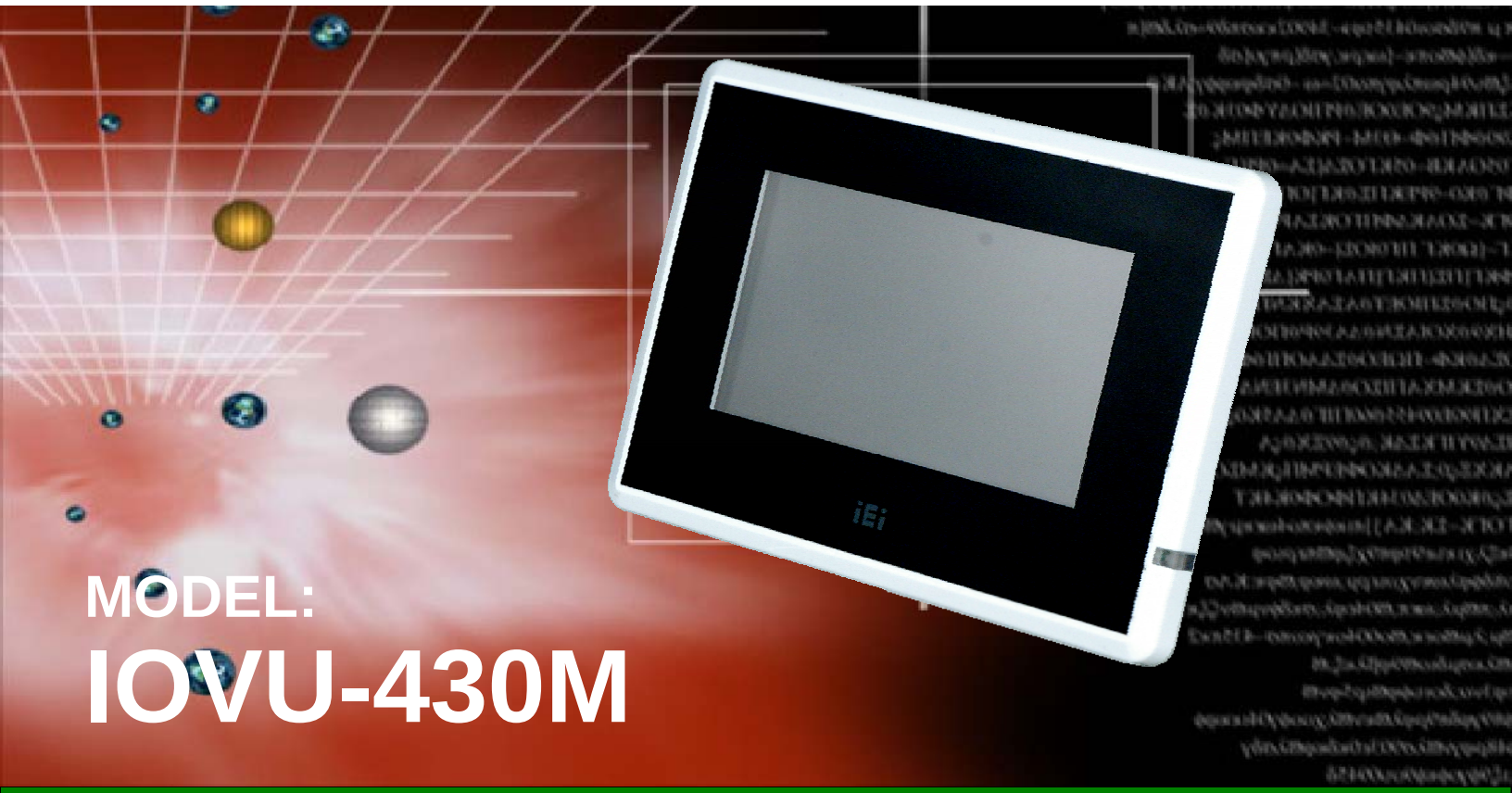
IEI Technology Corp.



Panel PC, 4.3" Touch Screen, 416 MHz Marvell XScale PXA270, Fast Ethernet, USB, Mini SD, CAN bus, RS-232/422/485 RoHS Compliant, Front Panel IP 65 Protection

User Manual

Rev. 1.01 – 6 December, 2010

RoHS Lead Free

Revision

Date	Version	Changes
6 December, 2010	1.01	Modified system mounting method
17 September, 2010	1.00	Initial release

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Chapter

1

Introduction

1.1 Overview

Figure 1-1: IOVU-430M

The IOVU-430M Panel PC comes with a 4.3" touch panel screen. It is powered by a 416 MHz Marvell XScale PXA270 processor and has 128 MB of SDRAM.

The IOVU-430M includes a Mini SD card with Windows CE 5.0 installed. The package also includes a software development kit and documentation to help easily customize the operating system according to needs.

The IOVU-430M is an extremely low power Panel PC. The system is fanless, which allows quiet and reliable operation.

Connection to a variety of peripheral devices and networks is provided through a USB port, a RS-232/422/485 serial port, and an Ethernet port. A CAN (Controller-Area Network) bus connection allows the IOVU-430M to be used in a wide range of automotive and industrial settings.

