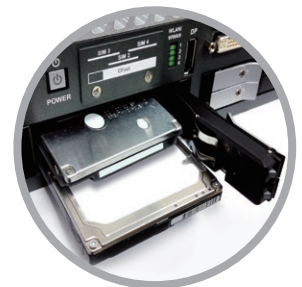


# IVH-7700 Series

Quad Core Intel® Core™ i7/ i5/ i3 Fanless In-Vehicle Embedded System with Intel® QM77, 6 Gigabit LAN with 4 M12 PoE+, 4 Front-access SSD/ HDD Tray, Isolated DIO, High Performance, Rugged, Extended Temperature



- Quad Core Intel® Core™ i7/ i5/ i3 Processor
- Fanless, -25°C to 70°C Operating Temperature
- 6 Gigabit LAN with 4 M12 IEEE 802.3at PoE+
- 4 Mini PCIe, 4 SIM Card Socket (3 External)
- Supports 3G/ 4G/ LTE/ WiFi/ GPRS/ UMTS
- 4 Front-access 2.5" HDD/ SSD Tray
- 4 Independent USB 3.0, 16 Isolated DIO, 16 GPIO
- Configurable Ignition Power Control
- 6V to 78V DC-in, 200V Surge Protection
- UPS Supported (Optional)



Traffic Safety System



ITS (Intelligent Transportation System)



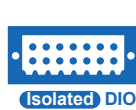
Fleet Management



In-Vehicle Surveillance

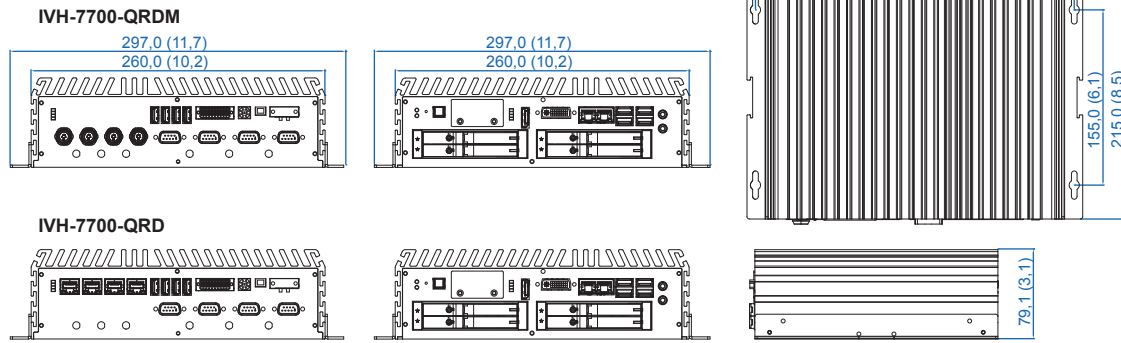


Mobile NVR



# Dimensions & Drawing

Unit: mm (inch)



## Specifications

### System

<b>Processor</b>	Quad Core 3 <sup>rd</sup> Gen Intel® Core™ i7/ i5/ i3 Processor
<b>Chipset</b>	Intel® QM77
<b>BIOS</b>	AMI
<b>SIO</b>	IT8783
<b>Memory</b>	<ul style="list-style-type: none"> <li>• DDR3 1066/1333/1600 MHz or DDR3L 1066/1333MHz</li> <li>• Up to 16GB</li> <li>• 2 204-pin SO-DIMM sockets</li> </ul>

### I/O Interface

<b>Serial</b>	2 COM RS-232, 2 COM RS-232/422/485
<b>USB</b>	<ul style="list-style-type: none"> <li>• Front : 4 USB 3.0</li> <li>• Rear : 4 USB 3.0 (Independent Controller)</li> <li>• 1 Internal USB 2.0 (Right Angle USB Connector)</li> <li>• 2 Internal USB 2.0 (6-pin JST)</li> </ul>
<b>Isolated DIO</b>	16 Isolated DIO (8 DI, 8 DO, up to 78V Input)
<b>LED</b>	Power, HDD, Wireless, PoE
<b>SIM Card</b>	4 SIM Card Socket (3 External, 1 Internal)
<b>GPIO</b>	16 GPIO

### Expansion

<b>Mini PCIe</b>	<ul style="list-style-type: none"> <li>• 1 Mini PCIe Socket for PCIe/ USB/ Internal SIM Card/ Optional mSATA</li> <li>• 3 Mini PCIe Socket for PCIe/ USB/ External SIM Card</li> </ul>
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### Graphics

<b>Chipset</b>	Intel® HD 4000, Triple Independent Display
<b>Display Memory</b>	Shared Memory, up to 1.7GB
<b>Interface</b>	<ul style="list-style-type: none"> <li>• DVI-I : Up to 1920 x 1200</li> <li>• DisplayPort : Up to 2560 x 1600</li> <li>• LVDS : Dual channel 24-bit, up to 1920 x 1200</li> </ul>

