

# IVH-7700-QRDM-ICY (M12)

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 15mm SSD Tray, Isolated DIO, High Performance, Rugged, Extended Temperature



## Features

- 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+ compliant
- 4 Front-access 2.5" SSD Tray (15mm in height)
- 4 Mini PCIe, 4 SIM Card Socket (3 External)
- Supports 3G/ 4G/ LTE/ WiFi/ GPRS/ UMTS
- 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)



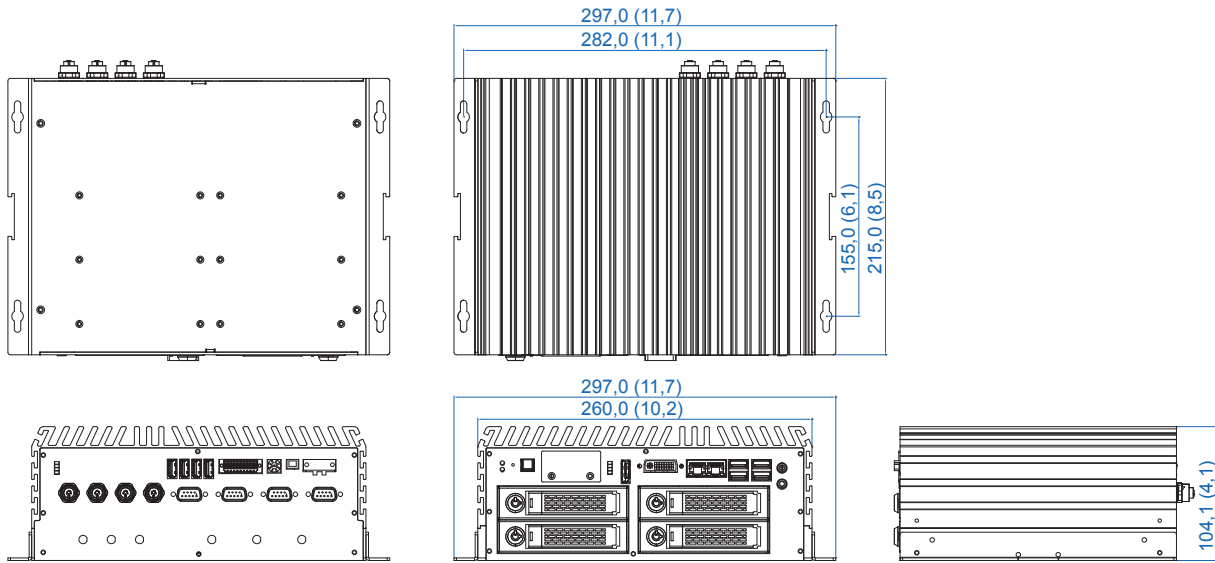
## Specifications

System	
Processor	Intel® Core™ i7-3610QE/ i5-3610ME/ i3-3120ME
Chipset	Intel® QM77
BIOS	AMI
SIO	IT8783
Memory	2 DDR3 1066/ 1333/ 1600 MHz or DDR3L 1066/ 1333 MHz SO-DIMM, up to 16GB
I/O Interface	
Serial	<ul style="list-style-type: none"> <li>▪ 2 COM RS-232/ 422/ 485</li> <li>▪ 2 COM RS-232</li> </ul>
USB	<ul style="list-style-type: none"> <li>▪ 8 USB 3.0 (External, 4 w/ independent controller)</li> <li>▪ 3 USB 2.0 (Internal)</li> </ul>
Isolated DIO	16 Isolated DIO : 8 DI, 8 DO
GPIO	16 GPIO
LED	Power, HDD, Wireless, PoE
SIM Card	4 SIM Card Socket (3 External, 1 Internal)
Expansion	
Mini PCIe	<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>
Graphics	
Graphics Processor	Intel® HD Graphics 4000
Display Memory	Shared Memory, up to 1.7GB
Interface	<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	
SATA	<ul style="list-style-type: none"> <li>▪ 2 SATA III (6Gbps)</li> <li>▪ 2 SATA II (3Gbps)</li> </ul>
mSATA	1 SATA II (Mini PCIe Type, 3Gbps)
Storage Device	<ul style="list-style-type: none"> <li>▪ 1 CFast Socket, Push-in/ Push-out Ejector</li> <li>▪ 4 Front-access 2.5" SSD/ HDD Tray (15mm in height)</li> </ul>
Audio	
Audio Codec	Realtek ALC892, 5.1 Channel HD Audio
Audio Interface	1 Mic-in, 1 Line-out
Ethernet	
LAN 1	Intel® 82579LM Gigabit LAN supports iAMT 8.0
LAN 2	Intel® I210 Gigabit LAN
PoE (M12)	
LAN 3	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210, M12 Connector

