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Product Selection Book
Intelligent Transportation Systems
Certified Fanless Computer

AI GPU COMPUTING
IN-VEHICLE COMPUTING
EMBEDDED COMPUTING
VIDEO SURVEILLANCE
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About SINTRONES

Your Trusted Partner - In-Vehicle Computer

SINTRONES is a world-renowned and ISO 9001 & IRIS ISO/TS 22163 certified company of in-vehicle computing system products. We are dedicated to provide our customers with high quality system products that meet international traffic standards certification, including EN50121, EN50155, E-Mark, IEC60945, IACS E10, DNV and MIL-810.

Our team has years of product design and sales experiences in X86 platforms as well as vertical system integration of applications. Our in-vehicle computing products were awarded several patents in many countries across the world. With reliable and powerful engineering ability in R&D, SINTRONES provides stable and high-quality product solutions align with customers’ short and long-term needs. We are proud of the passion, agility, and professional efficient service we offer.

SINTRONES in-vehicle computing solutions aim to complement our customers’ success. We thoroughly integrate internal and external resources of sales, R&D, product planning and marketing to truly perform professional, high-quality and simultaneous services and create maximal value for our customers with best C/P ratio products. SINTRONES in-vehicle computing solutions have been widely adopted and approved by many well-known international brands and companies in industries.

Why SINTRONES?

Intelligent Transportation System

- One-stop service
- 100 Percent in-house R&D and Taiwan Manufacturing
- 100,000 Devices are provided by SINTRONES worldwide
- 1,000+ Customers across over 108 countries

Technologies

Environmental Design

- IP65 Standard
- Fanless Design
- Extended Temperature :-40~70°C
- Vibration & Shock
- Low Profile & Compact Design
- Sunlight Readable for LCD & Touch Screen

Software Service

- A Variety of OS Support, (Include Win 10, Win 7, WES7, Linux)
- Pre-load OS Image Service
- Software Utility, API

Flexible ME Design Service

- Customized Chassis
- Customized Logo
- Customized I/O
- Customized Placement

Patent Certificate

- M447854
- M482200
- M565941
In-Vehicle Computing
Certified SINTRONES On-Board Computer

SINTRONES has introduced the EN50155 certified VBOX-3620-M12X Intel Gen6 Core i7 CPU 2.6GHz (up to 3.4GHz) with HD 520 GPU On-Board Computer. The VBOX-3620-M12X On-Board Computer features triple independent display (2 x DP Port / VGA) outputs that can play Full HD video, 2 x RS-232/422/485, 2 x RS-232 w/ isolation (auto direction control), 3 x Intel LAN ports (Can be used M12 connectors), and 2 x USB 3.0 & 2 x USB 2.0 hosts and wide range 9-36V DC input with power ignition control and power off delay time.

The VBOX-3620-M12X includes 2 x SIM card sockets, 1 x M.2 slot, 3 x Mini-PCIe slots for additional LTE, 3G, Wi-Fi, Bluetooth, GPS and 4–8 channels D1 video capture input for mobile surveillance on buses & trains. The VBOX-3620-M12X On-Board Computer is ideal for mobile digital video recorder (Mobile DVR), mobile digital signage (MDS) and railway applications.

Technologies
In-Vehicle Design Feature

- Design for Wide Range DC Input
- Power Ignition / Power Management
- Delay Time On/Off
- IEC 60945, EN50155 & EMark Certificate
- Isolated for Power, Serial & I/O Port
- Wireless Communication Technology
- Battery Backup Solution
- GPS Dead Reckoning & G-Sensor

Alert System
- GPS
- 3G / LTE / 5G
- 4~8ch Video Input Camera
- Announcement System
- Passenger 22” Display for Digital Signage
- Driver 17” Touch screen Display
- Dual Ethernet for Video Streaming & Diagnosis
- LED message board

IP65 for water & Dust Proof
- Isolation I/O Port EN50155
- AP Mode WLAN for passenger

Product Certificate
- EMark (Vehicle Certificate)
- EN50155 (Railway Certificate)
- IEC60945 & DNV (Maritime)
- MIL-STD-810G (Military Test)
Fleet Management

In-Vehicle Computing

Fleet Management Platform

Mobile DVR

Solution

In-Vehicle DVR Solution

SINTRONES, the innovative provider of solutions in the global In-Vehicle computing, is proud to introduce the new ABOX-5200G4 and ABOX-5200G1 with Intel GEN 8th 6 Cores i7-8700T. ABOX-5200G4 and ABOX-5200G1 can support not only autonomous vehicles, deep learning AI, automatic factory, but also apply to Smart Patrol and ADAS (Advanced Driver Assistance Systems).

New ABOX-5200G4 and ABOX-5200G1 Fanless AI Box Computers are powered by Intel GEN 8th 6 Cores i7-8700T CPU with NVIDIA® GeForce GTX technology: ABOX-5200G4 powered by GTX 1060 GPU while ABOX-5200G1 powered by GTX 1050TI GPU. It can provide high computing performance on more broadly to accelerate computational workloads. The new ABOX-5200G4 supports 1280 CUDA Cores and ABOX-5200G1 supports 768 CUDA Cores.

Regards to expansion capability, ABOX-5200G4 and ABOX-5200G1 both have 8 x GPI, 4 x GPO and 3 x RS-232/422/485 to connect and 10 x GbE LAN (Optional for 8 x PoE) with Dual Hot Swapable SATA Storage RAID 0,1,5. In terms of operating in extreme weather conditions, ABOX-5200G4 has wide range operating temperature -40°C ~ 60°C and ABOX-5200G1’s operating temperature range is -40°C ~ 70°C.

To highlight, ABOX-5200G4 and ABOX-5200G1 fanless AI box computers can process deep learning operations with NVIDIA CUDA technology, support end-to-end deep learning solutions which play a vital role for autonomous vehicles and automatic factory. Furthermore, ABOX-5200G4 and ABOX-5200G1 can be applied to assist the system to detect objects, do basic classification and alert the drivers (i.e. Smart Patrol, ADAS monitoring and warning).

Key Features:
- Intel GEN 8th 6 Cores i7-8700T
- NVIDIA® GeForce GTX 1060 GPU (G4) / 1050TI GPU(G1)
- Support 1280 CUDA Cores (G4) / 768 CUDA Cores (G1)
- 8 x GPI and 4 x GPO and 3 x RS-232/422/485
- Dual Hot Swapable SATA Storage RAID 0,1,5
- 9-48V DC Input and Operating Temp.: -40~60°C (G4) / -40~70°C (G1)
- 10 x GbE LAN (Optional for 8 x PoE)
GPS Dead Reckoning Navigation with Gyro sensor provides 100% coverage with continuous position fixes even in tunnels still working well. 3-axis accelerometer G-sensor provides Auto SOS for driving safety and recording Driver behavior. GPS Antenna can be supported auto detection.
## Power Ignition

Battery Backup

Wide Range

All specifications are subject to change without notice.

### In-Vehicle Computer Reference Table

<table>
<thead>
<tr>
<th>Power Management</th>
<th>Dimensions (mm)</th>
<th>Weight (lbs)</th>
<th>State of Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery (UPS)</td>
<td>260 x 250 x 95</td>
<td>210g (est)</td>
<td>Made in Taiwan</td>
</tr>
<tr>
<td>Power Off Control</td>
<td>260 x 226 x 89</td>
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<td></td>
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<tr>
<td>Operating Temp.</td>
<td>260 x 226 x 95</td>
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<td></td>
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<tr>
<td>Certification</td>
<td>250 x 150 x 55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>240 x 161 x 65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ABOX-5200

Intel 8th Gen Core i7/5150U CPU w/ 10 x GbE (Optional for M12 connector and 8 x PoE total Max. 100W) 3 x COM/ 3 x DP 4 x USB 3.0/ 9-48V Input AI GPU Computing

### Features

- Intel 8th Gen Core i7/5150U
- 10 x GbE LAN (Optional for M12 connector and 8 x PoE total Max. 100W)
- 8 x GPI, 4 x GPO and 3 x RS-232/422/485
- 3 x Display Ports
- Dual Hot Swappable SATA Storage RAID 0,1,5
- 9-48V DC Input and Operating Temp.: -40~70°C
- TPM 2.0

### System

- **CPU**: Intel Core i7-8700T (12M Cache 2.4GHz up to 4.5GHz)
- **Chipset**: Intel® 300 Series Chipset
- **Memory**: DDR4 32GB
- **Hard Disk**: SATA DOM, CFast
- **Video Out**: HDMI/ DVI/ VGA
- **Audio**: Mic-in / Line-out / Line-in
- **COM**: 3 x M12 X-Cell
- **Expansion Bus**: 8 x GPI, 4 x GPO
- **Software**: Operating System: Win 10, Ubuntu 18.04 64bit

