Embedded System Platform Solutions

As the leading Industrial System provider, IEI continues to extend the product footprint from component level to system integration service. Our strong knowledge of market and technology innovation offers reliability, flexibility and interoperability for all of our industrial products with choices of size, performance and features.

1. Transportation System

Model Name	Processor
IKARPC-07A	Intel® Atom™ E3826 1.46 GHz
AFOKAR-08A	RockChip RK3399(Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)
IKARPC-W10A-BT	Intel® Atom™ E3826 1.46 GHz
IVS-300-BT/ULT3	Intel® Core™ i5-6300U 2.4 GHz, Intel® Celeron® J1900 2.0GHz
IVS-200-ULT2	Intel® Core™ i5-5350U 1.8 GHz, Intel® Celeron® 3765U 1.9 GHz
IVS-110-AL	Intel® Atom™ E3930 1.8GHz, Intel® Atom™ E3940 1.8GHz, Intel® Atom™ E3950 2.0GHz
IRS-100-ULT3	Intel® Core™ i5-6300U 2.4 GHz
SBOX-100-QM87	Intel® Core™ i5-4400E 2.7 GHz

2. Industrial Automation System

Model Name	Processor
TANK-871-Q170	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-870-Q170	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-870e-H110	Intel® Core™ i7-6700TE 2.4 GHz, Intel® Core™ i5-6500TE 2.3 GHz
TANK-860-HM86	Intel® Core™ i5-4400E 2.7 GHz, Intel® Celeron® 2000E 2.2 GHz
TANK-820-H61	Intel® Core™ i5/i3, Pentium® processor
TANK-801-BT	Intel® Celeron® J1900 2 GHz
TANK-760-HM86	Intel® Core™ i7-4700EQ 2.4 GHz, Intel® Core™ i5-4400E 2.7 GHz, Intel® Celeron® 2000E 2.2 GHz
TANK-620-ULT3	Intel® Celeron® 3855U (1.6GHz, TDP=15W)
TANK-610-BW	Intel® Celeron® N3160 1.6GHz

3. DIN-Rail Embedded System

Model Name	Processor
DRPC-130-AL	Intel® Atom™ x5-E3930 1.3GHz (up to 1.8 GHz)
DRPC-120-BT	Intel® Atom™ E3845 1.91 GHz

4. Compact Size Embedded System

Model Name	Processor
ITG-100-AL	Intel®Atom™ x5-E3930 1.3GHz (up to 1.8 GHz)
uIBX-250-BW	Intel® Celeron® N3160 1.6GHz
uIBX-230-BT	Intel® Celeron® N2930 1.83 GHz

5. Digital Signage Embedded System

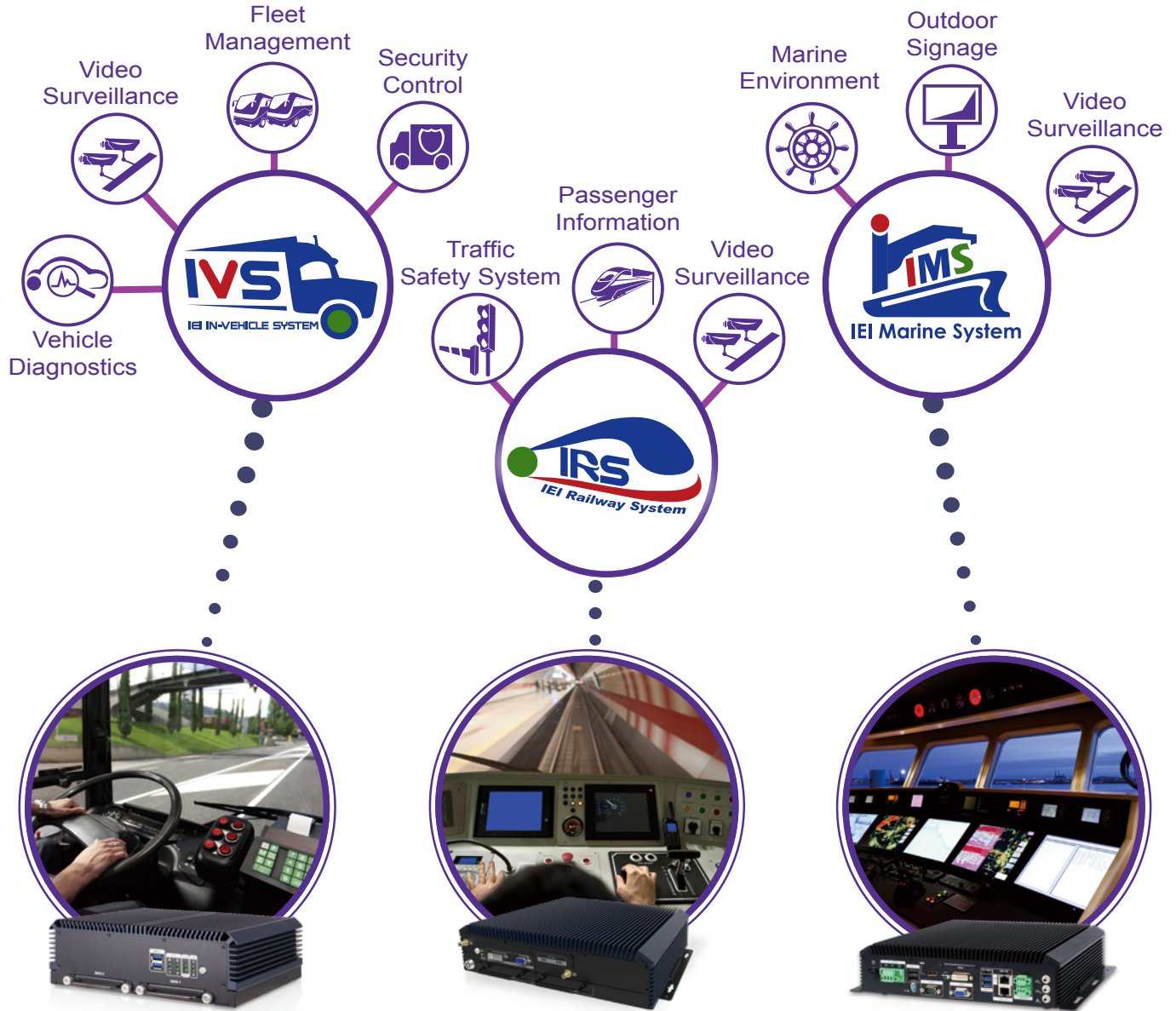| Model Name	Processor
IDS-300-BW	Intel® Celeron® N3160 1.6GHz

6. Medical Embedded System

Model Name	Processor
HTB-100-HM170	Intel® Core™ i7-6822EQ, Intel® Core™ i5-6442EQ

Transportation Solution

IEI transportation series is divided into three categories for different markets: in-vehicle, railway and marine. All these products have passed harsh vibration and shock test and can withstand in extreme temperature. This series allows wide voltage input and features multiple communication options. In addition, our products are in fanless design suitable for various markets and with rich I/O for different applications.

Ruggedized Solution

Video Surveillance
Fleet Management
Security Control
Vehicle Diagnostics

IVS IEI IN-VEHICLE SYSTEM

Traffic Safety System
Passenger Information
Video Surveillance

IRS IEI Railway System

Marine Environment
Outdoor Signage
Video Surveillance

IMS IEI Marine System

■ IVS & In-Vehicle PPC Series

In-Vehicle Features
- Wide working temperature
- Wide DC input range
- E-mark certification
- OBD-II function
- Multi wireless communication
- IP 4X protection

■ IRS Series

Railway Features
- Wide working temperature
- Support DVI and VGA dual display
- EN-50155 certification
- Dual SIM slot
- M12 connector

■ SBOX Series

Marine Features
- Isolation protection ports
- Three independent displays
- Full range dimming
- DNV, IEC 60945 4th, IACS-E10, IEC 61174 certification
- IP 4X protection

In-Vehicle PPC Series

Logistics industry's commonly used satellite positioning systems, electronic maps, Internet access, mobile communication systems with 3.75G/LTE/Wi-Fi/Bluetooth/GPS/RFID are all combined together in our solutions for fleet management, logistics, manufacturing and passenger transportation industries.
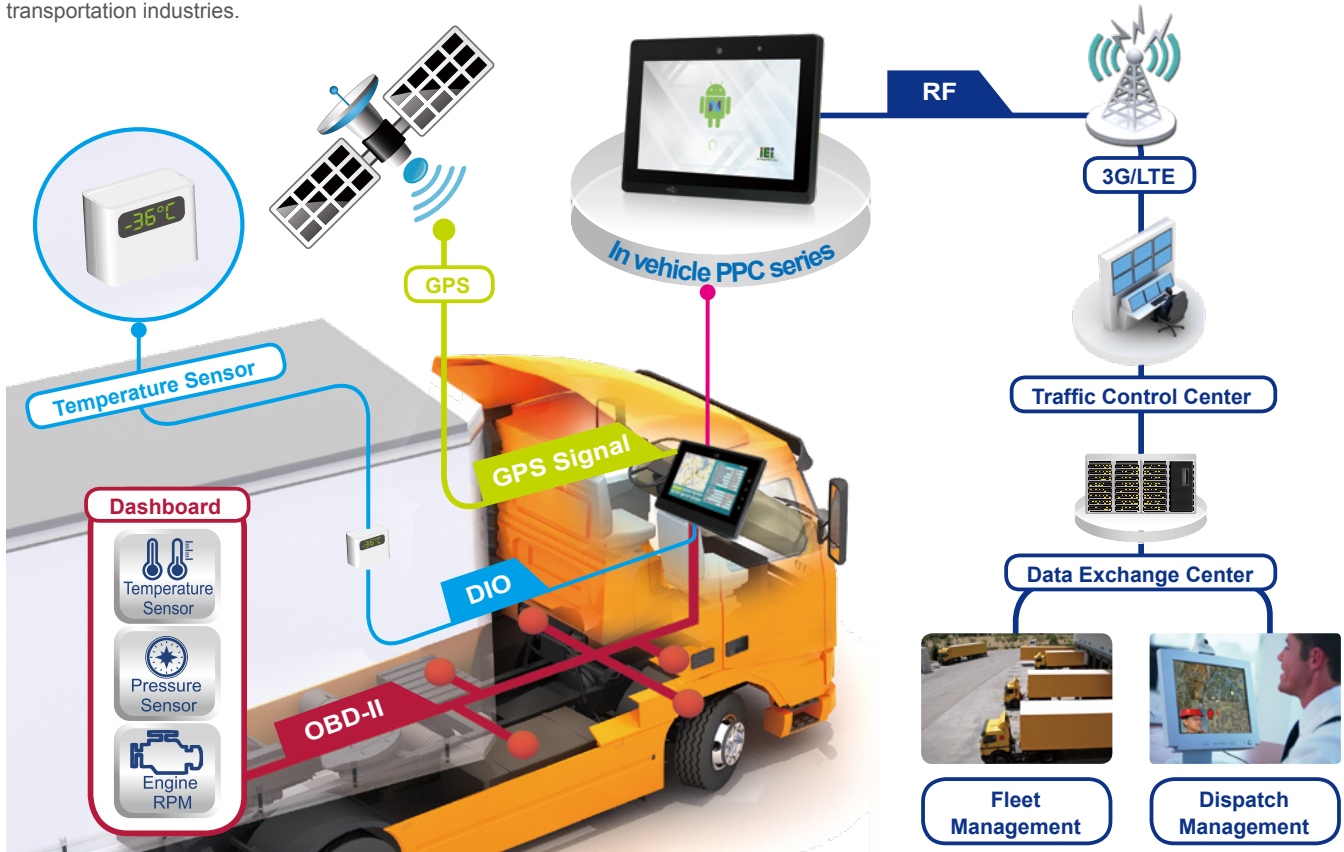
Key Features

■ High Brightness Screen

The in vehicle panel PC series is equipped with an ultra-high brightness LCD panel to help drivers avoid low visibility caused by direct sunlight.

■ Communication

The transportation series reserves multiple PCIe Mini slots for different network communication. Users can use CDMA/GPRS/HSUPA+/LTE to transmit and receive real-time data, use Wi-Fi for data acquisition, or use GPS to get accurate location data.

■ CAN Bus/OBD-II (Optional)

The in-vehicle panel PC series supports On Board Diagnostics (OBD) and Controller Area Network (CAN bus) and is built-in with OBD-II and CAN bus for real time vehicle diagnostic. CAN has a high degree of flexibility to adjust capacity which can be added in the existing network of nodes.
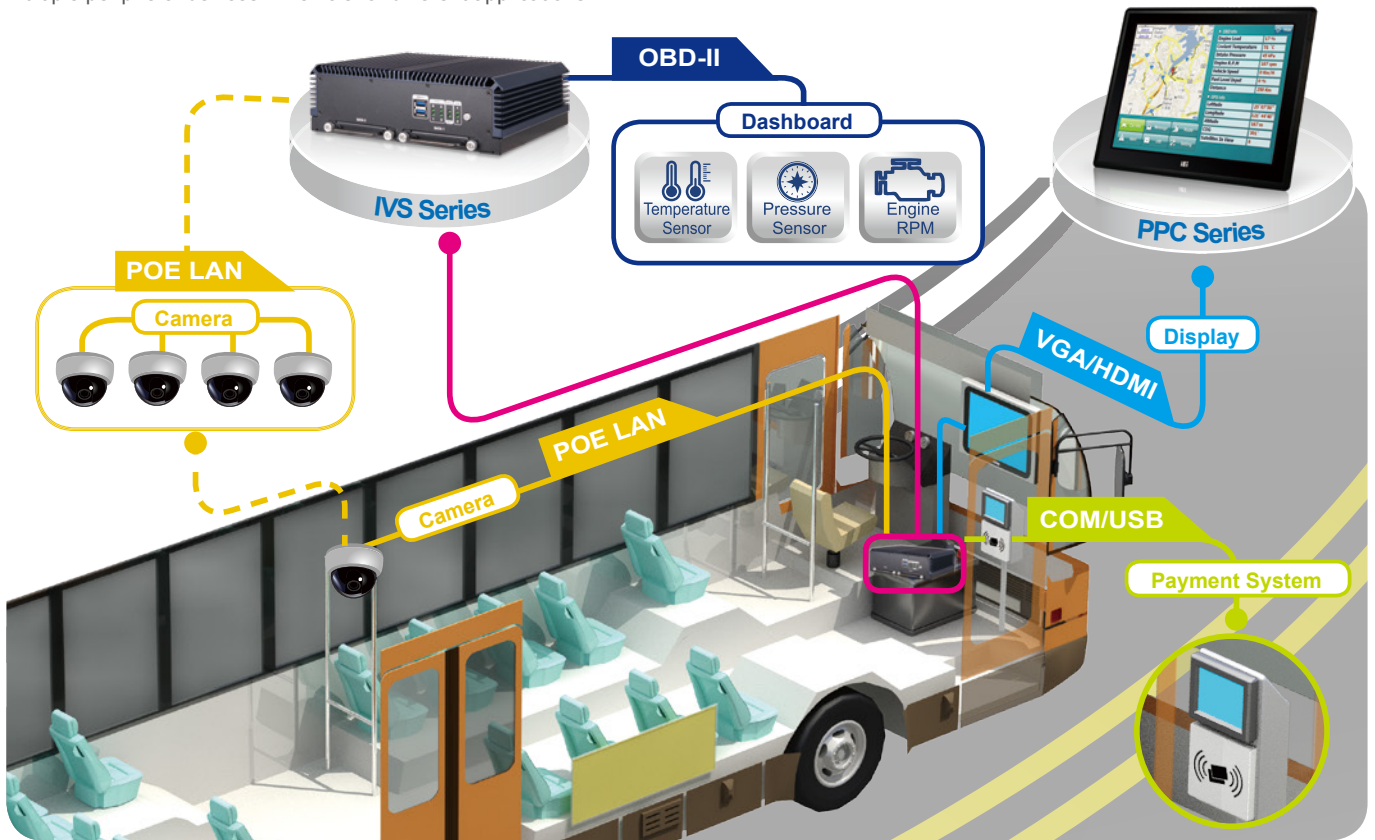
■ X86/ARM solution

The in vehicle panel PC series has two solutions, Intel and ARM architecture for customers. You can choose Intel solution which supports Windows OS, or you can choose ARM solution which supports Android OS.
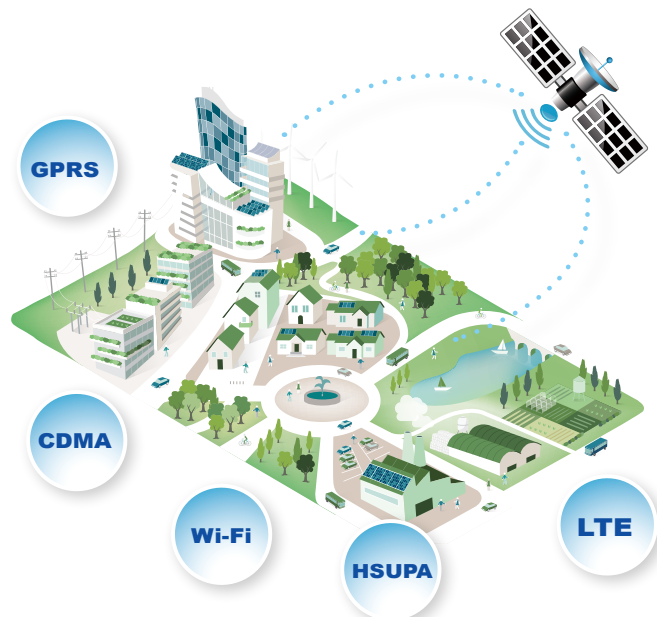
In-Vehicle: IVS Series

The IVS series vehicle box PC is designed with reliable performance for harsh environments. Rich I/O ports are provided to connect with multiple peripheral devices in vehicle for different applications.

