

BRAV-7220, ECM-I910, PADR-M101

JHCTECH

Live

JHCTECH Computers Empower Superior Performance for AGV & Machine Vision Applications

Speakers:



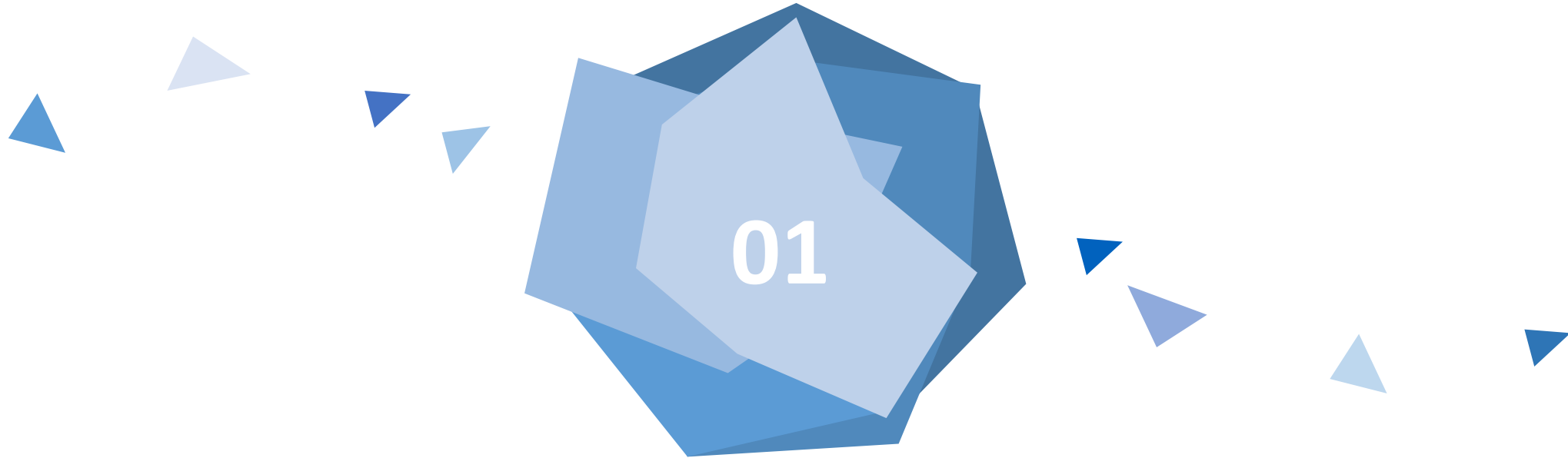
Alex
FAE/PSM
JHCTECH Taipei Office



Gary
Customer Solution Manager
JHCTECH Shenzhen Office

JHCTECH Computers Empower Superior Performance for AGV & Machine Vision Applications

Time	Agenda
16:00 ~ 16:05	Opening Alex, FAE/PSM, Taipei Office
16:05 ~ 16:30	AIoT and Edge Computing System with High-Efficiency Performance: BRAV-7220 Alex, FAE/PSM, Taipei Office
16:30 ~ 16:55	Intel® Whiskey lake U CPU / Single Board Computer: ECM-I910 Intel® Whiskey lake U CPU / Embedded Box Computer: PADR-M101 Gary Shu, Customer Solution Manager, Shenzhen Office
16:55 ~ 17:10	Q&A



Introduction of JHCTECH Power Products BRAV-7220 & ECM-I910 & PADR-M101

**PART
01**

Introduction of JHCTECH Powerful Product BRAV-7220

Alex, FAE/PSM, Taipei Office



**AIoT and Edge Computing System with High-efficiency
Performance**

BRAV-7220



- 01 BRAV Roadmap**
- 02 BRAV-7220 Product Features**
- 03 BRAV-7220 Order Info**
- 04 BRAV-7220 Target Market**
- 05 BRAV-7220 Schedule**