1.2 Benefits

Some of the IOVU-430M benefits include:

- Customizable operating system to suit application needs.
- Less downtime from overheating because there are not fans to fail
- Cost savings with low power consumption
- Easy installation with a wide range of input voltages supported

- Can handle tough environments because of solid-state storage and IP64 protection of the front cover

1.3 Features

The IOVU-430M features are listed below:

- 416 MHz Marvell XScale PXA270 processor
- 128 MB of SDRAM
- One Fast Ethernet port
- One USB 1.1 port
- One RS-232/422/485 serial communication connection
- One GPIO and CAN bus connection
- Projected capacitor multi-touch panel or 4-wire resistive single-touch panel
- 12-36 VDC input
- RoHS compliant

1.4 Front Panel

The IOVU-430M front panel (**Figure 1-2**) comprises a 4.3" TFT WQVGA color touch screen LCD in an ABS+PC plastic frame.

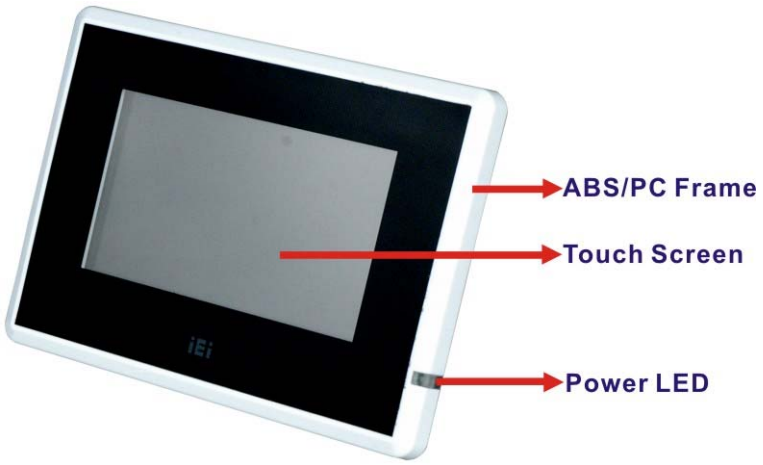

Figure 1-2: Front Panel

1.5 Connector Panel

The external peripheral interface connectors are located on the bottom and side panels of the IOVU-430M . The peripheral interface connectors are shown in **Figure 1-3**.

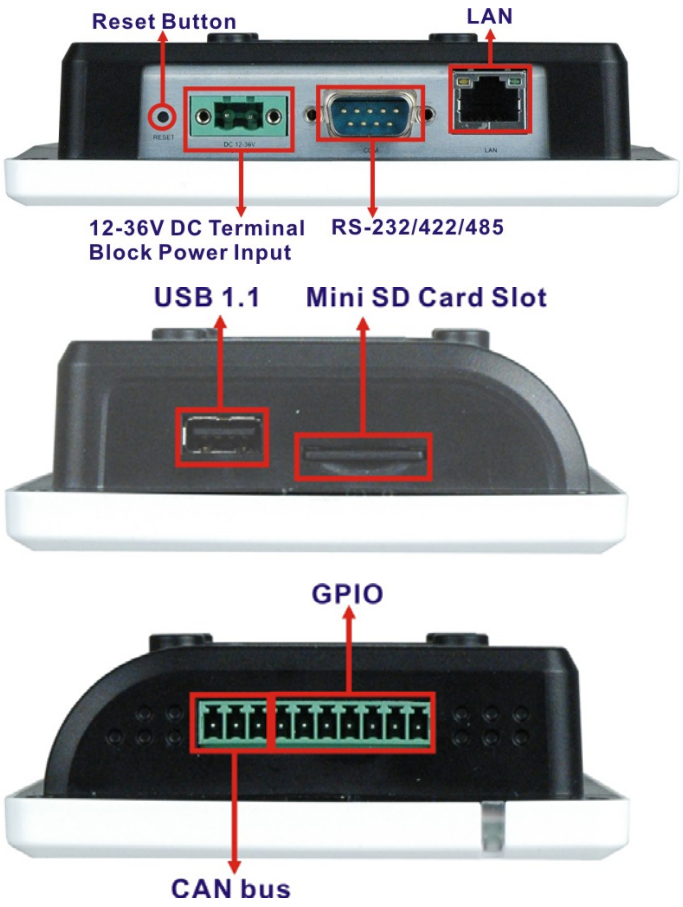

Figure 1-3: IOVU-430M Peripheral Connectors

External peripheral interface connectors on the IOVU-430M include:

- 1 x CAN bus connector
- 1 x DC-IN terminal block
- 1 x GPIO connector
- 1 x RJ-45 LAN connector
- 1 x RS-232/422/485 connector
- 1 x mini SD card slot
- 1 x USB 1.1 connector

1.6 Dimensions

The physical dimensions of the IOVU-430M are shown in **Figure 1-4** and listed below:

- Width: 145 mm
- Height: 104 mm
- Depth: 34 mm

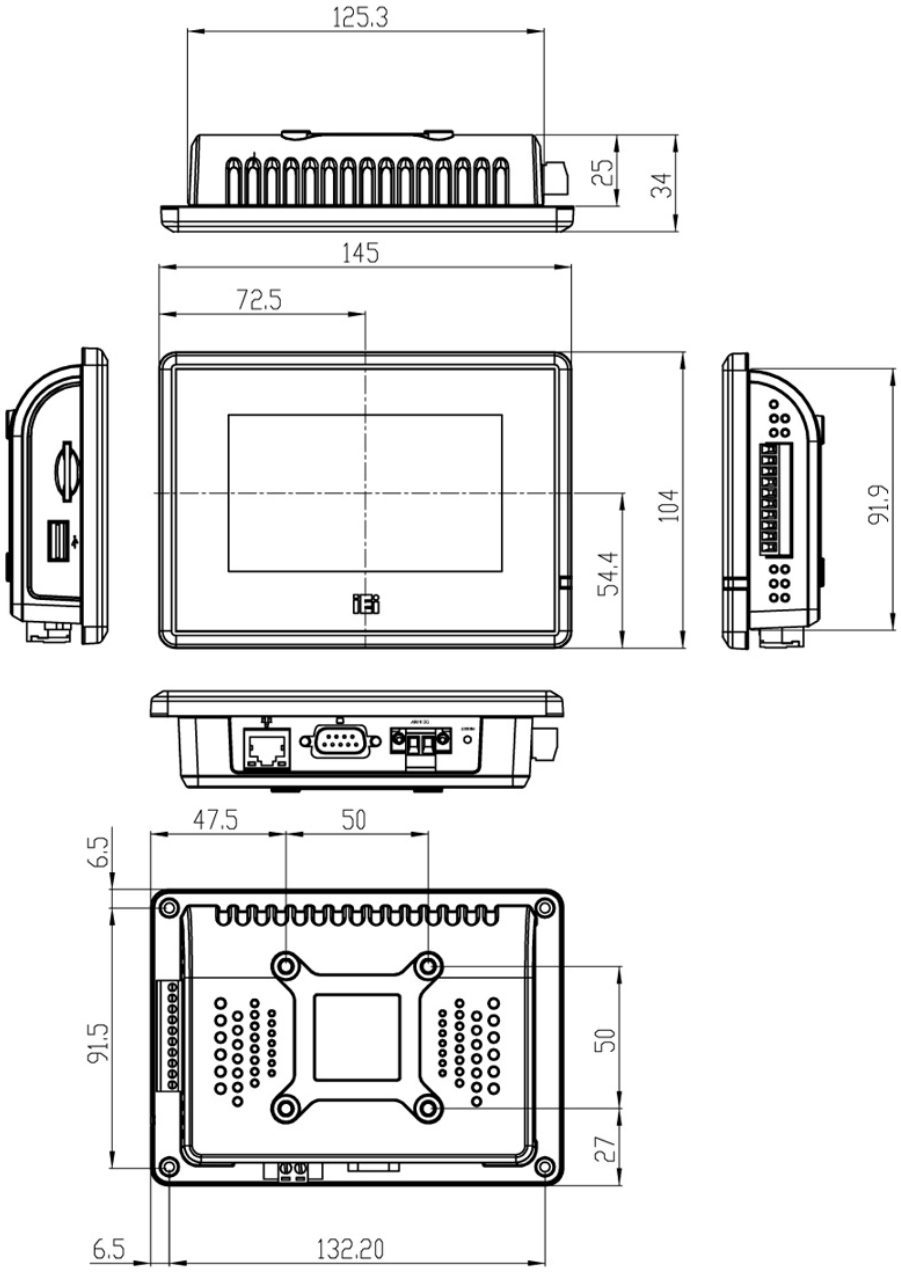

Figure 1-4: IOVU-430M Physical Dimensions (millimeters)

1.7 Power Supply and Battery

WARNING:

Whenever you need to remove a part for maintenance or upgrading,

switch off the power supply and unplug the power cord first.

And Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the instructions

The IOVU-430M has a terminal block connector on the bottom panel.

1.8 Model Variations

The IOVU-430M is available in the following model variations.

Model No.	Touch Panel Type	Wi-Fi
IOVU-430M-CE5/MT/-R10	Projected-capacitor multi-touch	No
IOVU-430M-CE5/MT/WL/-R10	Projected-capacitor multi-touch	802.11b/g
IOVU-430M-CE5/ST/-R10	4-wired resistive single-touch	No
IOVU-430M-CE5/ST/WL/-R10	4-wired resistive single-touch	802.11b/g

Table 1-1: IOVU-430M Specifications

1.9 Technical Specifications

The IOVU-430M technical specifications are listed in **Table 1-2**.

Specifications	
System	
CPU	416 MHz Marvell XScale PXA270 processor
Memory	2 MB boot ROM 128 MB of SDRAM 1 GB Mini SD card
Real-time Clock	Battery backup RTC
Watchdog Timer	Software programmable supports 1~255 sec. system reset
Display	
Display Type	TFT LCD screen
Display Size	4.3"
Resolution	480 x 272, 262,000 colors
Video Support	MPEG1
Brightness	400 cd/m^2
Backlight MTBF	10,000 hrs
Pixel Pitch (mm)	0.066(H) x 0.198(V)
Viewing Angle (H-V)	100 / 60
Touch Panel	Projected-capacitor multi-touch (IOVU-430M-CE5/MT/-RT10) 4-wired resistive single-touch (IOVU-430M-CE5/ST/-RT10)
I/O and Communications	
Ethernet	1 x 10/100 Mb/s
CAN bus	1 x 3-pin terminal block CAN bus (CAN specification 2.0b)
GPIO	1 x 8-pin GPIO terminal block connector
Serial Ports	1 x RS-232/422/485
USB Interfaces	1 x USB 1.1