OBD-II

Dashboard

Temperature Sensor | Pressure Sensor | Engine RPM

IVS Series

PPC Series

POE LAN

Camera

POE LAN

Camera

VGA/HDMI

Display

COM/USB

Payment System

Key Features

■ Wide Range Temperature

Operating Temperature

IEI fanless product series has leading-edge thermal design and has been tested under extreme temperature conditions in order to ensure that IEI fanless products can work in any harsh environment.

■ E-mark Certification

E-Mark

All vehicles, vehicle parts, and electronic products for the car must be enforced EMC testing. IEI IVS and in-vehicle panel PC series product all get E-Mark certification which are required for the European market.

■ Vibration and Shock Resistance

MIL-STD 810F COMPLIANT

In-vehicle systems must be able to withstand the shock and vibration that comes with driving a vehicle. IEI transportation series meet the requirement for different environments and has passed particular verification dependent on MIL-STD-810G 514.5 standard, EN61373 for railway market, EN60721 for in-vehicle market.

MIL-STD 810F

■ Particular Power Solution

Power Management

We design wide power input to prevent surge when starting engine. We develop power management for users. For in-vehicle market, we design wide DC input and ACC power to ensure users can operate the system well.

POWER IN

Raiway: IRS Series

IEI's Railway System (IRS) is focused on the rolling stock market with a variety of advanced technologies designed. The IRS-100 series is compliant with EN 50155 standard. The IRS-100 provides multiple storage bays for data saving, lockable connectors, GPS function and Wi-Fi for wireless communication. Users can control passenger information system (PIS) and network video recorder (NVR) through the IRS-100. The popular IP cameras for surveillance application can also be implemented to provide real time video monitoring to ensure passengers' safety.

Key Features

■ Dual SIM Slot

The IRS-100 offers dual SIM slot with the ability to automatically switch between two different networks in order to maintain seamless connectivity in remote areas. The system supports GPRS/UMTS/HSDPA/LTE technologies for transmission.

Front View

■ Lockable M12 Connectors

To against vibration and shock, the M12 connector is used for dual LAN communication which offers a reliable performance for high-quality data acquisition or transmission. The M12 connector can ensure that all cables can be tightly secured and improve anti-vibration capability.

Rear View

■ Multiple Isolated Port Protection

The IRS-100 provides 1.5kV isolation on the RS-232/422/485, DIO and power in order to protect from any stray electrical signals from other devices and to ensure stable operation in harsh environments.

■ Operating Temperature and EN 50155 Compliance

EN50155 is the standard for electronic equipment used on rolling stock. IEI's railway system (IRS-100) complies with EN50155 TX column 2 standard and passed tests for vibration, shock, and wide temperature. IRS-100 can run in an extremely hot or cold environment -40°C ~ 70°C.

Standard	EN50155 T1	EN50155 T2	EN50155 T3	EN50155 TX
Internal Cabinet Temperature Range	-25°C - +55°C	-40°C - +55°C	-25°C - +70°C	-40°C - +70°C

■ Wide Range of DC/DC Converters

Railway rolling stock is required to meet the requirement of EN50155 for electronic equipment.
IRS-100 has wide range of input voltages of 24VDC~110VDC (±40%), therefore, uses are able to install variety devices in different railway rolling stock applications.

Nominal Input	24V	37.5V	48V	72V	96V	110V
Input Range (0.7-1.25 Vin)	17-30V	26-47V	34-60V	50-90V	67-120V	77-137V
Brownout 100ms (0.6xVin)	14V	22V	29V	43V	58V	66V
Transient 1s (1.4xVin)	34V	61V	67V	101V	135V	154V

■ Compliant with Electromagnetic Interference Requirements

Railway electronic systems are subjected to different level of electromagnetic interference requirements.

Standard	Parameter		EN50155	
Rolling Equipment	Vibration	Category < 0.3 kg	Shock (half sine)	Long. / Trans. / Vert. axis
	Frequency range	5 - 150 Hz	Peak acceleration	5 g / 2 g / 1 g
	Acceleration	5 g	Duration	50 ms / 20 ms / 20 ms

■ Compliant with Mechanical Requirements

Railway electronic systems are subjected to high-level mechanical environmental constraints depending on their implementation.

	Generic Standards	EN 50121-3 and -4	EN 50155
Radio electrical conducted emission <30MHz 0,15 - 0,5 MHz (quasi peak) 0,5 - 5 MHz (quasi peak) 5 - 30 MHz (quasi peak)	EN55032 EN55011	EN55011 level +20 dB : 79 dB/µV/m+20dB (quasi peak) 73 dB/µV/m+20dB (quasi peak) 73 dB/µV/m+20dB (quasi peak)	Level: 70 dB/µV/ qp 70 dB/µV/ qp 70 dB/µV/ qp
Radio magnetic emission qp at 10m >30MHz 30 - 80 MHz 80 - 230 MHz 230 - 1,000 MHz	EN55032 EN55011	EN55011 level class B : 40 dB/µV/m (quasi peak) 40 dB/µV/m (quasi peak) 47 dB/µV/m (quasi peak)	Level: 70 dB/µV/m < 70 dB/µV/m < 70 dB/µV/m
Electrostatic discharge immunity (Internal)	EN61000-4-2 or IEC-801-2	Level: 6KV contact cond. B Level: 8KV air cond. B	
Radio frequency electromagnetic fields immunity (80 - 1,000 MHz)	EN61000-4-3 or IEC-801-3 EN50140	Level: 10V/m condition A Level: 20V/m condition A	Level: 10V/m Level: 20V/m
Fast transient/burst immunity (DC power port and I/O ports)	EN61000-4-4 or IEC-801-4	Level: 0.5KV condition A Level: 2KV condition A	Level: 2KV
Surge immunity	EN61000-4-5 or IEC-801-5	Level: 2KV condition B Impedance 42 Ohm	Level: 1.8 KV
Conducted distustances induced by radio frequency fields immunity (150KHz-80MHz) (DC power port and I/O port)	EN50141 or EN61000-4-6 or EN50121-4	Level: 3V condition A Modulation 80% AM Impedance 150 0hm Level: 10V condition A	
Damped oscillatcry magentic field immunity	EN61000-4-10	Level: 30A/m condition B	

Marine: SBOX Series

It is difficult to send out technical support for maritime field application due to the location limitation. The best way to solve the urgent issue is remote troubleshooting with IEI iRIS solution. IEI marine-grade solutions provide the most convinent method of real-time system alert notice and repair function through iRIS solution to make customer's equipment more reliable and durable in critical environment.

Echo Sounder

AIS Receiver

Radar

Gyro

S19A/S24A

Bridge

Accommodation

Internet

Engineering Control Room Pump Room

SBOX/S19M

Server Traitment Center

Key Features

■ 3 independent displays: HDMI, DVI, and VGA

The three simultaneously independent displays are supported via the on-board video output combinations of VGA, DVI and HDMI. This versatile combination of display output options makes the marine system ideal for multi-monitor required applications in the bridge room.
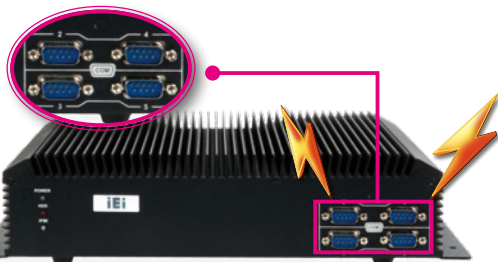

Display 1

Display 2

DVI

HDMI

VGA

Display 3

■ Multiple Isolated Ports for Comprehensive Protection against Electrical Surges

Ground loop and electric surges are common in the marine applications of electronic products due to the dense placement of devices. These stray electrical signals can cause equipment damage or malfunction.

■ 2.5 kV isolation protection on the RS-232/422/485

IEI marine computer is protected from any stray electrical signals from other devices on the ship. Electric surges that were generated from other electronic devices which often passed through serial lines to the marine computer can cause severe damage and malfunction to the computers.

■ Two independent CAN 2.0B channels with 2.5 kV isolation protection

CAN 2.0B is a kind of marine electronic data network for communication between marine electronic devices such as chart plotters, navigation instruments, GPS receivers, etc.

■ Isolated 18 V~24 V DC power 2250 V DC Input to Output Basic Insulation

DNV Compliance

The DNV regulation is one of the most stringent standards in the maritime industry. It sets the minimum requirements of devices based on where the device is located. IEI marine series complies with DNV regulations and has passed tests for temperature, humidity, vibration, EMC and water- and dust-proof levels.

■ Operating Temperature

The marine series can run in wide temperature environment from -15°C to 55°C.

Temperature	Class A	Class B	Class C	Class D
Location	Machinery spaces, control rooms, accommodation, bridge	Inside cubicles, desks, etc. with temperature rise of 5° C or more	Pump rooms, holds, rooms with no heating	Open deck, masts
Minimum equipment specification	Ambient temperatures: +5°C to +55°C	Ambient temperatures: +5° C to +70°C	Ambient temperatures: -25°C to +55°C	Ambient temperatures: -25°C to +70°C

■ Humidity

The marine series conforms to DNV class A of humidity.

Humidity	Class A	Class B
Location	Locations where special pre-cautions are taken to avoid condensation	All other locations
Minimum equipment specification	Relative humidity up to 96 % at all relevant temperatures.	Relative humidity up to 100 % at all relevant temperatures

■ Vibration

The marine series is subjected to DNV Class A vibration test and can be widely used on bulkheads, beams, deck and bridge.

Vibration	Class A	Class B	Class C
Location	On bulkheads, beams, deck, bridge	On machinery such as internal combustion engines, com-pressors, pumps, including piping on such machinery	Masts
Minimum equipment specification	Frequency range: 3-13.2 Hz, Amplitude: 1.0 mm (peak value) Frequency range: 13.2-100 Hz, Acceleration amplitude: 0.7 g	Frequency range: 3-25 Hz, Amplitude: 1.6 mm (peak value) Frequency range: 25-100 Hz, acceleration amplitude: 4.0 g	Frequency range: 3-13.2 Hz, Amplitude: 3.0 mm (peak value) Frequency range: 13.2-50 Hz, Acceleration amplitude: 2.1 g

■ EMC

Being different to CE and FCC standards, DNV regulations especially emphasize the importance of electromagnetic compatibility. IEI marine series is compliant with strict class B level and can provide a safe operating environment of sailing period.

Vibration	Class B			
Location	All locations including bridge and open deck			
Minimum equipment specification	**Immunity**			
	Conducted Low Frequency (Test 3.14.4)		Electrical Fast Transient/Burst (Test 3.14.5)	Electrical Slow Transient Surge (Test 3.14.6)
	AC 50/60 Hz Supply Voltage up to 15th harmonics: 10% of UN 15th to 100th harmonics: decreasing from 10% to 1% of UN 100th to 200th: harmonics 1% of UN	DC Supply Voltage Frequency Sweep Range: 50 Hz to 10 kHz Signal Level: 3 V r.m.s. max 2W	Amplitude : 2 kV line on power supply port/earth; 1 kV on I/O data control and communication ports(coupling clamp)	Amplitude: 0.5 kV, differential mode 1 kV, common mode
	Conducted Radio Frequency (Test 3.14.7 – Table 3.20/3.21)		Radiated Electromagnetic Field (Test 3.14.8)	Electrostatic Discharge (Test 3.14.9)
	Frequency range:150 kHz - 80 MHz Voltage level (e.m.f.): 3 V r.m.s. Spot frequencies: 2/3/4/6.2/8.2/12.6/16.5/18.8/22/25 MHz. Voltage level (e.m.f.) :10 V r.m.s.		Frequency range: 80 MHz to 2 GHz Electric field strength: 10 V/m	Output voltage Air: 8 kV Contact: 6 kV
	Emission			
	Radiated (Test 3.14.10 - 11)			
	Enclosure Port	Frequency range	Measuring bandwidth	Limits (quasi-peak)
	EMC B All locations including bridge and open deck	0.15-0.3 MHz	9 kHz	80 - 52 dBμV/m
		0.30-30 MHz	9 kHz	52 - 34 dBμV/m
		30-2000 MHz	120 kHz	54 dBμV/m
		Except: 156-165 MHz	9 kHz	24 dBμV/m
	Conducted (Test 3.14.10 - 12)			
	Power Port	Frequency range	Measuring bandwidth	Limits (quasi-peak)
	EMC B All locations including bridge and open deck	10-150 kHz	200 Hz	96 – 50 dBμV
		150-350 kHz	9 kHz	60 – 50 dBμV
		0.35 - 30 MHz	9 kHz	50 dBμV

■ Enclosure

The marine series is compliant with high waterproof and dustproof level. The front bezel complies with IP66 rating and the rear side complies with IP22.

Enclosure	Class A	Class B	Class C	Class D
Location	Control rooms, accommodation, bridge	Engine room	Open deck, masts, below floor plates in engine room	Submerged application, bilges
Minimum equipment specification	IP22	IP44	IP56	IP68

E-Window Tool Kit

GbE LAN
GPIO
COM
3G

Innovative E-windows technology is a new modular way of adding flexible functionality to a wide range of device. Using standardized component helps system integrators easily add more features without any costly efforts.

E-Window

Features
- Easy maintenance
- Various module & I/O plate with flexible customization
- Integration of multiple functions
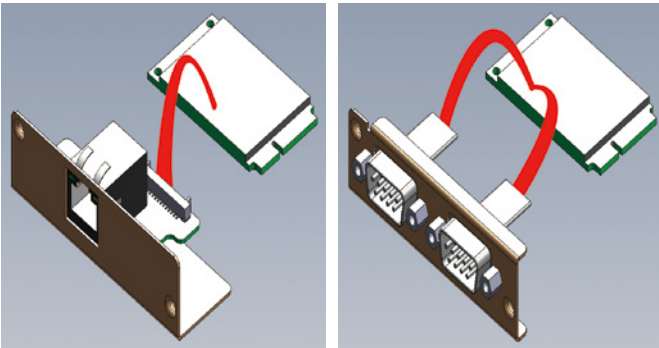- Easy for replacement with different modules

Supported Model

Transportation System	
IVS-110-AL	
Industrial Automation System	
TANK-871-Q170	TANK-870e-H110

E-MPCIE-LAN-R10   E-MPCIE-DLAN-R10

E-Window I/O Plate with PCIe Mini Card
An E-Window module uses a PCIe Mini slot embedded on the motherboard.