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01 BRAV ROADMAP

BRAV-7201



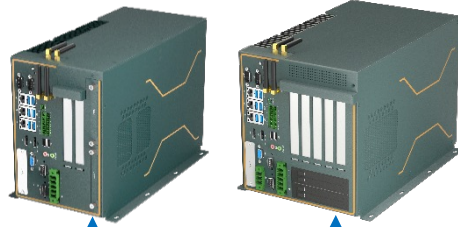
BRAV-7302



BRAV-7501



BRAV-7520/7521



<New product>

BRAV-7220



Intel® Skylake-U/
Kabylake-U

Intel® Skylake-S/
Kabylake-S

Intel® Coffee Lake

Intel® Comet lake

Intel® Tiger lake



BRAV-7520-WP
Universal Wide Voltage



BRAV-7601

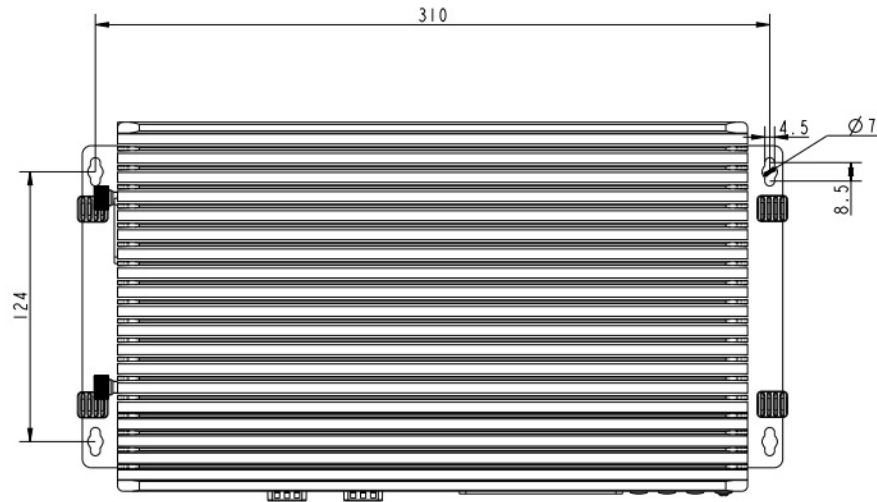
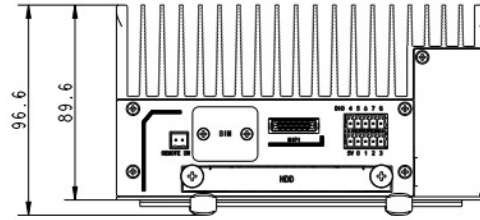
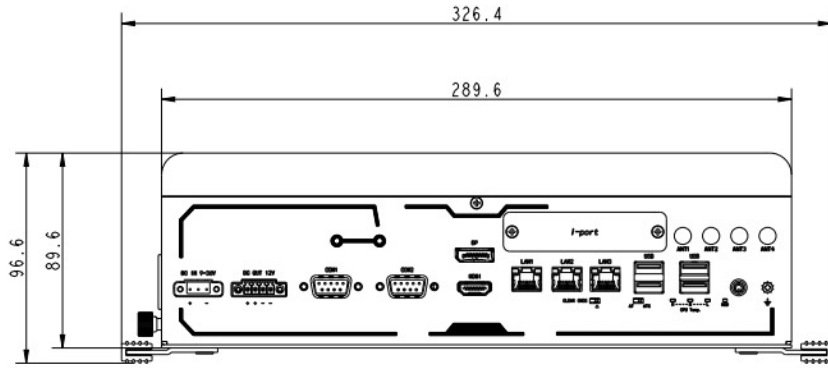
02 BRAV-7220

Key Features



CPU	Tiger lake-U Core I3/I5/I7 /Pentium/Celeron
RAM	Dual Channel DDR4 SODIMM
LAN	3*2.5G LAN
Display	1*DP , 1*HDMI
USB	2*USB3.2 , 3*USB2.0
Serial Port	2*RS232/422/485
Expansion	1*M.2 3042 B-Key with SIM slot 1*M.2 3052 B-Key with SIM slot 1*M.2 2280 M-Key PCIe x2 Gen4.0 signal 1*M.2 2280 M-Key PCIe x2 Gen3.0 signal
Storage	1*2.5" HDD/SSD SATA3 , 1*mSATA , 2*M.2 Type 2280 M-Key
Power Supply	DC 9-36V Universal Wide Voltage Input DC 12V/3A Radar Power Supply