### Graphics

- **Graphics**: Intel® UHD Graphics 630
- **Resolution**: Max Resolution [2P]: 4096x2304 at 60Hz
- **Storage**: Type: 2 x 2.5" Drive Bay for SATA Type HDD/SSD RAID 0, 1, 5 1 x mSATA

### Environmental

- **Operating Temp.:** -40~70°C
- **Relative Humidity:** 10%~90% RH (non-condensing)
- **Vibration (random):** 0.71g at 5~500Hz
- **Shock:** Operating: MIL-STD-810G, Method 516.6, Procedure I, Category 4

### Mechanical

- **Construction**: Aluminum Alloy
- **Mounting**: Wall-mount
- **Weight**: 1590g (non-enclosure)
- **Dimensions**: 260 x 250 x 95 (WxDxH) mm

### Ordering Information

- **Part Number**: ABOX-5200P7 (Optional for i5/3150U with PoE)
- **Description**: Intel 8th Gen Core i7/5150U CPU w/ 10 x GbE 3 x COM 3 x DP 4 x USB 3.0/ 9-48V Input AI GPU Computing
- **State of Origin**: Made in Taiwan
**ABOX-5200G4**

Intel Gen 8th 6 Cores i7 CPU w/ 10 x GbE (Optional 8 x PoE) / 3 x COM / 3 x DP/ 4 x HDMI/ 4 x USB 3.0/ NVIDIA® GeForce GTX 1060 1280 CUDA cores GPU/ DC 9-48V Input AI GPU Computing

**Features**
- Intel Gen 8th 6 Cores i7-8700T
- NVIDIA® GeForce GTX 1060 GPU
- Support 1280 CUDA Cores
- 10 x GbE LAN (Optional for 8 x PoE)

**Environmental**
- Operating Temp.: -40~70°C
- Relative Humidity: 10% RH – 90% RH (non-condensing)

**Specifications**
- CPU: Intel Gen8 Celeron G4900T (2M Cache 2.9GHz)
- Memory: CE, FCC Class A, E13
- Expansion Bus: 2 x 2.5” Drive Bay for SATA Type HDD/SSD RAID 0, 1, 5, 1 x mSATA
- Graphics: NVIDIA® GeForce GTX 1060 (1280 CUDA Cores)

**Ordering Information**
- Part Number: ABOX-5200PG4-7 Optional for 6G/U1 (with PoE)

**Software**
- Operating System: Win 10, Ubuntu 18.04 64bit

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**ABOX-5100**

AMD Ryzen™ Embedded V1000 Processor w/ 8 x GbE/ 2 x COM/ 4 x DP/ 4 USB 3.0/ 9-48V Input AI GPU Computing

**Features**
- AMD Ryzen™ Embedded V1000 Platform
- Vega GPU with up to 11 Compute Units and 4 x DP 1.4
- 8 x GPI, 4 x GPO and 2 x RS-232/422/485
- Dual Hot Swappable SATA Storage
- 9-48V DC Input and Operating Temp.: -40~70°C

**Environmental**
- Operating Temp.: 40ºC ~ 70ºC * CPU configure at 25W, ambient w/ 0.6m/s airflow
- Relative Humidity: 10% RH – 90% RH (non-condensing)
- Vibration (random): 0.06g/50-550Hz, 1hr

**Specifications**
- CPU: AMD Ryzen™ V1807B Quad Core Soc (3.3~3.6GHZ)
- Memory: 2 x 2.5” Drive Bay for SATA Type HDD/SSD
- Expansion Bus: 2 x Full Mini-PCie Slots and 1x M.2 A-E Key 2230 slot (2x SIM Card Sockets for 3G/4G)
- Graphics: NVIDIA® GeForce GTX 1060 (1280 CUDA Cores)

**Ordering Information**
- Part Number: ABOX-5100-V1807 (with PoE)

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**All specifications are subject to change without notice.**
**ABOX-5100G**

**Battery Backup**

**Wide Range**

All specifications are subject to change without notice.

**Taiwan Patent No. M447854**

9-48V Input AI GPU Computing

**Features**

- **AMD Ryzen™ Embedded V1000 Platform**
- **AMD Embedded Radeon™ E9260 GPU**
- **8 x GbE, 4 x GPO and 2 x RS-232/422/485**
- **Dual Hot Swappable SATA Storage**
- **9-48V DC Input and Operating Temp.: -40~60°C**
- **8 x GbE LAN (Optional for 8 x PoE)**

**System**

- **CPU**: AMD Ryzen™ V1807B Quad Core (3.3-3.6GHz)
- **Memory**: 2 x DDR4 2400 Mhz SO-DIMM up to 32GB
- **LAN Chipset**: Intel H210
- **Watchdog**: 1~255 Level Reset
- **TPM**: 2.0

**Input/Output**

- **Serial Port**: 3 x RS 232/422/485
- **USB Port**: 4 x USB 3.0 Ports
- **Video Port**: 4 x DP, 4 x HDMI
- **Audio**: 8 x GPI and 4 x GPO
- **Expansion Bus**: 3 x Full Mini-PcIE Slots and 1 x M.2 A-E Key 2230 slot (2 x SIM Card Sockets for 3G/4G/LTE)

**Graphics**

- **AMD Radeon™ E9260 GPU**
- **Support for DirectX® 12 (Feature Level 12_0) features**
- **Support for Mantle and AMD LiquidVR™**
- **Support for OpenGL 4.5. and OpenCL™ 2.0.**
- **AMD Radeon™ E9260 GPU**
- **(2 x SIM Card Sockets for 3G/LTE)**

**Software**

- **Operating System**: Win10 LTSC 1809, Ubuntu 18.04 64bit
- **Power Requirement**: 9-48V Input AI GPU Computing
- **Power Protection**: Internal Battery Kit for UPS (Optional)

**Mechanical**

- **Construction**: Aluminum Alloy
- **Mounting**: Rail-mount
- **Weight**: 5020g (Barren)
- **Dimensions**: 260(L) x 226(W) x 89(H) mm

**Ordering Information**

- **Part Number**: ABOX-5100G-V1807

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**ABOX-5000G1**

**Intel 6th/7th-Gen Quad Core Xeon/ Core i7553 CPU w/ 6 x GbE/ 3 x COM/ 7 x HDMI/ 4 USB 3.0/ NVIDIA® GeForce GTX 1050 GPU/ 9-48V Input AI GPU Computing**

**Features**

- **Intel 6th/7th-Gen Quad Core Xeon/Core i7 CPU**
- **NVIDIA® GeForce GTX 1050 GPU**
- **Support 768 CUDA Cores**
- **8 x GbE and 4 x GPO and 3 x RS-232/422/485**
- **Dual Hot Swappable SATA Storage RAID 0, 1, 5**
- **9-48V DC Input and Operating Temp.: -40~70°C**
- **6 x GbE LAN (Optional for 4 x PoE)**

**System**

- **CPU**: Intel E3-1230LV6 (6MB Cache 3.3GHz)
- **Chipset**: Intel H610LNT (6MB Cache 2.4GHz up to 3.4GHz)
- **Memory**: 2 x DDR4 2133 Mhz SO-DIMM up to 32GB
- **LAN Chipset**: Intel 210-AT 1x 2.5G Ethernet Controllers Onboard Support PXE and WOL
- **Watchdog**: 1~255 Level Reset
- **TPM**: 2.0

**Input/Output**

- **Serial Port**: 3 x RS 232/422/485 (Auto Direction Control)
- **USB Port**: 4 x USB 3.0 Ports
- **Video Port**: 7 x HDMI Ports
- **DIO Port**: 8 x GPO and 4 x GPO
- **Audio**: 1 x Line-out, 1 x Line-in and 1 x Mic-in
- **Expansion Bus**: 3 x Full Mini-PcIE Slots and 1 x M.2 A-E Key 2230 slot (2 x SIM Card Sockets for 3G/4G/LTE)

**Graphics**

- **NVIDIA® GeForce GTX 1050 GPU**
- **Support 768 CUDA Cores**
- **NVIDIA® GeForce GTX 1050 GPU (768 CUDA Cores) Support**
- **9-48V Input AI GPU Computing**
- **Power Requirement**: 9-48V Input AI GPU Computing

**Mechanical**

- **Construction**: Aluminum Alloy
- **Mounting**: Rail-mount
- **Weight**: 3860g (Barren)
- **Dimensions**: 260(L) x 266(W) x 95(H) mm

**Ordering Information**

- **Part Number**: ABOX-6000G-P01-17 Optional for 6131U/4
- **Battery (UPS)**: Internal Battery Kit for 10 Min Operating

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All specifications are subject to change without notice.
ABOX-5000

