# iEiMobile™

**3.75G HSUPA**

**GPS**

**OBD-II**

**DVB-T**
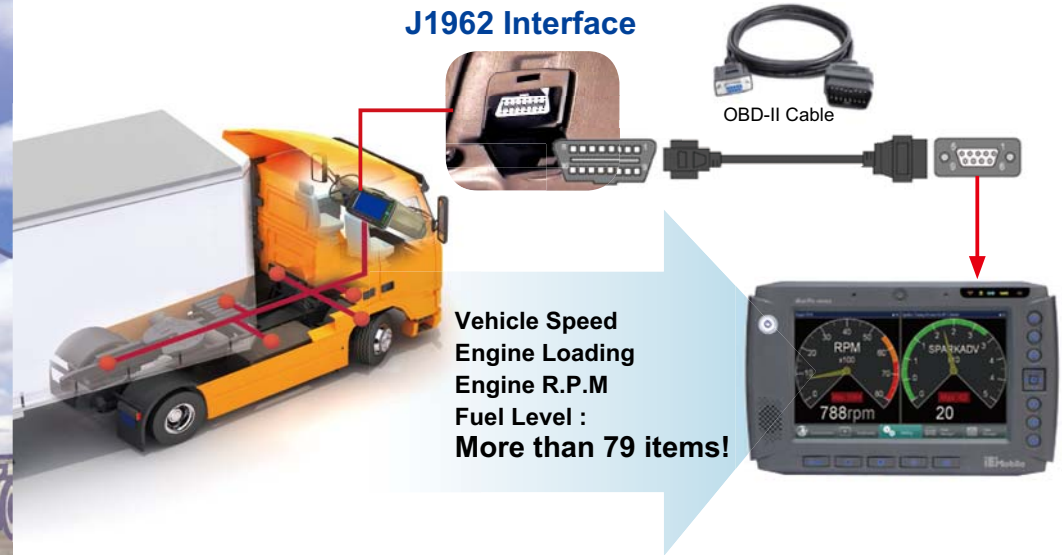
# iKarPC
## Vehicle Computer Series
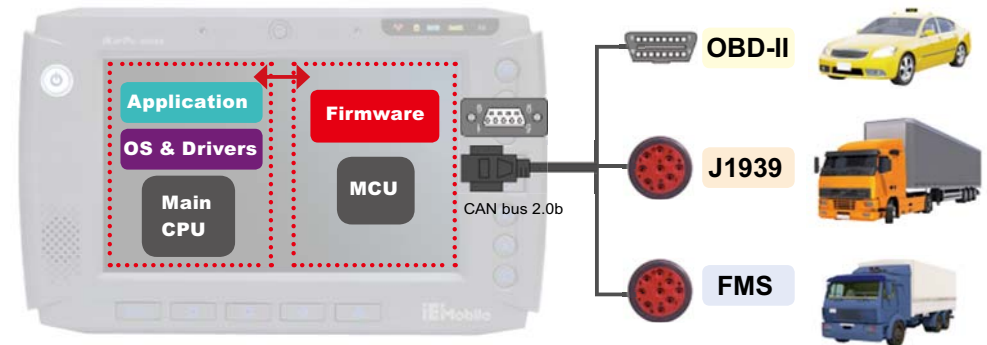
OBD-II | HSDPA 3.5G

intel Embedded Alliance

# 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 travel information such as vehicle speed, engine loading, engine R.P.M and fuel level. For example, 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

## 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 iKarPC acts as a converter among these protocols. IEI 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.

# Diverse Connectivity

## WWAN 2.5G/3.5G/3.75G
Efficient mobile connectivity for GPS map download and high quality video/audio stream.

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

## Alternative DVB-T/ CMMB Mobile Entertainment
Intelligent TV channel scan and memory for quick program access.

## Bluetooth V2.1 + EDR Class1
Efficient mobile connectivity for GPS map download and high quality video/audio stream.

## 802.11b/g Wifi
Best for near field data synchronization or ad-hoc communication when vehicle park in parking space or dock.
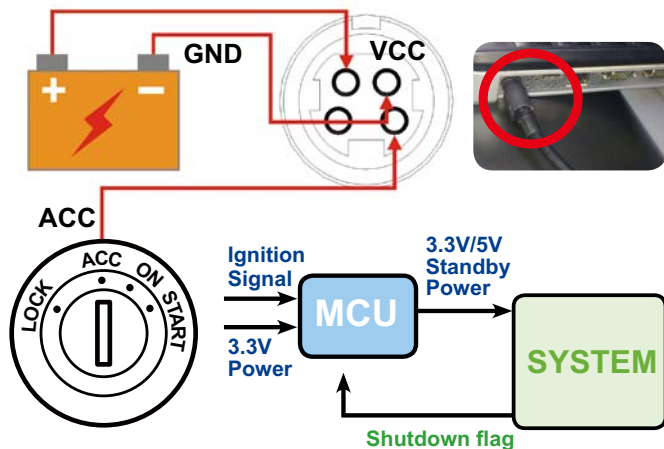
## A-GPS
Travel navigation, real-time locating and path tracking.
- 50-channel engine
- TTFF (Time to First Fix) < 1 sec for hot and aided starts
- -160dBm SuperSense sensitivity
- A-GPS service by accessing to assistance ephemeris data server via internet or mobile connectivity