Dimensions View

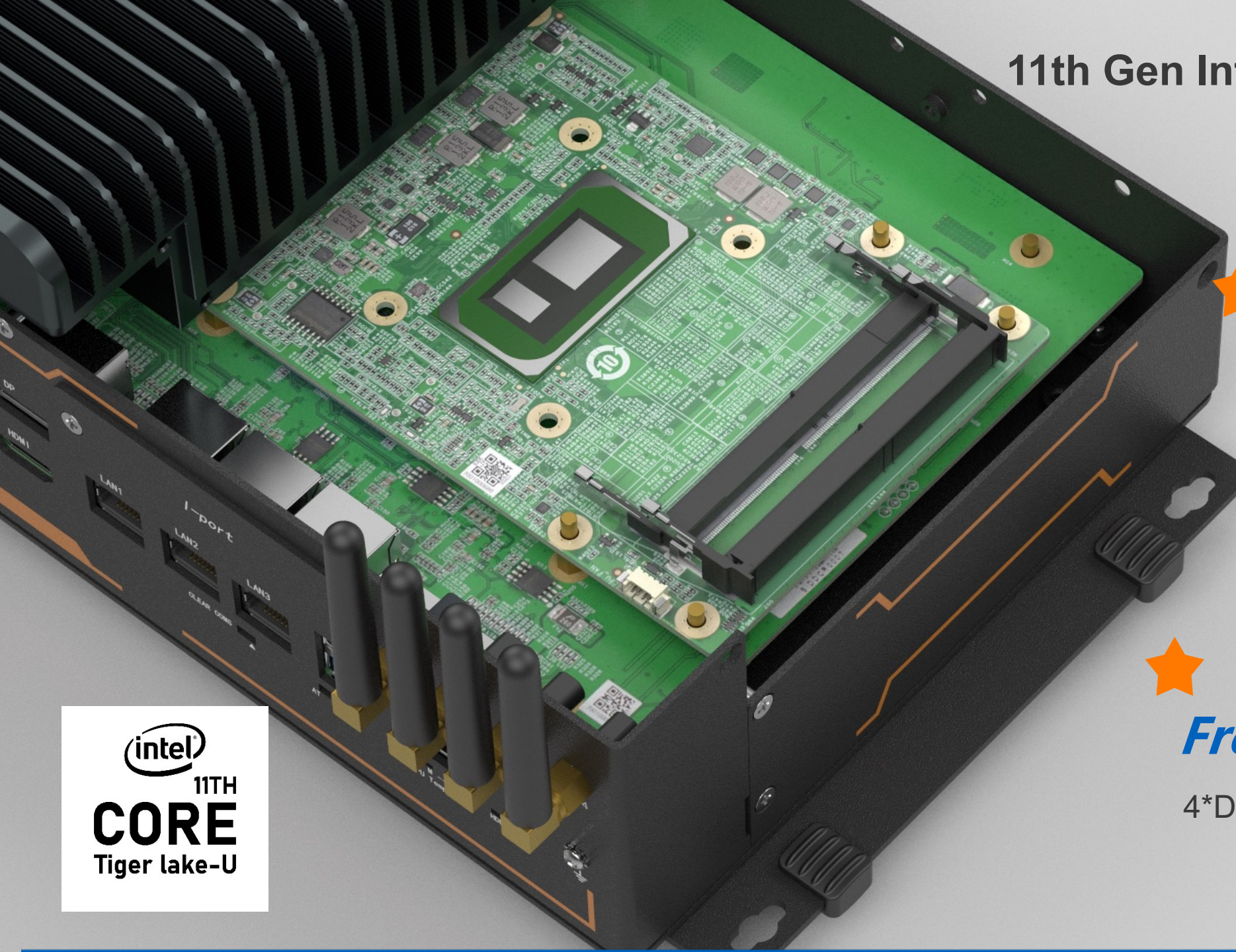


Main Box : 289.6*169.6*89.6mm

Bracket included : 326.4*169.6*96.6mm

Product Highlight

<p>1</p> <p><i>Enhanced CPU Performance</i></p>	<p>2</p> <p><i>High-Performance Graphics</i></p>	<p>3</p> <p><i>High AI Computing Speed</i></p>	<p>4</p> <p><i>Intel TCC and TSN</i></p>	<p>5</p> <p><i>Support high-frequency memory</i></p>
<p>6</p> <p><i>High bandwidth PCIe Expansion</i></p>	<p>7</p> <p><i>PCIe×2 Gen4.0 high-speed Storage</i></p>	<p>8</p> <p><i>According