Intel 6th/7th-Gen Quad Core Xeon/Core i7/i5/i3 CPU w/ 4 x GbE/ 4 x ISO COM/ 2 x DP/VGA/ 4 USB 3.0 Fast Expandable Slot 9-36V Fanless Computer

Features

- Intel® 6th/7th-Gen Quad Core Xeon/Core i7 LGA1151 CPU
- 4 x RS-232/422/485 with 1.5KVrms isolated
- 8 x GPI and 4 x GPO with 1.5KVrms isolated
- 4 x GbE LAN (optional for 4 x PoE and additional 4 x GbE / PoE)
- Dual Hot Swappable SATA Storage
- 9-36V DC input and operating Temp. : -40 ~ 70ºC
- Fast Expandable Slot support PCI-E, USB, SMBus, GPIO and SATA

Power Requirement

- 9V - 36V DC Power input
- Power Protection: Automatics Recovery Short Circuit Protection
- Power Management: Vehicle Power Ignition for Variety Vehicle

Environmental

- Operating Temp.: -40ºC ~ 70ºC (Default CPU 35Watt), ambient w/ 0.6m/s airflow
- Storage Temp.: -40ºC ~ 80ºC
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Vibration Operating: MIL-STD-810G, Method 514.6, Procedure I, Category 4

Mechanical

- Construction: Aluminum Alloy
- Mounting: 1U 19" Rack mount
- Weight: 3860g (Barebone)
- Dimensions: 240(L) x 226(W) x 79(H) mm

Software

- Operating System: Win 10, Ubuntu 16.04 64bit

All specifications are subject to change without notice.

ABOX-1000-M12X

Intel Gen6 Core i7-6600U CPU with Isolated 110VDC Input 6 x GbE with optional PoE In-Vehicle Computer/ EN50155 Railway Applications

Features

- Intel Core i7-6600U / i5-6300U / i3-6100U
- Wireless support LTE w/ SIM Card, GPS, BT(option)
- 6 x GbE optional PoE
- Isolated wide Input Range 77-137V DC
- Dual Hot Swappable SATA Storage, RAID 0,1,5
- EN50155 Tx temperature and class S2 interruption
VBOX-3620-M12X

Intel Gen6 Core i7-6600U CPU with Isolated Input
3 x 2.5Gbe and 1 x iAMT In-Vehicle Computer/
EN50155 Railway Applications

Features
- Intel Core i7-6600U / I5-6300U / I3-6100U
- Wireless support LTE w/ SIM Card, WLAN, GPS Dead Reckoning, BT (Optional)
- 3 x 2.5Gbe including 1 x iAMT
- Isolated wide Input Range 9-36V DC
- Max. 8 x SIM card Sockets
- Dual Hot Swappable SATA Storage, RAID 0, 1, 5
- EN50155 Tx
- E-13 Certified

Specifications
- CPU: Intel Gen6 Core i7-6600U (2.6GHz up to 3.4GHz)
- Memory: 2 x DDR3L 1066/1600 MHz
- Audio: Realtek ALC662 HD Codec Onboard
- LAN Chipset: Intel 82583V
- Watchdog: Operating System
- OS: Win 10, Ubuntu 16.04 64bit
- Expansion Bus: 3 x Mini-Card slots

Environmental
- Operating Temp.: -40ºC ~ 70ºC, ambient w/ 5%RH airflow
- Storage Temp.: -20ºC ~ 85ºC
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Vibration (random): MIL-STD-810G, Method 514.6, Procedure I, Category 4
- Shock: MIL-STD-810G, Method 516.6, Procedure I, Category 4

System
- CPU: Intel Gen6 Core i7-6600U / I5-6300U / I3-6100U
- Memory: 2 x DDR3L 1600 MHz
- Audio: Realtek ALC662 HD Codec Onboard
- LAN Chipset: Intel 82583V
- Watchdog: LAN Chipset
- OS: Win 10, Ubuntu 16.04 64bit
- Expansion Bus: 3 x Mini-Card slots

VBOX-3611

Intel Gen6 Core i7-6600U CPU with HD 520 GPU
On-Board Computer

Features
- Intel Core i7-6600U
- Wireless support LTE w/ Dual SIM Cards, WLAN, GPS Dead Reckoning, BT (Optional)
- 9V - 36V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- Dual Hot Swappable SATA Storage, RAID 0, 1, 5
- 1 x CAN Bus 2.0B (Optional)

Specifications
- CPU: Intel Gen6 Core i7-6600U (2.6GHz up to 3.4GHz)
- Memory: 2 x DDR3L 1600 MHz
- Audio: Realtek ALC662 HD Codec Onboard
- LAN Chipset: Intel 82583V
- Watchdog: Operating System
- OS: Win 10, Ubuntu 16.04 64bit
- Expansion Bus: 3 x Mini-Card slots

Environmental
- Operating Temp.: -40ºC ~ 70ºC, ambient w/ 5%RH airflow
- Storage Temp.: -20ºC ~ 85ºC
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Vibration (random): MIL-STD-810G, Method 514.6, Procedure I, Category 4
- Shock: MIL-STD-810G, Method 516.6, Procedure I, Category 4

System
- CPU: Intel Gen6 Core i7-6600U / I5-6300U / I3-6100U
- Memory: 2 x DDR3L 1600 MHz
- Audio: Realtek ALC662 HD Codec Onboard
- LAN Chipset: Intel 82583V
- Watchdog: Operating System
- OS: Win 10, Ubuntu 16.04 64bit
- Expansion Bus: 3 x Mini-Card slots
VBOX-3611-4L

Intel Gen6 Core i7-6600U CPU with 4 x GbE LAN
On-Board Computer

Features

- Intel Core i7-6600U
- Wireless support LTE w/ Dual SIM Cards, WLAN, GPS Dead Reckoning, WiFi, BT (Optional)
- 9V - 48V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- Dual Hot Swappable SATA Storage, RAID 0, 1, 5
- 1 x CAN Bus 2.0B (Optional)
- E13 and EN50155 certified

Specifications

- CPU: Intel Gen6 Core i7-6600U
- Memory: 2 x DDR4 2133 MHz SO-DIMM up to 32GB
- Chipset: Intel 6th Generation Core Soc Processor
- Graphics: Intel® HD Graphics 520
- LAN: 2 x RJ45 Ports (optional M12 connector) for GbE (3 ports with PoE 802.3af)
- Audio: Realtek ALC662 HD Codec Onboard
- SIM Card Socket: 2 x SIM Card Sockets Supported Onboard with eject
- Display: 4 x RJ45 Ports (optional M12 connector) for GbE (1 port with iAMT)
- Power Input: 9V - 48V DC Power Input
- Power Management: Vehicle Power Ignition for Variety Vehicle
- Power Off Control: Power Off Delay Time Setting by BIOS and Software

VBOX-3611-IP65

Intel Gen6 Core i7-6600U CPU with HD 520 GPU IP65
In-Vehicle Computer

Features

- Intel Core i7-6600U
- Wireless Support LTE, WLAN, GPS, Bluetooth(Optional)
- 9V - 48V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- 4 x DI / 4 x DO with Relay 5V / 100mA
- 2 x Analog Input (0-48V)
- IP65 Level for Water and Dust Proof

Specifications

- CPU: Intel Gen6 Core i7-6600U
- Memory: 2 x DDR4 2133 MHz SO-DIMM up to 32GB
- Chipset: Intel 6th Generation Core Soc Processor
- Graphics: Intel® HD Graphics 520
- LAN: 1 x Intel 82583V for Gigabit Ethernet
- Audio: Realtek ALC662 HD Codec Onboard
- SIM Card Socket: 2 x SIM Card Socket Supports Onboard
- Display: 4 x RJ45 Ports (optional M12 connector) for GbE (3 ports with PoE 802.3af)
- Power Input: 9V - 48V DC Power Input
- Power Management: Vehicle Power Ignition for Variety Vehicle

All specifications are subject to change without notice.
**VBOX-3611-POEX**

Intel Gen6 Core i7-6600U CPU with 4 x POE Ports

**On-Board Computer**

**Features**
- Intel Core i7-6600U
- Wireless support LTE w/ SIM Card, WLAn, GPS Dead Reckoning, BT(Option)
- 4 x Power Over Ethernet (POE)
- Smarter Vehicle Power Ignition for Variety Vehicle
- Dual Hot Swappable SATA Storage, RAID 0, 1, 5
- 1 x CAN Bus 2.0B (Optional)

**System**
- **CPU**
  - Intel Gen6 Core i7-6600U 2.6GHz up to 3.4GHz
- **Memory**
  - 2 x DDR3L 2133 MHz SO-DIMM up to 32GB
- **Chipset**
  - Intel 6th Generation Core Soc Processor
- **LAN Chipset**
  - Intel i210-AT Ethernet Switch: 1 x Marvell 88E6176
- **Audio**
  - Realtek ALC662 HD Codec Onboard
- **Graphics**
  - Direct3D Video Acceleration (DXVA) for Accelerating Video Processing
- **Expansion**
  - 3 x Mini PCIe card & 1 x M.2
- **Power**
  - Power on/off Delay Time Setting by Software and BIOS

