iEi®

IOVU RISC-based POE Panel PC

Power-over-Ethernet Panel PC

IOVU-751R

IOVU-751R

☑ **Power over Ethernet**

☑ **DC Adapter**
  (Wide Range 6~30V DC-Input)

☑ **Backup optional**
  UPS module AUPS-A10

- 7" WVGA POE (Power over Ethernet) Touch Panel PC

- Powerful Multimedia features provide hardware decode for MPE1/2/4, DivX and WMV9

- Dual-Ethernet provides redundant protection for uninterrupted data transmission.

Multi-Media | RMI Raza Microelectronics, Inc. | MPEG1 MPEG2 MPEG4 WMV9 | DivX MPEG4 | Microsoft Windows CE 5.0 | Linux | MIPS TECHNOLOGIES

The IOVU-751R is PoE-compliant multimedia panel PC.

Multi-Media | MPEG1 MPEG2 MPEG4 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. And 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

Application

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 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.
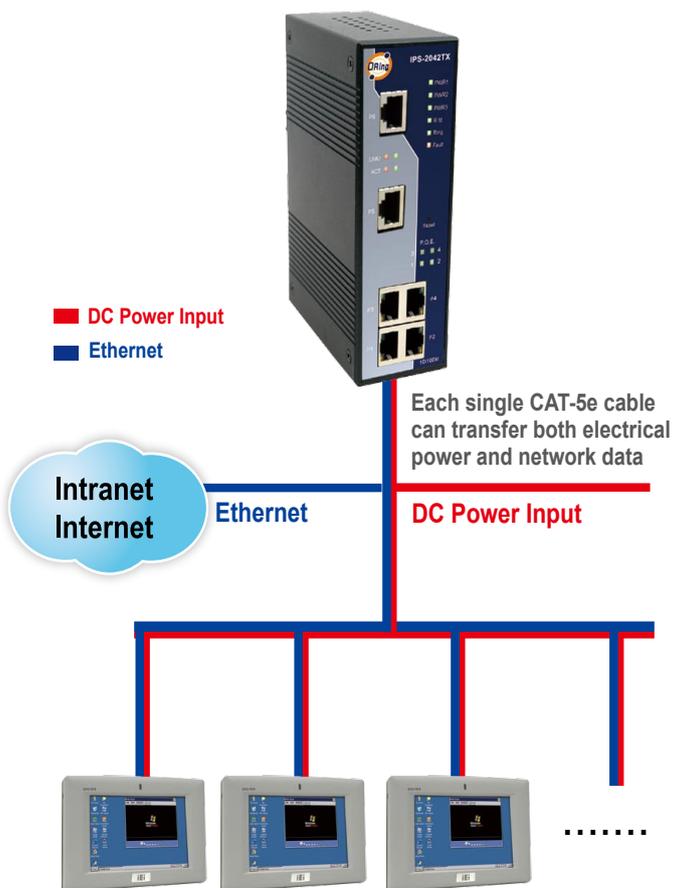
Power over Ethernet (PoE)

What is POE?

- POE technology enables a PSE (Power Sourcing Equipment) to transfer electrical power, along with data, to a remote PD (Powered Device) over standard twisted-pair cable in an Ethernet network.
- This technology is useful for powering remote devices where it would be inconvenient, expensive (mains wiring must often be done by qualified and/or licensed electricians for legal or insurance reasons) or infeasible to supply power separately. It doesn't require modification of existing Ethernet cabling infrastructure.
- Using Power-over-Ethernet system eliminates the cable to run 110/220 VAC power and just installs only a single CAT5e Ethernet cable that carries both data and power to each device.
- The flexibility of many application and network devices is significantly decreasing installation cost.

