

IOVU series PPC



IOVU (Input and Output Viewer) series enables the great embedded flexibility for RISC-based panel PC. Built with a XScale or Alchemy CPU, LCD display, touch screen, I/O peripherals, and pre-installed Windows® CE 5.0 or embedded Linux, the IOVU series provides the most cost-effective and stable solution for a diverse range of embedded RISC-based panel PC application. The supported software includes thin client technology, remote management tool, embedded OS SDK (software development kit) and BSP (board support package).



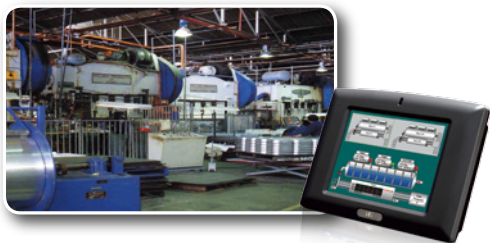
▶▶ Equipped with RISC CPU and Windows® CE embedded OS, the IOVU Series panel PCs are with high-performance computing power, fan-less design, low-power consumption, wide operating temperature, and wide-input-voltage range.

▶▶ The IOVU is designed for highly durable in harsh environments, due to its rugged, compact, low power consumption, and embedded system hardware design without failure-prone hard disk and fan. Each IOVU equips with a IP 65 or IP 64 compliant front panel to protect against accidental contacts of foreign bodies and against water.

▶▶ Each IOVU is driven by an powerful RISC CPU with built-in WDT (Watchdog Timer) functions, has a touch screen TFT display, and comes with a series of integrated external peripheral connectors including Ethernet ports, Serial ports, USB ports, Audio ports, CompactFlash™ slot, and optional wireless communication modules supporting WiFi 802.11 b/g, Bluetooth, GPS, or GSM/GPRS.



Applications



Industrial Automation



Building Automation



Multi-media Applications



Vehicle PC

Diversified Mounting Support and Rigorous Environmental Test

IOVU series panel PC have several mounting holes compliant with the VESA mounting standard (VESA 75 / 100) on the rear panel for stand mounting and other mounting methods.

• Wall Mount



Requires no cut out in the wall surface. It mounts directly on the existing wall or desk.

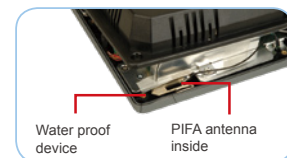
• Panel Mount



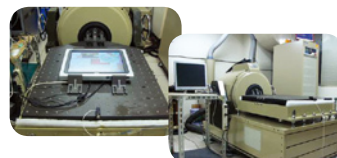
Requires a cut out in the wall surface. With four clamps to tighten the screws that pass through the panel mounting clamps

• IP64 / 65 dustproof and waterproof front panel

The IOVU front panel is IP64 / IP65 compliant. IP64 / 65 compliance guarantees the front panel is dustproof and water-proof. The IOVU front panel can withstand any industrial environment where dust and drizzle is encountered.



• Rugged design



The IOVU is directly mounted internally to a metal main frame rather than a fragile plastic cover. In addition, the IOVU case is made from ABS/PC (Acrylonitrile Butadiene Styrene/Polycarbonate Alloy), which improves the stiffness over conventional material and makes the system more solid and durable.

1 Automation

2 Point of Service

3 Digital Signage

4 Video Wall Controller

5 RISC-based Solutions

6 Medical Solutions

7 Optional Peripherals

IOVU Intelligent Panel PC



Introduction

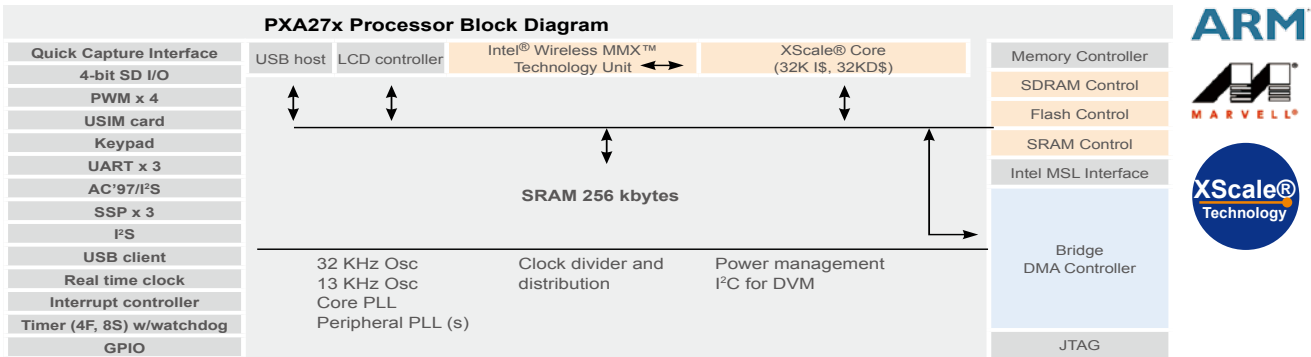
IOVU series enables the great embedded flexibility for RISC-based panel PC applications. Built-in XScale or Alchemy CPU, LCD display, touch screen, I/O peripherals and pre-installed Windows CE5.0, the IOVU series provide the most cost-effective and stable solution for a diverse range of embedded RISC-based panel PC application. IOVU provides an easy way to collect, transfer, process, access and manage data which is generated or inquired in various applications such as Factory Automation, Home Automation, Medical, Transportation management, POS...etc.