**Storage**
- **Type**
  - 1 x 2.5” Drive Bay for SATA Type Hard Disk Drive/SDD
- **Dimensions**
  - 240 x 161 x 65 mm

**Ordering Information**

**Part Number**

| VBOX-3611-4L7 | VBOX-3611-P0E-X |

**Specifications**

- **Power Requirement**
  - Power Input: 9V - 48V DC Power Input
  - Power Management: Vehicle Power Ignition for Various Vehicle
  - Power Off Control: Power on/off Delay Time Setting by Software
  - Battery(UPS): Internal Battery Kit for 10 Mins Operating (Optional) Patent No.: M447854 - Build-in Battery

**Software**

- **Operating System**
  - Win 10, Ubuntu 16.04 64bit
- **Power Requirement**
  - Power Input: 9V - 48V DC Power Input
- **Power Protection**
  - Automatic Recovery Short Circuit Protection

**Environmental**

- **Operating Temp.**
  - 40ºC – 70ºC, ambient w/ 0.6m/s airflow
- **Storage Temp.**
  - -40ºC – 85ºC
- **Relative Humidity**
  - 10% RH - 90% RH (non-condensing)
- **Vibration (random)**
  - IEC60068-2-44, random, 2.0G±500Hz, 1hr/axis with
- **Shock**
  - Operating: MIL-STD-810G, Method 516.6, Procedure I, Category 4
  - Non-operating: MIL-STD-810G, Method 516.6, Procedure I, Category 4

**Certifications**

- CE, FCC Class A
- E13

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**VBOX-3210**

AMD Merlin Falcon Embedded Platform RX-421BD/RX-216GD APU with 2 x DP/ 2 x COM/ 5 x GbE/ 4 x POE/ 2 USB3.0/ DC Input 9-48V In-Vehicle Computer

**Features**
- AMD Merlin Falcon RX-421BD/RX-216GD
- Wireless support LTE, WLAn, GPS, Bluetooth(Option)
- 5 x GbE with optional 4 x POE 802.3at
- Input 9-48V with Ignition for Variety Vehicle
- 3 x Mini PCIe card & 1 x M.2 for extension
- 2 x DP, 1 x VGA

**System**
- **CPU**
  - AMD RX-421BD Quad Core 2.1GHz up to 3.0GHz
  - AMD RX-216GD Quad Core 1.6GHz up to 3.0GHz
- **Memory**
  - 2 x SIM Card Sockets Supported Onboard with eject
- **GPU**
  - AMD Radeon™ Graphics
- **LAN Chipset**
  - Intel i210-AT Ethernet Switch: 1 x Marvell 88E6176
- **Audio**
  - Mic-in/Line-out/Line-in
- **Video Port**
  - 2 x DP, 1 x VGA (only for RX series)
- **Expansion Bus**
  - 3 x Mini-card slots, 1 x M.2 A-E key 2230 (only for RX series)

**Storage**
- **Type**
  - 1 x 2.5” Drive Bay for SATA Type Hard Disk Drive/SDD
- **Dimensions**
  - 240 x 161 x 65 mm

**Ordering Information**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>VBOX-3210-i421 (w/ RX-421BD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBOX-3210-RX2</td>
<td>VBOX-3210-P0E-X (w/ RX-216GD)</td>
</tr>
</tbody>
</table>

**Specifications**

- **Power Requirement**
  - Power Input: 9V - 48V DC Power Input
  - Power Management: Vehicle Power Ignition for Various Vehicle
  - Power Off Control: Power on/off Delay Time Setting by Software
  - Battery(UPS): Internal Battery Kit for 10 Mins Operating (Optional) Patent No.: M447854 - Build-in Battery

---

All specifications are subject to change without notice.
**VBOX-3120-3S**

Intel Haswell Dual Core 2980U 1.6GHz CPU with 3 x RS-232/ DC 9-36V Input In-Vehicle Computer

**Features**
- Intel Gen4 Dual Core 2980U 1.6GHz
- Wireless support LTE, WLAN, GPS, Bluetooth (Optional)
- 9V - 36V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- 3 x RS-232 (COM16COM2 with RS-232/422/485)
- 2 x DI / 2 x DO (12V / 100mA)

**Power**
- Battery (UPS)
- Power Ignition
- Wide Range
- Wireless
- Battery Backup

**System**
- **CPU**: Intel Gen4 Core i7-4600U 1.7GHz up to 3.3GHz
- **Memory**: 1 x DDR3L-1600 SO-CMM up to 8GB
- **Graphics**: Intel HD Graphics
- **ATA**: 2 x Serial ATA 2.0 Ports with 6Gbps H2D Transfer Rate
- **LAN Chipset**: 2 x Intel 82583V Gigabit Ethernet
- **Watchdog**: 1 ~ 255 Level Reset
- **SIM Card Socket**: 2 x SIM Card Sockets Supported Onboard with eject
- **Antenna**: UMTS / GSM / GPRS / GPS / Bluetooth
- **2 x RJ45 Ports for GbE**
- **2 x USB 3.0 and 1 x USB 2.0 Ports**
- **3 x RS-232 (COM1 & COM2 with RS-232/422/485)**
- **1 ~ 255 Level Reset**
- **LAN Chipset**: 1 x Intel 82583V Gigabit Ethernet
- **Audio**: Mic-in / Line-out
- **Expansion Bus**: 3 x Mini-card Slots
- **Power Supply**: 182 x 167.6 x 54 mm
- **Weight**: 1406 g
- **Certifications**: CE, FCC Class A, E-13, Window 10, Ubuntu 16.04
- **Environmental**: Shock, Vibration, Relative Humidity
- **Software**: Operating System: Windows 10, Ubuntu 16.04

**Power Requirement**
- **Power Input**: 9V - 36V DC Power Input
- **Power Management**: Vehicle Power Ignition for Variety Vehicle
- **Power Off Control**: Power off Delay Time Setting by BIOS and Software
- **Battery (UPS)**: 1 x SIM Card Sockets Supported Onboard with eject
- **Dimensions**: 182 x 167.6 x 54 mm
- **Weight**: 1406 g
- **State of Origin**: Made in Taiwan

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**VBOX-3121**

Intel Gen6 i7-6600U with HD Graphic 520/ 2x LAN/ 2x HDMI/ 1x VGA/ 3x RS-232/ DC 9-36V Input In-Vehicle Computer

**Features**
- Intel Gen6 Core i7-6600U
- Wireless support LTE, WLAN, GPS, GSM/GPRS, Bluetooth (Optional)
- 9V - 36V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- 4 x RS-232/422/485 (for i7 and i5)
- 2 x DI / 2 x DO (12V / 100mA)

**Power**
- Battery (UPS)
- Power Ignition
- Wide Range
- Wireless
- Battery Backup

**System**
- **CPU**: Intel Gen6 Core i7-6600U 2.6GHz up to 3.4GHz
- **Memory**: 1 x 2048MB SIM SO-CMM up to 16GB
- **Graphics**: Intel HD6 Graphics
- **ATA**: 2 x Serial ATA ports with 6Gbps H2D Transfer Rate
- **LAN Chipset**: 1 x Intel 82583V Gigabit Ethernet
- **Audio**: Mic-in / Line-out
- **Expansion Bus**: 3 x Mini-card Slots
- **Power Supply**: 250 x 167.6 x 54 mm
- **Weight**: 1406 g
- **Certifications**: CE, FCC Class A, E-13
- **Environmental**: Shock, Vibration, Relative Humidity
- **Software**: Operating System: Windows 10, Ubuntu 16.04

**Power Requirement**
- **Power Input**: 9V - 36V DC Power Input
- **Power Management**: Vehicle Power Ignition for Variety Vehicle
- **Power Off Control**: Power off Delay Time Setting by BIOS and Software
- **Battery (UPS)**: Internal Battery Kit for 10 Mins Operating (Optional)

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**AI GPU Computing**

**Video Surveillance**

**Embedded Computing**

**In-Vehicle Computing**

**AI GPU Computing**

**Video Surveillance**

**Embedded Computing**

**In-Vehicle Computing**

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All specifications are subject to change without notice.
## VBOX-3150

**Intel Haswell Celeron 2980U/i3-4010U CPU with 2 x PoE/ 1 x GbE with vPro/ 4 x COM In-Vehicle Computer**

### Features
- Intel Gen4 Celeron 2980U/i3-4010U
- Wireless support LTE, WLAN, GPS, Bluetooth (Option)
- 2 x PoE 802.3af & 1 x GbE with iAMT 19.5
- Input 9-36V with Ignition for Vehicle
- 4 x RS-232 (COM1 & COM2 with RS-232/422/485)
- 1 x DVI, 1 x HDMI, 1 x VGA