POE Standard 802.3af

802.3af of the Ethernet family from the IEEE was launched in 1999 – largely driven by PowerDsine. With all the major manufacturers including Avaya, Cisco and Nortel (14 all together), contribute to the standard.
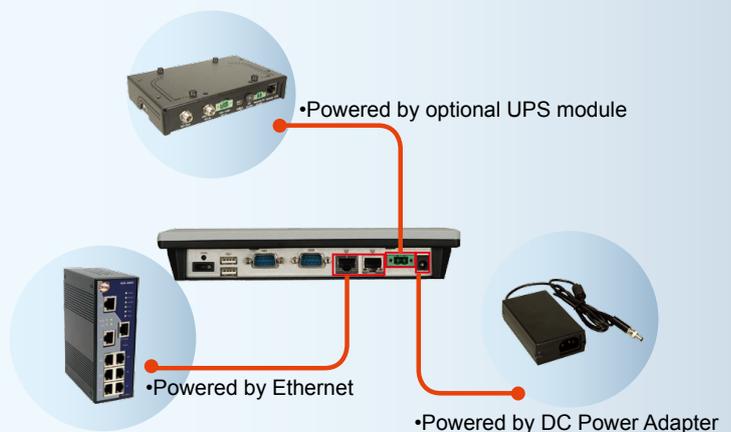
- Designed to work on Networks with existing CAT5e and above LAN Structured Cabling Systems utilizing RJ45 connector.
- End-span superimposes the power on the existing Data wires (1, 2, 3 and 6). Mid-span puts the power on the unused or spare wires (4, 5, 7 and 8).
- The amount of power launched by the End-span or Mid-span PSE is 15.4 watts per link (or per Port). Due to loss over the Structured Cabling System, the effective wattage available to the End device is about 13 watts.
- Support for 10Mb or 100Mb Ethernet connections for End devices

DC Power Input
Ethernet

Each single CAT-5e cable can transfer both electrical power and network data

Intranet Internet

Ethernet   **DC Power Input**

What is the benefit of POE?

- PoE will revolute the way manufactures design and build new products and will open a whole new dimension to network designing. While the need for PoE has been largely driven by the VoIP, surveillance cameras, and Panel PC industry, the benefits spread much further. It only requires a single data connection – cheaper and easier to install.

- POE function can provide enough power for IOVU-751R panel PC and addition peripheral, so customer doesn't need other power supply to power the system. The function reduces engineering cost greatly.

Power Input Options

•Powered by optional UPS module

•Powered by Ethernet

•Powered by DC Power Adapter

RMI Alchemy™ Au1250™

The IOVU-751R are embedded with an RMI Alchemy™ Au1250™ RISC-based processor. The Au1250™ is a high-performance system on chip (SOC) processor which provides a variety of PC style peripherals and integrated hardware multimedia acceleration engine (MAE) to play DVD quality video efficiently at full-frame rates. Its built-in MAE supports common digital video media including hardware decode MPEG1, 2, 4, DivX, and WMV9 at full D1 resolution without the need for a DSP or specialized coding.

Comparing to competitive X86 solutions, Alchemy™ technology achieves the support of complete multimedia display without extra hardware codec. Even though the multimedia supports are done by CPU itself, it has no thermal issue and consumes lower electricity power.

	Alchemy™ Au1250™	AMD LX 800
CPU Speed	500 MHz	500 MHz
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

Multimedia Support

Video Decode Resolution Support :
- D1(PAL)
- Wide VGA (16:9)
- D1(NTSC)
- VGA
- Wide GIF (16:9)
- GIF
- QVGA

Video Performance at Full D1 Resolution (720 x 480) :

