

iKarPC Vehicle Computer Series

- 8" TFT sunlight readable LCD touch screen
- Intel® Atom™ Z510 1.1GHz Processor
- Pre-installed Windows® XP Embedded
- Built-in HSUPA/GPRS/GSM, Wi-Fi® and Bluetooth®
- Built-in 32-channel GPS Receiver
- Optional DTV Support DVB-T, CMMB Module
- Supports On-Board Diagnostic (OBD)



Diverse Connectivity



WWAN 2.5G/3.5G/3.75G

- Efficient mobile connectivity for GPS map download and high quality video/audio stream.
- Support WCDMA/CDMA2000/TD-SCDMA

Supported Bands

- HSUPA/HSPA/UMTS-800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM-850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA



Digital TV Alternative DVB-T / CMMB Entertainment

Intelligent TV channel scan and memory for quick program access.



GPS

Travel navigation, real-time locating and path tracking.

- 32-channel engine
- TTFF (Time to First Fix) < 1 sec for hot and aided starts
- -160dBm SuperSense sensitivity
- A-GPS service by accessing to assistance ephemeris data server via internet or mobile connectivity



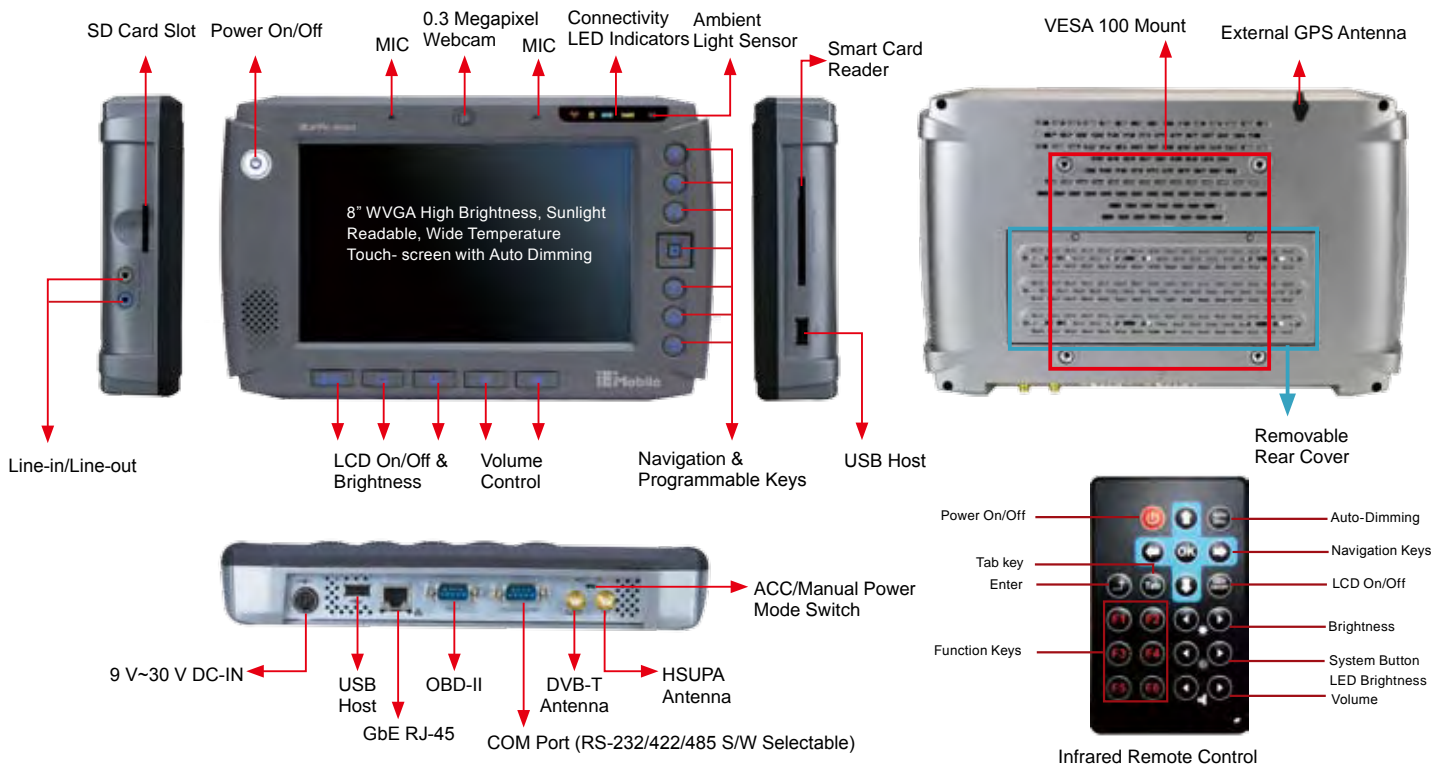
Bluetooth® V2.0 + EDR Class 1

Efficient mobile connectivity for GPS map download and high quality video/audio stream.

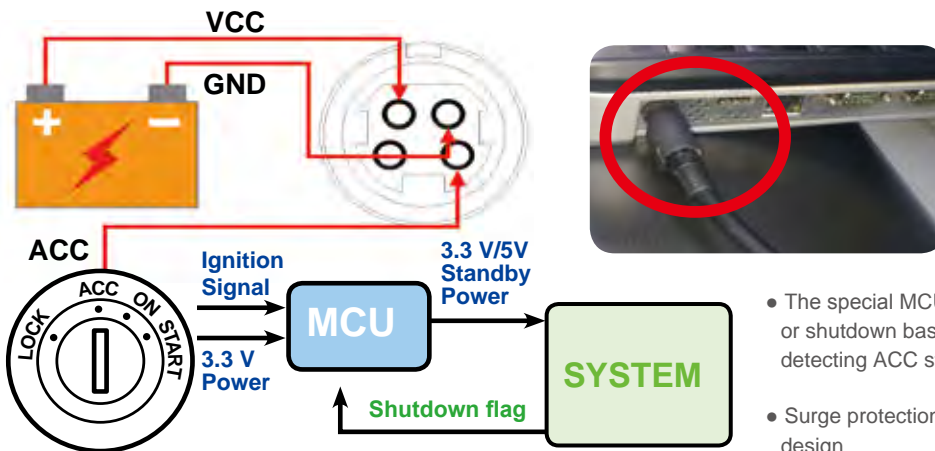


802.11b/g Wi-Fi®

Best for near field data synchronization or ad-hoc communication when vehicle park in parking space or dock.

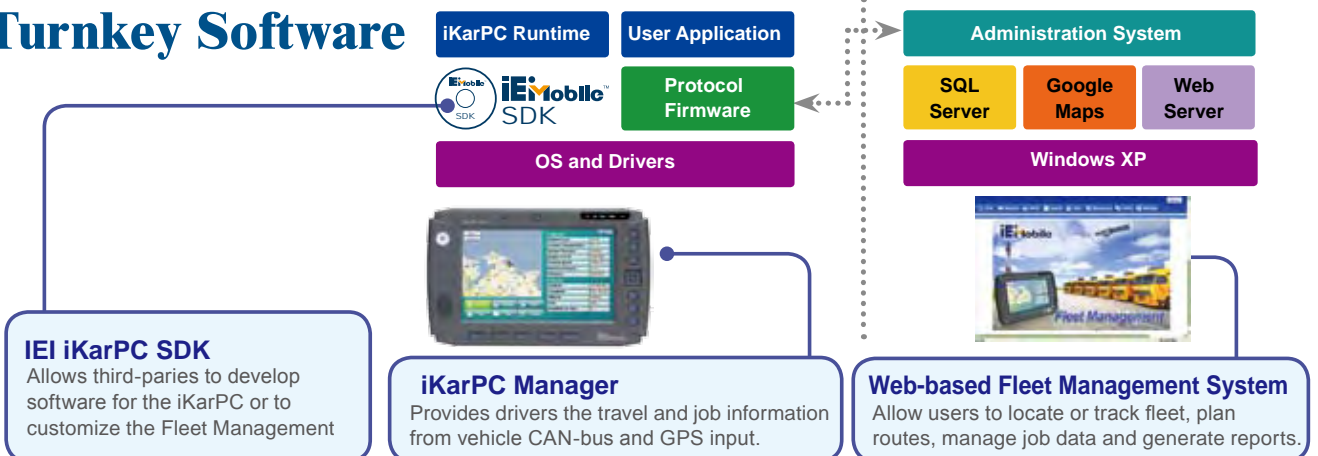


Vehicle Power Management



- The special MCU enables system to automatically reboot or shutdown based on the adjustable delay time by detecting ACC status.
- Surge protection and low power consumption hardware design

Turnkey Software





Setting

Use the Setting page to adjust the setting of audio volume, LCD brightness, power on/off delay time, embedded module and function keys.