to the Intel IEN Type-F standard</i></p>	<p>9</p> <p><i>Flexible installation</i></p>	<p>10</p> <p><i>Vibration Reduction Design</i></p>
<p>11</p> <p><i>vPro Remote management</i></p>	<p>12</p> <p><i>MIPI CSI Lens adaptor</i></p>	<p>13</p> <p><i>Efficient Heat Dissipation</i></p>	<p>14</p> <p><i>DC-OUT Power Supply</i></p>	



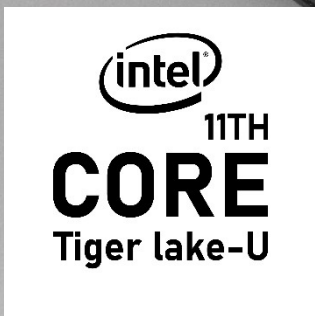
11th Gen Intel® Core™ processor

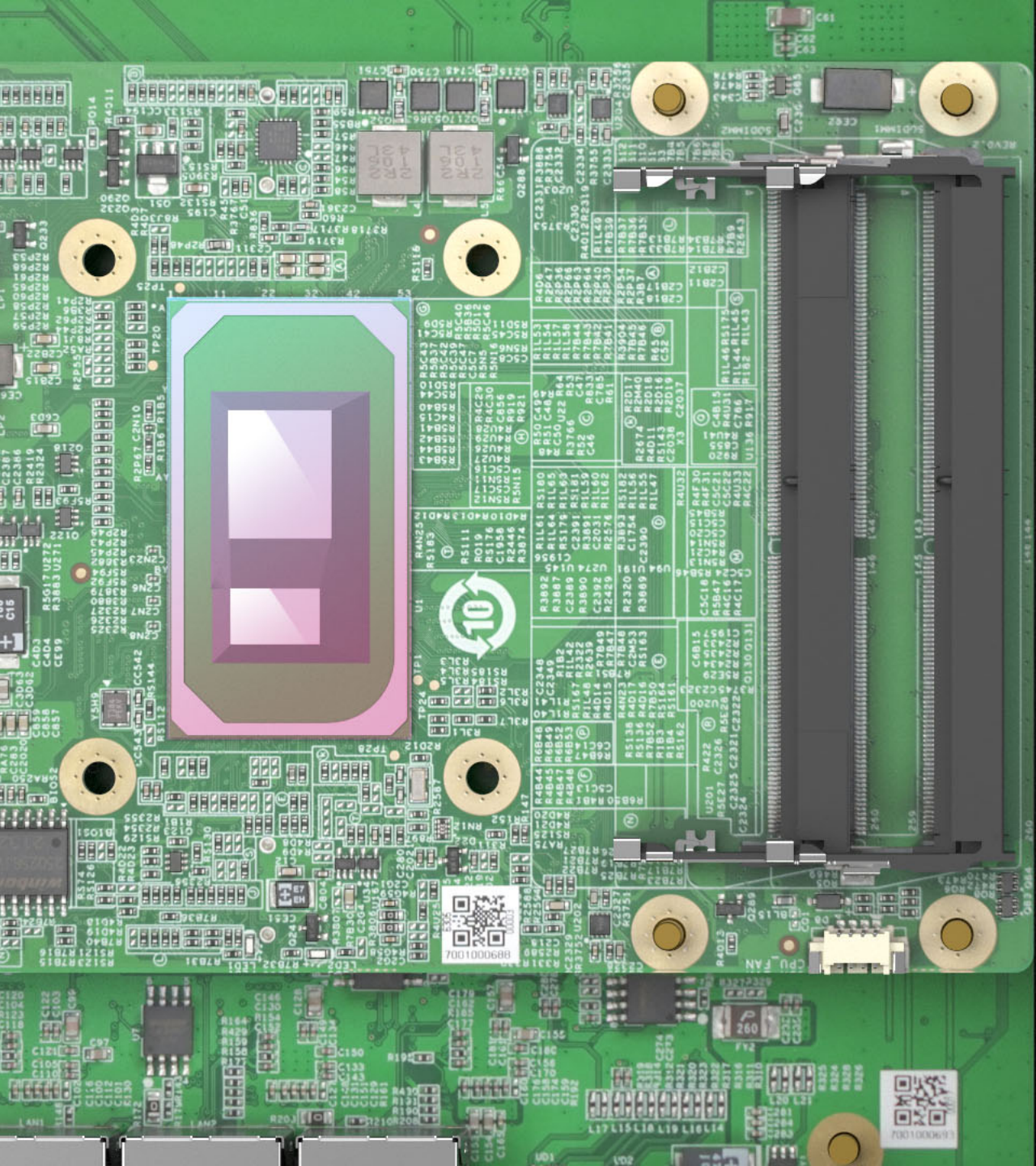
Tiger lake-U ULT SoC
Ultra-Low Power Consumption
Fan-less design