### Specifications
- **CPU**: Intel Celeron 2980U/i3-4010U (Optional: 6, 7)
- **Memory**: 1 x DDR3L-1600 SO-DIMM up to 8GB
- **Graphics**: Intel HD Graphics
- **ATA**: 2 x Serial ATA 2.0 Ports with 6Gb/s HDD Transfer Rate
- **LAN Chipset**: 2 x Intel 2110-AT Gigabit Ethernet with PoE 802.3af
- **Video Port**: 1 x HDMI & 1 x DVI-I
- **Audio**: Mic-in/Line-out (option 2 x Line-out)
- **USB Port**: 2 x USB 3.0, 1 x USB 2.0
- **Serial Port**: 4 x RS-232 (2 with RS-232/422/485)
- **Watchdog**: 1 ~ 255 Level Reset
- **Power Requirement**: 120W DC Power Input
- **Power Protection**: Vehicle Power Ignition for Variety Vehicle
- **Power Management**: Power off Delay Time Setting by BIOS & Software
- **Battery (UPS)**: Internal Battery Kit for 10 Mins Operating (Optional)

### Software
- **Operating System**: Win 7, Win 10, Ubuntu 16.04

### Patent
- **Taiwan Patent No. M447854**

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## VBOX-3130

**Intel Braswell N-Series Atom CPU In-Vehicle Computer with 9~36V DC Input In-Vehicle Computer**

### Features
- Intel N3710 Quad Core CPU up to 2.56GHz
- Wireless support LTE, WLAN, GPS, Bluetooth (Option)
- 9V - 36V DC Power Input
- Smarter Vehicle Power Ignition for Variety Vehicle
- 3 x RS-232 (COM1 & COM2 with RS-232/422/485)
- 2 x DVI / 2 x DO (12V / 160mA)

### Specifications
- **CPU**: Intel N3710 Quad Core CPU up to 2.56GHz
- **Memory**: 1 x DDR3L-1600 SO-DIMM up to 8GB
- **Graphics**: Intel HD Graphics
- **ATA**: 2 x Serial ATA 2.0 Ports with 6Gb/s HDD Transfer Rate
- **LAN Chipset**: 2 x Intel 2110-AT Gigabit Ethernet
- **Video Port**: 1 x HDMI and 1 x DVI-I
- **Audio**: Mic-in/Line-out
- **USB Port**: 2 x USB 3.0, 1 x USB 2.0
- **Serial Port**: 1 x HDMI & 1 x DVI-I
- **Watchdog**: 1 ~ 255 Level Reset
- **Power Requirement**: 120W DC Power Input
- **Power Protection**: Vehicle Power Ignition for Variety Vehicle
- **Power Management**: Power off Delay Time Setting by Software, Default is 5 Mins

### Software
- **Operating System**: Win 7, Win 10, Ubuntu 16.04

### Patent
- **Taiwan Patent No. M447854**

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### Table: System Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input</td>
<td>Intel Celeron 2980U/i3-4010U (Optional: 6, 7)</td>
</tr>
<tr>
<td>Memory</td>
<td>1 x DDR3L-1600 SO-DIMM up to 8GB</td>
</tr>
<tr>
<td>Graphics</td>
<td>Intel HD Graphics</td>
</tr>
<tr>
<td>ATA</td>
<td>2 x Serial ATA 2.0 Ports with 6Gb/s HDD Transfer Rate</td>
</tr>
<tr>
<td>LAN Chipset</td>
<td>2 x Intel 2110-AT Gigabit Ethernet with PoE 802.3af</td>
</tr>
<tr>
<td>Video Port</td>
<td>1 x HDMI &amp; 1 x DVI-I</td>
</tr>
<tr>
<td>Audio</td>
<td>Mic-in/Line-out (option 2 x Line-out)</td>
</tr>
</tbody>
</table>

### Environmental Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Operating: -40 ~ 70ºC (SSD), ambient w/ 0.6m/s airflow</td>
</tr>
<tr>
<td>Storage</td>
<td>Operating Temp. -40 ~ 90ºC</td>
</tr>
<tr>
<td>Humidity</td>
<td>RH 5% ~ 95% (non-condensing)</td>
</tr>
<tr>
<td>Vibration</td>
<td>Operating: 1.8g @ 2-256Hz with SSD</td>
</tr>
<tr>
<td>Shock</td>
<td>Operating: MIL-STD-810G, Method 514.6, Procedure I, Category 4, Int. Test</td>
</tr>
<tr>
<td>Crash</td>
<td>Operating: MIL-STD-810G, Method 514.6, Procedure V, Ground equipment=100g</td>
</tr>
<tr>
<td>Certification</td>
<td>CE, FCC Class A, E-13</td>
</tr>
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</table>

### Software Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input</td>
<td>Intel Celeron 2980U/i3-4010U (Optional: 6, 7)</td>
</tr>
<tr>
<td>Memory</td>
<td>1 x DDR3L-1600 SO-DIMM up to 8GB</td>
</tr>
<tr>
<td>Graphics</td>
<td>Intel HD Graphics</td>
</tr>
<tr>
<td>ATA</td>
<td>2 x Serial ATA 2.0 Ports with 6Gb/s HDD Transfer Rate</td>
</tr>
<tr>
<td>LAN Chipset</td>
<td>2 x Intel 2110-AT Gigabit Ethernet with PoE 802.3af</td>
</tr>
<tr>
<td>Video Port</td>
<td>1 x HDMI &amp; 1 x DVI-I</td>
</tr>
<tr>
<td>Audio</td>
<td>Mic-in/Line-out (option 2 x Line-out)</td>
</tr>
<tr>
<td>Expansion Bus</td>
<td>3 x Mini-card Slots</td>
</tr>
<tr>
<td>SIM Card Socket</td>
<td>2 x SIM Card Sockets Supported Onboard with eject</td>
</tr>
</tbody>
</table>

### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>703150010200</td>
<td>Intel Haswell Celeron 2980U/i3-4010U CPU with 2 x PoE/ 1 x GbE with vPro/ 4 x COM In-Vehicle Computer</td>
</tr>
</tbody>
</table>

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### Table: Mechanical Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Aluminum Alloy</td>
</tr>
<tr>
<td>Mounting</td>
<td>Wall-mount, VESA-mount, DIN Rail Mounting Kit</td>
</tr>
<tr>
<td>Weight</td>
<td>1406 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>249 x 161 x 65 mm</td>
</tr>
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</table>

### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>703150131000</td>
<td>Intel Haswell Celeron 2980U/i3-4010U CPU with 2 x PoE/1 x GbE with vPro/4 x COM In-Vehicle Computer</td>
</tr>
</tbody>
</table>

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### Table: Software Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input</td>
<td>Intel Celeron 2980U/i3-4010U (Optional: 6, 7)</td>
</tr>
<tr>
<td>Memory</td>
<td>1 x DDR3L-1600 SO-DIMM up to 8GB</td>
</tr>
<tr>
<td>Graphics</td>
<td>Intel HD Graphics</td>
</tr>
<tr>
<td>ATA</td>
<td>2 x Serial ATA 2.0 Ports with 6Gb/s HDD Transfer Rate</td>
</tr>
<tr>
<td>LAN Chipset</td>
<td>2 x Intel 2110-AT Gigabit Ethernet with PoE 802.3af</td>
</tr>
<tr>
<td>Video Port</td>
<td>1 x HDMI &amp; 1 x DVI-I</td>
</tr>
<tr>
<td>Audio</td>
<td>Mic-in/Line-out (option 2 x Line-out)</td>
</tr>
<tr>
<td>Expansion Bus</td>
<td>3 x Mini-card Slots</td>
</tr>
<tr>
<td>SIM Card Socket</td>
<td>2 x SIM Card Sockets Supported Onboard with eject</td>
</tr>
</tbody>
</table>

### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>703150131000</td>
<td>Intel Haswell Celeron 2980U/i3-4010U CPU with 2 x PoE/1 x GbE with vPro/4 x COM In-Vehicle Computer</td>
</tr>
</tbody>
</table>

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**All specifications are subject to change without notice.**
### VDB-810 Series

**Embedded u-blox M8 GPS with (G-Sensor)**

**Mini PCIe Card**

**Features**
- Concurrent Reception of GPS/QZSS, GLONASS, BeiDou
- 72-channel u-blox M8 Engine w/ Over 2 Million Effective Correlators
- 167dBm SuperSense® Acquisition & Tracking Sensitivity
- 10 Hz Position Update Rate
- Standard Mini PCIe V1.2 Full-Mini Card(USB2.0 Interface)
- Time To First Fix (TFF): <1 sec
- Operating Temp.: -40°C to 85°C