RISC-based Solutions : The best platform for embedded system and Panel PC

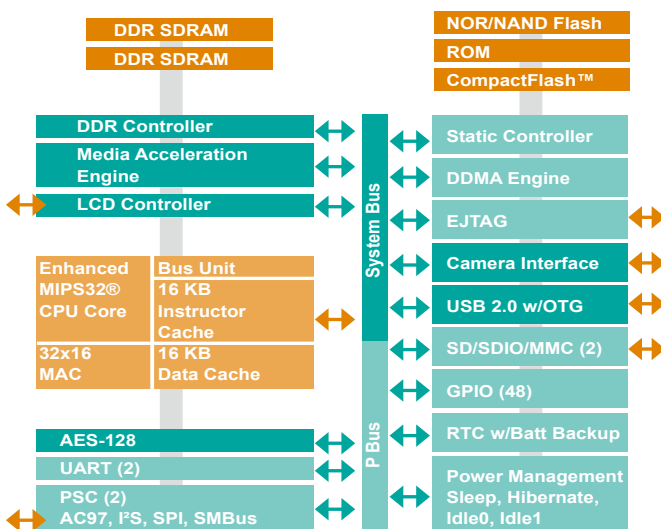
	4.3"	5.7"	7"
Model Name	IOVU-430M	IOVU-570M IOVU-571N	IOVU-700M IOVU-751R
CPU	XScale® PXA270 416 MHz	Xscale® PXA 520 MHz Winbond Nuvoton 200 MHz	Xscale® PXA 520 MHz Alchemy AU1250 500 MHz
Memory	128MB	128MB	256MB
Feature	1. Projected- capacitor type multi touch screen 2. Built-in WiFi 802.11b/g function 3. GPIO and CAN bus control	1. Compact form factor 2. Built-in WiFi 802.11b/g function	1. PoE available 2. MPEG 1/2/4 support 3. Built-in WiFi 802.11b/g function

MARVELL XScale® PXA270 and RMI Alchemy™ AU1250

High performance, ultra low power, lower cost, faster time-to-market, ARM V5TE compliant and robust tool chains make XScale® technology a compelling choice for applications ranging from smaller multimedia portable devices to high performance I/O or network applications.



IEI provides RMI Alchemy™ RISC-based technology to enable users to play DVD quality video efficiently at full-frame rates with low power consumption. The integrated MAE (Media Acceleration Engine) supports common digital video media including MPEG1, 2, 4, DivX, and WMV9 scaled up to 1024 x 768 pixel resolution, and delivers full D1 resolution without the need for a DSP or specialized coding.



	RMI Alchemy™ Au1250™	AMD® Geode™ LX800
CPU Speed	500 MHz	500MHz
Companion Chipset	No need	AMD® CS5536
Super I/O	No need	Winbond W83627EHG
System Memory	DDR I/II	DDR
Multimedia Support	Built-in Hardware MAE	MPEG1/2 with Software codec
H.D.D I/F	IDE	IDE
LCD I/F	24-bit TTL	24-bit TTL
Power Consumption	492 mW	4W
Working Temperature	-40°C ~ 100°C	0°C ~ 50°C or -10°C ~ 70°C
Embedded OS Support	Windows® CE and Embedded Linux	Windows® XP/XPe/CE

1 Automation Panel Solutions

2 All-in-One Touch POS

3 Digital Signage

4 Video Wall Controller

5 RISC-based Solutions

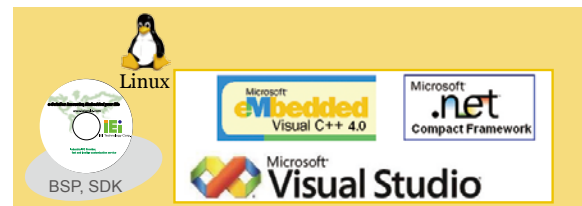
6 PACSmate Medical

7 Optional Peripherals

Software Support

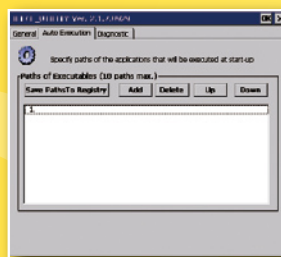
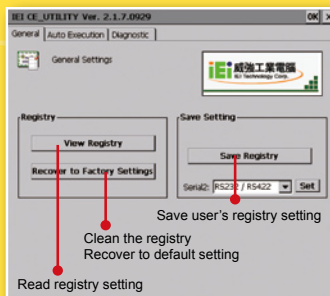
SDK (Software Development Kit)

- 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 series to access Microsoft Windows® based applications installed on Microsoft Terminal Service server.
- Attached SDK including GUI, Sample Code, and Tool chain make users program application readily.

