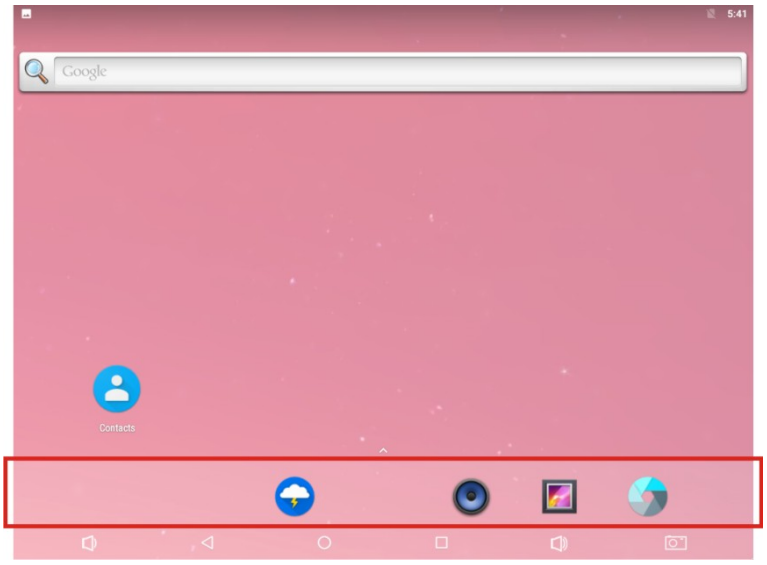
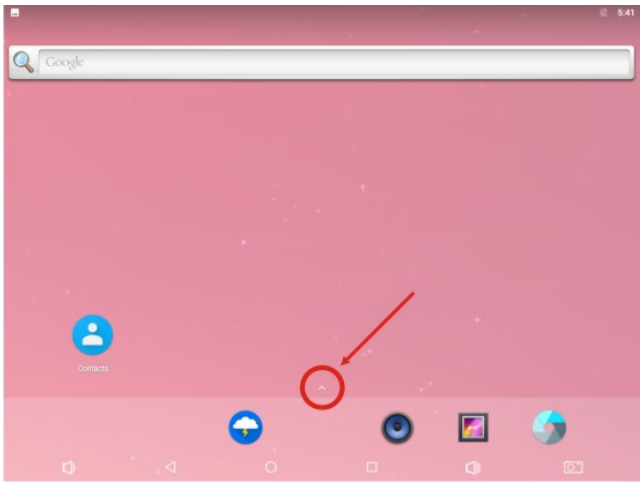


Figure 4-3: Favorites Tray

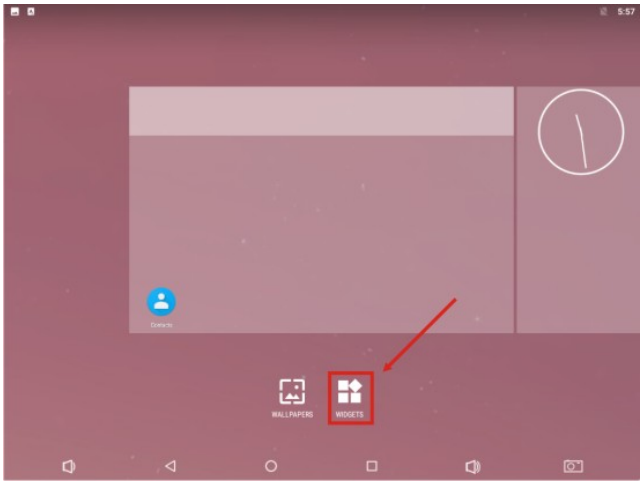
4.1.4 Adding Shortcuts

To add app or widget shortcuts on the home screen, follow the steps below.

Step 1: To add an app shortcut, tap the up arrow on the home screen to access the All Apps page.



To add a widget shortcut, touch and hold the background of a home screen, then tap **WIDGETS**.



Step 2: Touch and hold an app icon or a widget, and drag it to the home screen.