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# Vehicle Power Management

1. The special MCU enables system auto reboot or shutdown with adjustable time delay by detecting ACC status.
2. Surge protection and low power consumption hardware design

GND    VCC

ACC

ACC  ON  START  LOCK

Ignition Signal → MCU → 3.3V/5V Standby Power

3.3V Power → MCU

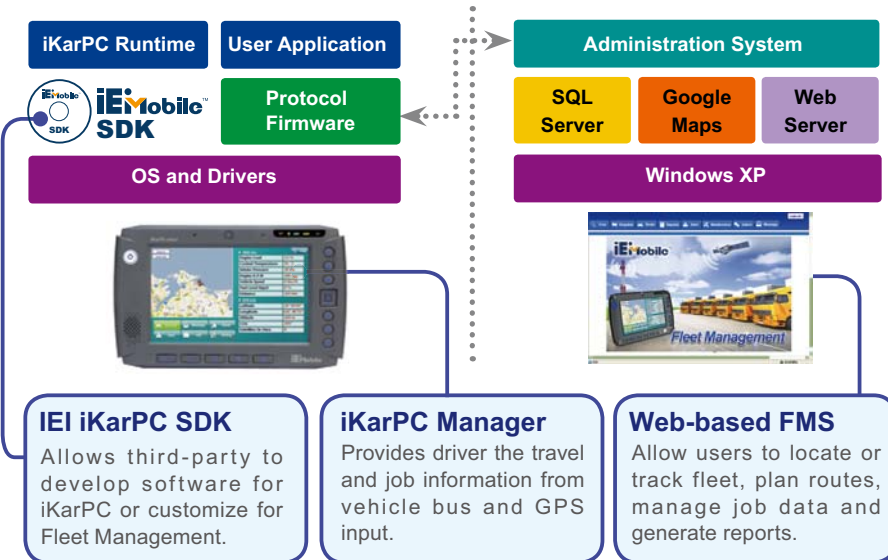MCU → SYSTEM

Shutdown flag

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# One Key Recovery

IEI One Key Recovery uses exclusive technology to recover and backup your system by just one click without any complicated settings.

### Recover the system from
- Severe virus attack
- Operating system crash
- Man-made disasters

**F3 One Key Recovery** iEi symantec.

**IEI Recovery Kit**

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# Turnkey Software

| iKarPC Runtime | User Application |
|---|---|

iEMobile SDK | Protocol Firmware

OS and Drivers

| Administration System | | |
|---|---|---|
| SQL Server | Google Maps | Web Server |

Windows XP

### IEI iKarPC SDK
Allows third-party to develop software for iKarPC or customize for Fleet Management.

### iKarPC Manager
Provides driver the travel and job information from vehicle bus and GPS input.

### Web-based FMS
Allow users to locate or track fleet, plan routes, manage job data and generate reports.

# Complete Accessories

## GPS Antenna

Built-in GPS antenna

External GPS MMX antenna connector

## Power Cable

ACC 3-pin 3M Power Cable

Cigarette Lighter 1M Power Cable

## Vehicle Bus Cable

J1962-to-DB9 OBD-II 2M Connection Cable

J1939-to-DB9 OBD-II 2M Connection Cable

## Vehicle Mounting Kit (Optional)

Single plastic sucker, length = 170mm, Dim = 13mm

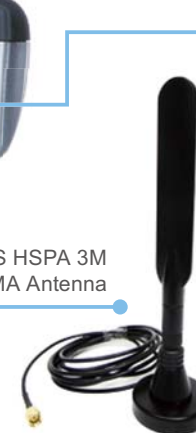Double plastic sucker, length = 170mm, Dim = 13mm