Specifications	
Audio	2 x 1.5 Watt speakers
Power	
Power Supply	12-36 VDC
Power Consumption	7 W
Environmental and Mechanical	
Operating Temperature	Minimum: -20ºC (-4°F) Maximum: 50°C (140°F)
Humidity	5%RH to 90%RH (non-condensing)
Vibration	Operating Random Vibration Mode (MIL-STD-810F 514.5C-3) 1.Axes: 3 axes (Vertical / Transverse / Longitudinal). 2.10-500 Hz, 60min/axis. 3.Equivalent to Z:2.18 Grms X:1.6 Grms Y:1.96 Grms
Front Panel Color	Pantone Black C
Physical Dimensions	145 mm x 104 mm x 34 mm
Net Weight	0.7 kg
Ingress Protection	IP 65 compliant front panel

Table 1-2: Technical Specifications

1.10 Certifications

All IOVU-430M series models comply with the following international standards:

- RoHS
- IP 65 compliant front panel

For a more detailed description of these standards, please refer to **Appendix A**.

Chapter

2

Unpacking

2.1 Anti-static Precautions

WARNING:

Failure to take ESD precautions during installation may result in permanent damage to the IOVU-430M and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the IOVU-430M. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the IOVU-430M 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-430M, place it on an antic-static pad. This reduces the possibility of ESD damaging the IOVU-430M.

2.2 Unpacking Precautions

When the IOVU-430M is unpacked, please do the following:

- Follow the anti-static precautions outlined in **Section 2.1**.
- Make sure the packing box is facing upwards so the IOVU-430M does not fall out of the box.
- Make sure all the components shown in **Section 2.3** are present.

2.3 Unpacking Checklist

NOTE:

If some of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the IOVU-430M from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to sales@iei.com.tw.

The IOVU-430M is shipped with the following components:

Quantity	Item and Part Number	Image
1	IOVU-430M	
1	Utility CD including SDK, utilities, and technical documentation	
1	Null modem cable	
1	Touch pen	

Table 2-1: Package List Contents

2.4 Optional Items

Item and Part Number	Image
12V DC 60W power adapter with terminal block connector, 90-264V AC input 63000-FSP0601AD101C760-RS	

Table 2-2: Optional Items

Chapter

3

Installation

3.1 Installation Precautions

During installation, be aware of the precautions below:

- **Read the user manual**: The user manual provides a complete description of the IOVU-430M, installation instructions and configuration options.
- **DANGER! Disconnect Power**: Power to the IOVU-430M must be disconnected during the installation process, or before any attempt is made to access the rear panel. Electric shock and personal injury might occur if the rear panel of the IOVU-430M is opened while the power cord is still connected to an electrical outlet.
- **Qualified Personnel**: The IOVU-430M must be installed and operated only by trained and qualified personnel. Maintenance, upgrades, or repairs may only be carried out by qualified personnel who are familiar with the associated dangers.
- **Grounding**: The IOVU-430M should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection per the electrical values indicated on the label attached to the back of the IOVU-430M.

3.2 Mini SD Card Installation

The IOVU-430M supports a Mini SD card. Follow the steps below to install a Mini SD card.

Step 1: Slide the Mini SD card into the slot.

Figure 3-1: Mini SD Card Installation

3.3 External Peripheral Interface Connectors

Table 3-1 lists the external interface connectors on the IOVU-430M. Detailed descriptions of the connectors can be found following the table.

Connector	Type
12-36 V DC terminal block	Terminal Block
CAN bus	CAN bus connector
Ethernet connectors	RJ-45 Jack connector
RS-232/422/485 Serial connector	D-sub 9 Male connector
USB connectors	USB port