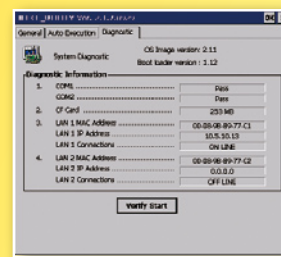


IEI WinCE Utility

- Free pre-installed utilities for configuring and diagnosing your IOVU series panel PC



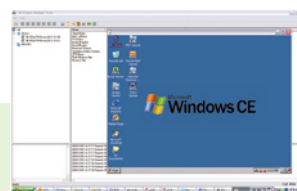
Easy to set programs for auto execution



Quickly verify peripheral function and check OS / Boot_loader version

RMT (Remote Management Tool)

- Free pre-installed utilities for configuring and diagnosing your IOVU series panel PC

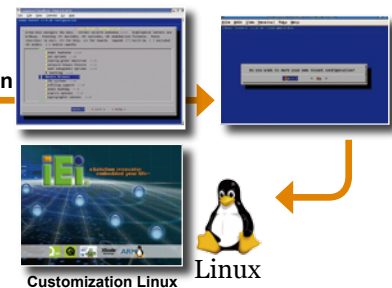


BSP (Board Support Package)

Linux Kernel 2.6.18

- GNU standard Embedded Linux 2.6.18 bootloader and OS image.
- Secure Shell (OpenSSH) providing 128-bit, 192-bit or 256-bit encryption between the IOVU series and another system
- Built-in web browser and X-window system
- Related Linux drivers for onboard peripheral I/O, network and audio
- Optional Board Support Package (BSP) includes kernel source code for customers to customize their own OS image.

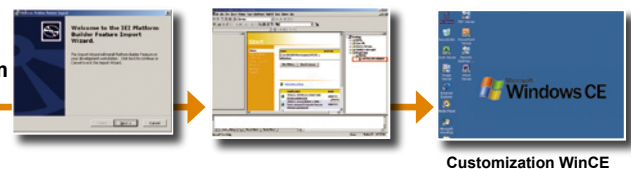
Embedded Linux Kernel configuration



Windows® CE5.0

- Standard Windows® CE5.0 professional version license.
- Optional Board Support Package (BSP) for customers to customize their own OS image.

Windows® Platform Builder



IOVU RISC-based Panel PC specifications



Model Name	IOVU-430M	IOVU-570M	IOVU-751R
SYSTEM			
CPU	XScale® PXA270 416 MHz	XScale® PXA270 520 MHz	Alchemy™ AU1250 500 MHz
Bootloader Storage	2 MB	2 MB	2 MB
RAM	128 MB SDRAM	128 MB SDRAM	256 MB DDR2
OS/Program Storage	1GB Mini secure digital card	1GB secure digital card	1GB secure digital card
DISPLAY			
LCD Size	4.3"	5.7"	7"
LCD Color	262 K	262 K	262 K
Display Resolution	WQVGA	VGA	WVGA
LCD Brightness (cd/m ²)	500	400	400
Dot Pitch (mm)	0.066(H) x 0.198(V)	0.06(H) x 0.18(V)	0.064(H) x 0.191(V)
Viewing Angle (H-V)	100 / 60	140 / 100	140 / 100
Backlight MTBF	10000	25000	50000
Touch Screen	1. Projective-Capacitor Type 2. Resistor Type	Resistor Type	Resistor Type
Multimedia Support	MPEG 1	MPEG 1	MPEG 1/2/4 and WMV9
I/O and COMMUNICATION			
I/O Interface	1 x RS-232/422/485 (Software Controllable) 1 x Reset button 1 x 10/100Mbps LAN 1 x USB1.1 host 1 x CAN bus 2.0b 6 x GPIO 1 x 2pin Terminal block DC input 1 x Mini SD card slot	1 x RS-232/422/485 (Software Controllable) 2 x 10/100Mbps LAN 2 x USB1.1 host 1 x SD card slot 1 x Reset button 1 x AT mode power switch 1 x 2pin Terminal block DC input	1 x 4-wired RS-232/422/485 (Software Controllable) 1 x RS-232 2 x 10/100Mbps LAN (one supports POE) 2 x USB2.0 host 1 x Reset button 1 x AT mode power switch 1 x 2pin Terminal block DC input 1 x Power jack
Audio	1.5W Speaker x 2	1.5W Speaker x 2	1.5W Speaker x 2
Wireless LAN	N/A	802.11 b/g	N/A
DIMENSION			
Construction Material	ABS + PC Plastic	ABS + PC Plastic	ABS + PC Plastic
Net Weight (kg)	0.6	0.7	0.8
Front Panel Colco	Black	Black	Black
Dimension (W x H x D mm)	145 x 104 x 34	180 x 135 x 45	226 x 140 x 41
ENVIRONMENTAL / POWER			
Operating Temperature (°C)	-20°C~60°C	-20°C~60°C	-20°C~60°C
Front Panel Protection	IP64 Compliant	IP64 Compliant	IP64 Compliant
Power Mode	AT	AT	AT
Power Requirement	12~36V DC input	12~36 V DC-IN	6~30 V DC-IN
Power Consumption	7 W	8 W	8.5 W
Vibration and Shock	MIL-STD-810F 1. Axes: 3 axes (Vertical / Transverse / Longitudinal) 2. 10 ~ 500Hz, 60min/axis 3. Equivalent to Z: 2.18Grms, X: 1.6Grms, Y: 1.96Grms		
Humidity	5%-90%RH	5%-90%RH	5%-90%RH

