



In-Vehicle Computer

ACO-6000-KBL-1

In-Vehicle Computer with 6th/7th Gen Intel® Core™ Processor, 1x Expansion Slot



Features

- LGA 1151 socket for 6th/7th Gen. Intel® Core™ i7/i5/i3, Pentium®, or Celeron® Desktop Processor
- Intel® Q170 Chipset
- 2x 260-pin DDR4 SO-DIMM, up to 32GB
- Triple independent display
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 4x 2.5" SATA HDD bay and 2x mSATA supporting
- 4x Full-size mini PCIe
- 3x SIM socket
- 1x PCIe x16 (ACO-6011E) or 1x PCI (ACO-6011P) expansion slot
- 4x RS-232/422/485, 6x USB 3.0, 16-bit Isolated digital I/O
- 9 to 48 VDC wide range power input
- -25 °C to 70 °C extended operating temperature
- Over voltage/current, reverse polarity protection
- E-Mark and EN-50121-3-2 certified

Specifications

System

Processor	Support 6th & 7th Gen Intel® Core™ i7 / i5 / i3 / Pentium® / Celeron® Desktop Processor (LGA 1151)
	<ul style="list-style-type: none"> • 7th Gen Intel® Core™ i7-7700T, Quad Core, 8MB cache, up to 3.8 GHz • 7th Gen Intel® Core™ i5-7500T, Quad Core, 6MB cache, up to 3.3 GHz • 7th Gen Intel® Core™ i3-7101TE, Dual Core, 3MB Cache, 3.4 GHz • 6th Gen Intel® Core™ i7-6700TE, Quad Core, 8MB Cache, up to 3.4 GHz • 6th Gen Intel® Core™ i5-6500TE, Quad Core, 6MB Cache, up to 3.3 GHz • 6th Gen Intel® Core™ i3-6100TE, Dual Core, 4MB Cache, 2.7 GHz • Intel® Pentium® G4400TE, Dual Core, 3MB Cache, 2.4 GHz • Intel® Celeron® G3900TE, Dual Core, 2MB Cache, 2.3 GHz
System Chipset	Intel® Q170 Express Chipset
LAN Chipset	<ul style="list-style-type: none"> • GbE1: Intel® I210-AT (Support Wake-on-LAN and PXE) • GbE2: Intel® I219LM (Support Wake-on-LAN and PXE) • GbE3~GbE10: Intel® I210-AT
Audio Codec	Realtek ALC888S
System Memory	2x 260-Pin DDR4 1866/2133MHz SODIMM. Max. up to 32GB
BIOS	AMI 128Mbit SPI BIOS
Watchdog	Software Programmable Supports 1~255 sec. System Reset

Display

Display Port	2x DP
DVI	1x DVI-I
Multiple Display	Triple Display

Storage

mSATA	2x mSATA (shared by 2x Mini PCIe)
SIM Socket	2x External SIM socket 1x Internal SIM Socket
SSD/HDD	2x Internal 2.5" SATA HDD Bay 2x Hotswap 2.5" SATA HDD Bay Support RAID 0, 1, 5, 10

Expansion

Mini PCIe	4x Full-size Mini PCIe
PCI	1x PCI (1I-Model)
PCIe	1x PCIe x16 (1E-Model)

Expansion Modules

- 4-port GbE module with Intel® I350-AM4 Chipset, RJ-45 or M12 connector (PoE optional)
- 2-Port RJ45 10GbE with Intel X710-AT2 Chipset
- 4-Port USB with Renesas uPD720201K8 host controller

Card Dimension	235 (L) x 112 (H) mm
----------------	----------------------

I/O

Audio	1x Mic-in, 1x Line-out
COM	4x RS-232/422/485
DIO	8 in / 8 out (Isolated)
LAN	2x GbE RJ45 (Base Model) 4x GbE RJ45 (Module) 4x GbE M12 (Module) 8x GbE RJ45 (Module) 8x GbE M12 (Module)

PoE	4x IEEE 802.3at (25.5W) GbE RJ45 (Module) 4x IEEE 802.3at (25.5W) GbE M12 (Module) 8x IEEE 802.3at (25.5W) GbE RJ45 (Module) 8x IEEE 802.3at (25.5W) GbE M12 (Module)
Universal I/O Bracket	3x Universal I/O Bracket (Base Model)
USB	6x USB 3.0
Others	6x WiFi Antenna Holes 1x Power Switch (front), 1x AT/ATX Switch (front) PC/Vehicle Mode, Vehicle Voltage, Delay Off Time (front) 1x Remote Power On/Off (rear)

Operating System

Windows	6th Gen CPU: Windows 10, Windows 7, WES7 7th Gen CPU: Windows 10
Linux	Linux kernel 4.X

Power

Power Adapter	Optional External Power Adapter 220W
Power Mode	Vehicle/PC mode select
Power Ignition Sensing	Delay On/Off Battery Voltage Monitoring (12V/24V)
Power Supply Voltage	9 ~ 48 VDC
Power Connector	3-pin Terminal Block
Power Protection	Over-Voltage Protection (OVP) Over-Current Protection (OCP) Reverse Polarity Protection (RPP)