Table 3-1: External Interface Connectors

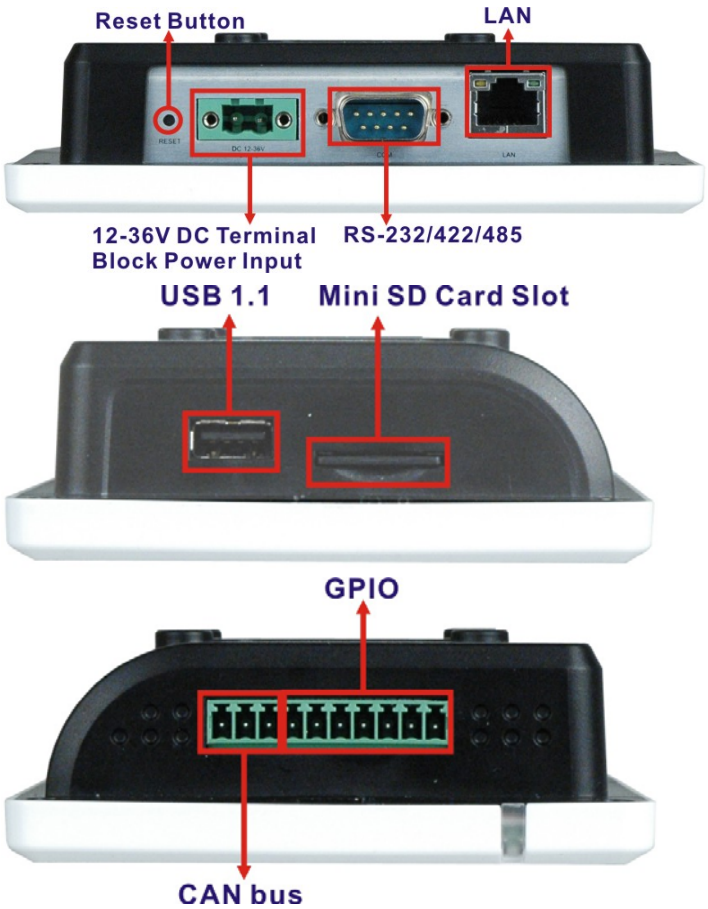

Figure 3-2: IOVU-430M Peripheral Connectors

3.3.1 12 V~36 V DC Terminal Block

The power terminal block connects to a 12 V~36 V DC power source.

CN Label: **12-36 V**

CN Type: Terminal block

CN Location: See **Figure 3-2**

CN Pinouts: See **Table 3-2** and **Figure 3-3**

Pin	Description
1	12~36 V DC Power in
2	GND

Table 3-2: 12~36 V Power Connector Pinouts

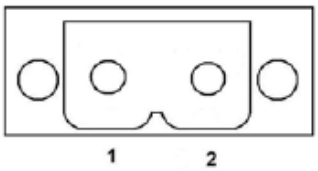

Figure 3-3: Power Terminal Block

3.3.2 GPIO and CAN bus Connector

The IOVU-430M has a GPIO (pins 1-7) and CAN bus connector (pins 8-10). The GPIO can be used to connect to external devices or peripherals. The CAN bus connector connects to a Controller-Area Network (CAN). A CAN allows microcontrollers and devices to communicate with each other without the need of a host computer. The pinouts are listed below.

Pin	Description
1	GND
2	GPIO1(95)
3	GPIO2(96)
4	GPIO3(97)
5	GPIO4(98)
6	GPIO5(99)
7	GPIO6(100)
8	CAND-/CAN_L
9	CAND+/CAN_H
10	GND

Table 3-3: GPIO and CAN Bus Connector Pinouts

Figure 3-4: GPIO and CAN Bus Terminal Block

3.3.3 RS-232/422/485 Serial Port

This section outlines the usage and setup of the serial port on the bottom I/O panel.

3.3.3.1 Connecting the Serial Port

The IOVU-430M has one female DB-9 connector on the external peripheral interface panel for connections to serial devices. Follow the steps below to connect a serial device to the IOVU-430M.

Step 1: **Insert the serial connector**. Insert the DB-9 connector of a serial device into the DB-9 connector on the external peripheral interface. See **Figure 3-5**.

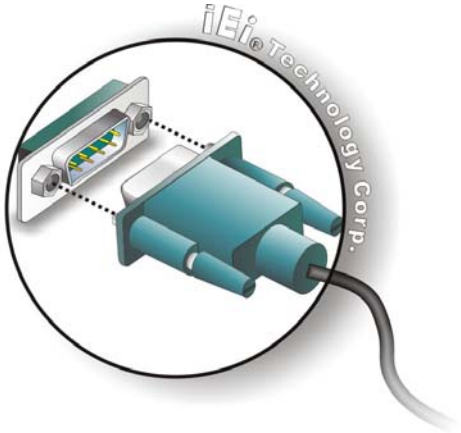

Figure 3-5: Serial Device Connector

Step 2: **Secure the connector**. Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

3.3.3.2 RS-232/422/485 Selection

To select RS-232/422/485 mode, please follow the directions below.

Step 1: **Find and start the IEI CE_UTILITY**. Select the Windows CE Start menu, next select Programs, then select IEI, and finally select IEI_CEUTILITY (Start -> Programs -> IEI -> IEI CEUTILITY) to launch the utility.

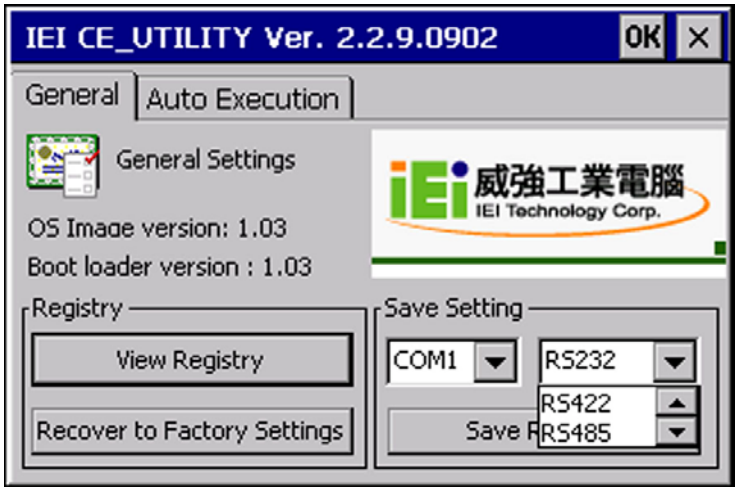

Figure 3-6: COM1 mode setting

Step 2: **Select COM1 mode setting**. Select the desired mode setting for Serial Port COM1 in the drop down menu (**Figure 3-6**).