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IOVU-430M

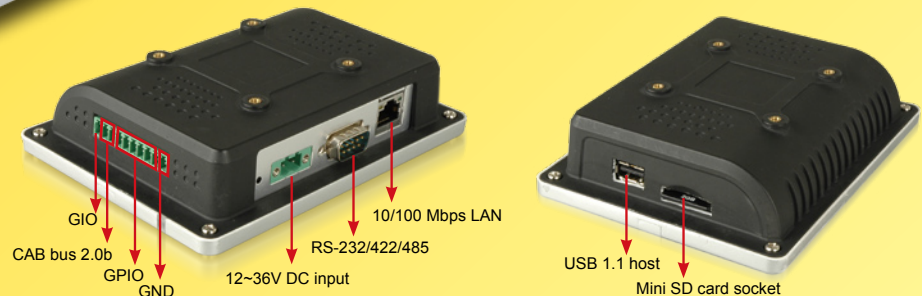
MULTI-TOUCH EMPOWERED ARM BASED FLAT PLANE PANEL PC

While touch sensor is commonplace for single points of contact, IOVU-430M's multi-touch sensor enables a user to interact with the system with more than one finger at a time. IOVU-430's RISC-based system provides high performance, lower power consumption, wide operating temperature, rugged compact form factor and cost-effective. Built-in WiFi module, GPIO (general purpose input/output) and CAN bus control have varied applications be flexible.



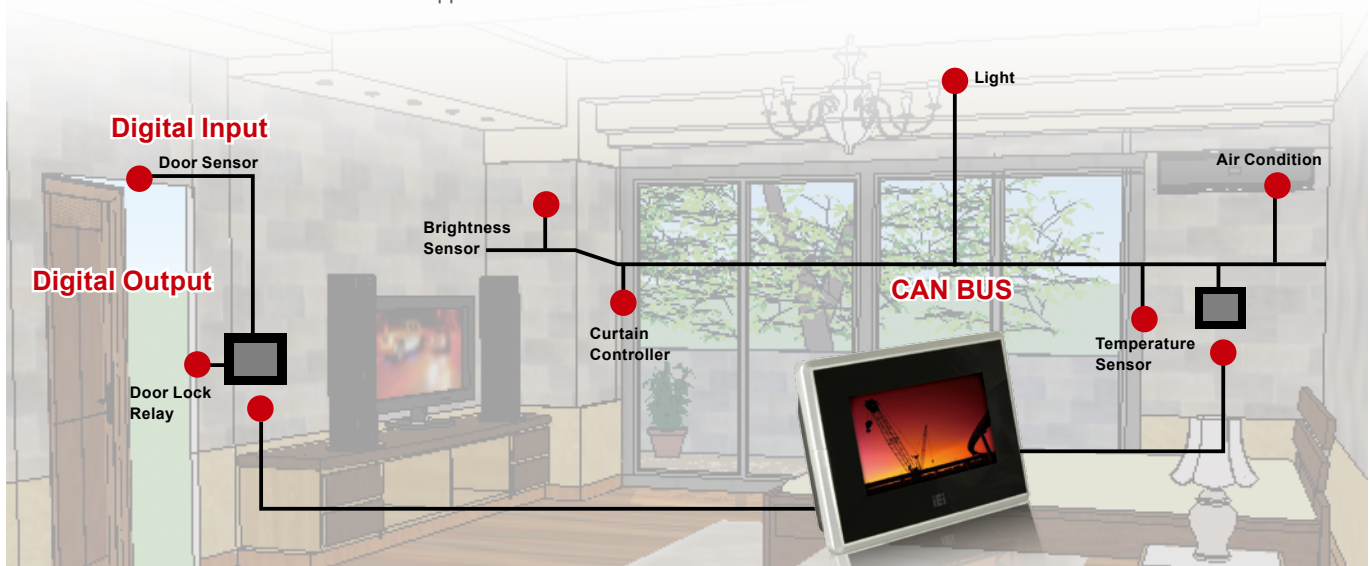
Features:

- RISC-based processor provides high performance and extremely low power consumption
- 4.3" widescreen WQVGA TFT LCD with projected-capacitor touch screen
- Multi-touch function provides flexible touch control
- Compact design with plastic housing and fan-less system
- Built-in 1.5w speakers
- Built-in 802.11b/g WiFi function
- CAN bus and GPIO provide flexible industrial control
- The whole plane multi-touch screen and IP65 compliant
- Mini secure digital card slot for storage extension

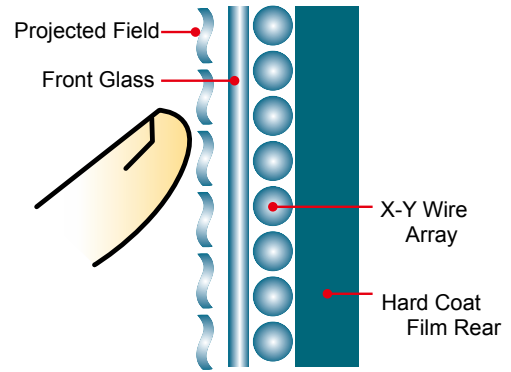


Flexible Connectivity

Designed for automation application, IOVU-430M provides various control interface choices to fit different automatic control applications. One can use GPIO (General Purpose Input & Output) in single control cases, for instance, to receive door sensor signal via digital input and send output signal to lock relay for door control. Furthermore, IOVU-430M provides CAN BUS connectivity which empowers to compose a smart network in advanced automation applications



Projective Capacitor Multi-touch



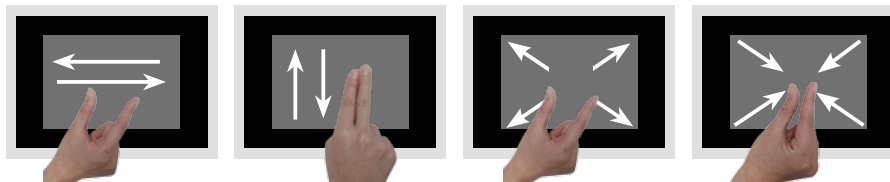
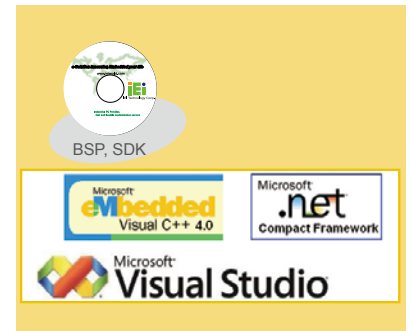
Activated by a finger or gloved hand

• Operation Theory

PCT is based on the principle of embedding an array of micro-fine sensing wires within a multi-layer laminated screen behind a protective front surface, ensuring that the sensing medium is well-protected from accidental and malicious damage.

• IEI IOVU-430M Multi-touch SDK

Empowered by equipping multi-touch technology, IOVU-430M provides user a more delight controlling experience. Comparing to conventional single touch technology, now application programmer can enhance user interface friendly by providing intuitive gesture control ways. IEI shares software development Kit and DEMO AP with source code to support quick software building. IEI IOVU-430M multi-touch SDK provides up to 10 gestures for user to define various user behaviors which makes operating more convenient and interesting



Slide (Multi-touch) Left (Right)

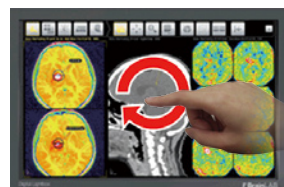
Slide (Multi-touch) Up (Down)

Zoom Out

Zoom In

• Gesture Applications

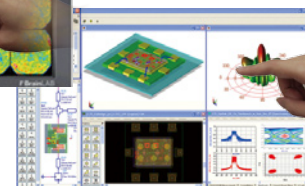
Using combination of gestures, user can freely rotate, zoom-in, zoom-out to put emphasis on specific photograph, graphic, photo or diagram with ability to go back to a wider vision of the whole slide or page as well, providing more convenience and flexibility within process of communication



Healthcare



Presentation



e-Collaboration

Flat Bezel Flat Plane Panel

The IOVU-430M full-flat surface screen makes the screen and bezel appear to blend seamlessly together. The flat-bezel design removes the front frame (bezel) of standard LCD to create a seamless surface. The IOVU-430M zero-bezel resistive/projective capacitive touch system offers aesthetic elegance, easy to clean, seamless front face.