Compact and flexible folding iron stand

## RF Antenna

DVB-T/CMMB 5M SMA Antenna

2.5G/UMTS HSPA 3M SMA Antenna

# Specifications

## System

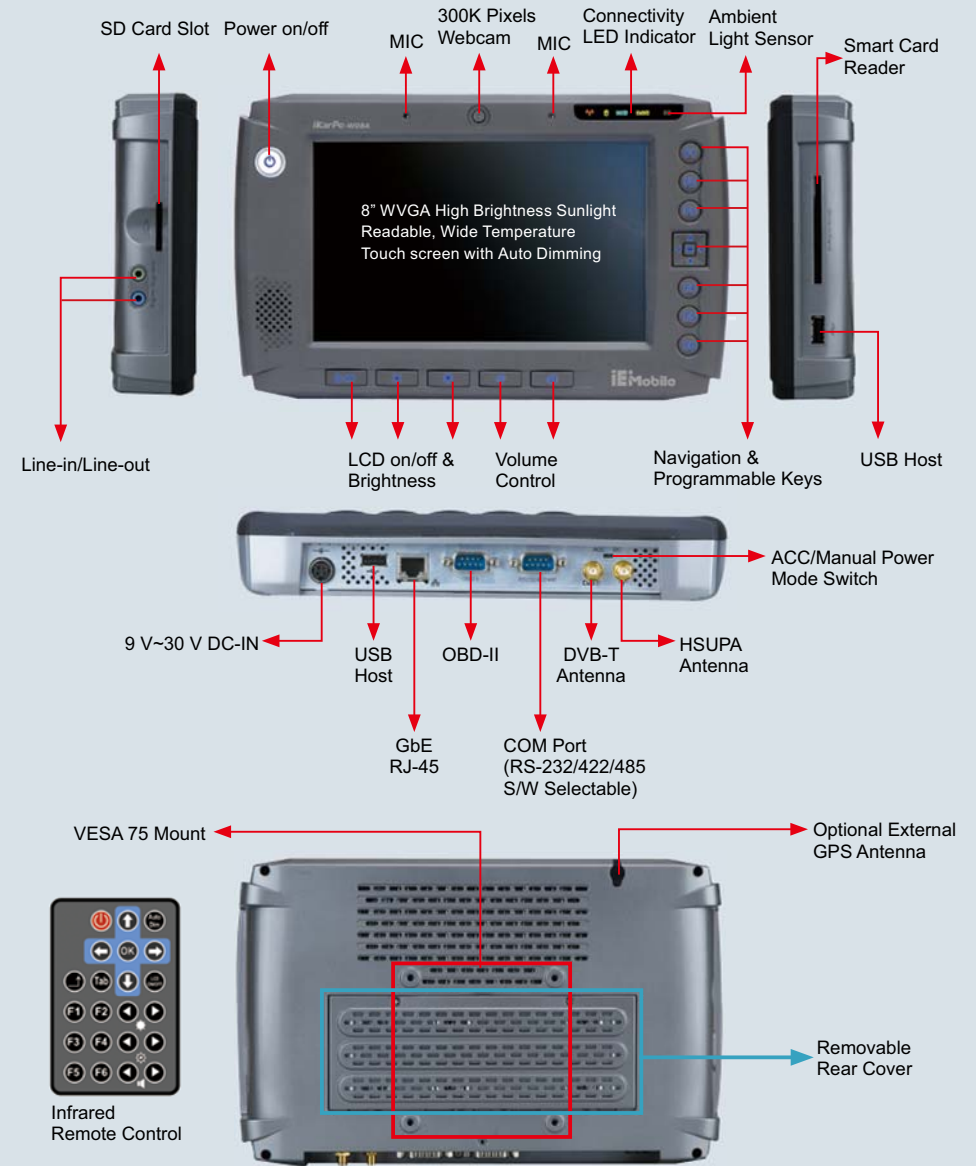| | | |
|---|---|---|
| System | CPU | Intel® Z510@1.1GHz, 533MHz FSB |
| | Chipset | Intel® US15WP |
| | OS | Windows XP Embedded |
| | Memory | 1 GB on-board 533 MHz DDR2 |
| | SSD Storage | 1 x Built-in 4GB Compact Flash (500x)<br>1 x SD Slot for data storage |
| Display | LCD | 8" sunlight readable LCD with resistive touchscreen and auto-dimming function |
| | Resolution | 800 x 480 WVGA |
| | Brightness | 600nits high brightness |
| | Surface Treatment | Anti-glare sunlight readable, hard-coating |
| | Panel Operation Temperature | -30°C ~ 85°C |
| | Viewing Angle | Horizontal : 140°   Vertical : 120° |
| Data Input | Keys | 1 x Power on/off<br>3 x LCD control (1 x LCD on/off, 2 x Brightness)<br>2 x Volume control<br>1 x 5-way navigator<br>6 x Programmable keys<br>1 x Smart card reader |
| Communication | LAN | 1 x 10/100/1000 Mbps GbE RJ-45 |
| | Wireless LAN | 802.11b/g |
| | Bluetooth | Bluetooth 2.1+EDR Class 1 |
| | WWAN | HSPA/UMTS-800/850/900/1900/2100MHz<br>Quad-band EDGE/GPRS/GSM-850/900/1800/1900MHz<br>Dual-band EV-DO/CDMA |
| | GPS | GPS w/ Built-in antenna and optional expandable external antenna |
| I/O Interface | USB | 2 x USB Host |
| | Serial | 1 x DB-9 RS-232/422/485 software selectable w/ 5 V DC<br>1 x DB-9 OBD-II |
| Camera, Audio & Multimedia | Audio | 1 x Line-in<br>1 x Line-out<br>1 x 1W speaker |
| | Camera | 1 x 300K pixels webcam w/ digital microphone |
| | TV-out | DVB-T (Optional, Alternative CMMB) |
| Power System | Power Input | 9~30 V DC input |
| | Power Consumption | 22.2W (9V@2.4685A, 12V@1.8292A) - 23W (30V@0.7922A) |
| | Vehicle Power | Manual power mode and ignition detection supported ACC power on/off mode with software configurable delay time |
| External Antenna | WWAN | 1 x SMA 3.75G antenna connector |
| | DVB-T | 1 x SMA DVB-T antenna connector |
| | GPS | 1 x External GPS antenna connector |
| Physical Character | Operation Temperature | -20°C ~  60°C |
| | Humidity | 5% ~ 95% non-condense |
| | Water/Dust Proof | Front Panel IP54 compliant |
| | Dimension | 261.2 mm x 162 mm x 44.2 mm |
| | Weight | 1.25 kg |
| | Safety and Regulation | CE-LVD, CB/CE-EMC, FCC, E-Mark (Plan to get) |
| | Anti-vibration/shock | |