- RS-232
- RS-422
- RS-485

Step 3: **Click the Set button**. Click the Set button to apply the mode setting change.

Step 4: **Click the Save Registry button**. Click the Save Registry button to save the settings.

3.3.3.3 Pinouts

Pinouts for the RS-232/422/485 serial port is shown below.

Pin	RS-232	RS-422	RS-485
1	DCD	RX-	DATA-
2	RX	RX+	DATA+
3	TX	TX-	
4	DTR		
5	GND	GND	GND
6	DSR		
7	RTS	TX+	
8	CTS		
9	RI		

Table 3-4: RS-232 Pinouts

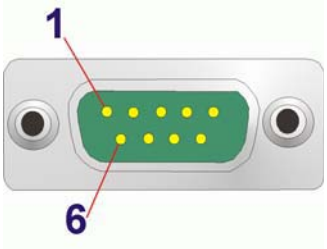

Figure 3–7: Serial Port Pinouts

3.3.4 USB Connector

The external USB Series "A" receptacle connector provides easier and quicker access to external USB devices. Follow the steps below to connect USB devices to the IOVU-430M.

Step 1: **Insert a USB Series "A" plug**. Insert the USB Series "A" plug of a device into the USB Series "A" receptacle on the external peripheral interface. See **Figure 3-8**.

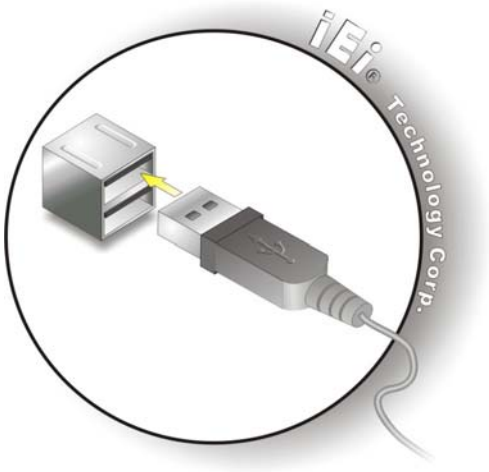

Figure 3-8: USB Connector

USB devices connect directly to the USB connector on the external peripheral connector panel.

PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	5	VCC
2	D1-	6	D2-
3	D1+	7	D2+
4	GND	8	GND

Table 3-5: USB Connector Pinouts

3.3.5 Ethernet Connector

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

Step 1: **Align the connectors.** Align the RJ-45 connector on the LAN cable with one of the RJ-45 connectors on the IOVU-430M. See **Figure 3-9**.

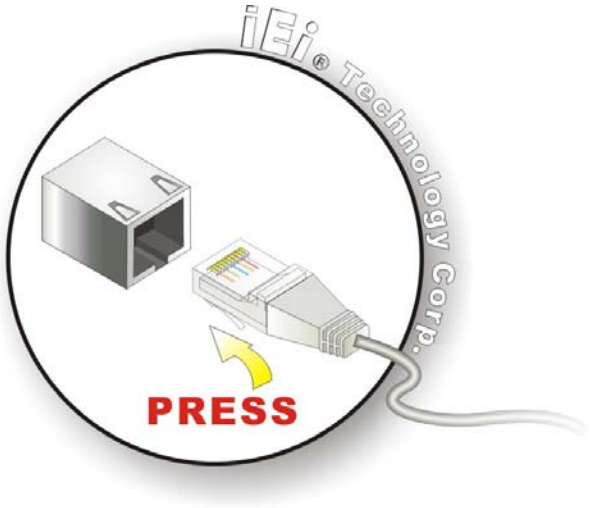

Figure 3-9: LAN Connection

Step 2: **Insert the LAN cable RJ-45 connector.** Once aligned, gently insert the LAN cable RJ-45 connector into the on-board RJ-45 connector.

The Ethernet connector pinouts are shown below.

PIN	DESCRIPTION
1	TPT+
2	TPT-
3	TPR+
4	LAN_GND
5	LAN_GND
6	TPR-
7	LAN_GND
8	LAN_GND

Table 3-6: Ethernet Connector Pinouts

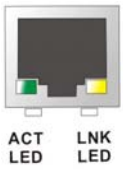

Figure 3-10: Ethernet Connector

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 3-7**).

SPEED LED		LINK LED	
Status	**Description**	**Status**	**Description**
GREEN	ON: 100 MB OFF: 10 MB	YELLOW	ON: Linked Flashing: Activity

Table 3-7: Ethernet Connector LEDs

3.4 In-Wall Mounting

WARNING!

When mounting the flat 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.

The mounting holes in the rear panel of the IOVU-430M are not Video Electronics Standards Association (VESA) compliant. IEI provides an in-wall cage to mount the IOVU-430M into a wall. To mount the IOVU-430M in a wall, please follow the steps below.

Step 1: Insert the four monitor mounting screws into the four screw holes on the real panel of the IOVU-430M and tighten until the screw shank is secured against the rear panel (**Figure 3-11**).