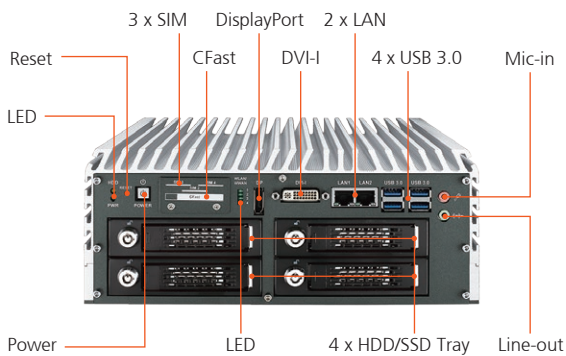
LAN 4	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210, M12 Connector
LAN 5	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210, M12 Connector
LAN 6	Gigabit IEEE 802.3at (25.5W/48V) PoE+ by Intel® I210, M12 Connector
Power	
Power Input	6V to 78V, DC-in
Power Interface	<ul style="list-style-type: none"> <li>▪ 3-pin Terminal Block : V+, V-, IGN</li> <li>▪ DC-in M12 Connector (Optional)</li> </ul>
Ignition Control	16 Mode
Remote Switch	2-pin Terminal Block
Surge Protection	Up to 200V/1ms Transient Power
UPS	Supported (Optional)
Others	
TPM	Optional Infineon SLB9635 supports TPM 1.0, LPC Interface
Watchdog Timer	Reset : 1 to 255 sec./min. per step
Smart Management	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.
GPS	Onboard GPS Module (Optional)
Software Support	
OS	Windows 8, Windows 7, Windows XP, Linux
Mechanical	
Dimensions (W x L x H)	260mm x 215mm x 99mm (10.2" x 8.5" x 3.9")
Weight	5.5 kg (12.13 lb)
Mounting	Wallmount by mounting bracket
Environment	
Operating Temperature	-25°C to 70°C (-13°F to 158°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @ 70°C
Shock	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>
EMC	CE, FCC, EN 50155, EN 50121-3-2

## Dimensions

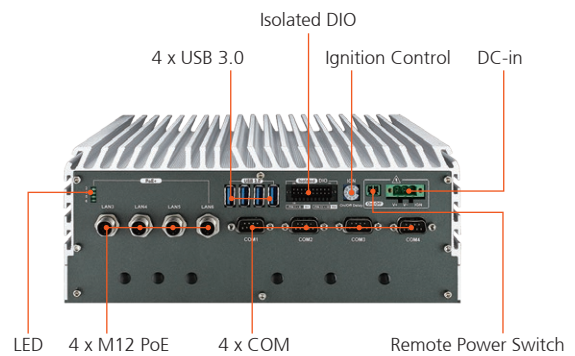
Unit : mm/ inch



## Front I/O



## Rear I/O



## Order Information

<b>IVH-7700-QRDM-ICY</b>	IVH-7700 Intel® Quad Core™ In-Vehicle Fanless Embedded System, 6 GbE LAN with M12 PoE+, 4 Front-access 15mm SSD Tray, 4 COM, 11 USB, 4 SIM, Isolated DIO, 16 GPIO
<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 1333/ 1600 MHz RAM
<b>Certified DDR3 8GB RAM</b>	Certified DDR3 8GB 1333/ 1600 MHz RAM
<b>PWA-120W</b>	120W, 24V, 90VAC to 264VAC Power Adapter with 3-pin Terminal Block
<b>PWA-160W-WT</b>	160W, 24V, 85VAC to 264VAC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>TMBK-20P-100</b>	Terminal Block 20-pin to SCSI, 100cm
<b>TMBK-20P-500</b>	Terminal Block 20-pin to SCSI, 500cm
<b>TMB-SCSI-20P</b>	Terminal Board with One 20-pin SCSI Connector and DIN-Rail Mounting
<b>VESA Mount</b>	VESA Mounting Kit
<b>DIN-RAIL</b>	DIN Rail Kit
<b>3G Module</b>	Mini PCIe 3G/GPS Module with Antenna
<b>4G Module</b>	Mini PCIe 4G/GPS Module with Antenna
<b>WiFi &amp; Bluetooth Module</b>	Intel® Mini PCIe WiFi & Bluetooth Module with Antenna

1

High Performance  
Embedded System

2

Expandable  
Embedded System

3

Ultra Compact  
Embedded System

4

Multi-Touch  
Computer/ Display

5

Frame  
Grabber