**Receiver Type**

<table>
<thead>
<tr>
<th>Chipset</th>
<th>u-blox M8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>GPS L1 C/A, SBAS L1 C/A, QZSS L1 C/A, GLONASS L1C/1, BeiDou B1</td>
</tr>
<tr>
<td>Channels</td>
<td>Supports 72 Channels</td>
</tr>
</tbody>
</table>

**Sensitivity**

<table>
<thead>
<tr>
<th>Tracking &amp; Navigation</th>
<th>Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>-167dBm</td>
<td></td>
</tr>
</tbody>
</table>

**Cold Start (Autonomous)**

| -145dBm |

**Time to First Fix (TFF)**

| Cold Start | 26 sec |
| Warm Start | 20 sec |
| Hot Start | 1 sec |
| Aided Start | 2 sec |

**Accuracy**

| Horizontal Position | Autonomous: <2.5m CEP, SBAS: <2.0m CEP |
| Accuracy of Timepulse Signal | RMS 30ns |
| Max Navigation | <80m |
| Update Rate | 50Hz (GPS/GLONASS), 1Hz (GPS) |

**Dynamic Conditions**

| Velocity | <50m/s (972 knots) |
| Acceleration | <4g |

**Output Message Format**

| GPS Protocol | NMEA 0183 V4.0, UBX, RTCM3.3 |

**Multipath Suppression**

Intelligent Multipath Detection and Suppression

**G-Sensor (VDB-810G)**

**Data Accelerometer**

| A-GPS |

**Supports AssistNow® Online and Offline, OMA SUPL Compliant**

**Environmental Characteristics**

| Operating Temp. | -40°C to +85°C, ambient w/ 0.6m/s airflow |
| Storage Temp. | -40°C to +85°C |
| Peak Supply Current | Max=1.75A |
| Max Performance | Acquisition <274mA, Tracking <4mA |
| Eco Mode | Tracking <25mA, Navigation <4mA |
| Power Input | 3.3V ±10% VDC Input |
| Dimensions | 51 x 30 (mm) |

**Ordering Information**

| Part Number | VDB-810-000 |
| Description | Embedded u-blox M8 GPS Mini PCIe Card |

### VDM-121-H

**Ultra-Grade 12.1” TFT LCD VGA Touch Screen Monitor with Metal Enclosure**

**Features**
- High Resolution of Panel 1024 x 768 Pixels
- High Contrast 700:1
- Industrial Application Panel with Long Product Life Cycle
- One VGA Input
- Resistive Touch
- USB Interface
- VESA Mountable
- Detachable Stand for Wall-mounting Application
- Metal-Enclosure

**System**

| Screen Size | 12.1 inch (Diagonal) |
| Display Resolution | 1024(H) x RGB x 768(V) |
| Interface | Digital |
| Driver System | TFT Active Matrix |
| Active Area(mm) | 245.76(H) x 184.32(V) |
| Panel Pitch | 3.375 x 3.375 |
| Color Configuration | R.G.B. Stripe |
| Backlight unit | LED |
| Contrast Ratio | 700:1 |
| Brightness | 1000 nits |
| View Angle | 80/80/80/80/80/deg. |
| Recommended Power Rating | 1024 x 768 (650kHz) |
| Power Rating | DC 5-32V |
| Operating Temp. | 30 to +80, ambient w/ 0.6m/s airflow |
| Storage Temp. | -40ºC to +85ºC |
| Dimensions | 303 x 223 x 40 mm |
| Certificate | CE/FCC, RoHS |
| Accessory | Metal stand x 1, Car Cigarette lighter adapter x 1, All-In-One cable x 1, Remote controller x 1, Touch driver x 1, Users manual x 1, Touch Stylus x 1, Headrest Shroud x 1 |

**Ordering Information**

| Part Number | VDM-121H |
| Description | Ultra-Grade 12.1” TFT LCD VGA Touch Screen Monitor with Metal Enclosure |
| State of Origin | Made in Taiwan |

---

All specifications are subject to change without notice.
VDM-102W
10.2" [16:9] Wide VGA Touch Screen

Features
- 16:9 Wide Screen
- Support Composite/Component/S-video Input
- One VGA Input
- Auto Reversing Function Among Composite/Component/S-video
- Touch Screen (USB Interface)
- Resolution Support: 640 x 480 ~ 1024 x 768 for VGA Mode
- Auto Power On/Off Function for VGA Mode
- NTSC/PAL/SECAM Auto Switching
- VESA Mounting

System
- Display: 10.2-inch TFT LCD
- Number of Pixels: 1,152,000 dots
- Back Light: LED
- Drive System: Active Matrix
- Display Active Area: 174.0(H) x 104.4(V) mm
- Resolution: 800(V) x 3(RGB) x 480(H)
- Brightness Rating: 400 cd/m² (850 cd/m² Optional)
- Contrast Ratio: 350:1
- Viewing Angle: 50/70/70/70 deg.
- Video Input Systems: NTSC/PAL Auto Switching
- Power source: DC 9V ~ 32V
- Operating Temp.: -30 to +85 °C, ambient w/ 0.6m/s airflow
- Storage Temp.: -40 to +85 °C
- Power Consumption: 1W x 1 Speaker
- Monitor Dimension: 251.5(W) x 176(H) x 27.5(D) mm
- Certificate: CE/FCC, RoHS

Ordering Information
- Part Number: 782010201010
- Description: Slim Design 10.2" [16:9] Wide VGA Touch Screen
- State of Origin: Made in Taiwan

Slim Design 8" [16:9] Wide Screen VGA Touch Function TFT LCD Monitor

VDM-800W

Features
- 16:9 Wide Screen
- High Resolution 2400(H)x480(V) Pixels
- High Brightness 500cd/m²
- Auto Power On for VGA Mode
- Support Resolution 800x600 ~ 1024x768 Pixels
- OSD Function Control
- NTSC/PAL/SECAM Auto Switching
- Two A/V Inputs Plus One Auto Reversing Input
- One VGA Input
- Touch Screen (USB Interface)
- With Headrest Shroud & Stand
- All-In-1 Cable
- VESA Mounting

System
- Display: 8.0-inch TFT LCD
- Number of Pixels: 1,152,000 dots
- Back Light: LED
- Drive System: Active Matrix
- Display Active Area: 175.2(W) x 105.12(H) mm
- Resolution: 800(V) x 3(RGB) x 480(H)
- Brightness Rating: 500 cd/m²
- Contrast Ratio: 500:1
- Viewing Angle: 40/60/60/60 deg.
- Video Input Systems: NTSC/PAL/SECAM Auto Switching
- Power Source: DC 9-36V
- Operating Temp.: -30 to +60 °C, ambient w/ 0.6m/s airflow
- Storage Temp.: -30 to +60 °C
- Power Consumption: 1000mA/10W (max)
- Monitor Dimension: 220(W) x 135(H) x 29(D) mm
- Monitor with Shroud Dimension: 238(W) x 153(H) x 30(D) mm

Ordering Information
- Part Number: 782010201010
- Description: Slim Design 8" [16:9] Wide Screen VGA Touch Function TFT LCD Monitor
- State of Origin: Made in Taiwan

All specifications are subject to change without notice.
SBOX-2620

Intel Gen4 Core i7-4650U with HD 5000 GPU / 2x LAN / HDMI / DVI / VGA / DC 9-36V Fanless Box PC

Features
- Intel Core i7-4650U / Core i5-4300U
- Triple Display Output (DVI / HDMI / VGA)
- Dual Gigabit Ethernet and 2x RS-232
- Wide Range Operating Temp.: -30~60°C
- Ultra Slim (40mm), Compact Size and Fanless
- DC 12V Power Input

SBOX-2600

Intel Gen4 Core i7-4650U CPU with HD 5000 GPU / 2x LAN / HDMI / DVI / VGA / DC 12V Fanless Box PC

Features
- Intel Core i7-4650U / Core i5-4300U
- Triple Display Output (DVI / HDMI / VGA)
- Dual Gigabit Ethernet and 2x RS-232
- Wide Range Operating Temp.: -30~60°C
- Ultra Slim (40mm), Compact Size and Fanless
- DC 12V Power Input
### SBOX-2621

**Intel Gen6 i7-6600U with HD Graphic 520 / 2 x LAN/ 2 x HDMI/ VGA/ DC 9-36V Fanless Box PC**

**Features**
- Intel Gen 6 Core i7-6600U
- Triple Display Output (2 x HDMI / VGA)
- Dual Gigabit Ethernet
- Wide Range Operating Temp. : -30~60°C
- Ultra Slim(54mm), Compact Size and Fanless
- DC 9-36V Power Input