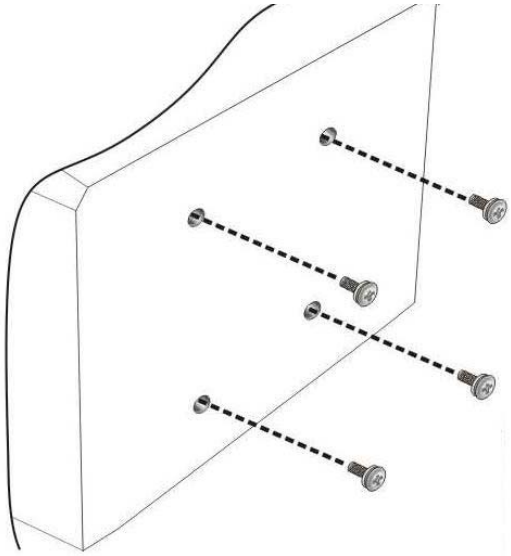

Figure 3-11: Chassis Support Screws

Step 2: Align the mounting screws installed in the previous step with the screw holes (**Figure 3-12**) on in-wall cage.

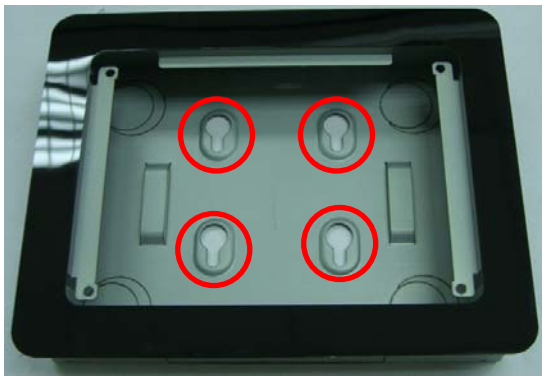

Figure 3-12: In-wall Cage Screw Holes

Step 3: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes. Ensure that all four of the mounting screws fit snuggly into their respective slotted holes. (**Figure 3-13**).

Figure 3-13: In-wall Mounting

3.5 Software

The IOVU-430M comes with a pre-installed Windows CE 5.0 or Linux 2.6.x operating system and a rich software application development kit. For information about configuring the operating system, adding remote management tools or additional software and drivers, refer to the user manuals on IEI IOVU Utility CD that came with the IOVU-430M. The IOVU includes the following software:

- Standard Windows® CE5.0 professional version license.
- Optional Board Support Package (BSP) for customers to customize their own OS image.
- Attached Software Development Kit (SDK) for embedded Visual C++ to program Windows CE application.
- Built-in .NET Compact Framework support with related SDK
- Thin Client Technology, Microsoft RDP (Remote Desktop Protocol), to enable IOVU-430M to access Microsoft Windows® based applications installed on Microsoft Terminal Service server.
- Free pre-installed utilities for configuring and diagnosing your IOVU-430M.
- Free remote management tools installed in laptop for remotely configuring, monitoring, and managing your IOVU-430M.

3.5.1 Wireless AP

To select Wireless AP, please follow the instructions below.

Step 1: When turn on the power, Wireless AP start to search wireless base stations

around as shown below. (**Figure 3-132**).

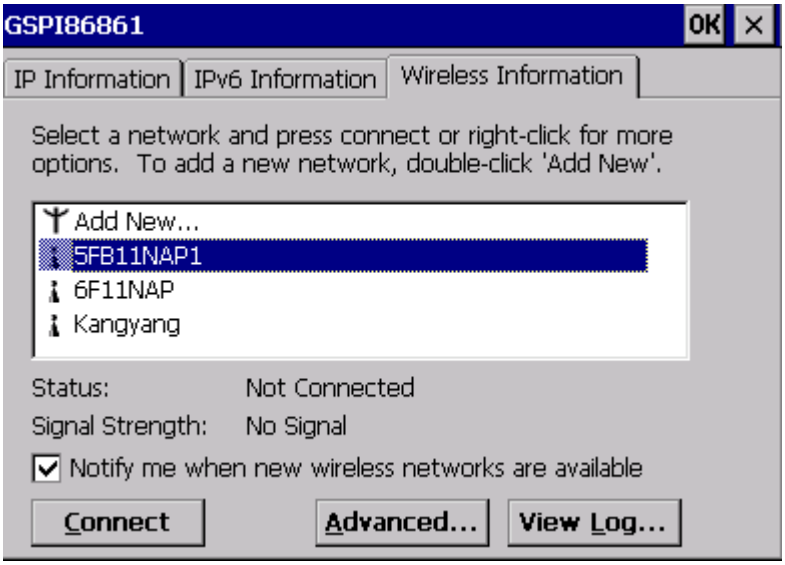

Figure 3-12: Wireless AP

Step 2: Select your Internet connection and click Connect.

Step 3: The Wireless Network Properties screen appears next. (**Figure 3-133**).

Figure 3-13: Wireless Network Properties

Step 4: You must input the password into the Network key. Click OK. The soft AP configuration is finished. (**Figure 3-134**).