Ordering Information

Part No.	Description
E-MPCIE-DLAN-R10	PCIe Mini card supports 2-port GbE with Intel I211 controller, with PMS 194C I/O bracket and 250mm cable
E-MPCIE-LAN-R10	PCIe Mini card supports 1-port GbE with Realtek RTL8111E controller, with PMS 194C I/O bracket and 250mm cable
E-MPCIE-UART-KIT01-R10	PCI Express Mini supports quad RS-232/422/485 port module

Transportation System

Model Name		IKARPC-07A-BT	AFOKAR-08A-RK39	IKARPC-W10A-BT
Chassis	Color	Black C + Silver	Black C + Silver	Blue C + Black C
	Dimensions (WxDxH) (mm)	210 x 154 x 28	210 x 154 x 33.9	277 x 186 x 27
	System Fan		Fanless	
	Chassis Construction	PC + ABS plastic	PC + ABS plastic front, Metal rear	PC + ABS plastic
Display	Size	7"	8"	10.1"
	Resolution	1024 × 3 (RGB) × 600	800(RGB) × 1280	1280 x 800
	Brightness (cd/m²)	500	500	350
	Contrast Ratio	700:1	800 : 1	800:1
	Pixel Pitch (mm)	0.05 (W) × 0.15 (H)	0.13455(H) × 0.13455(V)	0.0565 (W) × 0.1695 (H)
	Viewing Angle (H/V)	130° (H) / 140° (V)	85/85/85/85 Deg.	150° (H)/145° (V)
	Touchscreen	Projected capacitive touch with USB interface	Projected capacitive with AG coating	Projected capacitive touch with USB interface
Motherboard	CPU	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)	Rockchip RK3399 (Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)
	Chipset		SoC	
	System Memory	On-board 2 GB SDRAM	On-board 2GB LPDDR3-1866	On-board 2 GB DDR3L
Storage	Hard Drive	N/A	N/A	1 x 2.5" SATA 3Gb/s HDD/SSD drive bay
	SD card	1 x microSD slot (supports SD 2.0, max. 32 GB)	1 x Micro SD slot	1 x SD slot (supports SD 2.0, max. 32 GB)
	Flash	N/A	On-board 16GB eMMC NAND FLASH	N/A
	mSATA	1 x mSATA (SATA 3Gb/s) optional	N/A	N/A
Communication	WLAN	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)	On-board 802.11 a/b/g/n/ac	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)	Bluetooth V4.1	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini LTE (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	RFID	N/A	13.56 MHz ISO4443 A/B, read-write capable, ISO 14443A (MIFARE), ISO 14443B (FeliCa)	N/A
	GPS		On-board GPS	
I/O Interfaces	20-pin Connector	1 x GbE LAN, 1 x OBD-II/J1939, 1 x USB 2.0	1 x OBD-II/J1939 1 x USB 2.0	N/A
	24-pin Connector	1 x Audio line-out(R+L) 1 x Audio line-in 1 x RS-232 4-bit digital I/O (2-bit input, 2-bit output)	1 x Audio out 1 x RS-232 1 x RS-485 4-bit digital I/O with isolation (2-bit input, 2-bit output)	N/A
	USB 3.1 Gen 1		1	
	USB 2.0	1	20-pin connector	1
	Ethernet	N/A	N/A	1 x RJ-45 PCIe GbE by Realtek 8111E
	COM Port	N/A	24-pin connector	2 x DB-9 RS-232
	Digital I/O	N/A	24-pin connector	8-bit digital I/O (4-bit input, 4-bit output)
	CAN-Bus/OBD-II	N/A	20-pin connector	1 x DB-9 OBD-II/J1939
	Display		1 x HDMI	
	SIM	2 x on-board SIM card slot	1 x on-board SIM card slot	2 x on-board SIM card slot
	Antenna		1 x GPS, 1 x WWAN	
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for mSATA module), 1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Half-size PCIe Mini (reserved for WLAN module)	1 x Full-size PCIe Mini (reserved for WWAN)	1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Full-size PCIe Mini (reserved for WLAN module)
Multimedia	Speaker		1 x Speaker (2 W)	
	Camera	2-megapixel CMOS	5-megapixel CMOS	2-megapixel CMOS
Power	Power Input		Cigarette lighter power cable, DC 9 V~30 V	
	Power Consumption	12V @ 1.25 A	12V @ 1.2A	12 V @ 1.73 A
Reliability	Mounting	VESA 75	VESA 75	VESA 100
	Operating Temperature	-20°C ~ 60°C with air flow	-10°C ~ 50°C with air flow	-20°C ~ 60°C with air flow
	Weight (Net/Gross)	0.9 kg/2.1 kg	0.77 kg	1.3 kg/2.8 kg
	Safety/EMC	CE/FCC/E-Mark/IP 54 compliant front panel	CE/FCC (Class A)/E-mak/IP54 front panel compliant	CE/FCC/E-Mark/IP 64 compliant front panel
OS	Supported OS	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Android 7.1	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E

Transportation System

Model Name		IVS-300	IVS-200-ULT2	IVS-110-AL
Chassis	Color	Blue C	Blue C	Black
	Dimensions (WxDxH) (mm)	255 x185 x80	255 x 150 x 63	261 x 60 x 170
	System Fan	Fanless	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloy	Extruded aliminum alloy
Motherboard	CPU	Intel® Celeron® J1900 processor (quad-core 2GHz, 10W TDP) or Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)	Intel® Core™ i5-5350U processor (dual-core, 1.8 GHz, 15W TDP) or Intel® Celeron® 3765U processor (dual-core, 1.9 GHz, 15W TDP)	Intel® Atom™ x7 E3950 processor (quad-core, 2.0GHz, 12W TDP)
	Chipset	SoC	SoC	SoC
	System Memory	IVS-300-BT: 2 x 204-pin DDR3L SO-DIMM. 4GB pre-installed (system max. 8 GB) IVS-300-ULT3: 2 x 260-pin DDR4 SO-DIMM, 4GB pre-installed (system max. 32 GB)	2 x 204-pin DDR3L SO-DIMM slot 4 GB Pre-installed (system max. 16 GB)	2 x 204-pin DDR3L SO-DIMM. 4GB pre-installed (system max. 8GB)
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD removable drive bay	1 x 2.5" SATA 6Gb/s HDD/SSD removable drive bay	1 x 2.5" SATA 6Gb/s HDD/SSD drive bay
	SD Card	N/A	N/A	N/A
	Flash	N/A	N/A	1 x eMMC 5.0 8GB (reserved)
	mSATA	N/A	1 x mSATA (SATA 6Gb/s)	1 x mSATA (PCIe Mini Slot) 1 x eMMC 5.0 8G (reserved)
Communication	WLAN	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)	PCIe Mini Wi-Fi 802.11b/g/n (optional)	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)	Bluetooth 2.1 (combined with WWAN optional module)	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	RFID	N/A	N/A	N/A
	GPS	On board GPS	N/A	On board GPS
I/O Interfaces	USB 3.1 Gen 1	2	2	4
	USB 2.0	N/A	2	N/A
	Ethernet	4 x RJ-45 PCIe GbE by Intel® i210-AT Support PoE IEEE802.3af (Each port max 15.4W)	4 x RJ-45 connector LAN1: PCIe GbE by Intel® I218 LAN2: PCIe GbE by Intel® I211 LAN3: PCIe GbE by Intel® I211 LAN4: PCIe GbE by Intel® I211	1 x RJ-45 PCIe GbE by Intel® I210-IT
	COM Port	2 x DB-9 RS-232 1 x DB-15 (with isolation) RS-422/485	2 x DB-9 RS-232/422/485 4 x DB-9 RS-232 (optional)	1 x DB-9 RS-232/422/485 (BIOS configuration)
	Digital I/O	(with isolation) 8-bit digital I/O (4-bit input / 4-bit output)	8-bit digital I/O (4-bit input / 4-bit output) (optional)	1 x Printer port 16-bit digital I/O (8-bit input / 8-bit output)
	CAN-bus/OBD-II	1 x DB9 OBD-II/J1939	N/A	1 x DB9 OBD-II/J1939
	Display	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
	Resolution	VGA : Up to 1920 x 1080 @60 Hz HDMI : Up to 1920 x 1080 @60 Hz	VGA: up to 2560 x 1600 @60 Hz HDMI: up to 3840 x 2160 @60 Hz	VGA : Up to 1920 x 1600 @60 Hz HDMI : Up to 3840 x 2160 @30 Hz
	Audio	1 x Line out, 1 x Mic in	1 x Line out, 1 x Mic in	1 x Line out
	SIM	2 x on-board SIM card slot	1 x on-board SIM card slot	2 x on-board SIM card slot
	Antenna	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi	1 x 3G, 1 x BT, 1 x Wi-Fi	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi
Expansions	PCI	N/A	N/A	N/A
	PCIe Mini	1 x Half-size PCIe Mini (reserved for WLAN) 1 x Full-size PCIe Mini (reserved for WWAN) 1 x Full-size PCIe Mini (USB signal)	1 x Full-size PCIe Mini (reserved for WWAN or mSATA) 1 x Half-size PCIe Mini (reserved for WLAN)	1 x Full/Half-size PCIe Mini slot (reserved for WWAN) 1 x Full/Half-size PCIe Mini slot (reserved for mSATA or E-window) 1 x Half-size PCIe Mini slot (reserved for WLAN)
Power	Power Input	Cigarette lighter power cable : DC 9 V~30 V	DC jack : 9 V~36 V DC	Cigarette lighter power cable : 9 V~ 36 V DC
	Power Consumption	12 V @ 14A (Intel® i5-6300U with 4 GB DDR4 memory + 4 PoE)	12 V @ 2.1 A (Intel® i5-5350U with 4 GB DDR3 memory)	12V @ 5A (Intel® Atom™ x7 E3950 with 8 GB DDR3 memory)
Reliability	Mounting	Wall mount	VESA 100	Wall mount / VESA 100
	Operating Temperature	-20°C ~60°C with air flow	-20°C ~ 60°C with air flow (SSD)	-30°C ~ 70°C with air flow
	Weight (Net/Gross)	3 kg / 4.5 kg	2.2 kg / 3 kg	2.4kg / 3.8kg
	Safety/EMC	CE/FCC/E-Mark	CE/FCC/E-Mark	CE/FCC/E-Mark/ IP rating : IP 4X compliant
OS	Supported OS	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Microsoft® Windows 10 IoT Enterprise

Transportation System

	Model Name	IRS-100-ULT3	SBX-100-QM87
Chassis	Color	Blue C	Black
	Dimensions (WxDxH) (mm)	290 x 225 x 69	290 x 225 x 75
	System Fan	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloy
Motherboard	CPU	Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)	Intel® mobile Core™ i5-4400E (2.7 GHz, 37W)
	Chipset	SoC	Intel® QM87
	System Memory	2 x 260-pin DDR4 SO-DIMM 4GB pre-installed (system max. 32 GB)	2 x 204-pin DDR3 SO-DIMM slot (system max. 16 GB) Pre-installed 4 GB DDR3 SO-DIMM
IPMI	iRIS Solution	N/A	1 x iRIS-2400
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD drive bay	2 x 2.5" SATA 6Gb/s SSD bay with RAID 0/1 function
	CFast/CF Card	1 x CFast	1 x CFast
	Flash	N/A	N/A
	mSATA	1 x mSATA	N/A
I/O Interfaces	PS/2 (KB/MS)	N/A	1
	USB 3.1 Gen 1	2	2
	USB 2.0	1 (M12 connector)	2
	Ethernet	2 x M12 connector PCIe GbE by Intel® I211	2 x RJ-45 with teaming support 1 x PCIe GbE by Intel® I217LM 1 x PCIe GbE by Intel® I210-AT (2 with 2 kV isolation)
	COM Port	2 x DB-9 RS-232/422/485 (with 1.5 kV isolation)	1 x DB-9 (non-isolated) 4 x RS-232/422/485 (with 2.5 kV isolation)
	Digital I/O	1 x Terminal block 8-bit digital I/O (4-bit input / 4-bit output, 1.5 kV isolation)	N/A
	CAN-bus/OBD-II	N/A	2 x CAN-bus (with 2.5 kV isolation)
	Display	1 x VGA, 1 x DVI-D	1 x VGA ,1 x DVI-D ,1 x HDMI
	Resolution	VGA : Up to 1920 x 1200 @60Hz DVI-D : Up to 1920 x 1200 @60Hz	VGA: Up to 1920 x 1200 @ 60 Hz HDMI: Up to 2500 x 1600 @ 60 Hz DVI-D: Up to 2500 x 1600 @ 60 Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Line-in, 1 x Mic-in
	TPM	N/A	N/A
	SIM	2 x SIM card slot	N/A
	Antenna	1 x 3G, 1 x BT, 2 x Wi-Fi	2 x Antenna SMA hole (reserved)
Expansions	PCIe Mini	2 x Full-size PCIe Mini (for WWAN / WLAN module)	2 x Full size
Power	Power Input	M12 connector: Typical: 24V / 110V DC input	Terminal block: Isolated 24V DC (18~31.2 V DC)
	Power Consumption	24V @ 2A (Intel® i5-6300U with 4 GB DDR4 memory)	100 W (Intel® mobile Core™ i5-4400E with 4 GB DDR3 memory)
Reliability	Mounting	Wall mount	Wall mount
	Operating Temperature	-40°C ~ 70°C with air flow (with industrial SSD/CF), compliant with EN 50155	*-15°C ~ 55°C (5°F ~131°F) with air flow (SSD)
	Weight (Net/Gross)	3.9 kg / 5.1 kg	4.08 kg / 6.03 kg
	Safety/EMC	CE/FCC Compliance with EN50155, EN50121	EMC/CE/FCC/DNV, IEC 60945 4th, IACS-E10, IEC 61174 compliant IP rating: IP22 compliant rear cover
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

IKARPC–07A *Vehicle Computer Series*

Features

- 7" sunlight readable TFT LCD with projected capacitive touchscreen
- Optional HSUPA/GPRS/GSM, Wi-Fi and Bluetooth
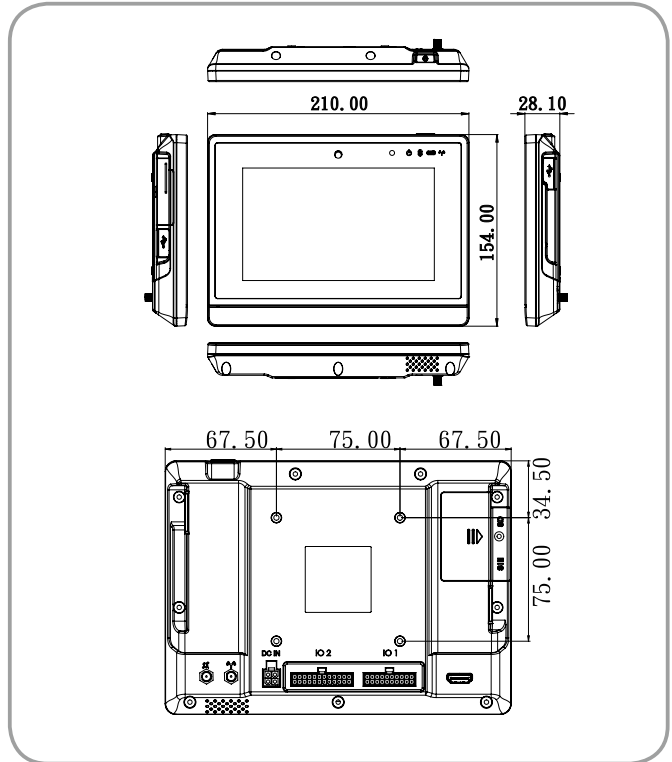- Built-in GPS receiver
- Built-in OBD-II/J1939

3.75G/HSUPA	Bluetooth	Wi-Fi	Fanless	Operating Temperature	High Brightness	Touchscreen	Camera	OBD-II