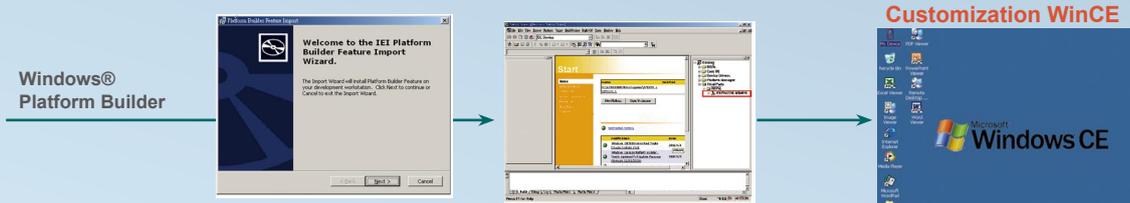| FORMAT	STREAM TYPE	AUDIO FORMAT	SUPPORTED BIT RATES
MPEG-1	SYSTEM	MPEG	8 Mbps
MPEG-2	PROGRAM	MPEG	10 Mbps
	TRANSPORT	MPEG	8 Mbps
WMV9	Unencrypted only	WMA	2.5 Mbps
	CBR w/o filters, 720x480	WMA	2.5 Mbps
	VBR w/o filters, 720x480	WMA	2.5 Mbps
DivX	Unencrypted only/ no subtitles - V3.11	MP3/AAC/MPEG	4 Mbps
	V4	MP3/AAC/MPEG	4 Mbps
	V5	MP3/AAC/MPEG	4 Mbps
MPEG-4 MP4 iso/eic 14496-2. For more information, please visit www.m4if.org.	Advanced Simple Profile – level 5	AAC	3 Mbps
MPEG-4 AVI	Advanced Simple Profile – level 5	MP3, AC-3	4 Mbps

Supported Audio Formats :

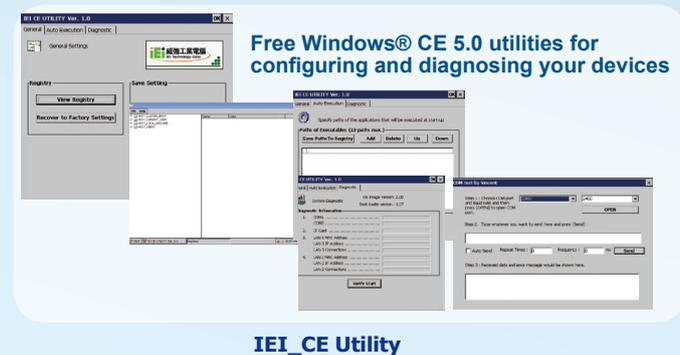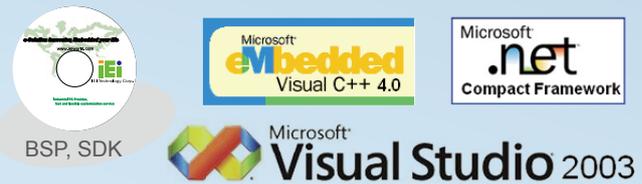| AUDIO ONLY	CHANNELS	FORMATS PROFILES	SAMPLING RATES	SUPPORTED BIT RATES
MPEG	1 to 2 channels	MPEG1/2/2.5 layers 1,2,3 (mp3), MP3Pro (less SBR)	8 kHz to 48 kHz	8 kbps to 320 kbps
AAC	1 to 6 channels down mixed to 2	LC, MAIN, PNS, DRC, IS, MS, TNS, LD, LTP	8 kHz to 96 kHz	8 kbps to 448 kbps
PCM	1 to 6 channels down mixed to 2	24/16/8-bit, WAV, AIFF, ulaw/alaw, adpcm, LPCM	4 kHz to 96 kHz	32 kbps to 9216 kbps
Dolby Digital AC-3	1 to 6 channels (including 5.1) down mixed to 2	All	32, 44.1, & 48 kHz	56 kbps to 640 kbps
Windows Media Audio (WMA)	1 or 2 channels	MS, DC, JS, IS, no lossless or voice	8 kHz to 48 kHz	8 kbps to 320 kbps
OGG Vorbis	2 channels	All (less FLAC)	.5 kHz to 192 kHz	.4 kbps to 1760 kbps

Software Support

IOVU-751R is shipped with pre-installed Windows CE 5.0 or Linux kernel 2.6.x, along with rich application software development kit :

Windows CE5.0

- Standard Windows® CE5.0 professional version license.

- Optional Board Support Package (BSP) for customers to customize their own OS image.