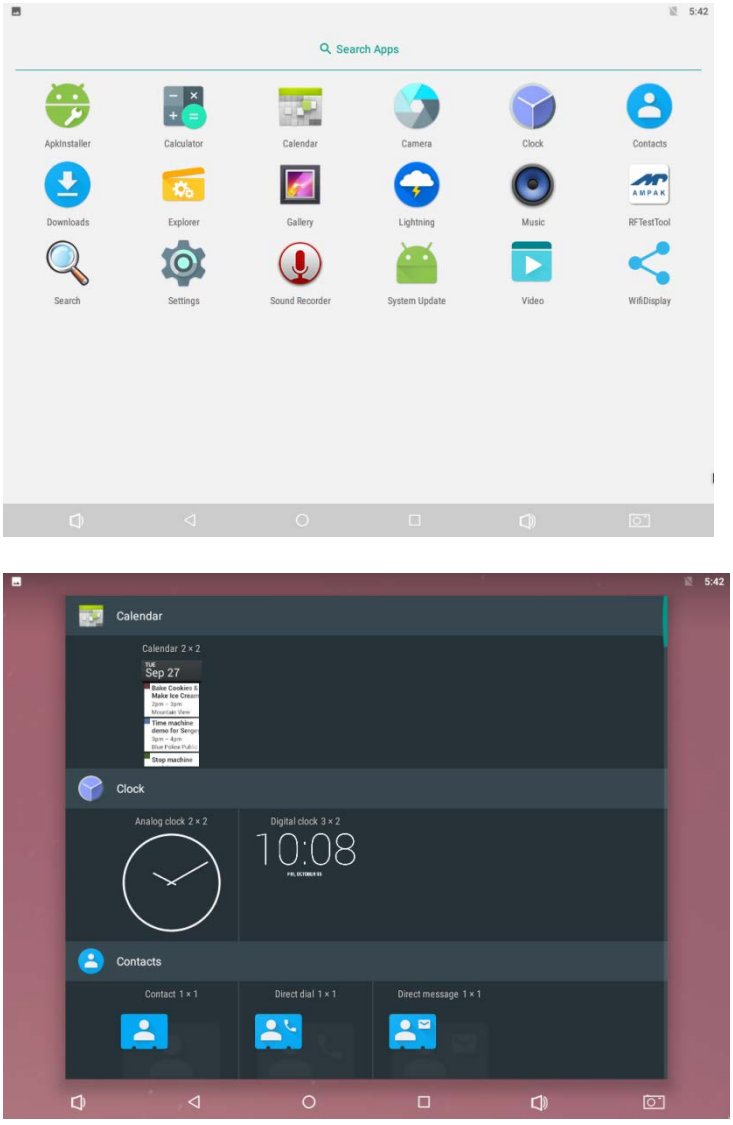


Figure 4-4: All Apps/WIDGETS Page

4.1.5 Arranging the Home Screen

The items on the home screen can be moved and deleted. Touch and hold an item on the home screen and drag it where you want. To trash the item on the screen, drag it to the Remove icon. Release the icon when it turns gray.