Specifications

Model Name		IKARPC-07A-BT
Chassis	Color	Black C + Silver
	Dimensions (WxHxD) (mm)	210 x 154 x 28
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic
Display	Size	7"
	Resolution	1024 × 3 (RGB) × 600
	Brightness (cd/m^2)	500
	Contrast Ratio	700:1
	Pixel Pitch (mm)	0.05 (W) × 0.15 (H)
	Viewing Angle (H/V)	130° (H) / 140° (V)
	Touchscreen	Projected capacitive touch with USB interface
Motherboard	CPU	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)
	Chipset	SoC
	System Memory	On-board 2 GB SDRAM
Storage	SD Card	1 x Micro SD slot (supports SD 2.0, max. 32 GB)
	Flash	N/A
	mSATA	1 x mSATA (SATA 3Gb/s) optional
Communication	WLAN	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	RFID	N/A
	GPS	On board GPS
I/O Interfaces	20-pin Connector	1 x GbE LAN 1 x OBD-II/J1939 1 x USB 2.0
	24-pin Connector	1 x Audio line-out (R+L) 1 x Audio line-in 1 x RS-232 4-bit digital I/O (2-bit input, 2-bit output)
	8-pin Connector	N/A
	USB 3.1 Gen 1	1
	USB 2.0	1
	Display	1 x HDMI
	SIM	2 x on board SIM card slot
	Antenna	1 x GPS, 1 x WWAN
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for mSATA module), 1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Half-size PCIe Mini (reserved for WLAN module)
Multimedia	Speaker	1 x Speaker (2 W)
	Camera	2-megapixel CMOS
LED Indicator & Button	Indicator	Power/HDD/Wi-Fi/3G
	Button	1 x Power botton
Power	Power Input	Cigarette lighter power cable, DC 9 V~30 V
	Consumption	12V @ 1.25 A
Reliability	Mounting	VESA 75
	Operating Temperature	-20°C ~ 60°C with air flow
	Storage Temperature	-30°C ~ 70°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	0.9 kg/2.1 kg
	Safety/EMC	CE/FCC/E-Mark/IP 54 compliant front panel
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

Fully Integrated I/O

- Power Switch
- USB 3.1 Gen 1
- Power Input
- 3.75G Antenna (Optional)
- GPS Antenna
- microSD Card Slot Access Panel
- SIM Card Slot Access Panel
- USB 2.0
- HDMI
- I/O Connector 2 (24-pin)
- I/O Connector 1 (20-pin)

Dimensions (Unit: mm)

210.00 · 28.10 · 154.00 · 67.50 · 75.00 · 67.50 · 34.50 · 75.00

Ordering Information

Part No.	Description
IKARPC-07A-BT-E3/2G-R11	7" 500 cd/m2 1024 x 600 In Vehicle Panel PC with Intel® Atom E3826 1.46GHz, 7W TDP, 2GB DDR3L on board memory, OBDII, GPS on board, 2M Camera, ROHS

Options

Item	Part No.	Description
Power adapter	IVIPOWER-4PIN-R10	Power adapter with 4-pin transfer cable, RoHS
Cigarette lighter power cable	32002-004000-100-RS	Round cable, power cable, car cigarette lighter cable, 2000 mm, 18 AWG, (A) cigarette lighter (5 A 250 V)+ ψ3 green LED, (B) MOLEX 5557-0400 P=4.2, SHANGHAI YING YU, RoHS
VESA mount stand	IVI-MK03-R10	138mm 75x75 VESA mount stand
OBD-II cable	32025-003400-100-RS	Round cable, OBD-II cable, 2000 mm, 24 AWG, (A) OBD-II 16P male, (B) D-sub 9P female, one piece package with label, NIAN YEONG, RoHS

IKARPC-07A-BT Series

Item	Part No.	Description
I/O connector 1 cable (20-pin)	32024-003000-100-RS	Round cable, integration cable, I/O cable, 300 mm, 24 AWG (A)terminal block 3P P=5.08, (B)USB A type female+2 NUT, (C)PCB jack: RJ-45 8P8C, (D)D-sub 9P male, (E)MOLEX 5557-2000 P=3.0, one piece package with label, RoHS
I/O connector 2 cable (24-pin)	32124-003700-100-RS	Round cable, integration cable, I/O cable, 300 mm, 22 AWG, (A)terminal block 8P P=5.08, (B)MOLEX 43025-2400 P=3.0, (C)D-sub 9P male, (D)phone jack 3.5_3P+NUT, (E)phone jack 3.5_5P+NUT, one piece package with label, RoHS
OS: Windows Embedded 7 (DVD-ROM)	IKARPC-07A-BT-WES7P-R10	OS image with Windows® Embedded Standard 7 E for IKARPC-07A-BT Series, DVD-ROM, RoHS
OS: Windows Embedded 8 (DVD-ROM)	IKARPC-07A-WE8S-R10	OS image with Windows® Embedded Standard 8 E for IKARPC-07A-BT Series, WE8S license label, DVD-ROM, RoHS
Wireless kit	IKARPC-WIFI-KIT01-R10	1T1R wifi module kit for embedded system, IEEE 802.11b/g/n, 1 x wifi module, RoHS
WWAN kit	IKARPC-3G-KIT02-R10	F260 3.75G module kit for embedded system, with BT V2.1, RoHs

Packing List

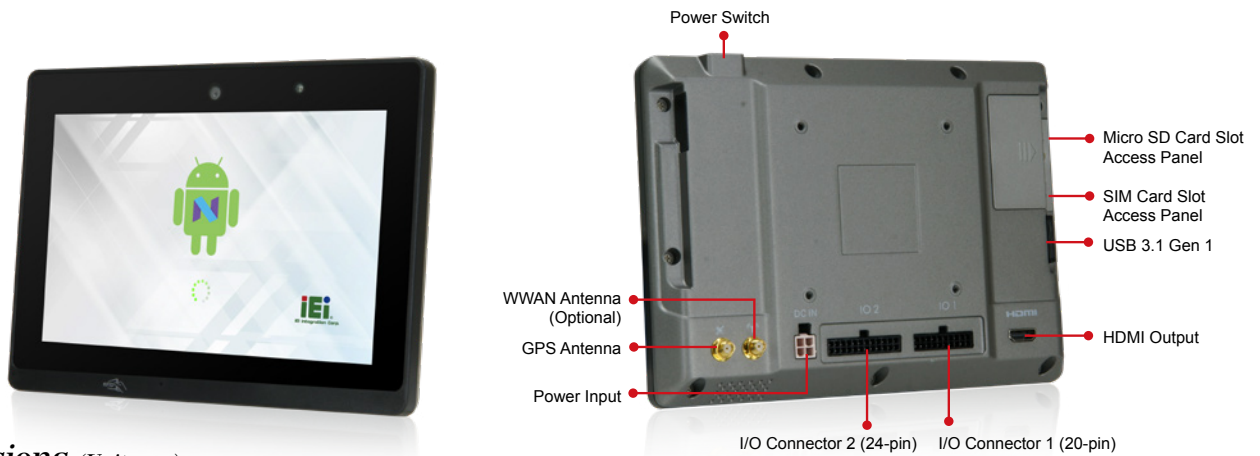| Product	Item	Part No.	Qty	Description
IKARPC-07A-BT	Power Cable	32002-001900-100-RS	1	Round cable, power cable, 3000mm, RoHS
	Screw pack	44045-020031-RS	2	Screw pack
	GPS/GSM Antenna	32506-000100-100-RS	1	Integration antenna, GPS/GSM, RG 174, 5000mm/5000mm, PPF-5423SA5X-999, Magnetic mount: φ55x22mm, 1575.42MHz/850MHz/900MHz/1800MHz/1900MHz, SMA plug x 2

AFOKAR–08A–RK39

Vehicle Computer Series

New

Features

- 8" sunlight readable TFT LCD with projected capacitive touchscreen
- Optional LTE module
- Built-in GPS receiver
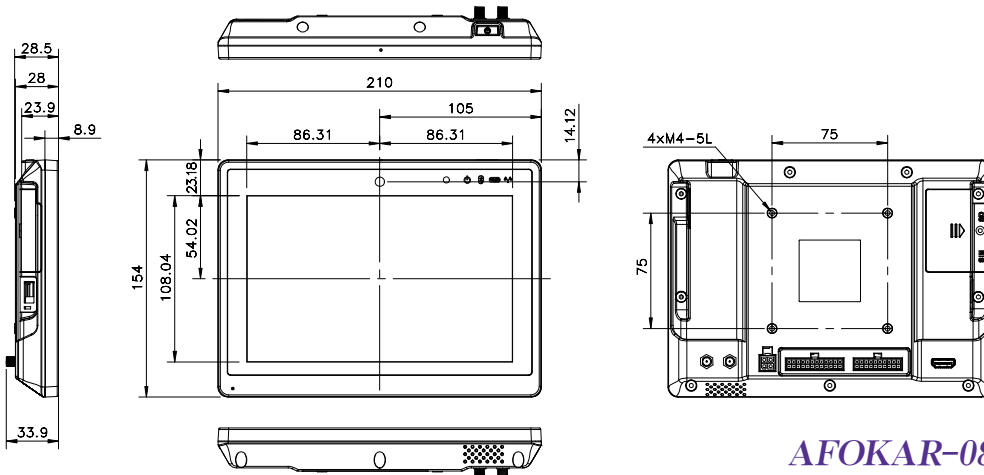- Built-in OBD-II/J1939
- OS: Android 7.1

Fanless | **Bluetooth** | **Wi-Fi** | **High Brightness** | **Camera** | **Android** | **Touchscreen** | **NFC** | **OBD-II** | **GPS**

Specifications

Model Name		AFOKAR-08A-RK39
Chassis	Color	Black C + Silver
	Dimensions (WxHxD) (mm)	210 x 154 x 33.9
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic front, Metal rear
Display	Size	8"
	Resolution	800(RGB) × 1280
	Brightness (cd/m²)	500 cd/m² (typ.)
	Contrast Ratio	800 : 1 (typ.)
	Pixel Pitch (mm)	0.13455(H) × 0.13455(V)
	Viewing Angle (H/V)	85/85/85/85 Deg.
	Touchscreen	Projected capacitive with AG coating
Motherboard	CPU	Rockchip RK3399 (Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)
	System Memory	2GB LPDDR3-1866
Storage	SD Card	1 x Micro SD slot
	Flash	16GB eMMC NAND FLASH
Communication	WLAN	802.11 a/b/g/n/ac
	Bluetooth	Bluetooth V4.1
	WWAN	PCIe Mini LTE (optional)
	RFID	13.56 MHz ISO4443 A/B, read-write capable, ISO 14443A (MIFARE), ISO 14443B (FeliCa)
	GPS	On board GPS
I/O Interfaces	20-pin Connector	** 1 x OBD-II/J1939 ** 1 x USB 2.0
	24-pin Connector	** 1 x Audio out ** 1 x RS-232 ** 1 x RS-485 ** 4-bit digital I/O with isolation (2-bit input, 2-bit output)
	USB 3.1 Gen 1	1 x USB 3.1 Gen 1 Type A
	Display	1 x HDMI output
	SIM	1 x on board SIM card slot
	Antenna	1 x GPS, 1 x WWAN
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for WWAN)
Multimedia	Speaker	1 x Speaker (2 W)
	Camera	5-megapixel CMOS
LED Indicator & Button	Indicator	Power/BT/Wi-Fi/WWAN
	Button	1 x Power button
Power	Power Input	DC 9 V~30 V, 4 pin connector (with ACC Ignition)
	Power Consumption	12V @ 1.2A
Reliability	Mounting	VESA Mount 75mm x 75mm
	Operating Temperature	-10°C ~ 50°C with air flow
	Storage Temperature	-20°C ~ 60°C
	Humidity	10% ~ 90%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2
	Weight (Net)	0.77 kg
	Safety/EMC	CE/FCC (Class A)/E-mak/IP54 front panel compliant
OS	Supported OS	Android 7.1
	Watch dog timer	Yes

Power Switch

Micro SD Card Slot Access Panel

SIM Card Slot Access Panel

USB 3.1 Gen 1

WWAN Antenna (Optional)

GPS Antenna

HDMI Output

Power Input

I/O Connector 2 (24-pin)   I/O Connector 1 (20-pin)

Dimensions *(Unit: mm)*

28.5
28
23.9
8.9
210
105
86.31
86.31
14.12
23.18
54.02
108.04
154
4xM4-5L
75
75
33.9

AFOKAR-08A-RK39

Ordering Information

Part No.	Description
AFOKAR-08A-RK39-R10-TW	8" 500 cd/m², Android 7.1 In Vehicle Panel PC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, GPS, WIFI/BT, OBD II, 5M Camera, RFID Reader, TW reg, ROHS
AFOKAR-08A-RK39-R10-CN	8" 500 cd/m², Android 7.1 In Vehicle Panel PC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, GPS, WIFI/BT, OBD II, 5M Camera, RFID Reader, CN reg, ROHS
AFOKAR-08A-RK39-R10-US	8" 500 cd/m², Android 7.1 In Vehicle Panel PC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, GPS, WIFI/BT, OBD II, 5M Camera, RFID Reader, US reg, ROHS
AFOKAR-08A-RK39-R10-EU	8" 500 cd/m², Android 7.1 In Vehicle Panel PC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, GPS, WIFI/BT, OBD II, 5M Camera, RFID Reader, EU reg, ROHS

Options

Item	Part No.	Description
Power Adapter	IVIPOWER-4PIN-R10	Adapter PowerWith 4 pins transfer cable, RoHS
Cigarette Lighter Power Cable	32002-004000-100-RS	CAR CIGARETTE LIGHTER CABLE
VESA Mount Stand	IVI-MK03-R10	138mm 75x75 VESA mount stand
VESA Mount Stand	IVI-MK04-R10	286mm 75x75 VESA mount stand
OBDII Cable	32025-003400-100-RS	OBDII CABEL;2;2000MM;24AWG;(A)OBD2-16P MALE;(B)D-SUB 9PIN FEMALE
ACC Power Cable	32002-001900-100-RS	Vehicle battery to device power cable;3000MM;16AWG
GPS/LTE Antenna	32506-000500-100-RS	Magnetic Antenna Base_GPS+GLOANSS & 3G/LTE 2 In 1 Antenna;RG 174;5000MM
I/O Connector (20 pin)	32024-003800-100-RS	1 x DB-9 for OBD-II/J1939, 1 x USB 2.0 TYPE A
I/O Connector (24 pin)	32124-004400-100-RS	1 x Audio line-out (R+L), 1 x RS-232, 1 x RS-485,1 x terminal block 4 bit digital I/O
LTE module	27552-000004-RS	WCDMA/HSPA+/LTE;SIM7500SA
	27552-000005-RS	GSM/LTE/WCDMA;SIM7500E
	27552-000006-RS	LTE/WCDMA;SIM7500A

Packing List

1 x AFOKAR Device

IKARPC–W10A

Vehicle Computer Series

Features

- 10.1" TFT LCD with projected capacitive touchscreen
- Intel® Atom™ E3826 1.46 GHz CPU
- Windows® Embedded Standard 7
- Option HSUPA/GPRS/GSM, Wi-Fi and Bluetooth
- Built-in GPS function
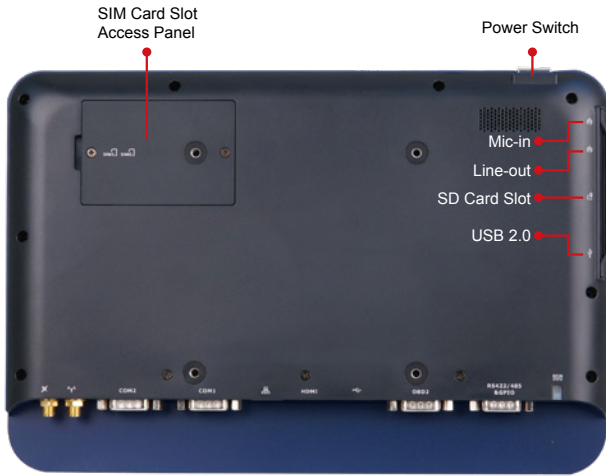- Built-in OBD-II/J1939

| 3.75G/HSUPA | Bluetooth | Wi-Fi | Fanless | Operating Temperature | Touchscreen | Camera | OBD-II |