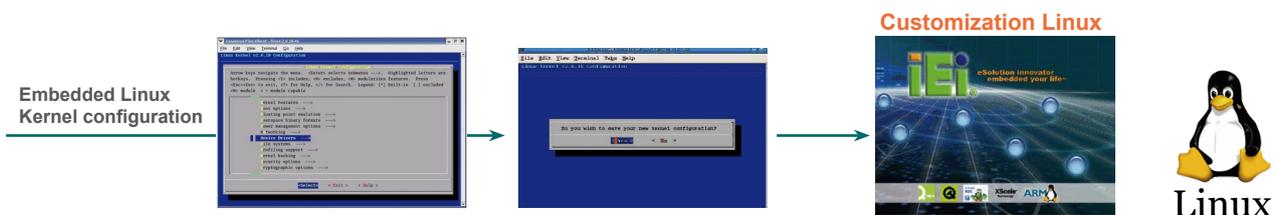**Windows® Platform Builder**

Customization WinCE

- 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-751R to access Microsoft Windows® based applications installed on Microsoft Terminal Service server.

BSP, SDK

- Free pre-installed utilities for configuring and diagnosing your IOVU-751R.

- Free remote management tools installed in laptop for remotely configuring, monitoring, and managing your IOVU-751R.

Free Windows® CE 5.0 utilities for configuring and diagnosing your devices

IEI_CE Utility

Remote Management Tool

Linux Kernel 2.6.x

- GNU standard Embedded Linux 2,6,x bootloader and OS image including.

- Secure Shell (OpenSSH) providing 128-bit, 192-bit or 256-bit encryption between the IOVU-751R and another system

- Built-in web browser and X-window system

- Related Linux drivers for onboard peripheral I/O, network and audio

- Attached SDK including GUI, Sample Code, and Tool chain make users program application readily.

- Optional Board Support Package (BSP) including kernel source code for customers to customize their own OS image.

Embedded Linux X-Window

Embedded Linux Kernel configuration

Customization Linux

IOVU-751R

MIPS TECHNOLOGIES

RMI Raza Microelectronics, Inc.
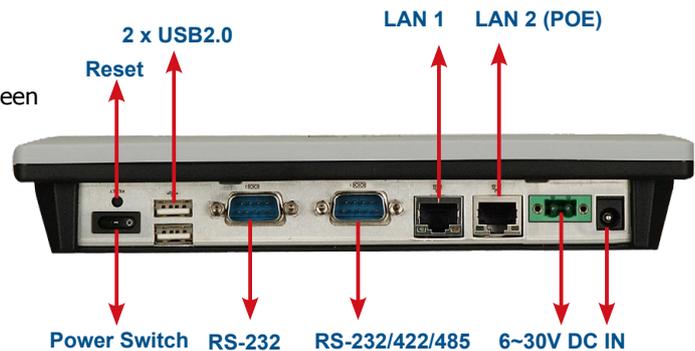
Microsoft Windows CE 5.0

Multi-Media

Linux

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

2 x USB2.0

Reset

LAN 1   **LAN 2 (POE)**

Power Switch   **RS-232**   **RS-232/422/485**   **6~30V DC IN**

Specification

Model	IOVU-751R
LCD Size	7"
Max. Resolution	800 x 480
Brightness (cd/m2)	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)	-10 ~ 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