### Storage

<b>SATA</b>	<ul style="list-style-type: none"> <li>• 2 SATA III (6Gbps)</li> <li>• 2 SATA II (3Gbps)</li> </ul>
<b>mSATA</b>	1 SATA II (3Gbps)
<b>Expansion</b>	<ul style="list-style-type: none"> <li>• CFast Slot, Push-in/ Push-out Ejector</li> <li>• 4 Front-access SSD/ HDD Tray</li> </ul>

### Audio

<b>Audio Codec</b>	Realtek ALC892, 5.1 Channel HD Audio
<b>Audio Interface</b>	1 Mic-in, 1 Line-out

### Ethernet

<b>LAN 1</b>	Intel® 82579LM Gigabit LAN supports iAMT 8.0
<b>LAN 2</b>	Intel® I210 Gigabit LAN

### PoE

<b>LAN 3</b>	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210
<b>LAN 4</b>	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210
<b>LAN 5</b>	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210
<b>LAN 6</b>	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210

- M12 Connector (IVH-7700-QRDM)

### Power

<b>Input Voltage</b>	DC-in 6V to 78V
<b>Power Input</b>	<ul style="list-style-type: none"> <li>• 3-pin Terminal Block : V+, V-, IGN</li> <li>• DC-in M12 Connector (Optional)</li> </ul>
<b>Ignition Control</b>	16 modes
<b>Remote Switch</b>	2-pin Terminal Block
<b>Surge Protection</b>	Up to 200V/1ms Transient Power Supported (Optional)
<b>UPS</b>	Supported (Optional)

### Others

<b>TPM</b>	Trusted Platform Module, Infineon SLB9635, LPC interface (Optional)
<b>Watchdog Timer</b>	Reset : 1 to 255 sec./min. per step
<b>Smart Management</b>	Wake on LAN, PXE supported
<b>HW Monitor</b>	Monitoring temperature, voltages. Auto throttling control when CPU overheats
<b>GPS</b>	Onboard GPS Module (Optional)

### Software Support

<b>Microsoft</b>	Windows 8, Windows 7, Windows XP
<b>Linux</b>	Fedora 13, Ubuntu 10.04 LTS, or Linux Kernel 3.0 above

### Mechanical

<b>Dimension</b>	260mm x215mm x79mm (10.2"x 8.5"x 3.1") (W x L x H)
<b>Weight</b>	4.2 kg (9.26 lb)
<b>Mounting</b>	Wallmount by mounting bracket

### Environment

<b>Operating Temp.</b>	-25°C to 70°C (-13°F to 158°F)
<b>Storage Temp.</b>	-40°C to 85°C (-40°F to 185°F)
<b>Humidity</b>	5% to 95% humidity, non-condensing
<b>Relative Humidity</b>	95% at 70°C
<b>Shock</b>	<ul style="list-style-type: none"> <li>• IEC 60068-2-27</li> <li>• SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>
<b>Vibration</b>	<ul style="list-style-type: none"> <li>• IEC 60068-2-64</li> <li>• SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>
<b>EMC</b>	CE, FCC, EN 50155, EN 50121-3-2

## Order Information

<b>IVH-7700-QRD</b>	• Intel® Quad Core™ In-Vehicle Fanless Embedded System with 6 Gigabit Ports (4 PoE+) and 4 Front-access SSD/HDD Trays
<b>IVH-7700-QRDM</b>	• Intel® Quad Core™ In-Vehicle Fanless Embedded System with 6 Gigabit Ports (4 PoE+ with M12 Connectors) and 4 Front-Access SSD/HDD Trays
<b>i7-3610QE</b>	• Ivy Bridge 3 <sup>rd</sup> Gen Intel® Mobile Quad Core™ i7 Processor
<b>i5-3610ME</b>	• Ivy Bridge 3 <sup>rd</sup> Gen Intel® Mobile Core™ i5 Processor
<b>i3-3120ME</b>	• Ivy Bridge 3 <sup>rd</sup> Gen Intel® Mobile Core™ i3 Processor
<b>M340S-W28M1</b>	• Vecow DDR3 4GB 1333/1066 MHz RAM, Wide Temperature -40°C to +85°C
<b>Certified DDR3 4GB RAM</b>	• Certified DDR3 4GB RAM
<b>PWA-160W-WT</b>	• 160W, 24V, 85VAC to 264VAC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-120W</b>	• 120W, 24V, 90VAC to 264VAC Power Adapter with 3-pin Terminal Block
<b>TMBK-20P-100</b>	• Terminal Block 20-pin to SCSI Cable, 100cm
<b>TMBK-20P-500</b>	• Terminal Block 20-pin to SCSI Cable, 500cm
<b>TMB-SCSI-20P</b>	• Terminal Board with One 20-pin SCSI Connector and DIN-Rail Mounting