Specifications

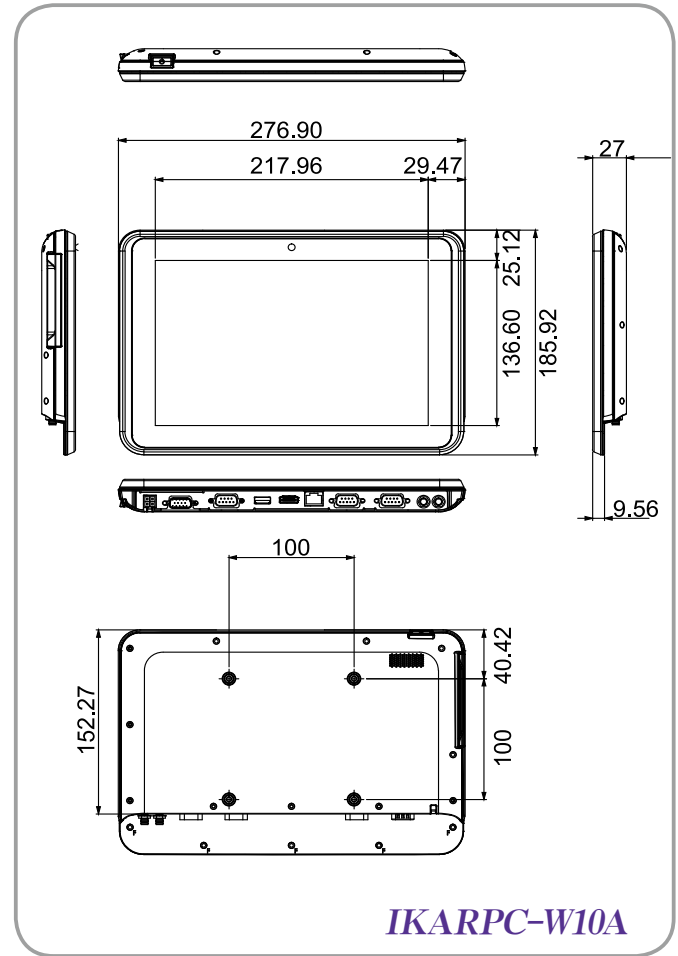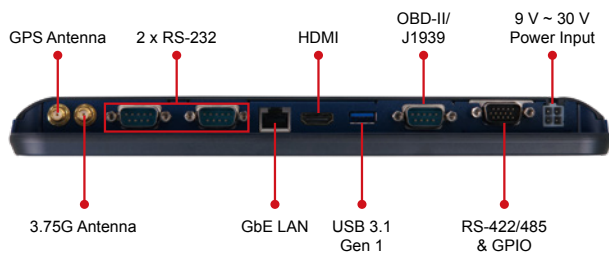| Model Name		IKARPC-W10A
Chassis	Color	Blue C + Black C
	Dimensions (WxHxD) (mm)	277 x 186 x 27
	System Fan	Fanless
	Chassis Construction	PC + ABS plastic
Display	Size	10.1"
	Resolution	1280 x 800
	Brightness (cd/m²)	350
	Contrast Ratio	800:1
	Pixel Pitch (mm)	0.0565 (W) × 0.1695 (H)
	Viewing Angle (H/V)	150° (H)/145° (V)
	Touchscreen	Projected capacitive touch with USB interface
Motherboard	CPU	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)
	Chipset	SoC
	System Memory	On-Board 2GB DDR3L 1 x 204-pin DDR3L SO-DIMM. (Max. 4GB)
Storage	Hard Drive	1 x 2.5" SATA 3Gb/s HDD/SSD drive bay
	SD Card	1 x SD slot (supports SD 2.0, max. 32 GB)
Communication	WLAN	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	GPS	On board GPS
I/O Interfaces	USB 3.1 Gen 1	1
	USB 2.0	1
	Ethernet	1 x RJ-45 PCIe GbE by Realtek 8111E
	COM Port	2 x DB-9 RS-232
	Digital I/O	8-bit digital I/O (4-bit input / 4-bit output)
	CAN-bus/OBD-II	1 x DB9 OBD-II/J1939
	Display	1 x HDMI
	Resolution	HDMI: Up to 1920 x 1080 @ 60 Hz
	Audio	1 x Line out, 1 x Mic in
	SIM	2 x on board SIM card slot
	Antenna	1 x GPS, 1 x WWAN
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Full-size PCIe Mini (reserved for WLAN module)
Multimedia	Audio	1 x Speaker (2 W)
	Camera	2-megapixel CMOS
LED Indicator & Button	Indicator	Power/Wi-Fi/HDD/3.5G
	Button	1 x Power botton
Power	Power Input	Cigarette lighter power cable, DC 9 V~30 V
	Consumption	12 V @ 1.73 A
Reliability	Mounting	VESA 100
	Operating Temperature	-20°C ~ 60°C with air flow
	Storage Temperature	-30°C ~ 70°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	1.3 kg/2.8 kg
	Safety/EMC	CE/FCC/E-Mark/IP 64 compliant front panel
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

Fully Integrated I/O

Rear view

- SIM Card Slot Access Panel
- Power Switch
- Mic-in
- Line-out
- SD Card Slot
- USB 2.0

Bottom view

- GPS Antenna
- 2 x RS-232
- HDMI
- OBD-II/ J1939
- 9 V ~ 30 V Power Input
- 3.75G Antenna
- GbE LAN
- USB 3.1 Gen 1
- RS-422/485 & GPIO

Dimensions *(Unit: mm)*

276.90
217.96
29.47
27
25.12
136.60
185.92
9.56
100
152.27
40.42
100

IKARPC-W10A

Ordering Information

Part No.	Description
IKARPC-W10A-BT-E3/2G-R10	10.1" 350 cd/m2 1280 x 800, in-vehicle panel PC with Intel® Atom E3826 1.46GHz, 7W TDP, 2GB DDR3L on-board memory, OBD-II, on-board GPS, 2-megapixel camera, RoHS

Options

Item	Part No.	Description
Power adapter	IVIPOWER-4PIN-R10	Power adapter with 4-pin transfer cable, RoHS
Cigarette lighter power cable	32002-004000-100-RS	Round cable, power cable, car cigarette lighter cable, 2000 mm, 18 AWG, (A) cigarette lighter (5 A 250 V)+ ψ3 green LED, (B) MOLEX 5557-0400 P=4.2, RoHS
OBD-II cable	32025-003400-100-RS	Round cable, OBD-II cable, 2000 mm, 24 AWG, (A) OBD-II 16P male, (B) D-sub 9P female, one piece package with label, RoHS
OS: Windows Embedded 7 (DVD-ROM)	IKARPC-W10A-BT-WES7P-R10	OS image with Windows® Embedded Standard 7 E for IKARPC-W10A-BT Series, DVD-ROM, RoHS
OS: Windows Embedded 8 (DVD-ROM)	IKARPC-W10A-WE8S-R10	OS image with Windows® Embedded Standard 8 E for IKARPC-W10A Series, WE8S license label, DVD-ROM, RoHS
Wireless kit	IKARPC-WIFI-KIT02-R10	1T1R wifi module kit for embedded system, IEEE802.11a/b/g/n/ac WiFi with Bluetooth 4.0/3.0+HS, 1 x wifi module, RoHS
WWAN kit	IKARPC-3G-KIT02-R10	F260 3.75G module kit for embedded system, with BT V2.1, RoHs
VESA mount stand	IVI-MK02-R10	286mm 75x75 / 100x100 VESA mount stand

Packing List

Item	Part No.	Qty	Description
Power Cable w/ core	32002-001900-100-RS	1	Round cable, power cable, 3000mm, RoHS
	30600-000056-RS	1	Cable Core 13φ, 33x31.5x33mm, RoHS
GPS/GSM Antenna	32506-000100-100-RS	1	Integration antenna, GPS/GSM, RG 174, 5000mm/5000mm, PPF-5423SA5X-999, Magnetic mount: φ55x22mm, 1575.42MHz/850MHz/900MHz/1800MHz/1900MHz, SMA plug x 2

IVS–300 *Vehicle Surveillance System*

Features

- Intel® Skylake ULT /Baytrail processor
- 4 x PoE IEEE802.3af
- Optional 3G/Wi-Fi
- 2 x RS-232, 1 x RS-422/485
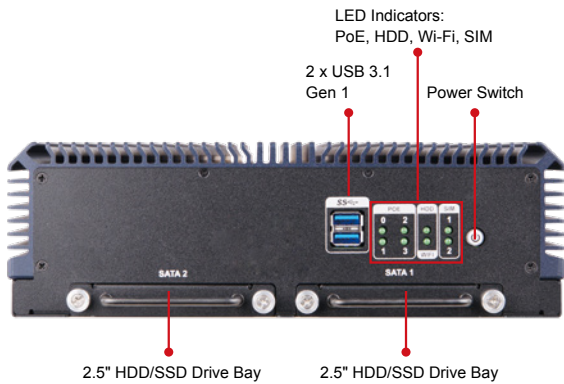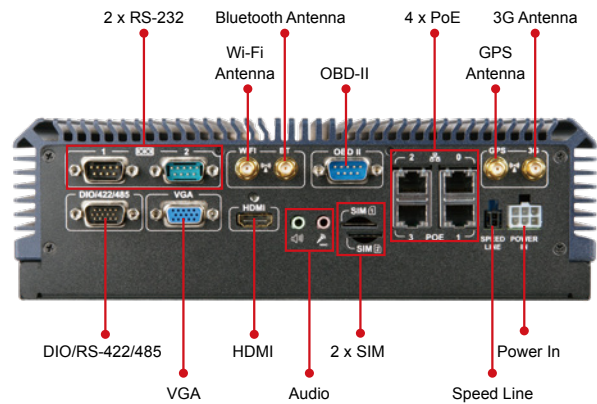- 4 x DI/DO
- 1 x HDMI (lockable), 1 x VGA

Fanless | PoE | 3.75G/HSUPA | GPS | Wi-Fi | OBD-II | E-Mark

Specifications

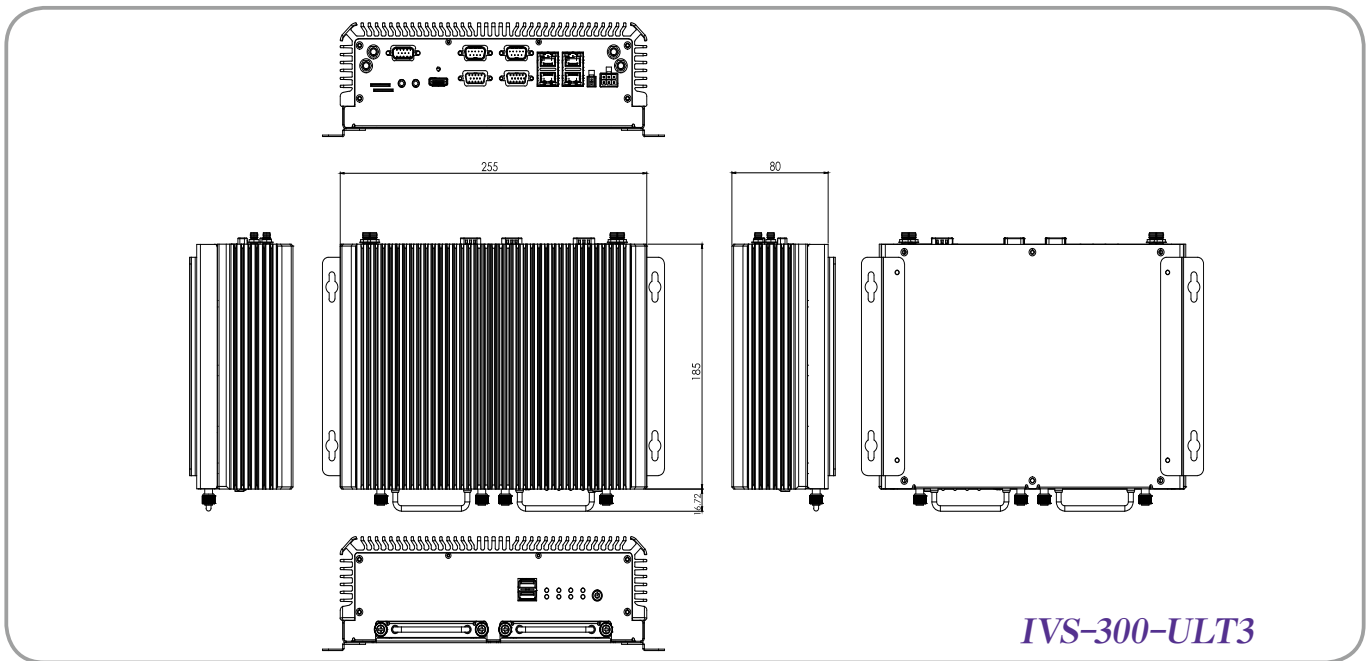| Model Name		IVS-300-BT	IVS-300-ULT3
Chassis	Color	Blue C	Blue C
	Dimensions (WxHxD) (mm)	255 x 80 x 185	255 x 80 x 185
	System Fan	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloy
Motherboard	CPU	Intel® Celeron® J1900 Processor (quad-core 2GHz, 10W TDP)	Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)
	Chipset	SoC	
	System Memory	2 x 204-pin DDR3L SO-DIMM. 4GB pre-installed (system max. 8 GB)	2 x 260-pin DDR4 SO-DIMM, 4GB pre-installed (system max. 32 GB)
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s SSD removable drive bay	2 x 2.5" SATA 6Gb/s SSD removable drive bay
Communication	WLAN	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	GPS	On board GPS	On board GPS
I/O Interfaces	USB 3.1 Gen 1	2	2
	Ethernet	4 x RJ-45 PCIe GbE by Intel® i210-AT Support PoE IEEE802.3af (Each port max 15.4W)	4 x RJ-45 PCIe GbE by Intel® i210-AT Support PoE IEEE802.3af (Each port max 15.4W)
	COM port	2 x DB-9 RS-232(With isolation) 1 x DB-15 RS-422/485	2 x DB-9 RS-232(With isolation) 1 x DB-15 RS-422/485
	Digital I/O	8-bit digital I/O (4-bit input, 4-bit output)	8-bit digital I/O (4-bit input, 4-bit output)
	CAN-Bus/OBD-II	1 x DB9 OBD-II/J1939	1 x DB9 OBD-II/J1939
	Display	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
	Resolution	VGA : Up to 1920 x 1080 @60Hz HDMI : Up to 1920 x 1080 @60Hz	VGA : Up to 1920 x 1080 @60Hz HDMI : Up to 1920 x 1080 @60Hz
	Audio	1 x Mic in, 1 x Line out	1 x Mic in, 1 x Line out
	SIM	2 x on board SIM card slot	2 x on board SIM card slot
	Antenna	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi
Expansions	PCIe Mini	1 x Half-size PCIe Mini (reserved for WLAN) 1 x Full-size PCIe Mini (reserved for WWAN) 1 x Full-size PCIe Mini (USB signal)	1 x Half-size PCIe Mini (reserved for WLAN) 1 x Full-size PCIe Mini (reserved for WWAN) 1 x Full-size PCIe Mini (USB signal)
Led Indicator & Button	Indicator	8 x LED (4 PoE, 1 HDD, 1 Wi-Fi, 2 SIM)	8 x LED (4 PoE, 1 HDD, 1 Wi-Fi, 2 SIM)
	Button	1 x Power button	1 x Power button
Power	Power Input	Cigarette lighter power cable: DC 9 V~30 V	Cigarette lighter power cable: DC 9 V~30 V
	Consumption	12 V @ 12A (Intel® J1900 with 4 GB DDR3L memory + 4 PoE)	12 V @ 14A (Intel® i5-6300U with 4 GB DDR4 memory + 4 PoE)
Reliability	Mounting	Wall mount	Wall mount
	Operating Temperature	-20°C ~ 60°C with air flow	-20°C ~ 60°C with air flow
	Storage Temperature	-30°C ~ 70°C	-30°C ~ 70°C
	Humidity	10% ~ 95%, non-condensing	10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	3kg/4.5kg	3kg/4.5kg
	Safety/EM C	CE / FCC / E-Mark	CE / FCC / E-Mark
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

Fully Integrated I/O

Front view

LED Indicators:
PoE, HDD, Wi-Fi, SIM

2 x USB 3.1 Gen 1

Power Switch

2.5" HDD/SSD Drive Bay

2.5" HDD/SSD Drive Bay

Rear view

2 x RS-232 · Bluetooth Antenna · 4 x PoE · 3G Antenna

Wi-Fi Antenna · OBD-II · GPS Antenna

DIO/RS-422/485 · HDMI · 2 x SIM · Power In

VGA · Audio · Speed Line

Dimensions (Unit: mm)