## Ordering Infomation

| Part No. | Description |
|---|---|
| IKAR-W08-Z510-XPEE1HSD1-R10 | 8" 600cd/m² WVGA Car PC with Intel® Z510 1.1GHz, include HSUPA, DVB-T, 1GB DDR2, XPE English OS and 4GB CF |
| IKAR-W08-Z510-XPEE1HSN1-R10 | 8" 600cd/m² WVGA Car PC with Intel® Z510 1.1GHz, include HSUPA, 1GB DDR2, XPE English OS and 4GB CF |

## Options

| Part No. | Description |
|---|---|
| 63000-FSP0601AD101C746-RS | DIN 4-Pin100-240V AC to 12V@5A DC Power Adapter |
| 19Z00-000391-00-RS | ABS VESA 75 mounting plate |
| 19Z00-000389-00-RS | Vehicle mounting kit w/ aluminum pipe and single rubber sucker |
| 19Z00-000388-00-RS | Vehicle mounting kit w/ aluminum pipe and double rubber sucker |
| 19Z00-000390-00-RS | Metal VESA 75 mounting plate |
| 19Z00-000387-00-RS | iKarPC iron folding stand |

## Packing List

| |
|---|
| 1 x iKarPC |
| 1 x Remote Control (P/N: 7Z000-8T00322ICP06G-RS) |
| 1 x 3.5G/3.75G Antenna (P/N: 32503-000100-100-RS) |
| 1 x DVB-T Antenna (P/N: 32511-000100-100-RS) |
| 1 x ACC Power Cable (P/N: 32002-000901-100-RS) |
| 1 x Cigarette Lighter Power Cable (P/N: 32002-001700-100-RS) |
| 1 x OBD-II Cable (P/N: 32025-000300-100-RS) |
| 1 x J1939 Cable (P/N: 32025-000400-100-RS) |
| 1 x Utility CD (Bundle IEI Mobile SDK & Fleet Management System) |



SD Card Slot | Power on/off | MIC | 300K Pixels Webcam | MIC | Connectivity LED Indicator | Ambient Light Sensor | Smart Card Reader

8" WVGA High Brightness Sunlight Readable, Wide Temperature Touch screen with Auto Dimming

Line-in/Line-out | LCD on/off & Brightness | Volume Control | Navigation & Programmable Keys | USB Host

ACC/Manual Power Mode Switch

9 V~30 V DC-IN | USB Host | OBD-II | DVB-T Antenna | HSUPA Antenna

GbE RJ-45 | COM Port (RS-232/422/485 S/W Selectable)

VESA 75 Mount | Optional External GPS Antenna

Removable Rear Cover

Infrared Remote Control

*Specifications are subject to change without prior notice.