- Better visual effects
- No EDGE EFFECTS
- Sleek, stylish luxury look without clutter
- Easy clean properties



1 Automation Panel Solutions

2 All-in-One Touch POS

3 Digital Signage

4 Video Wall Controller

5 RISC-based Solutions

6 PACSmate Medical

7 Optional Peripherals

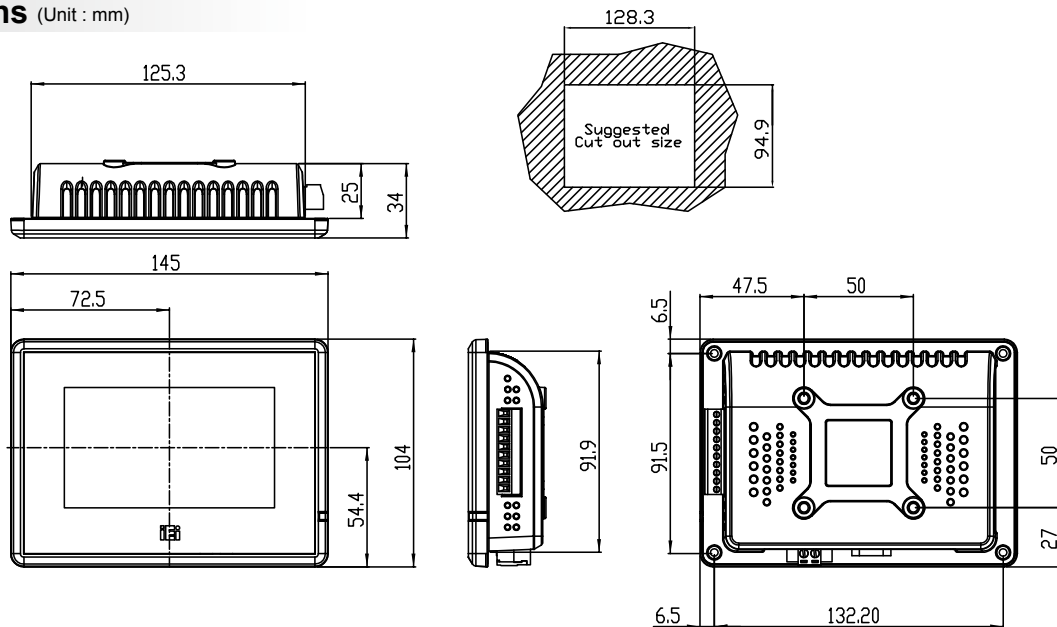
IOVU-430M Specifications

Model	IOVU-430M
LCD size	4.3"
Max. Resolution	480 x 272
Brightness (cd/m²)	400
LCD Color	262K
Pixel Pitch (mm)	0.066(H) x 0.198(V)
Backlight MTBF	10000 hrs
Touch Screen	Projected-Capacitor
CPU	MARVELL XScale PXA270 416MHz
RAM	128MB SDRAM
Bootloader Storage	2MB boot ROM
OS/Program Storage	1GB Mini Secure Digital card
I/O Ports and Switches	1 x RS-232/422/485 COM port (software controllable) 1 x Reset button 1 x 10/100Mbps LAN 1 x USB1.1 host 1 x CAN bus 2.0b 6 x GPIO 2pin Terminal block DC input

Audio	1.5W speaker x 2
Construction Material	ABS + PC Plastic
LED Function	1 x Power ON/OFF LED on front panel
Mounting	Wall, Stand, Vstand and Arm (VESA 50 x 50)
Front Panel Color	Black
Dimension (W x H x D mm)	145 x 104 x 34
Operation Temperature (°C)	-20°C ~ 60°C
Storage Temperature (°C)	-20°C ~ 80°C
Net Weight (kg)	0.7
IP Level (front panel)	IP 65
Power Requirement	12~36V DC input
Power Consumption	7W

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Dimensions (Unit : mm)



Packing List

1 x IOVU-430M
1 x Null modem cable
1 x Screw kits
1 x Utility CD includes SDK, utilities, and technical document

Options

Part No.	Description
63000-FSP0601AD101C760-RS	12V/5A DC 60W power adapter with bare wire, 90~264V AC input
IOVU-430M-IWC/B/-R10	In-Wall-Cage
IOVU-430M-IWC/W/-R10	In-Wall-Cage

Ordering Information

Part No.	Description
IOVU-430M-CE5/MT/-R10	4.3" TFT, WQVGA fan-less with MARVELL XScale PXA270 CPU, 128MB SDRAM, Projected-capacitor multi-touch Panel PC with built-in Windows® CE 5.0 license
IOVU-430M-CE5/ST/-R10	4.3" TFT, WQVGA fan-less with MARVELL XScale PXA270 CPU, 128MB SDRAM, Resistor type single-touch Panel PC with built-in Windows® CE 5.0 license

IOVU-570M

ARM-based Panel PC



Built-in WiFi function



WiFi function supports 802.11b/g



SD card

Preinstalled Windows® CE5.0 or ARM-Linux boot from secure digital card

2 x USB1.1 host
12~36 V DC-IN
Reset button
10/100Mbps LAN RS-232/422/485
(software controllable)



Features:

- 5.7" TFT VGA LCD with resistive touch screen
- MARVELL XScale PXA270 520MHz processor and 128MB SDRAM
- Default 1GB secure digital card for OS and user data/programs
- Built-in 802.11b/g Wireless LAN
- Built-in 1.5W speakers
- IP64 compliant front panel
- Fan-less design for rigorous environments
- Preinstalled Windows® CE5.0 operating system.
- Windows® CE5.0 SDK for user application software development.