**System**
- **CPU**: Intel Gen6 i7-6600U with HD Graphic 520 / 2 x LAN/ 2 x HDMI/ VGA/ DC 9-36V Fanless Box PC
- **Chipset**: N/A
- **Graphics**: Intel HD Graphics
- **ATA**: 2 x Serial ATA ports with 6Gb/s HDD Transfer Rate
- **LAN Chipset**: 1 x Intel i219-LM Gigabit Ethernet (LAN 2), support iAMT for i5 & i7
- **Watchdog**: 1 ~ 255 Level Reset
- **I/O**:
  - **Serial Port**: 4 x RS-232/422/485
  - **USB Port**: 4 x USB 2.0 Ports and 2 x USB 3.0
  - **LAN**: 2 x RJ45 Ports for GbE
  - **Video Port**: 2 x HDMI / 1 x VGA
  - **GPIO Port**: 4 In and 4 Out GPIO Ports (5V Level)
- **Audio**: Line-Out / Mic-in
- **Expansion Bus**: 2 x Mini-Card Slots (1 with SIM for LTE only), 1 x M.2 A-E Key

**Storage**
- **Type**: 1 x 2.5" Drive Bay for SATA Type Hard Drive/SSD

**Software**
- **Operating System**: Win 10, Ubuntu 16.04 64bit
- **Certifications**: CE, FCC Class A, UL

**Environmental**
- **Operating Temp.**: -30 ~ 60°C, ambient w/ 0.6m/s airflow
- **Storage Temp.**: -40 ~ 85°C
- **Relative Humidity**: 10% RH ~ 90% RH (non-condensing)

**Mechanical**
- **Construction**: Aluminum Alloy
- **Mounting**: Wall-mount, VESA-mount, Din Rail Mounting Kit
- **Dimensions**: 250 x 167.6 x 54 mm (for i7 and i5), 182 x 167.6 x 54 mm (for i3 and C1)

**Ordering Information**
- **Part Number**: SBOX-2621-i7, SBOX-2621-i5, SBOX-2621-i3, SBOX-2621-C1

**State of Origin**: Made in Taiwan

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### SBOX-2601

**Intel Gen6 i7-6600U with HD Graphic 520 / 2 x LAN/ 2 x HDMI/ VGA/ DC 12V Fanless Box PC**

**Features**
- Intel Gen 6 Core i7-6600U
- Triple Display Output (2 x HDMI / VGA)
- Dual Gigabit Ethernet
- Wide Range Operating Temp. : -30~60°C
- Ultra Slim(40mm), Compact Size and Fanless

**System**
- **CPU**: Intel Gen6 i7-6600U with HD Graphic 520 / 2 x LAN/ 2 x HDMI/ VGA/ DC 12V Fanless Box PC
- **Chipset**: N/A
- **Graphics**: Intel HD Graphics
- **ATA**: 2 x Serial ATA ports with 6Gb/s HDD Transfer Rate
- **LAN Chipset**: 1 x Intel i219-LM Gigabit Ethernet (LAN 2), support iAMT for i5 & i7
- **Watchdog**: 1 ~ 255 Level Reset
- **I/O**:
  - **Serial Port**: 4 x RS-232/422/485 (for i7 and i5), 3 x RS-232/422/485 (for i3 and C1)
  - **USB Port**: 2 x USB 2.0 Ports and 2 x USB 3.0
  - **LAN**: 2 x RJ45 Ports for GbE
  - **Video Port**: 2 x HDMI / 1 x VGA
  - **GPIO Port**: 4 In and 4 Out GPIO Ports (5V Level)
- **Audio**: Line-Out / Mic-in
- **Expansion Bus**: 1 x Mini-Card Slot, 1 x M.2 A-E Key

**Storage**
- **Type**: 1 x 2.5" Drive Bay for SATA Type Hard Drive/SSD

**Software**
- **Operating System**: Win 10, Ubuntu 16.04 64bit
- **Certifications**: CE, FCC Class A, UL

**Environmental**
- **Operating Temp.**: -30 ~ 60°C, ambient w/ 0.6m/s airflow
- **Storage Temp.**: -40 ~ 85°C
- **Relative Humidity**: 10% RH ~ 90% RH (non-condensing)

**Mechanical**
- **Construction**: Aluminum Alloy
- **Mounting**: Wall-mount, VESA-mount, Din Rail Mounting Kit
- **Dimensions**: 250 x 167.6 x 54 mm (for i7 and i5), 182 x 167.6 x 54 mm (for i3 and C1)

**Ordering Information**
- **Part Number**: SBOX-2601-i7, SBOX-2601-i5, SBOX-2601-i3, SBOX-2601-C1

**State of Origin**: Made in Taiwan
**SBOX-2320**

Intel Braswell N-series Atom CPU / 2 x LAN/ HDMI/ DVI/ VGA/ DC 9-36V Fanless Box PC

**Features**
- Intel Braswell N3060 Atom CPU
- Triple Display Output (DVI / HDMI / VGA)
- Dual Gigabit Ethernet and 2 x RS-232
- Wide Range Operating Temp. : -30~60ºC
- Ultra Slim(54mm), Compact Size and Fanless
- DC 9-36V Power Input

**Features**
- *Mini-PCIe (Mini Card) Interface*
- Up to 4-channel Video Inputs (VDB-310)
- Up to 8-channel Video Inputs (VDB-320)
- D1, Half-D1, CIF Resolution
- Windows Driver & SDK Provide

---

**VDB-310/320**

4/8 ch Mini-PCIe Video Capture Card Support 4/8 CCTV Cameras Input and 4/8 MIC Input at the Same Time

**Features**
- *Mini-PCIe (Mini Card) Interface*
- Up to 4-channel Video Inputs (VDB-310)
- Up to 8-channel Video Inputs (VDB-320)
- D1, Half-D1, CIF Resolution
- Windows Driver & SDK Provide

---

**System**

<table>
<thead>
<tr>
<th>CPU</th>
<th>Intel N3160 Atom CPU up to 2.24GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>2 x DDR3L-1600</td>
</tr>
<tr>
<td>Graphics</td>
<td>Intel HD Graphics</td>
</tr>
<tr>
<td>Serial Port</td>
<td>2 x RS-232/422/485 (Optional)</td>
</tr>
</tbody>
</table>

**Software**

- Certification: CE, FCC Class A

**Environmental**

- Operating Temp.: 30 ~ 60ºC, ambient w/ 0.8-1.0 m/s airflow
- Storage Temp.: -40 ~ 85ºC
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Power Input: DC 9-36V Input / Reverse Polarity OCP and OVP Protection

**Mechanical**

- Construction: Aluminum Alloy
- Mounting: Wall-mount, VESA-mount, Din Rail Mounting Kit
- Weight: 1000g (Barndoor)
- Dimensions: 192 x 167.6 x 54 mm

**Display Video**

- Format: YUV, YCB, YPbPr
- Resolution: 720x480, 704x480, 640x480, 720x240, 704x240, 640x240, 320x240
- Frame Rate: 30fps

**Recording Video**

- Format: MPEG4, H.264
- Resolution: 720x480, 704x480, 640x480, 720x240, 704x240, 640x240, 320x240

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**VDB-310**

- Features: 4-ch Mini-PCIe video capture card, with software development kit
- Specifications: 720x480 with NTSC and PAL

**VDB-320**

- Features: 8-ch Mini-PCIe video capture card, with software development kit
- Specifications: 720x480 with NTSC and PAL

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All specifications are subject to change without notice.
## ABOX-5000-V8

Intel 6th-Gen Skylake Core i7/i5/i3 CPU w/ 4 x GbE/ 4 x ISO COM/ 2 x DPI/ VGA/ 4 USB3.0/ Fast Expansible Slot/ 8 x D1 Video Input/ 9-36V Fanless computer

### Features
- Intel® 6th-Gen Core™ i7/i5/i3 LGA1151 CPU
- 9-36V Fanless computer
- Fast Expansible Slot support PCI-E, USB, SMBus, GPIO and SATA