Submenu of Setting
Audio Brightness
Module On/Off
Power Management
Program Function Key



Power Management

Use the power management page to set the system power on/off time delay. When the vehicle ignition switch is turned to ACC or ON state, the iKarPC will automatically turn on after a certain time delay. When the ignition switch is set to the LOCK position, the iKarPC will automatically turn off after a certain time delay.



Module On/Off

Use the Module On/Off page to enable or disable the embedded modules, including Bluetooth, Wi-Fi, DVB-T, 3.75G connection and webcam.

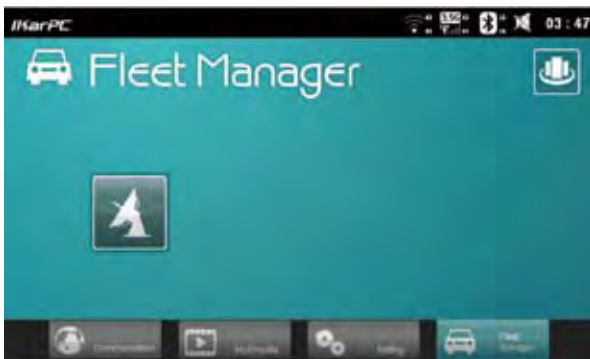


Programmable Function Key

The iKarPC provides SDK for customers to define and program their own Function Keys. Use the function key page to program the function on the right edge of the front panel of the iKarPC. To program a key, click the button on the screen. Select a function from the pop-up menu, then click Apply button.

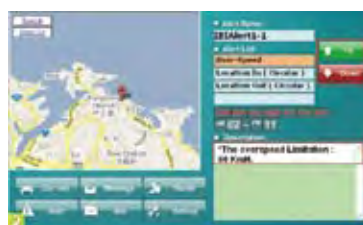
Fleet Management Software

The Fleet Management is an advanced, end-to-end, web-based software for data collection and communication. It combines all the information from CAN bus and GPS input in one easy-to-navigate interface. Pre-installed in the iKarPC, it is integrated with OBD-II or FMS/J1939 diagnose tool to provide a comprehensive remote performance monitoring envelope for vehicles.



Car Information

Show the vehicle information gathered through the OBD cable to the iKarPC and display the GPS information.



Alert

Click the Alert button to view the alerts from the management center.



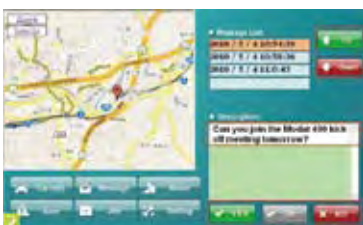
Route

View the route plan from the back-end management center. Click the Map button to bring up the map of the route plan.



Job

Click the Job button to view the Job assignment from the management center.



Message

Show the messages from the back-end management center. Use up and down buttons or click a message from the message list to view the message.



Setting

Use the Setting page to input the server IP address of the back-end management center to the iKarPC. The unique number of SIM card is used as the identification number of the iKarPC.

IEIMobile Introduction
Tablet PC
Industrial PDA (EDA)
Automotive PC

Vehicle Bus Protocol (OBD-II/J1939/FMS)

A vehicle bus protocol is a specialized internal communications network that interconnects components inside a vehicle. It also provides interface for users to acquire vehicle data for diagnostic or cruise information such as vehicle speed, engine loading, engine R.P.M and fuel level. OBD-II supports more than 79 kinds of vehicle information.

J1962 Interface

OBD-II Cable

Vehicle Speed
Engine Loading
Engine R.P.M
Fuel Level :
More than 79 items!