Ordering Information

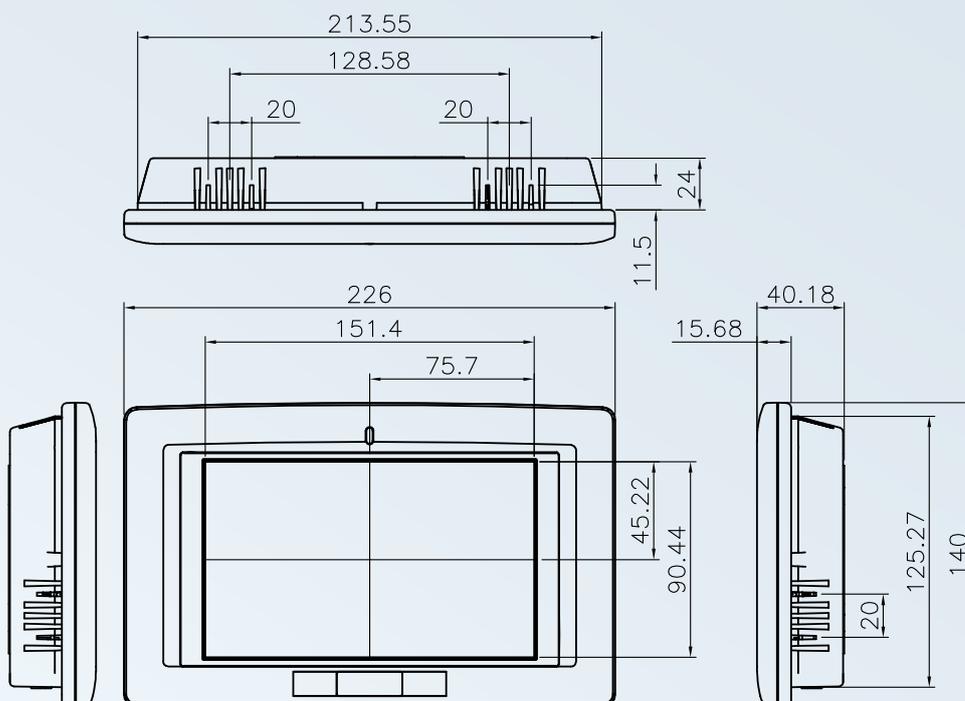| Part Number	Description
IOVU-751R-CE5/-R10	7" TFT, WVGA, 262K color, touch Panel PC with built-in Windows® CE 5.0 license
IOVU-751R-UX/-R10	7" TFT, WVGA, 262K color, touch Panel PC with built-in Linux kernel 2.6.18

Packing List

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

Option

Part Number	Description
AFLPK-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
AUPS-A10-R10	DC 12 V Input UPS module
AFLP-12BMSR-U	USB Magnetic Card Reader
AFLP-BRW01-U / AFLP-BRB01-U	USB Barcode Reader (White / Black)
AFLP-CDB01 / AFLP-CDW01	VFD Customer Display (Green) 5 x 7 dot matrix (Black / White)
63000-FSP0361AD101C-RS	POWER ADAPTER, 90V-264V input and 12V/36W output ;PLUGψ2.5/ψ5.5/no lock
63000-UP0451E24P56L-RS	24V DC 45W power adapter with bare wire 90~264V AC input

Dimensions (Unit: mm)

Diversified Mounting Support

IOVU-751R has several mounting holes compliant with the VESA mounting standard (75 mm x 75 mm) on the rear panel for stand mounting and other mounting methods.
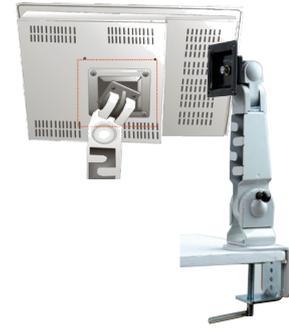
►V-Stand

NEW !

A. VESA 75/100 compliant and height adjustable mounting screw holes.

C. 0° to 90° adjustable hinge design

B. Designed holes help to dissipate the system heat

►Stand kits

STAND-A08

►ARM kits

ARM-11

►Wall Mount

Requires no cut out in the wall surface.It mounts directly on the existing wall or desk.
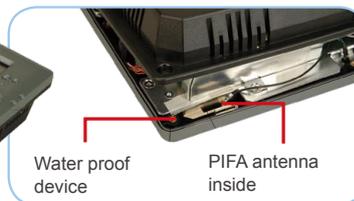
AFLWK-12
(VESA 75 Compliant)

►Panel Mount

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

AFLPK-08

►IP64 dustproof and waterproof front panel

The IOVU front panel is IP64 compliant. IP64 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.

Water proof device

PIFA antenna inside

►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.