255

80

185

167.72

IVS-300-ULT3

Ordering Information

Part No.	Description
IVS-300-BT-J1/4G-R10	Fanless embedded system with Intel® Celeron® Processor J1900 (10W) Processor with 4GB DDR3L pre-installed memory, PoE, on board GPS, HDMI, VGA, two 2.5" removable SATA HDD bay, RoHs
IVS-300-ULT3-i5/4G-R10	Fanless embedded system with 6th generation 14nm Intel® Core™ i5-6300U (15W) mobile processor (ULT) with 4GB DDR4 pre-installed memory, PoE, on-board GPS, HDMI, VGA, two 2.5" removable SATA HDD bay, RoHs

Options

Part No.	Description
IVS-300-ULT3-WES7E64-R10	OS Image with Windows® Embedded Standard 7 E 64-bit for IVS-300-ULT3, with DVD-ROM, RoHS
IVS-300-BT-WES7E64-R10	OS Image with Windows® Embedded Standard 7 E 64-bit for IVS-300-BT, with DVD-ROM, RoHS
IVS-WIFI-KIT02-R10	1T1R Wi-Fi module kit for embedded system, IEEE802.11a/b/g/n/ac Wi-Fi with Bluetooth 4.0/3.0+HS, 1 x Wi-Fi module, 1 x Antenna, RoHS
IVS-3G-KIT02-R10	3G module kit for embedded system, F260, 1 x 3G module, RoHs
IVIPOWER-6PIN-R10	Power adapter with 6-pin transfer cable, RoHS

Packing List

Item	Part No.	Qty	Description
Wall Mount Kit	41020-0432C2-00-RS	2	Wall mount bracket
Power Cable	32002-007200-101-RS	1	Round cable, power cable, 1, 3000mm, 18AWG, (A) MOLEX 5557-0600 P=4.2, H.S.TUBE x 2, Label: GND x 3 + VIN x 2 + ACC, RoHS
GPS/GSM Antenna	32506-000100-100-RS	1	Integration antenna, GPS/GSM, RG 174, 5000mm/5000mm, PPF-5423SA5X-999, Magnetic mount: φ55x22mm, 1575.42MHz/850MHz/900MHz/1800MHz/1900MHz, SMA plug x 2
Screw pack	44015-030053-RS	8	Screw pack
	44005-030061-RS	6	Screw pack

IVS-200-ULT2

Vehicle Surveillance System

Features

- Intel® i5-5350U dual-core 1.8 GHz CPU or Intel® Celeron® 3755U dual-core 1.7 GHz CPU
- Four Intel® GbE LAN ports
- 9 V~36 V DC input
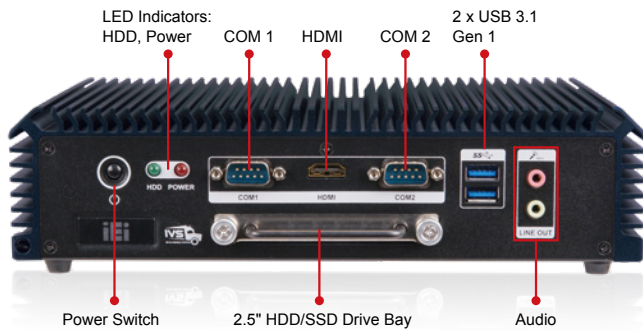- Two RS-232/422/485
- E-Mark certification

E-Mark | **Four LAN** | **Fanless** | **9~36V DV Input** | **mSATA** | **-20℃~60℃**

Specifications

Model Name		IVS-200-ULT2
Chassis	Color	Blue C
	Dimensions (WxHxD) (mm)	255 x 63 x 150
	System Fan	Fanless
	Chassis Construction	Extruded aluminum alloy
Motherboard	CPU	Intel® Core™ i5-5350U Processor (dual-core, 1.8 GHz, 15W TDP) or Intel® Celeron® 3765U Processor (dual-core, 1.9 GHz, 15W TDP)
	Chipset	SoC
	System Memory	2 x 204-pin DDR3L SO-DIMM slot 4 GB Pre-installed (system max. 16 GB)
Storage	Hard Drive	1 x 2.5" SATA 6Gb/s HDD/SSD removable drive bay
	mSATA	1 x mSATA (SATA 6Gb/s)
Communication	WLAN	PCIe Mini Wi-Fi 802.11b/g/n (optional)
	Bluetooth	Bluetooth 2.1 (combined with WWAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
I/O Interfaces	USB 3.1 Gen 1	2
	USB 2.0	2
	Ethernet	4 x RJ-45 connector LAN1: PCIe GbE by Intel® I218 LAN2: PCIe GbE by Intel® I211 LAN3: PCIe GbE by Intel® I211 LAN4: PCIe GbE by Intel® I211
	COM Port	2 x DB-9 RS-232/422/485 4 x DB-9 RS-232 (optional)
	Display	1 x VGA, 1 x HDMI
	Resolution	VGA: up to 2560 x 1600 @ 60 Hz HDMI: up to 3840 x 2160 @ 60 Hz
	DIO	8 bit digital I/O (4-bit input, 4-bit output) (optional)
	SIM	1 x on board SIM card slot
	Antenna	1 x 3G, 1 x BT, 1 x Wi-Fi
	Audio	1 x Line out, 1 x Mic in
Expansions	PCIe Mini	1 x Full-size PCIe Mini (reserved for WWAN or mSATA)* 1 x Full-size PCIe Mini (reserved for WLAN)
Power	Power Input	DC jack : 9 V~36 V DC
	Consumption	12 V @ 2.1 A (Intel® i5-5350U with 4 GB DDR3 memory)
Reliability	Mounting	VESA 100
	Operating Temperature	-20°C ~ 60°C with air flow (SSD)
	Storage Temperature	-30°C ~ 70°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	2.2 kg/3 kg
	Safety/EMC	CE/FCC/E-Mark
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

*IVS-200-ULT2-QGW-R10 has only one PCIe mini slot(Full size)
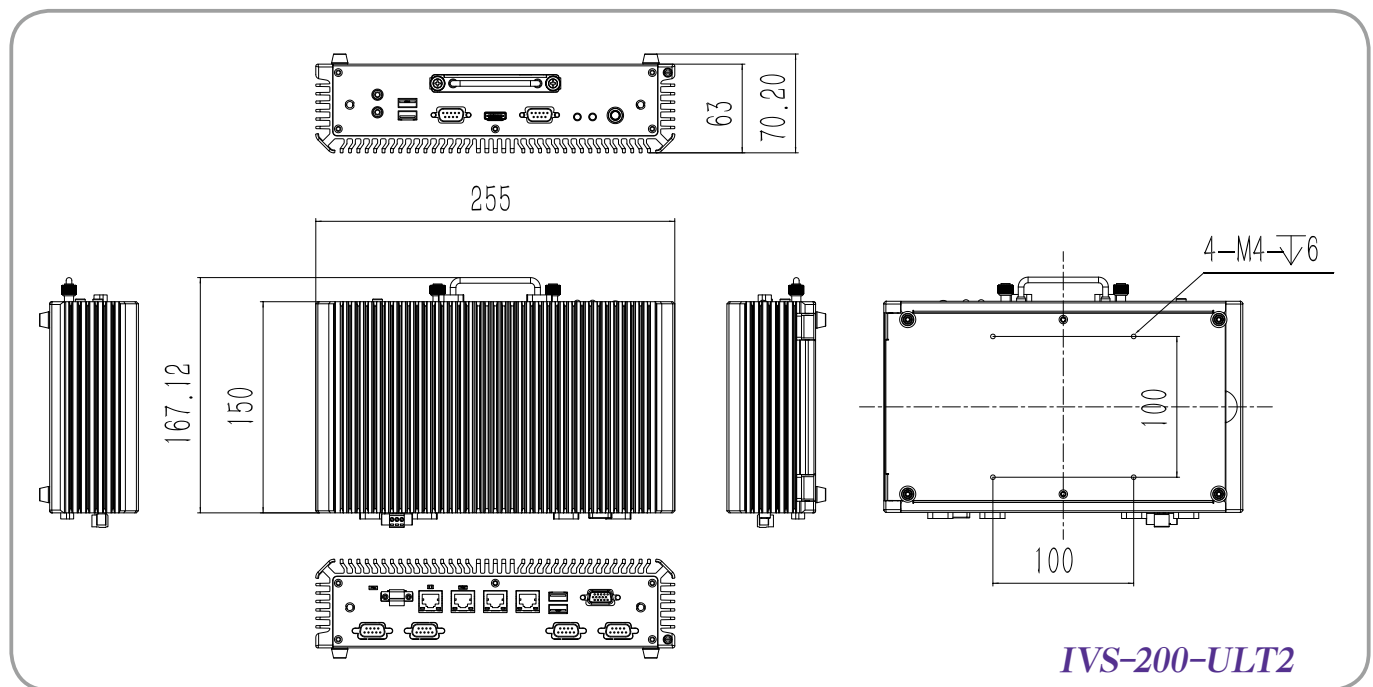
Fully Integrated I/O

Front view

LED Indicators:
HDD, Power   COM 1   HDMI   COM 2   2 x USB 3.1 Gen 1

Power Switch   2.5" HDD/SSD Drive Bay   Audio

Rear view

ACC Mode   Reset   ATX/AT Mode   2 x USB 2.0

Power In (Terminal Block)   4 x LAN   VGA

Dimensions (Unit: mm)

63
70.20
255
167.12
150
4−M4−▽6
100
100
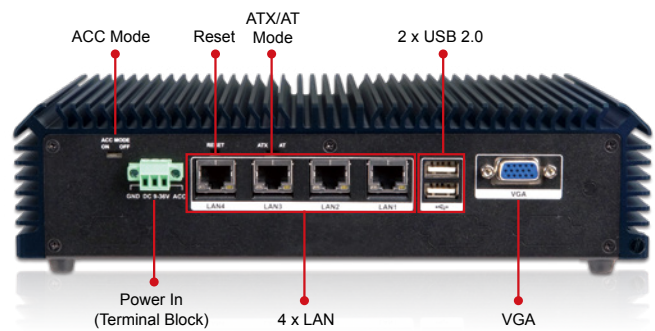
IVS−200−ULT2

Ordering Information

Part No.	Description
IVS-200-ULT2-i5/4G-R10	Fanless system with Intel® Core™ i5-5350U CPU, up to 2.9GHz, TDP 15W, four GbE LAN ports, one HDMI, one VGA, two RS-232/422/485, one 2.5" removable SATA HDD bay, 4 GB memory pre-installed, 9 V~36 V DC, R10, RoHS
IVS-200-ULT2-C/4G-R10	Fanless system with Intel® Celeron® 3765U 1.7GHz CPU, TDP 15W, four GbE LAN ports, one HDMI, one VGA, two RS-232/422/485, one 2.5" removable SATA HDD bay, 4 GB memory pre-installed, 9 V~36 V DC, R10, RoHS
IVS-200-ULT2-QGW-R10	Fanless System with Intel® Core™ i5-5350U up to 2.9GHz, TDP 15W, 4 x GbE LAN port , 1 x HDMI, 1 x VGA, 2 x RS-232/422/485, 1 x 2.5'' removable SATA HDD bay, 8G memory pre-installed, with QTS-Gateway, 9~36V DC, RoHS

Options

Item	Part No.	Description
OS	IVS-200-ULT2-WES7E64-R10	OS Image with Windows® Embedded Standard 7 E 64-bit for IVS-200-ULT2, DVD-ROM, RoHS
Serial cable	32205-005400-100-RS	RS-232 cable, 150 mm, 2x5 pin
DIO cable	32231-000100-200-RS	DIO cable, 150 mm, 2x5 pin

Packing List

Item	Part No.	Qty	Description
Screw pack	44013-030041-RS	4	Screw pack
	44005-030083-RS	4	Screw pack
Wall Mount Kit	41020-0433C2-00-RS	2	Wall mount bracket

IVS-110-AL

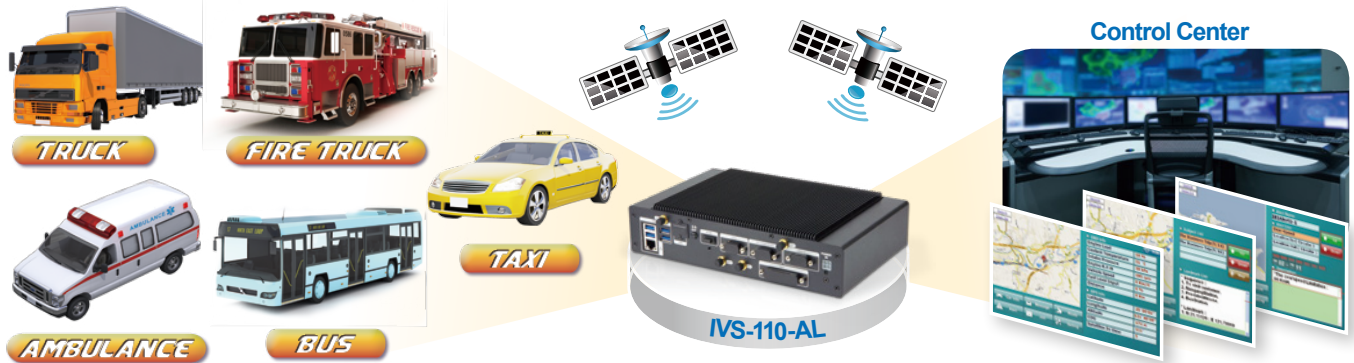*Vehicle Fleet Management System*

New

Features

- Intel® Apollo Lake processor
- Dual SIM slot
- Optional 3G/Wi-Fi
- 16 x DI/DO
- 1 x HDMI (lockable), 1 x VGA
- Built-in GPS function
- E-Mark certification
- Built-in OBD-II/J1939
- IP4X protection

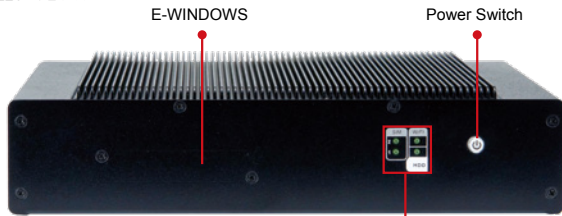Fanless | 3.75G/HSUPA | GPS | Wi-Fi | OBD-II | E-Mark | Dual SIM | -30°C~70°C