Physical Connection Interface

The vehicle bus connection is mostly based on CAN bus 2.0b signaling via a specific connection interface. For example, OBD-II defines the J1962 female 16-pin (2x8) connector as its physical interface while J1939 defines the 9-pin round connector.

Application
OS & Drivers
Main CPU
Firmware
MCU
CAN bus 2.0b

OBD-II
J1939
FMS

On-Board Diagnostics (OBD-II)

OBD-II is a standard that specifies the type of diagnostic connector and its pin-out, the electrical signaling protocols available, and the messaging format. There are five signalling protocols currently in use with the OBD-II interface. Any given vehicle will likely only implement one of the protocols. The iKarPC supports ISO 15765 CAN (250 kBit/s or 500 kBit/s). The CAN protocol is a popular standard outside of the US automotive industry and is making significant in-roads into the OBD-II market share. By 2008, all vehicles sold in the US are required to implement CAN, thus eliminating the ambiguity of the existing five signaling protocols. The CAN signals are via pin-6 and pin-14 of the OBD-II connector.

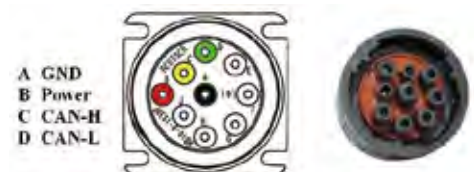
Pin	Description
1	Manufacturer discretion. GM: J2411 GMLAN/SWC/Single-Wire CAN.
2	Bus positive Line of SAE-J1850 PWM and SAE-1850 VPW
3	Ford DCL(+) Argentina, Brazil (pre OBD-II) 1997-2000, Usa, Europe, etc. Chrysler CCD Bus(+)
4	Chassis ground
5	Signal ground
6	CAN high (ISO 15765-4 and SAE-J2284)
7	K line of ISO 9141-2 and ISO 14230-4
8	-
9	-
10	Bus negative Line of SAE-J1850 PWM only (not SAE-1850 VPW)
11	Ford DCL(-) Argentina, Brazil (pre OBD-II) 1997-2000, Usa, Europe, etc. Chrysler CCD Bus(-)
12	-
13	-
14	CAN low (ISO 15765-4 and SAE-J2284)
15	L line of ISO 9141-2 and ISO 14230-4
16	Battery voltage

OBD-II/J1939/FMS Vehicle Bus Protocol

The vehicle bus protocol deals with special request for data transmission reliability and quality on vehicle bus. The MCU inside the iKarPC acts as a converter among these protocols. IEIMobile currently supports three major vehicle bus protocols: OBD-II, J1939 and FMS. The OBD-II is mostly for small car diagnostics while the SAE J1939 is implemented for off-road vehicles with diesel engines and the FMS is for commercial trucks or buses.

SAE J1939

- SAE J1939 has been adopted widely by diesel engines. Applications of J1939 now include off-highway, truck, bus, and even some passenger car applications
- SAE J1939 defines five layers in the 7-layer OSI network model, and this includes the CAN 2.0b specification (using only the 29-bit/"extended" identifier) for the physical and data-link layers. The session and presentation layers are not part of the specification.
- All J1939 packets contain eight bytes of data and a standard header which contains an index called PGN (Parameter Group Number). J1939 defines standard PGNs to encompass a wide range of automotive, agricultural, construction, marine and off-road vehicle purposes
- iKarPC supports SAE J1939 and provides a SAE J1939 connector



Applications

IPCAM Applications

IP camera is a type of digital video camera commonly employed for surveillance. Unlike analog closed-circuit television (CCTV) cameras, it can send and receive data via a computer network and the Internet.



iKarPC can monitor and record vehicle status through IPCAM.

OBD-II Applications



Auto Service



Car Racing



Rental & Insurance



Fleet Management

SAE J1939 Applications



Off-Road



Marine



Construction



Bus & Truck



Diesel Engine



Agricultural

One Key Recovery

Without having to go through complicated settings, IEI One Key Recovery uses exclusive technology to recover and backup your system with just one click.