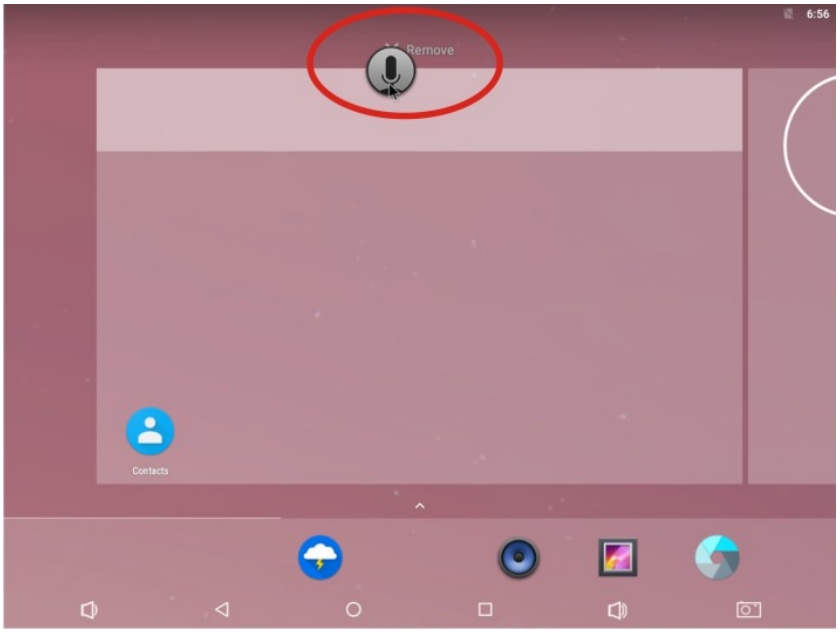


Figure 4-5: Trash an Item on Home Screen

4.2 Navigation Buttons

The navigation buttons shown in **Figure 4-8** can always be found at the bottom of every screen.

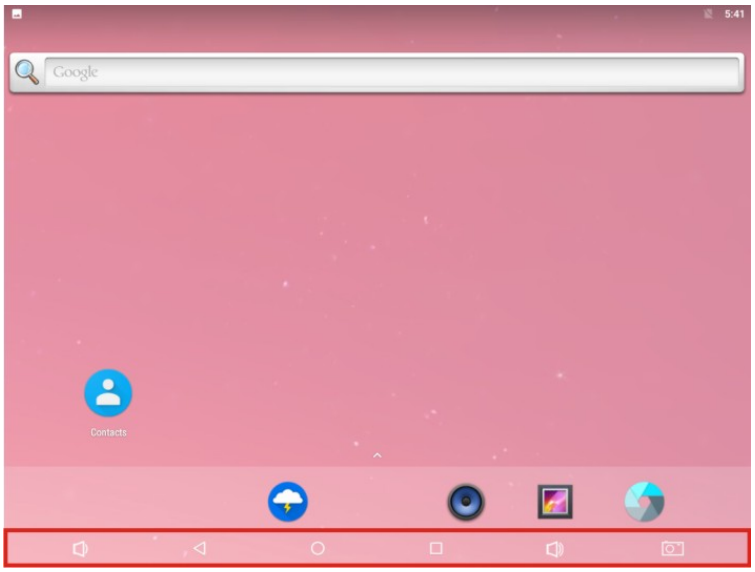


Figure 4-6: Navigation Buttons

Buttons	Description
	Tap to turn the volume down.
	Tap to return to the previous screen.
	Tap to return to the home screen.
	Tap to display all the recently used applications.
	Tap to turn the volume up.
	Tap to take a screenshot.

Table 4-1: Navigation Buttons

4.3 Status Bar

The status bar on the top of the screen (**Figure 4-9**) displays system status, such as battery level or signal strength.