Packing List

1 x IOVU-570M
1 x Utility CD includes application tools, SDK, and technical document.
1 x Null modem cable
1 x Touch pen

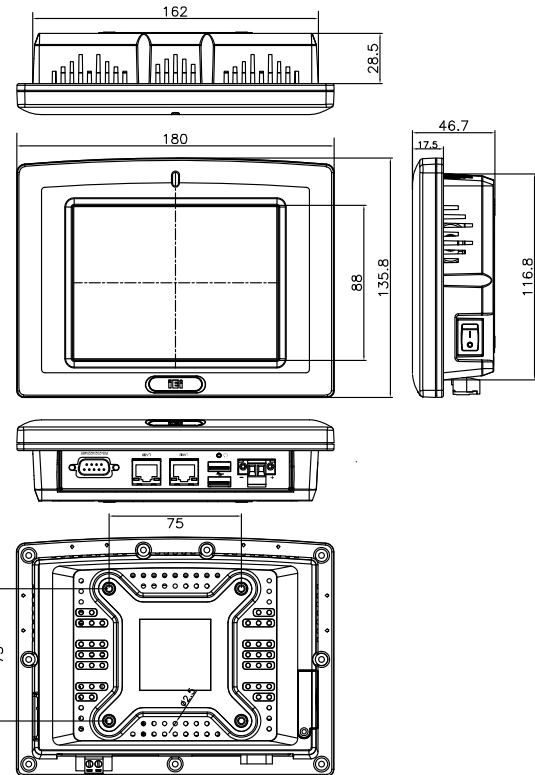
Ordering Information

Part No.	Description
IOVU-570M-CE5/-R10	5.7", VGA fan-less touch panel PC with MARVELL XScale PXA270 CPU, 128MB SDRAM, 802.11b/g wireless LAN and built-in Windows® CE5.0 Operating System

Options

Part No.	Description
ALFPK-08	Panel mount kit
AFLWK-07	VESA 75 wall mount kit
ARM-11-RS	LCD Monitor/PPC Arm kit loading capacity from 3kg~7kg
STAND-A08-RS	LCD Monitor/PPC Stand kit for VESA 75 and support up to 5 Kg
VSTAND-A07	LCD Monitor/PPC STAND V type for VESA 75, 0~90 degree adjustable hinge and support up to 2.5 Kg
AFLP-12BMSR-U	USB Magnetic Card Reader
AFLP-BRW01-U / AFLPB01-U	USB Barcode Reader (White / Black)
AFLP-CDB01 / AFLP-CDW01	VFD Customer Display (Green) 5 x 7 dot matrix (Black / White)
63000-FSP0601AD101C760-RS	12V/5A DC 60W power adapter with bare wire, 90~264V AC input

Dimensions (Unit : mm)



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IOVU-751R

MIPS-based Panel PC



MPEG1
MPEG4

MPEG2
WMV9

DivX
MPEG4

Hardware
Decode

Traditionally, Power over Ethernet (PoE) technology has been used to power low voltage devices such as wireless LAN Access Points, Voice over IP phones and IP-based cameras. However, the IOVU-751R is a 7" touch screen panel PC powered by Ethernet and with enhanced built-in hardware multimedia acceleration engine (MAE) to support MPEG1/2/4, DivX, and WMV9 in full D1 resolution. The power requirement is less than 13 W, and falls within the power specified in the IEEE 802.3af PoE industry standard.



Intranet
Internet

Power Sourcing Ethernet Switch

Wireless LAN
Access Point

IP Camera

VoIP Phone



RMI
Raza Microelectronics, Inc.

MPEG1
MPEG4

MPEG2
WMV9

DivX
MPEG4

Windows CE 5.0



MIPS
TECHNOLOGIES

Applications

The IOVU-751R is a rugged, compact device that has low power consumption and is designed without failure-prone hard disks and fans; moreover, its high-performance multimedia support is a solution for diverse range of applications :

- > POE supports Ethernet transmission for updating advertisement and doesn't need additional power supply.
- > Compliant with varied digital video media including MPEG1, 2, 4, DivX, and WMV9.
- > Internal speakers and fan-less feature for great audio presentation.



Home / Building Automation

- Update the latest information by Ethernet like cookbook, entertainment program...etc.
- Power meter, lighting control, and home-safety.