Recover the system from

- Severe virus attack
- Operating system crash
- Man-made disasters



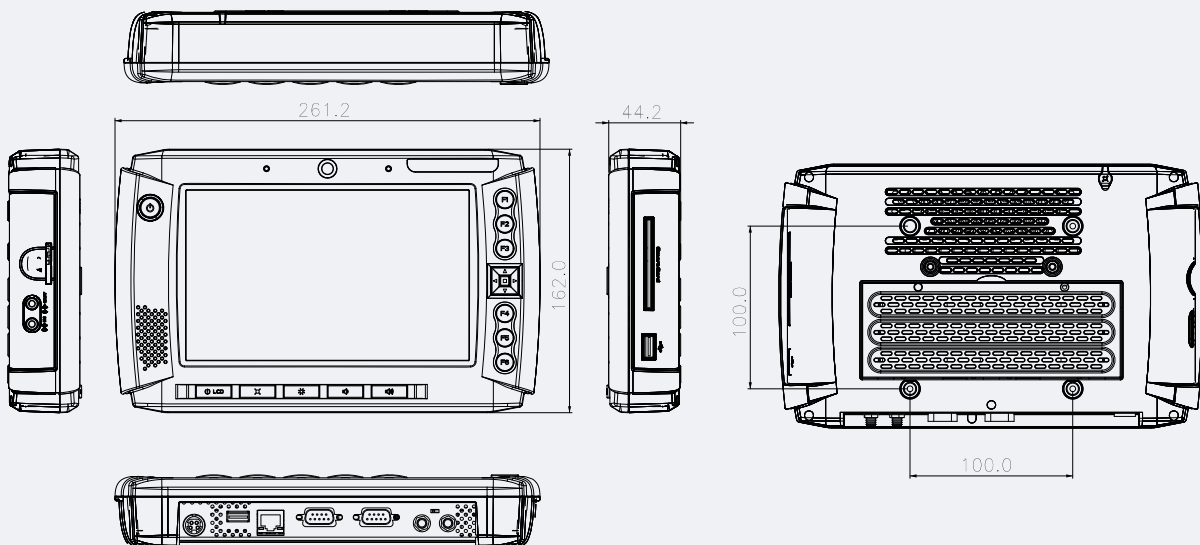
IEI Recovery Kit

iKarPC for MeeGo

- Besides Windows® XP or Windows® 7, iKarPC provides an optional model powered by MeeGo IVI.
- The MeeGo IVI software platform is designed to enable rich Internet and multimedia consumer experiences for vehicles. MeeGo IVI builds on the foundation laid by Moblin IVI for rich multimedia, CE device management, Internet, and automotive connectivity.
- This MeeGo version of iKarPC is with pre-installed MeeGo IVI platform, along with default standard MeeGo IVI UI (user interfaces) customized by IEIMobile to provide all specific iKarPC features and bundled SDK (Software Development Kits).
- Like all MeeGo devices, iKarPC users can use standard MeeGo API, which is based on Qt and Qt Mobility, to develop MeeGo application software for iKarPC.