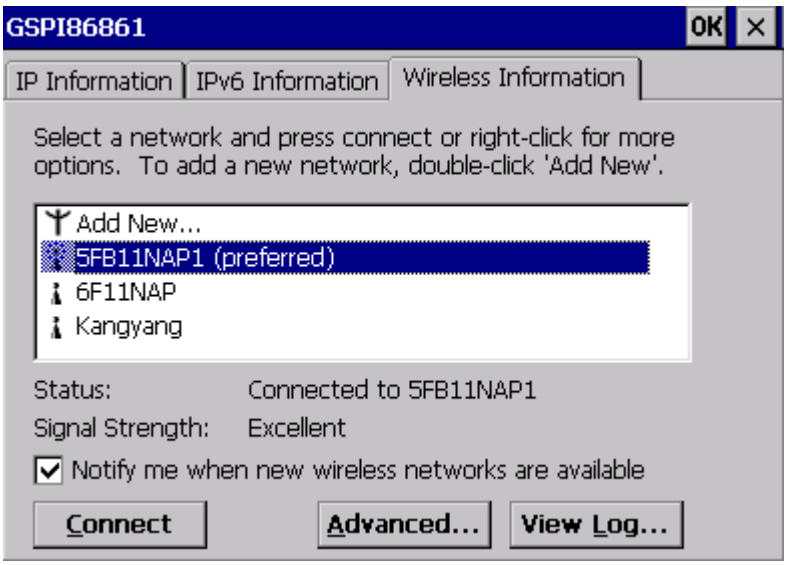

Figure 3-14: Wireless AP Connected

Step 5: Click the IP Information button to view the information of the Wireless AP Solo. If the server function is enabled on the AP. You can automatically get the IP address, subnet mask. (**Figure 3-135**)

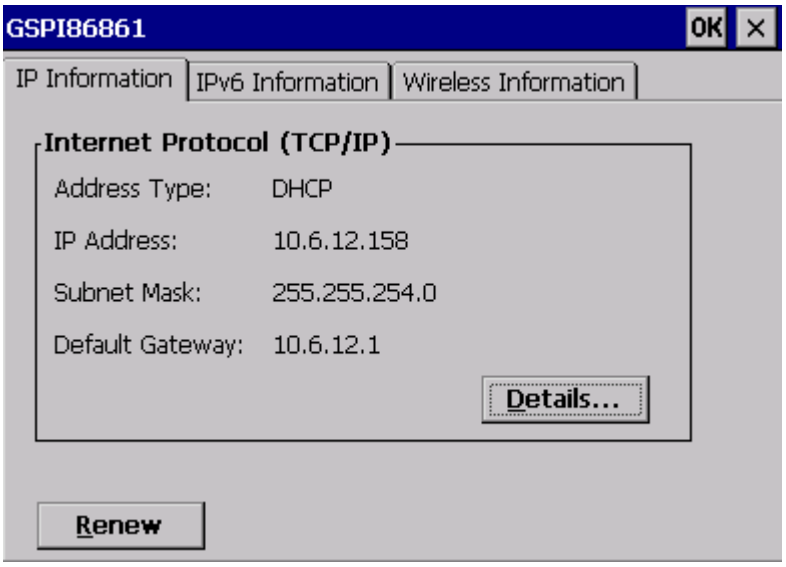

Figure 3-15: IP Information

Appendix

A

Certifications

A.1 RoHS Compliant

All models in the IOVU series comply with the Restriction of Hazardous Materials (RoHS) Directive. This means that all components used to build the industrial workstations and the workstation itself are RoHS compliant.

The RoHS Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

A.2 IP 65 Compliant Front Panel

The front panel on the IOVU-430M models in the IOVU series have an ingress protection rating (IP) of 65, IP 65. The front panel is protected from dust particles and water projected by a nozzle.

Appendix

B

Safety Precautions

B.1 Safety Precautions

WARNING:

The precautions outlined in this appendix should be strictly followed. Failure to follow these precautions may result in permanent damage to the IOVU-430M.

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.

- ***Make sure the power is turned off and the power cord is disconnected*** whenever the IOVU-430M 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-430M chassis is opened when the IOVU-430M is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the IOVU-430M.
- ***If considerable amounts of dust, water, or fluids enter the IOVU-430M***, turn off the power supply immediately, unplug the power cord, and contact the IOVU-430M vendor.
- **DO NOT**:
  - Drop the IOVU-430M 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-430M may result in permanent damage to the IOVU-430M and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the IOVU-430M. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the IOVU-430M 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 antic-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.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the IOVU-430M, please follow the guidelines below.

B.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the IOVU-430M 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-430M does not require cleaning. Keep fluids away from the IOVU-430M interior.
- Be cautious of all small removable components when vacuuming the IOVU-430M.
- Turn the IOVU-430M off before cleaning the IOVU-430M.
- Never drop any objects or liquids through the openings of the IOVU-430M.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the IOVU-430M.
- Avoid eating, drinking and smoking within vicinity of the IOVU-430M.

B.2.2 Cleaning Tools

Some components in the IOVU-430M 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-430M.

- ***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the IOVU-430M.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol can be used to clean the IOVU-430M.
- ***Using solvents*** – The use of solvents is not recommended when cleaning the IOVU-430M 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-430M. Dust and dirt can restrict the airflow in the IOVU-430M 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.

B.3 FCC Precautions

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 product 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

C

Hazardous Materials Disclosure

C.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

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 table on the next page.

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	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
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

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

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	X	O	O	O	O	X
显示	X	O	O	O	O	X
印刷电路板	X	O	O	O	O	X
金属螺帽	X	O	O	O	O	O
电缆组装	X	O	O	O	O	X
风扇组装	X	O	O	O	O	X
电力供应组装	X	O	O	O	O	X
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/T11363-2006 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/T11363-2006 标准规定的限量要求。						