Optional PSE (Power Sourcing Equipment) Module:IPS-2042TX

■ **DC Power Input**
■ **Ethernet**

Intranet Internet

Ethernet

DC Power Input

Each single CAT-5e cable can transfer both electrical power and network data
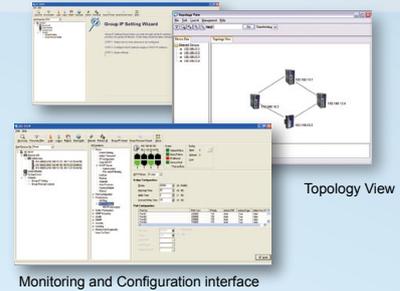
Hardware Features

- Wide Operating Temperature: -40 to 70 °C
- Storage Temperature: -40 to 85 °C
- Operating Humidity: 5% to 95%, non-condensing
- 4 x 10/100Base-T(X) Ethernet port with PSE provides up to 25 watts (TI high-power design)
- 10/100Base-T(X) Ethernet port

Software Features

- World's fastest Redundant Ethernet Ring (Recovery time < 10ms over 250 units connection)
- Supports Ring Coupling, Dual Homing and RSTP over O-Ring
- Support fast recovery mode
- Easy-to-configure: Web / Windows utility
- Windows utility (Open-Vision) for network management

Topology View

Monitoring and Configuration interface

Specification

ORing Switch Model	IPS-2042TX
Physical Ports	
10/100 Base-T(X) Ports in RJ45Auto MDI/MDIX with PSE	4
10/100 Base-T(X) Ports in RJ45Auto MDI/MDIX without PSE	2
Technology	
Ethernet Standards	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for Flow control IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 802.3af PoE specification (up to 25 Watts per port for PSE)
MAC Table	2048 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Store-and-Forward	Switching bandwidth: 1.0Gbps
VLAN: Port Based	
Security Features	
VLAN to segregate and secure network traffic	Enable/disable ports
Software Features	STP/RSTP (IEEE 802.1D/w) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units Port configuration, status, statistics, monitoring, security
Network Redundancy	O-Ring STP RSTP

Fault Contract	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Redundant Input power	Triple DC inputs. 12-48VDC on 7-pin terminal block, 12-45VDC on power jack
Power consumption (Typ.)	5W (Power for PSE isn't included)
Overload current protection	Present
Reverse polarity protection	Present on terminal block
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	52(W)x106(D)x144(H) mm (2.05x4.17x5.67 inch.)
Weight (g)	696 g
Environmental	
Storage Temperature	-40 to 85˚C (-40 to 185˚F)
Operating Temperature	-40 to 70˚C (-40 to 158˚F)
Operating Humidity	5% to 95% Non-condensing

Ordering Information

Part Number	Description
IPS-2042TX	Industrial 6-port Lite-Managed P.O.E. Ethernet Switch with 6 x 10/100TX

Packing List

1 x IPS-2042TX	1 x Utility CD includes technical document and utilities
1 x Screw kit	

Optional DC UPS Module : AUPS-A10

1.VESA 75 standard for IOVU-751R product.
2.Enhance charger and battery status by network remote management softare

D. DC output on/off switch by terminal block.

A. Networking UPS management port by RJ-45

C. DC output on/off switch

B. Battery status console port

+12V DC-Out
+12V DC-In
DC On/Off
Remote DC On/Off
Remote LAN

● Network Remote Management Software

E-Mail Alarming

Low Battery/High Temperature Alarm
IEI UPS will pop-up a status window to notify users when a special event is happened, such as low battery or high temperature (over 60°C).