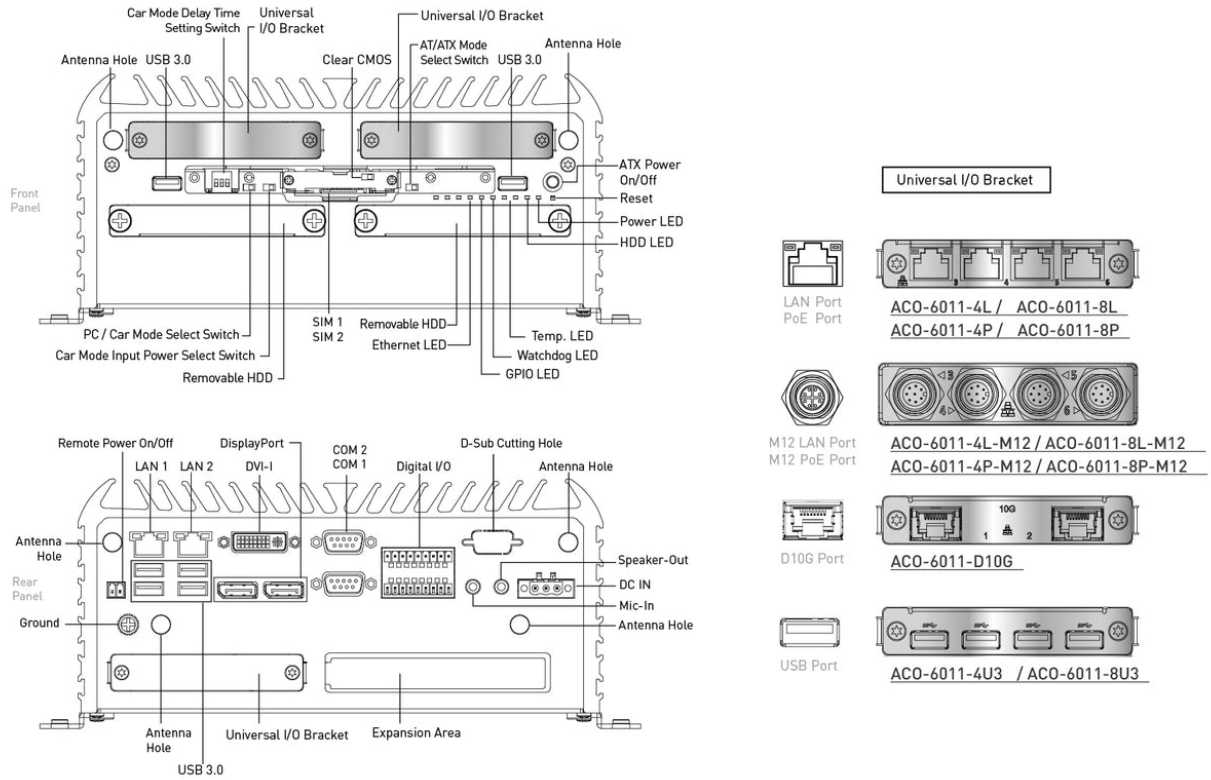
Environment

Operating Temperature	-13°F ~ 158°F (-25°C ~ 70°C)
Storage Temperature	-22°F ~ 185°F (-30°C ~ 85°C)
Relative Humidity	10% to 95% (non-condensing)
Certification	CE, FCC Class A, E-Mark, EMC Conformity with EN50155 & EN50121-3-2
Vibration	5 Grms, 5 ~ 500 Hz, 0.5 hr/axis (SSD) 1 Grms, 5 ~ 500 Hz, 0.5 hr/axis (HDD)
Shock	50G, half-sine, 11 ms (SSD)

Physical

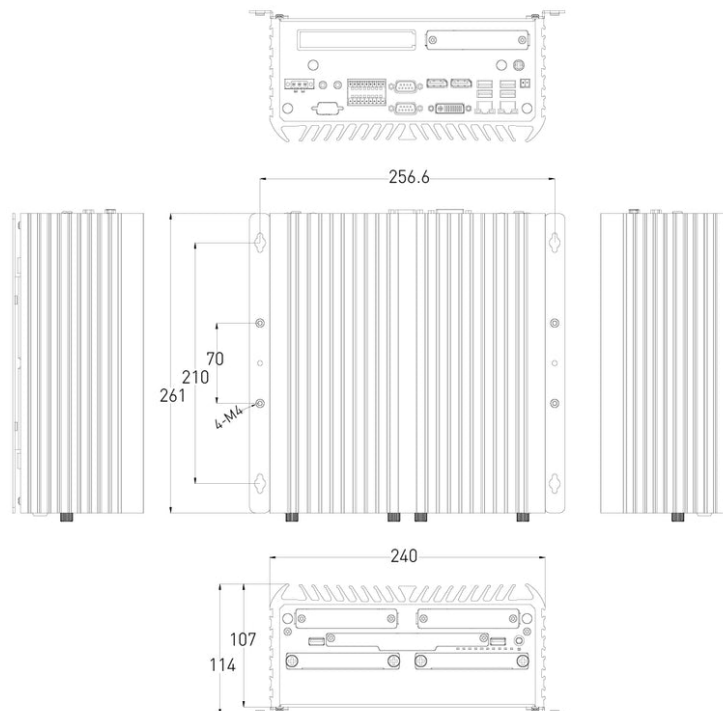
Dimensions	9.5" x 10.3" x 4.2" (240 x 261 x 107 mm)
Weights	5.14 ~ 6.18 kg
Construction	Extruded aluminum with heavy duty metal
Mounting Options	Wall Mount

External I/O Mechanical Layout



Dimension

Unit: mm



Available Models

Model No.	Description
ACO-6000-KBL-1E-P	In-Vehicle Computer with 7th Gen Intel® Core™ Processor, 1x PCIe x16 Expansion
ACO-6000-KBL-1I-P	In-Vehicle Computer with 7th Gen Intel® Core™ Processor, 1x PCI Expansion

Optional Accessories

Model No.	Description
1-E09A22801	Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch
1-E09A22102	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch
999930	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

Packing List

- 1x ACO-6000-KBL-1
- 1x Utility DVD Driver
- 1x Wall Mount Kit
- 1x Accessory Kit

Exports And Tariff Codes

ECCN	5A992.c
HTS	8471.50.0150
Schedule B	84.71