Specifications

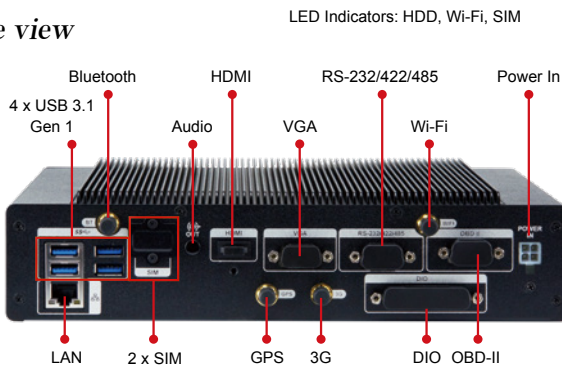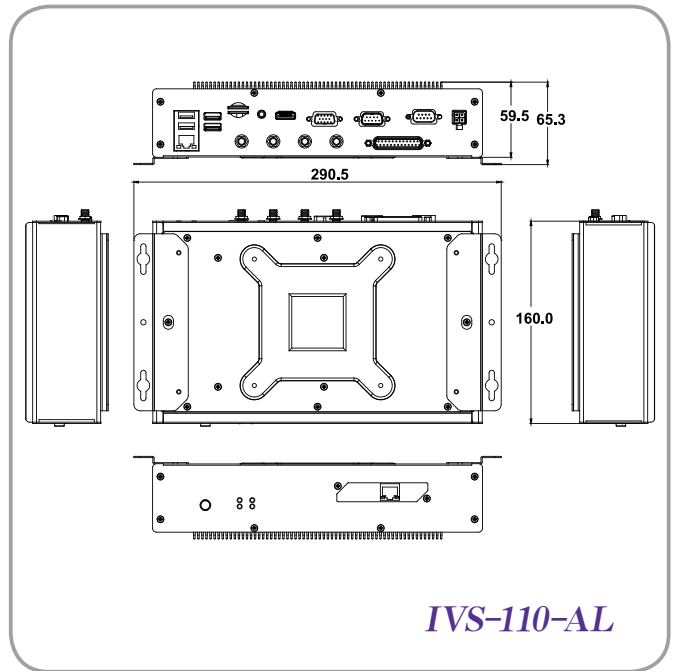| Model		IVS-110-AL
Chassis	Color	Black
	Dimensions (WxHxD) (mm)	261 x 170 x 60
	System Fan	Fanless
	Chassis Construction	Extruded aluminum alloy
Motherboard	CPU	Intel® Atom™ x7-E3950 Processor (quad-core 1.6GHz, 12W TDP)
	Chipset	SoC
	System Memory	1 x 204-pin DDR3L SO-DIMM. 4GB pre-installed
Storage	Hard Drive	1 x 2.5" SATA 6Gb/s HDD/SSD drive bay
	mSATA / eMMC	1 x mSATA (PCIe Mini Slot) 1 x eMMC 5.0 (reserved)
Communication	WLAN	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	GPS	On board GPS
I/O Interfaces	USB 3.1 Gen 1	4
	Ethernet	1 x RJ-45 PCIe GbE by Intel® I211
	COM Port	1 x RS-232/422/485 (BIOS configuration)
	Digital I/O	1 x 16-bit digital I/O (8-bit input / 8-bit output)
	OBD-II/J1939	1 x DB9 OBD-II/J1939
	Display	1 x VGA, 1 x HDMI
	Resolution	VGA : Up to 1920 x 1200 @ 60 Hz HDMI : Up to 3840 x 2160 @ 30 Hz
	Audio	1 x Line out
	SIM	2 x on board SIM card slot
Expansions	Mini PCIe	1 x Full/Half-size PCIe Mini slot (reserved for WWAN) 1 x Full/Half-size PCIe Mini slot (reserved for mSATA or E-window) 1 x Half-size PCIe Mini slot (reserved for WLAN)
Power	Power Input	Cigarette lighter power cable: 9 V~ 36 V DC
	Consumption	12V @ 5A (Intel® Atom™ x7-E3950 with 8GB DDR3 memory)
Reliability	Mounting	Wall mount / VESA 100
	Operating Temperature	-30°C ~ +70°C with air flow
	Storage Temperature	-40°C ~ 80°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
	Operating Vibration	5 Grms, 5-500 Hz, 3 Axes(with SSD, according to IEC60068-2-64) MIL-STD-810F 514.5C-2 (SSD)
	Weight (Net/Gross)	2.4 kg / 3.8 kg
	Safety/EMC	CE/FCC/E-Mark/IP rating : IP 4X compliant
OS	Supported OS	Microsoft® Windows 10 IoT Enterprise

Fleet Management Tracking System

Control Center

TRUCK

FIRE TRUCK

AMBULANCE

BUS

TAXI

IVS-110-AL

Fully Integrated I/O

Front view

E-WINDOWS Power Switch

LED Indicators: HDD, Wi-Fi, SIM

Side view

Bluetooth HDMI RS-232/422/485 Power In

4 x USB 3.1 Gen 1

Audio VGA Wi-Fi

LAN 2 x SIM GPS 3G DIO OBD-II

Dimensions (Unit: mm)

59.5 65.3

290.5

160.0

IVS-110-AL

Ordering Information

Part No.	Description
IVS-110-AL-E3/4G-R10	Fanless embedded system with Intel® Atom™ x7-E3950 (12W) Processor with 4GB DDR3L pre-installed memory, on board GPS, HDMI, VGA, one GbE LAN, one 2.5" SATA HDD bay, two SIM slots, RoHs

Options

Item	Part No.	Description
GPS/LTE antenna	32506-000400-100-RS	Integration Antenna, Magnetic Antenna Base+GPS/4G LTE ANTENNA, RG 174, 5000MM, AU-4S-LTE, GPS Gain:27dB, LTE, Gain:0dBi, 50Ω, SANAV, 1575.42MHz/704-960MHz/1710-2766MHz, VSWR ≤ 2.0, SMA PLUG, REVERSE SMA PLUG, RoHS
Power adapter	IVIPOWER-4PIN-R10	Power adapter with 4-pin transfer cable, RoHS
OBD-II cable	32025-003400-100-RS	Round cable, OBD-II cable, 2000 mm, 24 AWG, (A) OBD-II 16P male, (B) D-sub 9P female, one piece package with label, RoHS
Cigarette lighter power cable	32002-004000-100-RS	Round cable, power cable, car cigarette lighter cable, 2000 mm, 18 AWG, (A) cigarette lighter (5 A 250 V)+ ψ3 green LED, (B) MOLEX 5557-0400 P=4.2, SHANGHAI YING YU, RoHS
Wireless kit	IVS-WIFI-KIT02-R10	1T1R Wi-Fi module kit for embedded system, IEEE802.11a/b/g/n/ac Wi-Fi with Bluetooth 4.0/3.0+HS, 1 x Wi-Fi module, 2 x Antenna, RoHS
WWAN kit	IVS-3G-KIT02-R10	3G module kit for embedded system, F260, 1 x 3G module, RoHs
ACC power cable	32002-001900-100-RS	Round cable, power cable, 3000 mm, 16 AWG, (A) MOLEX 5557-04P P=4.2, SHANGHAI YING YU, RoHS

Packing List

Item	Part No.	Qty	Description
Screw pack	44005-030083-RS	4	Screw pack
	42005-000603-RS	4	Screw pack
	44003-030052-RS	4	Screw pack
	44045-020031-RS	5	Screw pack
SATA Cable	32801-003608-100-RS	1	Sata cable, 3, 150mm/150mm, 26AWG, SATA 7+15P female 180°, SATA 7P female 90°+lock, JST PHR-2 P=2.0, One pcs PKG W/ label, RoHS
Wall Mount Kit	41020-0482C2-00-RS	2	Wall mount bracket

E-Window (for ATO assembly) E-Window

Part No.	Description
E-MPCIE-LAN-R10	PCIe Mini card supports 1-port GbE with Realtek RTL8111E controller, with PMS 194C I/O bracket and 250mm cable, R10
E-MPCIE-DLAN-R10	PCIe Mini card supports 2-port GbE with Intel I211 controller, with PMS 194C I/O bracket and 250mm cable, R10

IRS–100–ULT3

Railway Surveillance System

Features

- Intel® Skylake ULT processor
- Dual M12 LAN port
- VGA / DVI dual display
- Dual SIM card design
- 24V and 110V DC input (±40%) DC input
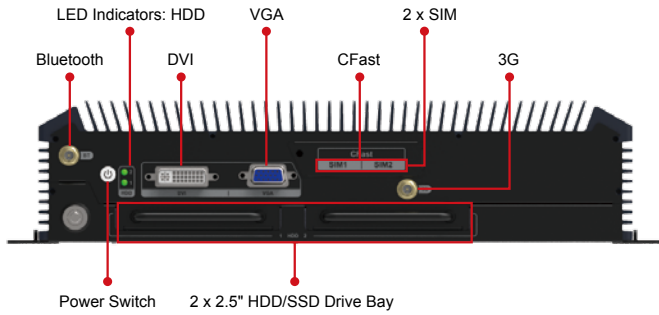- 2 x 2.5" hot-swappable SATA SSD drive bay
- EN 50155

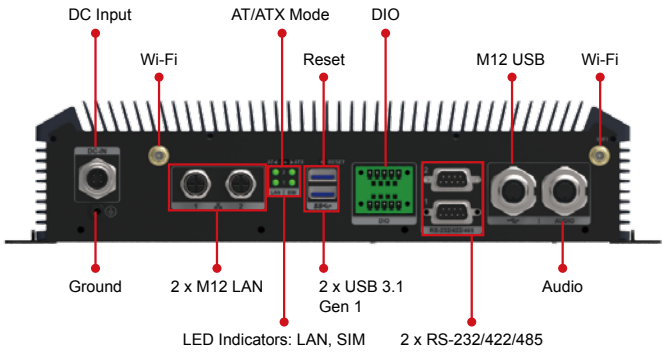EN 50155 | Dual SIM | Dual LAN | Dual HDD | -40℃~70℃

Specifications

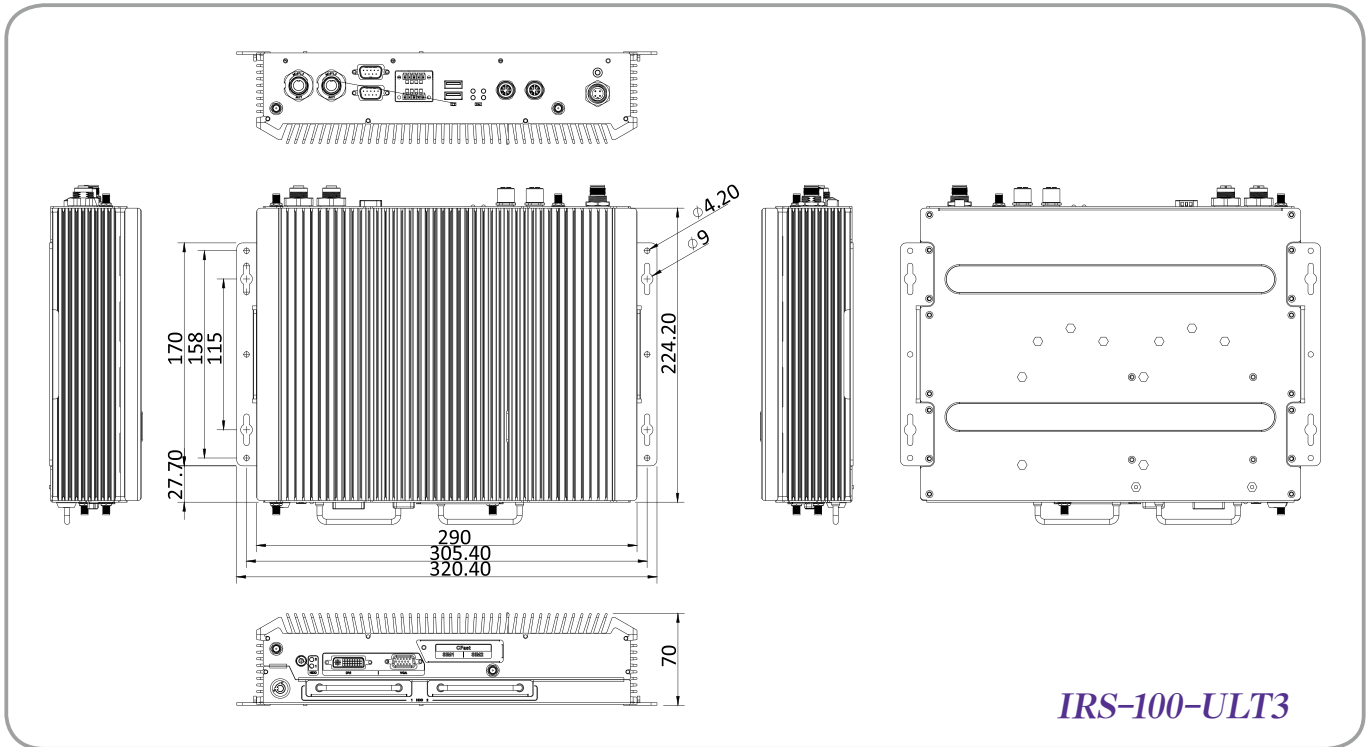| Model Name		IRS-100-ULT3
Chassis	Color	Blue C
	Dimensions (WxHxD) (mm)	290 x 69 x 225
	System Fan	Fanless
	Chassis Construction	Extruded aluminum alloy
Motherboard	CPU	Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)
	Chipset	SoC
	System Memory	2 x 260-pin DDR4 SO-DIMM 4GB pre-installed (system max. 32 GB)
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s SSD drive bay
	CFast/CF Card	1 x CFast (SATA 6Gb/s)
	mSATA	1 x mSATA (SATA 6Gb/s)
Communication	WLAN	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
I/O Interfaces	USB 3.1 Gen 1	2
	USB 2.0	1 (M12 connector)
	Ethernet	2 x M12 connector PCIe GbE by Intel® I211
	COM Port	2 x DB-9 RS-232/422/485 (with 1.5 kV isolation)
	Digital I/O	1 x Terminal block for 8-bit digital I/O (4-bit input/4-bit output, 1.5 kV isolation)
	Display	1 x VGA, 1 x DVI-D
	Resolution	VGA : Up to 1920 x 1200 @60Hz DVI-D : Up to 1920 x 1200 @60Hz
	Audio	1 x Line-out, 1 x Mic-in
	SIM	2 x SIM card slot
Expansions	PCIe Mini	2 x Full-size PCIe Mini (for WWAN / WLAN module)
Power	Power Input	M12 Connector: 24V and 110V DC input
	Consumption	24V @ 2A (Intel® i5-6300U with 4 GB DDR4 memory)
Reliability	Mounting	Wall mount
	Operating Temperature	-40°C ~ 70°C with air flow (with industrial SSD/CF), compliant with EN 50155
	Storage Temperature	-40°C ~ 85°C
	Humidity	10% ~ 95%, non-condensing
	Operating Shock	Compliant with EN 61373 Category 1 Class B
	Operating Vibration	Compliant with EN 61373 Category 1 Class B
	Weight (Net/Gross)	3.9 kg / 5.1 kg
	Safety/EM C	CE/FCC, compliant with EN 50155, EN 50121-3-2
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

Fully Integrated I/O

Front view

LED Indicators: HDD   VGA   2 x SIM
Bluetooth   DVI   CFast   3G

Power Switch   2 x 2.5" HDD/SSD Drive Bay

Rear view

DC Input   AT/ATX Mode   DIO
Wi-Fi   Reset   M12 USB   Wi-Fi

Ground   2 x M12 LAN   2 x USB 3.1 Gen 1   Audio

LED Indicators: LAN, SIM   2 x RS-232/422/485

Dimensions (Unit: mm)

IRS-100-ULT3

Ordering Information

Part No.	Description
IRS-100-ULT3-i5/4G-R10	Fanless railway system with Intel® Core™ i5-6300U processor (15W), 4GB DDR4 pre-installed memory, two 2.5" SATA SSD bays, VGA, DVI, two M12 GbE LAN

Options

Item	Part No.	Description
OS	IRS-100-ULT3-WES7E64-R10	OS Image with Windows® Embedded Standard 7 E 64-bit for IRS-100-ULT3, DVD-ROM, RoHS
DC cable	32002-009000-100-RS	Power cable, 2000 mm, 16AWG, M12 5-pin female; label: V+, V-, GND; RoHS
USB cable	32001-022700-200-RS	USB cable, 2000 mm, 24AWG; (A) Amphenol LTW: M12 5-pin male IP68 (12-05BMMA-SL8001), (B) USB Type A 4-pin female; RoHS
LAN cable	32013-003400-100-RS	LAN cable, 1000 mm, 26AWG; (A) METZ: M12 plug 8-pin (MNF881A315-001), (B) RJ-45 8P8C plug; RoHS
Audio cable	32007-005400-100-RS	Audio cable, 1200 mm, 28AWG; A) Amphenol LTW: M12 5-pin male (12-05BMMA-SL8001), (B) DC stereo jack: 3.5mm*2; RoHS
Wireless Kit	IRS-100-WIFI-KIT02-R10	1T1R Wi-Fi module kit for embedded system, IEEE802.11a/b/g/n/ac Wi-Fi with Bluetooth 4.0/3.0+HS, 1 x Wi-Fi module, 2 x antennas, 2 x cables RoHS
WWAN Kit	IRS-100-3G-KIT02-R10	3G module kit for embedded system, F260, 1 x 3G module, 1 x antenna , 2 x cables, RoHs

Packing List

Item	Part No.	Qty	Description
Wall Mount Kit	41020-0474C2-00-RS	2	Wall mount bracket
Screw Pack	44015-030061-RS	16	Screw pack

SBOX-100-QM87

Maritime Embedded System

New

Features

- Fanless marine computer with 4th generation Intel® Core™ i5 dual-core processor
- -15°C ~ +55°C wide temperature
- Isolation protection
  - » 4 x RS-232/422/485 isolated serial ports
  - » Isolated 24 VDC (with tolerance from 18 to 36V)
  - » 2 x Isolated CAN-bus 2.0B
- 2 x 2.5" SSD bay with RAID 0/1 function
- Supports IEI iRIS-2400 (IPMI 2.0 compliant)

IMS IEI Marine System

QTS-Gateway | IPMI 2.0 Compliant | Fanless | CAN-Bus | Triple Display | Dual HDD | DNV

Intel® Core™ i5 High Performance Computing Power in a Fanless Design

IEI's high performance marine solutions are built with the powerful Intel® Core™ i5 CPU within a fanless system architecture. No matter your applications are general marine system management, monitoring or conning systems, radar systems, or ECDIS navigation, IEI's marine computers will give you the most stability than ever.