Slim POS

- PoE supports Ethernet service and power supply function directly.
- Easy to integrate optional barcode reader, magnetic card reader, and customer display.

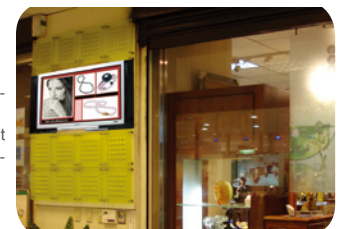
Thin/Client

- Provide the service information to all passengers.
- Varied movies, games, and chat room for all passengers.



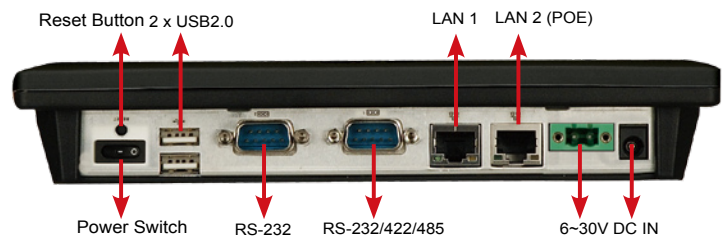
Digital Signage & Game Device

- Update advertisement programs by Ethernet and support multimedia functions.
- Access games, sport training programs and internet service. Users don't need an individual coach anymore.



Features:

- Processor includes MAE (Media Acceleration Engine) supports MPEG 1/2/4 and WMV9
- RISC-based processor provides high performance and extremely low power consumption
- POE (Power over Ethernet) function
- 7" widescreen WVGA TFT LCD with resistive touch screen
- Compact design with plastic housing
- Fanless system
- Built-in 1.5W speakers
- Secure Digital card slot for storage extension
- IP64 compliant front panel



IOVU-751R Specifications

Model	IOVU-751R
LCD Size	7"
Max. Resolution	800 x 480
Brightness (cd/m ²)	400
LCD Color	262K
Pixel Pitch (mm)	0.0635 (H) x 0.1905 (V)
Backlight MTBF	50000 hrs
Touch Screen	Resistive Type 4-wire
CPU	Alchemy™ Au1250™ 500 MHz
RAM	256 MB DDR2
Bootloader Storage	2 MB boot ROM
OS/Program Storage	1 GB Secure Digital card
I/O Ports and Switches	1 x RS-232 COM port 1 x RS-232/422/485 COM port (Software Controllable) 1 x Reset button 1 x On/Off power switch 2 x 10/100Mbps LAN (one supports POE) 2 x USB2.0 host

Audio	1.5W speaker x 2
Construction Material	ABS + PC Plastic
LED Function	1 x Power ON/OFF LED on front panel
Mounting	Panel, Wall, Stand, Vstand and Arm (VESA 75 x 75)
Front Panel Color	Gray 7C
Dimensions (W x H x D mm)	226 x 140 x 40
Operating Temperature (°C)	-20 ~ 60
Storage Temperature (°C)	-20 ~ 80
Net Weight (kg)	0.8
IP Level (front panel)	IP 64
Power Requirement	6~30 V DC
Power Consumption	8.5 W

Packing List

- 1 x IOVU-751R
- 1 x Utility CD includes application tools, SDK, and technical document.
- 1 x Null modem cable
- 1 x Touch pen
- 1 x Screw kit

Ordering Information

Part No.	Description
IOVU-751R-CE5/-R10	7", WVGA fan-less touch panel PC with RMI Alchemy AU1250 CPU, 256MB DDR2 SDRAM, LAN supports POE function and built-in Windows® CE5.0 Operating System
IOVU-751R-UX/-R10	7", WVGA fan-less touch panel PC with RMI Alchemy AU1250 CPU, 256MB DDR2 SDRAM, LAN supports POE function and built-in ARM-Linux 2.6.11 Operating System

Options

Part No.	Description
ALFPK-08	Panel mount kit
AFLWK-07	VESA 75 wall mount kit
ARM-11-RS	LCD Monitor/PPC Arm kit loading capacity from 3kg~7kg
STAND-A08-RS	LCD Monitor/PPC Stand kit for VESA 75 and support up to 5 Kg
VSTAND-A07	LCD Monitor/PPC STAND V type for VESA 75, 0~90 degree adjustable hinge and support up to 2.5 Kg
AFLP-12BMSR-U	USB Magnetic Card Reader
AFLP-BRW01-U / AFLPBRB01-U	USB Barcode Reader (White / Black)
AFLP-CDB01 / AFLP-CDW01	VFD Customer Display (Green) 5 x 7 dot matrix (Black / White)
63000-FSP0601 AD101C-RS	POWER ADAPTER, 90V-264V input and 12V/5A/60W output; PLUG ψ 2.5/ ψ 5.5/no lock
63000-FSP0601AD101C760-RS	12V/5A DC 60W power adapter with bare wire, 90~264V AC input

Dimensions (Unit : mm)