### Specifications

<table>
<thead>
<tr>
<th>System Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel® Gen Core™ i7/i5/i3 LGA1151</td>
</tr>
<tr>
<td>Memory</td>
<td>2 x DDR3 2133 MHz DDR3 up to 32GB</td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel® Q170 Platform Controller Hub</td>
</tr>
<tr>
<td>LAN Chipset</td>
<td>Intel® 82583V 82599V/ 82599TV6</td>
</tr>
<tr>
<td>Watchdog</td>
<td>1 ~ 255 Level Reset</td>
</tr>
<tr>
<td>I/O</td>
<td>4 x RS232/422/485 w/ 1.5KVrms isolation</td>
</tr>
<tr>
<td>USB</td>
<td>4 x USB 3.0 Ports</td>
</tr>
<tr>
<td>LAN</td>
<td>4 x RJ45 Ports for GbE (Optional for 4 x PCIe 1x4 Power per port)</td>
</tr>
<tr>
<td>Video Port</td>
<td>2 x Display Port w/ 1x VGA Port (Triple Independent Display)</td>
</tr>
<tr>
<td>DIO Port</td>
<td>8 x GPIO and 4 x GPO connector w/ 1.5KVrms isolation</td>
</tr>
<tr>
<td>Audio Input</td>
<td>1 Channel</td>
</tr>
<tr>
<td>Audio Format</td>
<td>MONO / 8 ~ 16BITS / 8000 ~ 48000HZ</td>
</tr>
<tr>
<td>Video Recording</td>
<td>Total 240FPS (NTSC), 200FPS (PAL) @ D1 Real-Time</td>
</tr>
<tr>
<td>Video Display</td>
<td>Total 240FPS (NTSC), 200FPS (PAL) @ D1</td>
</tr>
<tr>
<td>Resolution</td>
<td>NTSC: 720x480@30FPS, 720x576@25FPS, 704x576@25FPS, 640x480@30FPS, 640x576@25FPS, 576x480@25FPS, 480x320@25FPS, 352x240@25FPS, 352x288@25FPS, 320x240@25FPS, 320x288@25FPS</td>
</tr>
<tr>
<td>Dimensions</td>
<td>240(L)x 228(W) x 79(H) mm</td>
</tr>
<tr>
<td>Audio Format</td>
<td>MONO / 1.8 ~ 16BIT / 8000 ~ 48000HZ</td>
</tr>
</tbody>
</table>

### Operating System
- Win 10 64bit, Ubuntu 16.04 64bit

### Storage
- Type: 2 x 2.5" Drive Bay for SATA Type HDD/SSD, Support RAID 0, 1, 5 SATA DOM

### Power Requirement
- 9-36V DC Input
- Power Protection: Automatic Recovery Short-Circuit Protection
- Power Management: Vehicle Power Ignition for Variety Vehicle
- Power Off Control: Power off Delay Time Setting by BIOS and Software

### Environmental
- Operating Temp.: -40ºC ~ 70ºC (Default CPU 35Watt), ambient w/ 0.6m/s airflow
- Storage Temp.: -40ºC ~ 80ºC
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Vibration (random): 80G@50Hz (Baroformance)
- Certification: CE, FCC Class A

### Construction
- Aluminum Alloy

### Order Number
- ABOX-5000-V8 Optional for IS/IS/CS

### State of Origin
- Made in Taiwan

## VBOX-3611-V4

Intel Gen6 Core i7-6600U Hybrid Mobile DVR Surveillance with 4 Channel Camera

### Features
- Intel® Core™ i7-6600U
- Wireless Support LTE w/ Dual SIM Cards, WLAN, GPS DR & G-Sensor, BT(Optional)
- 8V ~ 36V DC Power Input
- 4 Channel D1 Resolution@120fps for 2 IP Digital Cameras
- Smarter Vehicle Power Ignition for
- Dual Hot Swappable SATA Storage, RAID 0, 1, 5
- 1 x CAN Bus 2.0B (Optional)

### Specifications

<table>
<thead>
<tr>
<th>System Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel® Gen Core™ I7-6600U 2.6GHz up to 3.4GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>2 x DDR3 2133 MHz DDR3 up to 32GB</td>
</tr>
<tr>
<td>Watchdog</td>
<td>Watching Timer Support, D1 ~ 2055 Step</td>
</tr>
<tr>
<td>I/O</td>
<td>4 x RS-232 (2 with RS-422/485 (Auto Direction Control))</td>
</tr>
<tr>
<td>USB Port</td>
<td>2 x USB 3.0 Ports, 2 x USB 2.0 Ports</td>
</tr>
<tr>
<td>LAN</td>
<td>1 x RJ45 Ports for GbE</td>
</tr>
<tr>
<td>Video Port</td>
<td>1 x DVI-D, 1x VGA and 1x DP (support Triple Independent Display)</td>
</tr>
<tr>
<td>DIO Port</td>
<td>4 In and 4 Out</td>
</tr>
<tr>
<td>Audio Input</td>
<td>2 x Line-out and 1 x Mic-in (Line-in Optional)</td>
</tr>
<tr>
<td>Audio Format</td>
<td>MONO / 16BIT / 44.1KHZ</td>
</tr>
<tr>
<td>Video Input</td>
<td>4 Channels (4 x BNC Connections)</td>
</tr>
<tr>
<td>Video Recording</td>
<td>Total 120FPS (NTSC), 100FPS (PAL) @ D1 Real-Time</td>
</tr>
<tr>
<td>Video Display</td>
<td>Total 120FPS (NTSC), 100FPS (PAL) @ D1</td>
</tr>
<tr>
<td>Resolution (5W/MPEA or H.264)</td>
<td>NTSC: 720x480@30FPS, 720x576@25FPS, 704x576@25FPS, 640x480@30FPS, 640x576@25FPS, 576x480@25FPS, 480x320@25FPS, 352x240@25FPS, 352x288@25FPS, 320x240@25FPS, 320x288@25FPS</td>
</tr>
<tr>
<td>Dimensions</td>
<td>250 x 150 x 50 mm</td>
</tr>
<tr>
<td>Audio Format</td>
<td>MONO / 16BIT / 44.1KHZ</td>
</tr>
<tr>
<td>Power Protection</td>
<td>Automatic Recovery Short-Circuit Protection</td>
</tr>
<tr>
<td>Power Management</td>
<td>Vehicle Power Ignition for Variety Vehicle</td>
</tr>
<tr>
<td>Power Off Control</td>
<td>Power off Delay Time Setting by BIOS and Software</td>
</tr>
</tbody>
</table>

### Environmental & Mechanical
- Operating Temp.: 40 ~ 70ºC (SSD), ambient w/ 0.6m/s airflow
- Storage Temp.: -40 ~ 70ºC (SSD), ambient w/ 0.6m/s airflow
- Relative Humidity: 10% RH ~ 90% RH (non-condensing)
- Vibration (random): 80G@50Hz (Baroformance)
- Certification: CE, FCC Class A, E Mark Compliance

### Construction
- Aluminum Alloy

### Order Number
- VBOX-3611-V4.000

### State of Origin
- Made in Taiwan
SBOX-2620-V4/V8

Intel Gen4 Core i7-4650U with HD 5000 GPU / 2 x LAN/ HDMI/ DVI/ VGA/ 4/8 x D1 Video Input/ DC 9-36V Fanless Box PC

Features
• Intel Core i7-4650U / Core i5-4300U
• Triple Display Output (DVI / HDMI / VGA)
• 4(V4) / 8(V8) x D1 Video Input Camera
• Dual Gigabit Ethernet and 2 x RS-232
• Wide Range Operating Temp.: -30~60°C
• Ultra Slim(54mm), Compact Size and Fanless
• DC 9-36V Power Input

System
CPU Intel Gen4 Core i7-4650U with HD 5000 GPU / 2xLAN/ VGA/ HDMI/ DVI/ 4/8 xD1 Video Input/ DC 9-36V Fanless Box PC

I/O
• Serial Port 1 x RS-232 Ports (1 x RS232/422/485)
• USB Port 2 x USB 2.0 Ports and 2 x USB 3.0
• LAN 2 x RJ45 Ports for GbE
• Video Port 1 x HDMI and DVI*4 Output
• GPIO Port 4 In and 4 Out GPIO Ports (V4 Level)
• Audio Line-Out

Serial Port 1 x RS-232 Ports (1 x RS232/422/485)
USB Port 2 x USB 2.0 Ports and 2 x USB 3.0
LAN 2 x RJ45 Ports for GbE
Video Port 1 x HDMI and DVI*4 Output
GPIO Port 4 In and 4 Out GPIO Ports (V4 Level)
Audio Line-Out

Software
Operating System Win 7, Win 10, Ubuntu 16.04

Qualification
Certifications CE, FCC Class A, UL

Environmental & Mechanical
Operating Temp. -30~60°C ambient w/ 0.6m/s airflow
Storage Temp. -40~85°C
Relative Humidity 10% RH – 90% RH (non-condensing)
Power Input DC 5-36V Input w/ Reverse Polarity OCP and OVP Protection
Construction Aluminum Alloy
Mounting Wall-mount, VESA-mount, Din Rail Mounting Kit
Weight 1200g (Barebone)
Dimensions 121(L) x 167(W) x 54(H) mm

Ordering Information
Part Number SBOX-2620-V4-000, SBOX-2620-V8-000
Description Intel Gen4 Core i7-4650U with HD 5000 GPU / 2xLAN VGA/ HDMI DVI 4K D1 Video Input DC 9-36V Fanless Box PC
State of Origin Made in Taiwan