E-mail

configuration

Sataus

Upload

Specification

Model Name		AUPS-A10
Output	Voltage	+12V +/-5%
	Output Power	60W
Input	Voltage	+12V
Battery	Type	Li-Ion 2S2P
	Normal Voltage	7.4V 3800mAH
	Backup	60W/10Min
Physical	Dimensions	150mm(L) * 95mm(W)*34mm(H)
	Weight	1.2kg
LED Indicator	Green	DC power input
	Yellow	Battery charging
	Orange	Bettery discharging
Environment	Operating Tem.	0℃~40℃
	Storage Tem.	-20℃~50℃

Ordering Information

Part Number	Description
AUPS-A10-R10	VESA 75, DC 12V input 60W UPS module with 3800mAH, 2S2P Li-Ion battery

Packing List

1 x DC jack cable	1 x screw kit
1 x USB cable	

Optional Peripherals

● MSR and Smart Card Reader

PoE supply power directly

Magnetic Card Reader

P/N	AFLP-12BMSR-U
General	90 mm Magnetic Stripe Reader Programming: By Software Download Program Card Standard: ANSI , ISO , ABA Track Read: ISO 1,2,3 (IATA,ABA,THRIFT/MINTS) , JISII100-1000mm/sec
Electrical	Voltage:DC+5V, +/-5%Reading Inicator:Beeper
Environment	Operating Temperature: 0°C to 40°C Relative Humidity: 20% to 85 % (Non-condensing)
Physical	Cable: Straight 2.5ft / Weight: Approx.61g
Interface	USB

● Barcode Reader

PoE supply power directly

Ideal for scanning applications

Specifications

SCAN PERFORMANCE	
Depth of Scan Field	0 mm – 140 mm (0" – 5.5") for 0.33 mm (13 mil) bar codes
Width of Scan Field	49 mm (1.9") @ face; 195 mm (7.7") @ 140 mm (5.5")
Scan Speed	72 scan lines per second
Scan Pattern	Single scan line
Minimum Bar Width	0.102 mm (4 mil)
Print Contrast	35% minimum reflectance difference
Roll, Pitch, Yaw	42°, 68°, 52°
MECHANICAL	
Length	169 mm (6.7")
Width Head	63 mm (2.5")Handle: 40 mm (1.6")
Height	Head: 35 mm (1.4")Handle: 31 mm (1.2")
Weight (w/o cable)	97 g (3.41 oz)
Termination	10 pin modular RJ45
Cable	Standard 1.5 m (5') straight; optional 2.7 m (9') coiled
ELECTRICAL	
Input Voltage	5 VDC + 0.25 V
Power	675 mW
Operating Current	135 mA @ 5 VDC
System Interface	USB

Options

P/N	Description
AFLP-BRW01-U	Single-line, hand-held laser scanner, white color
AFLP-BRB01-U	Single-line, hand-held laser scanner, black color

● Customer Display

Options

P/N	Description
AFLP-CDB01	Customer Display, VFD, 5x7 dot matrix, RS232, black color
AFLP-CDW01	Customer Display, VFD, 5x7 dot matrix, RS232, white color

Specifications

Customer Display	Vacuum Fluorescent Display Green
Display Pattern	5 x 7 dot matrix
Brightness	350~700 cd/m2
Character	95 Alphanumeric & 32 International Characters
Dot Size (X x Y)	0.86 mmx 1.2 mm
Font Size	5.25(W) x 9.3(H)
Character Number	20 x 2 for 5 x 7 font
Command	LD-220, EPSON POS D101, Aedex, UTC/S, UTC/P, ADM788, DSP800, CD5220, EMAX, LOGIC CONROL
Language	USA, France, Germany, U.K., Sweden, Denmark I & II, Italy, Spain, Norway, Japan (Katakana), Slavonic, Russian, etc...
Pass-through	Pass-through function is standard
Dimension (Panel) (W x D x H)	220 mm x 50 mm x 86 mm
Dimension (Support)	Two supports per package, per support : 130mm130mm x 2 = 260 mm (H)x 33 mm (dia)
Dimension (base)	217 mm (W) x 106 mm (D) x 20 mm (H)
Viewing Angle	Max. 90°
Horizontal Rotation	Max. 360°
Weight	About 0.55 Kg
Interface	RS-232
Power Consumption	3 Watts Average (Maximum 15 Watts)

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The World's First Power-over-Ethernet Panel PC.

IOVU-751R