- Improved CPU performance with Intel® 22nm 4th Generation Mobile Core™ i5-4400E 2.7 GHz processor
- Two 204-pin 1600/1333MHz dual-channel DDR3 SDRAM support up to 16 GB

Next Generation Intel® HD Graphics with DX 11.1, OpenGL 4.x, OpenCL 1.2

Fully Integrated VR

3 Independent Displays High Resolution DP v1.2, HDMI 1.4a

X16 PCIe Gen3 | 3x4 DDI 1x4 eDP | PCIe I/O | DMI | Display Ports | System Agent | IMC | 2ch DDR3 | High Bandwidth Cache Memory | Display | Core | LLC | Core | LLC | Core | LLC | Core | LLC | Processor Graphics GT2/GT1
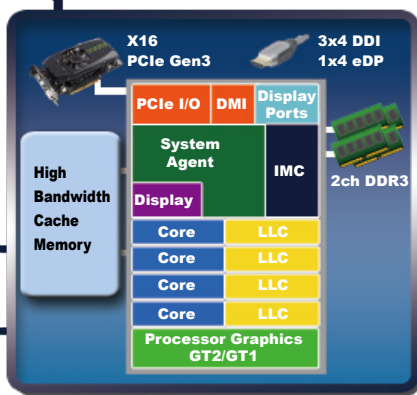
Built-in 22 nm Processor

Intel® Turbo Boost Technology

2 Ch DDR3L 1600 MHz 1/2 DIMM per Channel

Up to 4C and 8MB of Intel® Smart Cache

Intel® AVX 2.0 + Intel® AES New Instructions and Improvements

-15°C~55°C FANLESS!

With IEI's fanless solutions, your vessels can avoid the bothersome of replacement of fan, increasing safety and efficiency for the crew and the entire ship.

Three independent aluminum heat sinks help the heat dissipate averagely, and help the system efficiently achieve wide operating temperature range between -15°C~55°C.

3 independent displays: HDMI, DVI, and VGA

The three simultaneously independent displays are supported via the on-board video output combinations of VGA, DVI and HDMI. This versatile combination of display output options make the marine system ideal for multi-monitor required applications in the bridge room.

Display 1

HDMI

Display 2

VGA

DVI

Display 3

Multiple Isolated Ports for Comprehensive Protection against Electrical Surges

Ground loop and electric surges are common in the marine applications of electronic products due to the dense placement of devices. These stray electrical signals can cause equipment damage or malfunction.

■ 2.5 kV isolation protection on the RS-232/422/485

IEI marine computer is protected from any stray electrical signals from other devices on the ship. Electric surges that were generated from other electronic devices which often passed through serial lines to the marine computer can cause severe damage and malfunction to the computers.

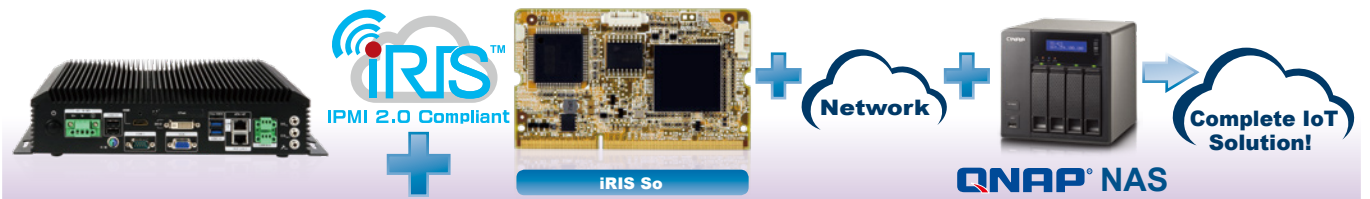### ■ Isolated 24 VDC (with tolerance from 18 to 36V) power 2250 V DC Input to Output Basic Insulation
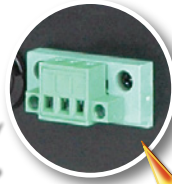
■ Two independent CAN 2.0B channels with 2.5 kV isolation protection

CAN 2.0B is a kind of marine electronic data network for communication between marine electronic devices such as chart plotters, navigation instruments, GPS receivers, etc.

CAN bus

Multiple serial ports for connecting devices and sensors

Echo Sounder

AIS Receiver

Radar

Gyro

Serial

Serial — S24A-QM87 Marine Panel PC

VGA/DVI/HDMI — Marine Display
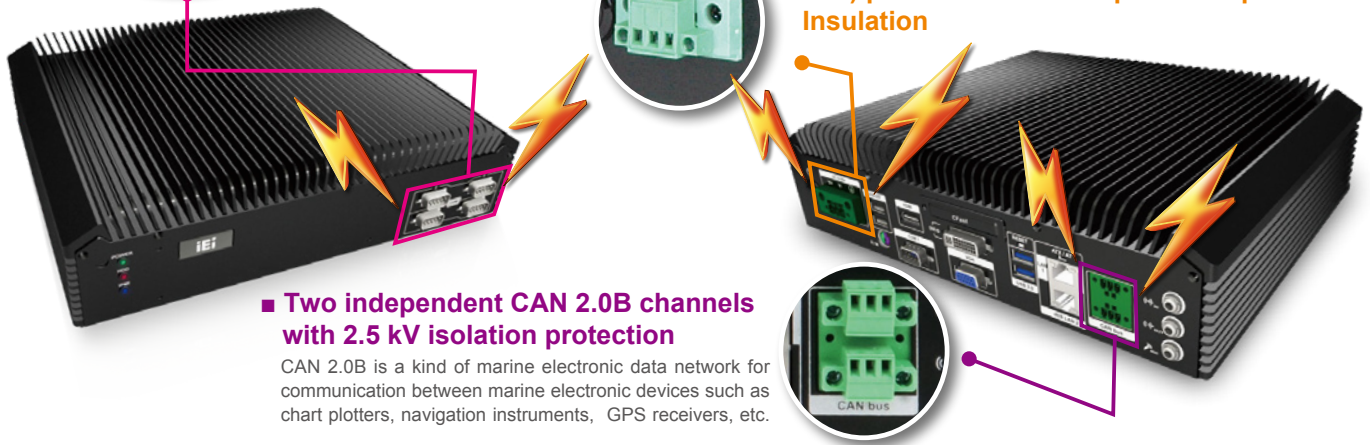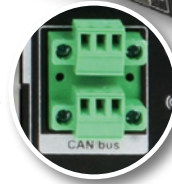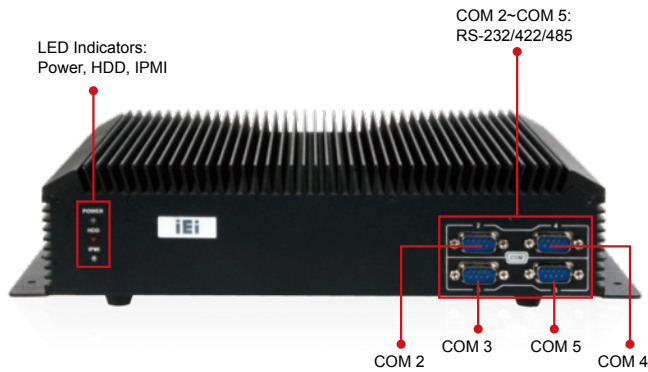
IEI Remote Intelligent Management System

The marine computer supports IEI iRIS remote management solution which helps users to manage multiple devices through single management interface and elevates work efficiency. The iRIS solution only requires a module and Internet connection!
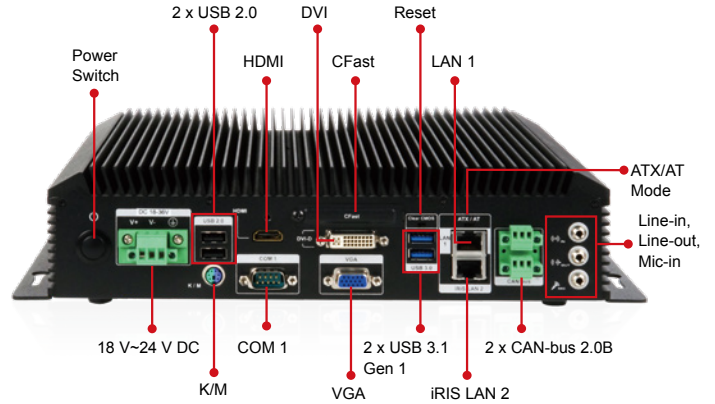
iRIS™ IPMI 2.0 Compliant + iRIS So + Network + QNAP® NAS → Complete IoT Solution!

| iRIS Key Feature	Detailed Functions	iRIS Key Feature	Detailed Functions
System health monitor	● Hardware monitor ● Health log ● Event log	Screen record	● Remote video streaming record ● Event Trigger Setting & video record
Remote system maintenance	● Remote BIOS update ● Remote OS recovery ● Remote KVM + One Key Recovery ● Remote out-off-band backup	Remote power control	● Reset Power ● Power Off Server — Immediately ● Power Off Server — Orderly ● Power On Server ● Power Cycle Server
Active alert & notice	● Send instant system alerts via e-mail ● Send instant system alerts via SMS ● Send instant system alerts to management server	Remote troubleshooting	● Remote software update ● Remote OS installation & recovery ● Remote KVM ● Post code display
Remote device control	● Fan control ● Remote KVM ● Remote setting BIOS	Diagnose before dispatch	● Health log analysis ● Event log analysis
		Group control	● Group control

Fully Integrated I/O

Front view

LED Indicators:
Power, HDD, IPMI

COM 2~COM 5:
RS-232/422/485

COM 2   COM 3   COM 5   COM 4

Rear view

2 x USB 2.0   DVI   Reset

Power Switch   HDMI   CFast   LAN 1

ATX/AT Mode

Line-in, Line-out, Mic-in

18 V~24 V DC   COM 1   2 x USB 3.1 Gen 1   2 x CAN-bus 2.0B

K/M   VGA   iRIS LAN 2

Specifications

Model Name		SBOX-100-QM87
Chassis	Color	Black
	Dimensions (WxHxD) (mm)	290 x 75 x 225
	System Fan	Fanless
	Chassis Construction	Extruded aluminum alloy
Motherboard	CPU	Intel® mobile Core™ i5-4400E (2.7 GHz, 37W)
	Chipset	Intel® QM87
	System Memory	2 x 204-pin DDR3 SO-DIMM slot (system max. 16 GB) Pre-installed 4 GB DDR3 SO-DIMM
IPMI	iRIS Solution	iRIS-2400
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s SSD bay with RAID 0/1 function
	CF Card/CFast	1 x CFast
I/O Interfaces	PS2 (KB/MS)	1
	USB 3.1 Gen 1	2
	USB 2.0	2
	Ethernet	2 x RJ-45 with teaming support 1 x PCIe GbE by Intel® I217LM 1 x PCIe GbE by Intel® I210-AT (2 with 2 kV isolation)
	COM Port	1 x DB-9 (non-isolated) 4 x RS-232/422/485 (with 2.5 kV isolation)
	CAN-bus/OBD-II	2 x CAN-bus (with 2.5 kV isolation)
	Display	1 x VGA, 1 x DVI-D, 1 x HDMI
	Resolution	VGA: Up to 1920 x 1200 @ 60 Hz HDMI: Up to 2500 x 1600 @ 60 Hz DVI-D: Up to 2500 x 1600 @ 60 Hz
	Audio	1 x Line-out, 1 x Line-in, 1 x Mic-in
	Wireless	2 x Antenna SMA hole (reserved)
Expansions	PCIe Mini	2 x Full size*
LED Indicator & Button	Indicator	Power (power on: green, power off: orange), storage (red, blinking), IPMI (blue)
Power	Power Input	Terminal block: Isolated 24 VDC (with tolerance from 18 to 36V)
	Consumption	100 W (Intel® mobile Core™ i5-4400E with 4 GB DDR3 memory)
Reliability	Mounting	Wall mount
	Operating Temperature	-15°C ~ 55°C (5°F ~131°F) with air flow (SSD)
	Storage Temperature	-20°C ~ 60°C (-4°F ~140°F)
	Humidity	5% ~ 95%, non-condensing
	Operating Shock	
	Operating Vibration	IEC 60945 and DNV 2.4 IASC-E10 compliant
	Weight (Net/Gross)	4.08 kg / 6.03 kg
	Safety/EMC	EMC/CE/FCC/DNV, IEC 60945 4th, IACS-E10, IEC 61174 compliant IP rating: IP22 compliant rear cover
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E

*SBOX-100-QM87i-QGW-R10 has only one Half-size PCIe Mini slot

Dimensions (Unit: mm)

328
311
290
23.50
Ø10
170
85
27.50
Ø4.50
225
75
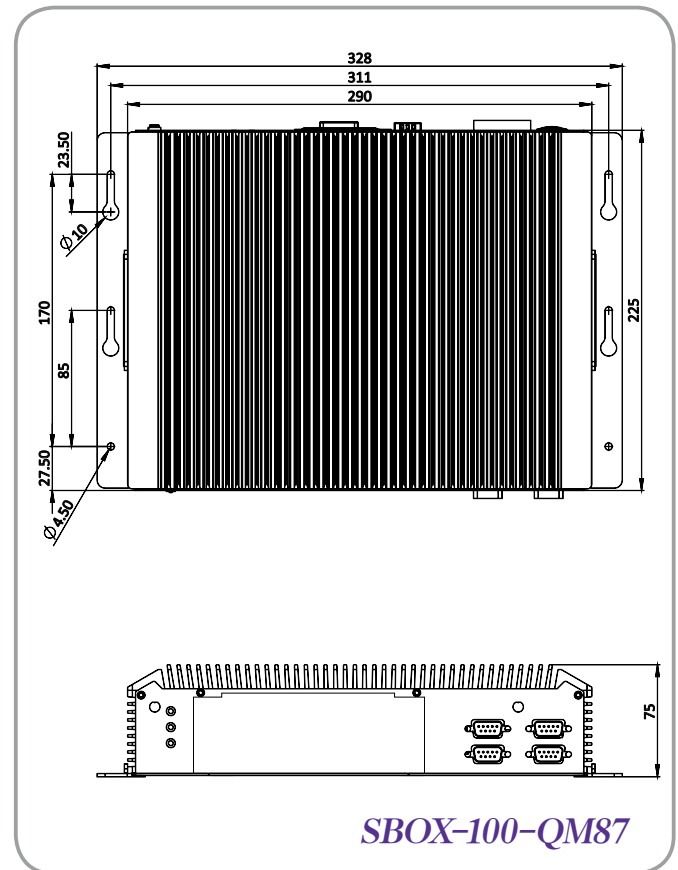
SBOX-100-QM87

Ordering Information

Part No.	Description
SBOX-100-QM87i-i5/4G-R10	Fanless marine computer with Intel® Mobile Core™ i5-4400E 2.7 GHz processor, 4 GB DDR3 memory, iRIS-2400 supported, isolated 18 V~36 V DC, R10
SBOX-100-QM87i-QGW-R10	Fanless marine computer with Intel® Mobile Core™ i5-4400E 2.7GHz Processor, DDR3 8GB, iRIS-2400 supported, with QTS-Gateway, isolated 18~36V DC, RoHs

Packing List

Item	P/N	Qty	Description
PS/2 cable	32006-000300-100-RS	1	PS/2 cable
Rubber pad & screw pack		1	Rubber pad & screw pack