MeeGo



Specifications

Model	iKarPC	
Display	LCD Size	8" TFT-LCD (Sunlight readable)
	Brightness (cd/m ²)	600 cd/m ² High Brightness
	Max Resolution	800 x 480 pixels WVGA
	Viewing Angle	60/60/50/50 Deg.
	Touch Screen	5-Wire Resistive Type Touch
System	CPU	Intel® Atom™ Z510 1.1 GHz
	Chipset	Intel® US15WP
	Operating System	Microsoft® Windows® XP Embedded
	Memory	1 GB DDR2 533 MHz On-board
	Storage	4 GB CompactFlash® SD Card Slot
Communication	Wireless LAN	Wi-Fi® 802.11 b/g
	Bluetooth	Bluetooth® V2.0+ EDR (Class 1)
	Modem	WCDMA/HSUPA
	GPS	GPS w/ Internal Antenna
Multimedia	Audio	1 x Line-in 1 x Line-out 1 x 3 W Speaker
	Digital TV	DVB-T , CMMB Module (Optional)
	Camera	0.3 Megapixel CMOS Camera
LED Indicators & Buttons	Indicators	Wi-Fi®/Bluetooth®/HDD/3.75G/DVB-T/Power Status LED
	Hot Key & Buttons	F1~F6 Function Key, Direction key, Power Button
I/O Interface	USB	2 x USB 2.0
	Serial	1x DB-9 OBD-II 1x DB-9 RS-232/422/485 (Software selectable w/ 5V DC)
	LAN	1 x 10/100/1000 Mbps GbE RJ-45
Power	Cigarette Lighter Power	Cigarette Lighter Power Cable DC 9~30V
	ACC Power	Manual power mode and ignition detection supported ACC power on/off mode with software configurable delay time
	Power Adapter	12V@3A@36W (Optional)
Environment	Operating Temperature	-20°C to +60°C
	Storage Temperature	-30°C to +70°C
	Humidity	5%~95% non-condensing
	Drop Survival	1 M
	Environmental Protection	IP54 compliant front panel (Water, dust and splash resistant)
Physical Characteristics	Certification	CE/FCC/CCC/E-MARK
	Dimensions (LxWxH) (mm)	261 x 162 x 44
	Net Weight	1730 g

Ordering Information

Part Number	Description
iKarPC-W08A-510-HU-R10	8.0" TFT-LCD 600 cd/m ² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g Wireless, Bluetooth, Gobi2000 HSUPA, OBD-II, Touch screen, 0.3 M pixel Camera, XPE OS and 4GB CF, RoHS
iKarPC-W08A-510-HW-R10	8.0" TFT-LCD 600 cd/m ² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g Wireless, Bluetooth, Huaewi EM770W HSUPA, OBD-II, Touch screen, 0.3 M pixel Camera, XPE OS and 4GB CF, RoHS
iKarPC-W08A-510-HU-DVB_T-R10	8.0" TFT-LCD 600 cd/m ² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g Wireless, Bluetooth, Gobi2000 HSUPA, OBD-II, Touch screen, DVB-T, 0.3 M pixel Camera, XPE OS and 4GB CF, RoHS
iKarPC-W08A-510-HW-CMMB-R10	8.0" TFT-LCD 600 cd/m ² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g Wireless, Bluetooth, Huaewi EM770W HSUPA, OBD-II, Touch screen, CMMB, 0.3 M pixel Camera, XPE OS and 4GB CF, RoHS

Packing List

Item	Part Number	Q'ty
Remote Controller	72000-8T00322ICP06G-RS	1
3.75G Antenna	32503-000100-100-RS	1
DVB-T Antenna	32511-000100-100-RS	1
GPS Antenna	32502-000200-100-RS	1
ACC Power Cable	32002-000901-100-RS	1
Cigarette Lighter Power Cable	32002-001700-100-RS	1
OBD-II Cable	32025-000300-100-RS	1
J1939 Cable	32025-000400-100-RS	1
Uesr's Manual CD-ROM	IEI-7B000-000544-RS	1
IEI One Key Recovery CD	IEI-7B000-000478-RS	1



Optional Accessory List

Item	Part Number	Description
Power Adapter	63000-FSP036RAB614-RS	POWER ADAPTER;FSP036-RAB614;VAC:90V~264V;12V/3A;36W;DIN 4 PIN/WITH LOCK;1500MM;FSP;;RoHS
Bracket	iKarPC-W08A-MK01-R10	iKarPC 100 x 100 VESA Mount kit

Support Function

Part Number	Wireless	Bluetooth	GPS	3.75G	Digital TV
iKarPC-W08A-510-HU-R10	802.11 b/g	V2.0+EDR, Class 1	U-blox	Qualcomm Gobi2000	None
iKarPC-W08A-510-HW-R10	802.11 b/g	V2.0+EDR, Class 1	U-blox	HUAWEI EM770W	None
iKarPC-W08A-510-HU-DVB_T-R10	802.11 b/g	V2.0+EDR, Class 1	U-blox	Qualcomm Gobi2000	Avermedia 337 DVB-T
iKarPC-W08A-510-HW-CMMB-R10	802.11 b/g	V2.0+EDR, Class 1	U-blox	HUAWEI EM770W	Avermedia 372 CMMB