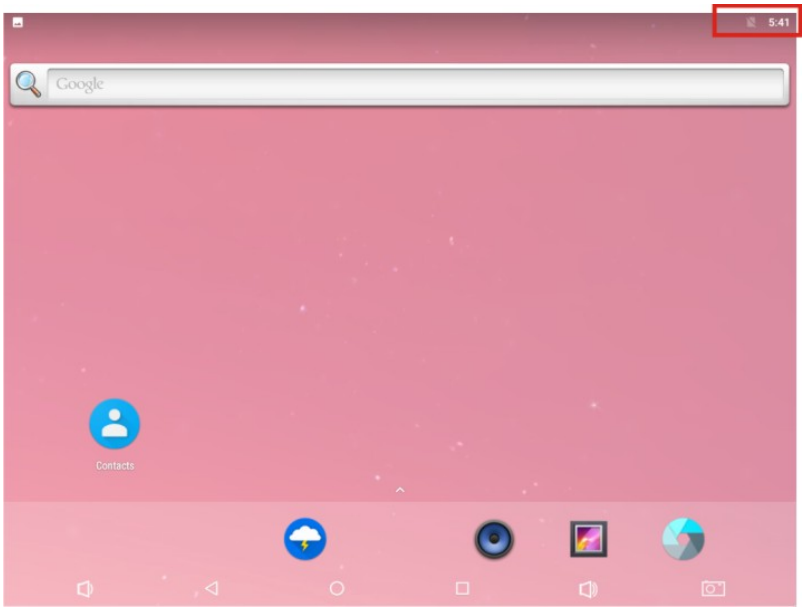
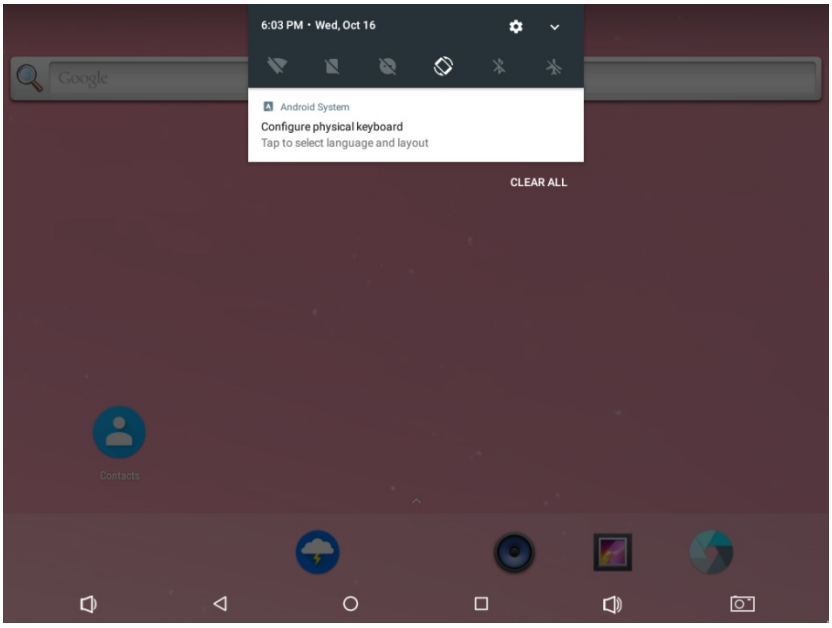


Figure 4-7: Status Bar

Swipe down from the status bar to view notification and status details (**Figure 4-10**).



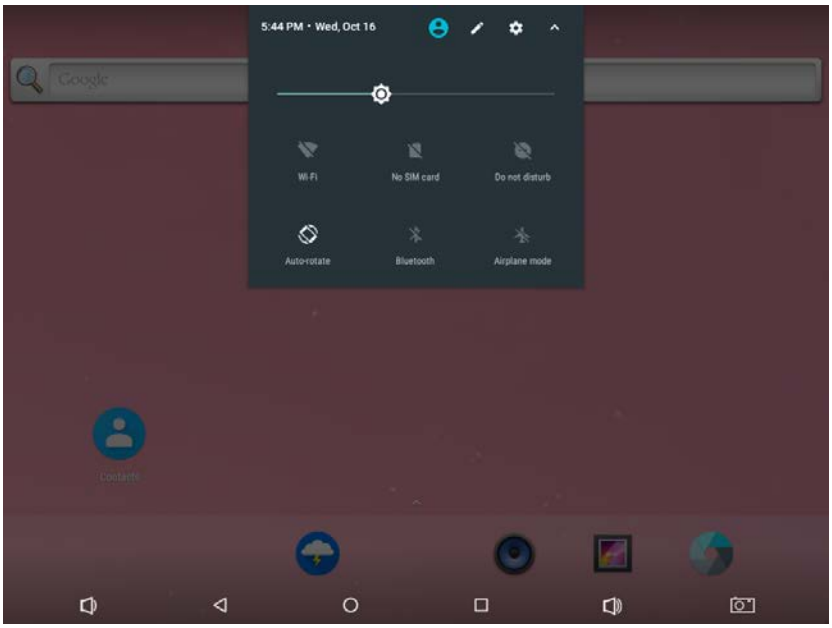


Figure 4-8: Notification List and System Status

Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY

This equipment is in conformity with the following EU directives:

- EMC Directive 2014/30/EU
- Low-Voltage Directive 2014/35/EU
- RoHS II Directive 2015/863/EU

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

If this equipment has telecommunications functionality, it also complies with the requirements of the R&TTE Directive 1999/5/EC.

English IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Български [Bulgarian] IEI Integration Corp. декларира, че този оборудване е в съответст□ие със съществените изисквания и другите приложими правила на Директива 1999/5/EC.
Česky [Czech] IEI Integration Corp tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/□S.
Dansk [Danish] IEI Integration Corp erklærer herved, at følgende udstyr overholder de væsentlige krav c øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German] IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian] IEI Integration Corp deklareerib seadme seadme vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Español [Spanish] IEI Integration Corp declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική [Greek] IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French] IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5□CE.
Italiano [Italian] IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian] IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 1999/5/EK.
Lietuvių [Lithuanian] IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch] IEI In□egration Corp dat het toestel toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese] IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian] IEI Integration Corp nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Polski [Polish] IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese] IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras□disposições da Directiva 1999/5/CE.
Româna [Romanian] IEI Integration Corp declară că acest echipament este in conformitate cu cerinţele esenţiale şi cu celelalte prevederi relevante ale Directivei 1999/5/CE.

Slovensko [Slovenian] IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak] IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 199□/5/ES.
Suomi [Finnish] IEI Integration Corp vakuuttaa täten että laitteet on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish] IEI Integration Corp förklarar att denna utrustningstyp står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

ROHS STATEMENT

The label on the product indicates this product complies to European (EU) Restriction of Hazardous Substances (RoHS) that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

FCC WARNING

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

CHINA ROHS

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

Appendix

B

Safety Precautions

WARNING:

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the IOVU-210AD-RK39.

B.1 Safety Precautions

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

B.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the IOVU-210AD-RK39 is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the IOVU-210AD-RK39 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 IOVU-210AD-RK39 chassis is opened when the IOVU-210AD-RK39 is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the IOVU-210AD-RK39.
- ***If considerable amounts of dust, water, or fluids enter the IOVU-210AD-RK39***, turn off the power supply immediately, unplug the power cord, and contact the IOVU-210AD-RK39 vendor.
- ***This equipment is not suitable for use in locations where children are likely to be present.***
- **DO NOT**:
  - Drop the IOVU-210AD-RK39 against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature

B.1.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the installation of the IOVU-210AD-RK39 may result in permanent damage to the IOVU-210AD-RK39 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the IOVU-210AD-RK39. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the IOVU-210AD-RK39 is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding***: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component***: When handling the electrical component, hold the electrical component by its edges.

B.1.3 Product Disposal

CAUTION:

Risk of explosion if the battery is replaced by an incorrect type;

Replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types);

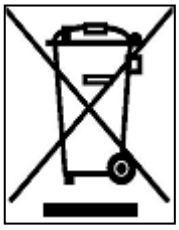
Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas;

A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas;

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

B.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the IOVU-210AD-RK39, please follow the guidelines below.

B.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the IOVU-210AD-RK39, 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 IOVU-210AD-RK39 does not require cleaning. Keep fluids away from the IOVU-210AD-RK39 interior.
- Be cautious of all small removable components when vacuuming the IOVU-210AD-RK39.
- Turn the IOVU-210AD-RK39 off before cleaning the IOVU-210AD-RK39.
- Never drop any objects or liquids through the openings of the IOVU-210AD-RK39.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the IOVU-210AD-RK39.
- Avoid eating, drinking and smoking within vicinity of the IOVU-210AD-RK39.

B.2.2 Cleaning Tools

Some components in the IOVU-210AD-RK39 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 IOVU-210AD-RK39.

- □***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the IOVU-210AD-RK39.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol can be used to clean the IOVU-210AD-RK39.
- ***Using solvents*** – The use of solvents is not recommended when cleaning the IOVU-210AD-RK39 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 IOVU-210AD-RK39. Dust and dirt

can restrict the airflow in the IOVU-210AD-RK39 and cause its circuitry to corrode.

- ***Cotton swabs*** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- ***Foam swabs*** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

C

Hazardous Materials Disclosure

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

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

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements									
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)	Bis(2-ethylhexyl) phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
Housing	O	O	O	O	O	O	O	O	O	O
Display	O	O	O	O	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O	O	O	O	O
Battery	O	O	O	O	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in Directive (EU) 2015/863.

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in Directive (EU) 2015/863.

C.2 China RoHS

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签，此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组装	O	O	O	O	O	O
电池	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在SJ/T11364-2014與GB/T26572-2011标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11364-2014 與 GB/T26572-2011 标准规定的限量要求。