★ *CPU Performance
Overall Enhanced*

★ *Support High
Frequency RAM*

4*Dual channel DDR4 3200MHz





Dual Discrete Graphics, 1*DP(8K)+1*HDMI(4K)

Accelerating Neural Networks with Low-power Consumption Intel® Iris® X^e Graphics(INTEL DX1 GPU)

- Support Intel Deep Learning Boost Computing Power Reaches to **8TOPS**
- Support Intel GNA / Intel® Gaussian / Neural Accelerator with AI Noise Cancellation

Tiger Lake-U

Core13/Pentium/Celeron
INTEL UHD Graphics

- Core I5/I7
- Intel® Iris® X^e Graphics
- Computing power reaches to 3-4TOPS
- Comparable performance to NV1030/1050

Dual M.2 2280 M-Key Expansion Slot

PCIex2 Signal Support AI Accelerator with 8.25W Power

PCIe 4.0 X2

INTEL Gen3.0 Movidius VPU **8TOPS**
Cambricon MLU220-M.2 Accelerator

INTEL Gen3.0 Movidius VPU **8TOPS**
Cambricon MLU220-M.2 Accelerator

PCIe 3.0 X2

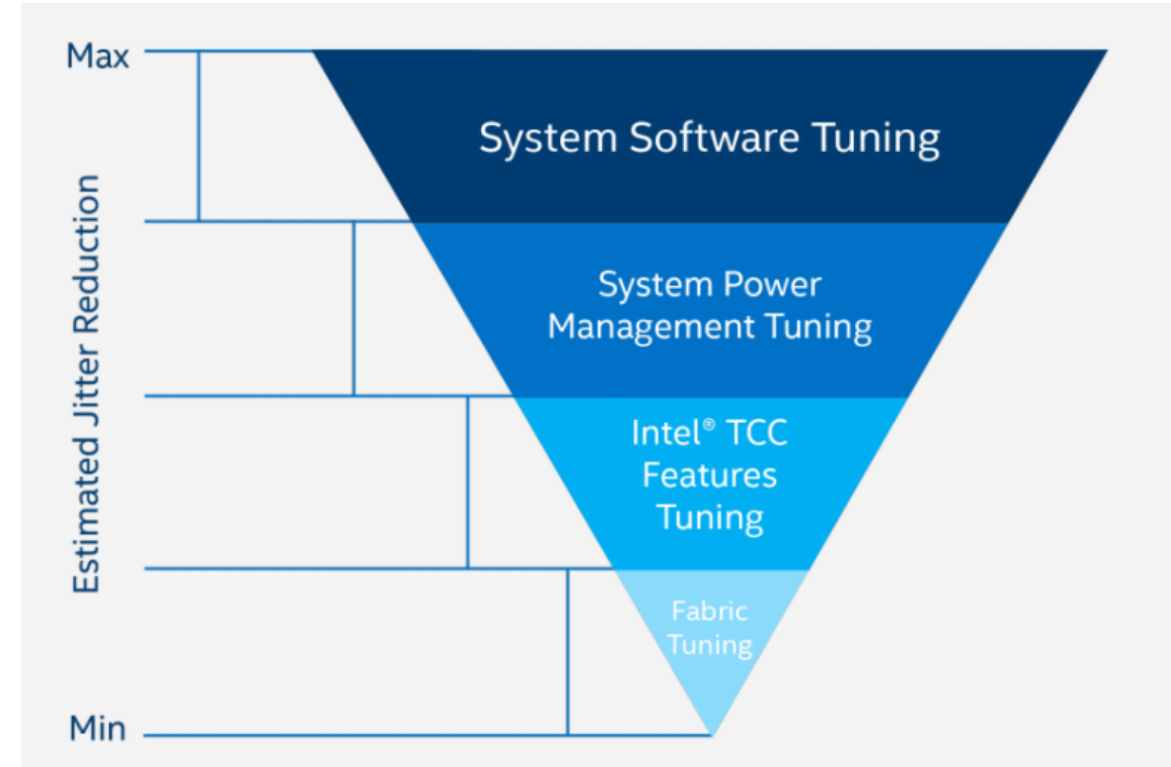
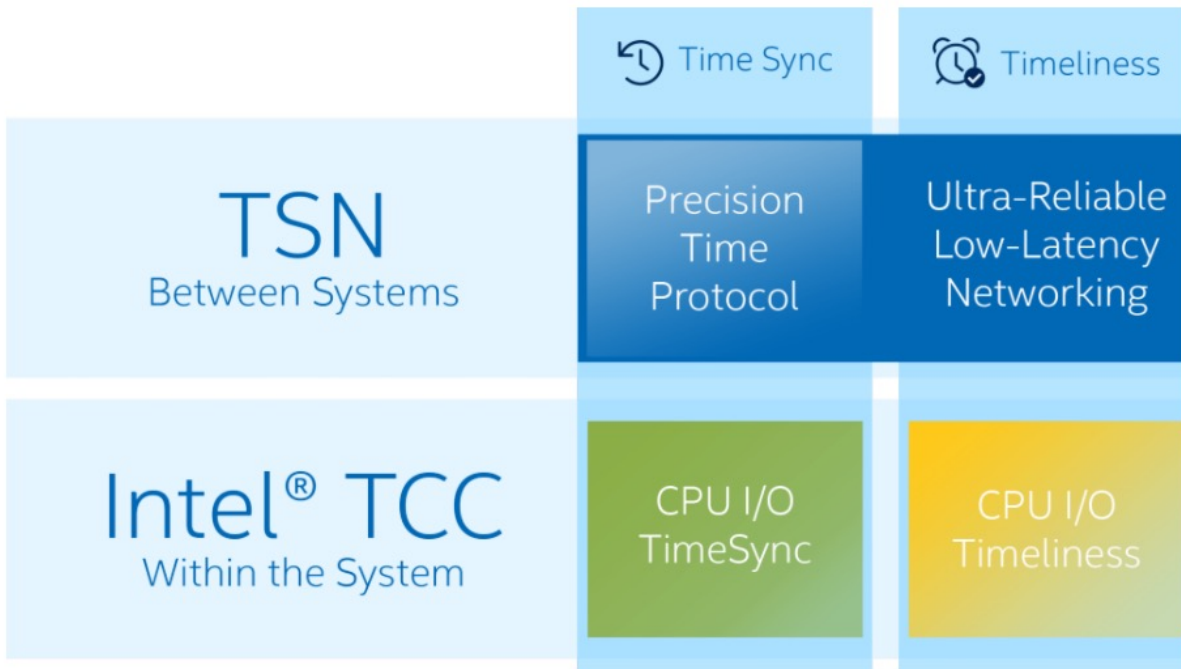
Cambricon
寒武纪科技

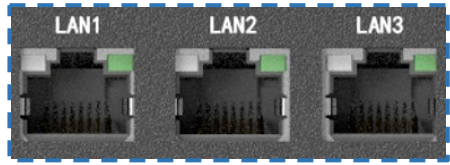


Higher AI Computing Speed

★ Intel Time Coordinated Computing (INTEL TCC)

- Time Coordinated Computing
- Timing jitter within 10μs
- Achieved at Intel ECI Platform

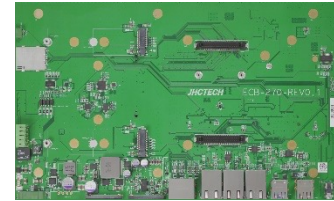




3*2.5G-Lan
3*I225V chip

M.2 3052 support 5G, 4G LTE

M.2



ECB-270 Board



4G LTE

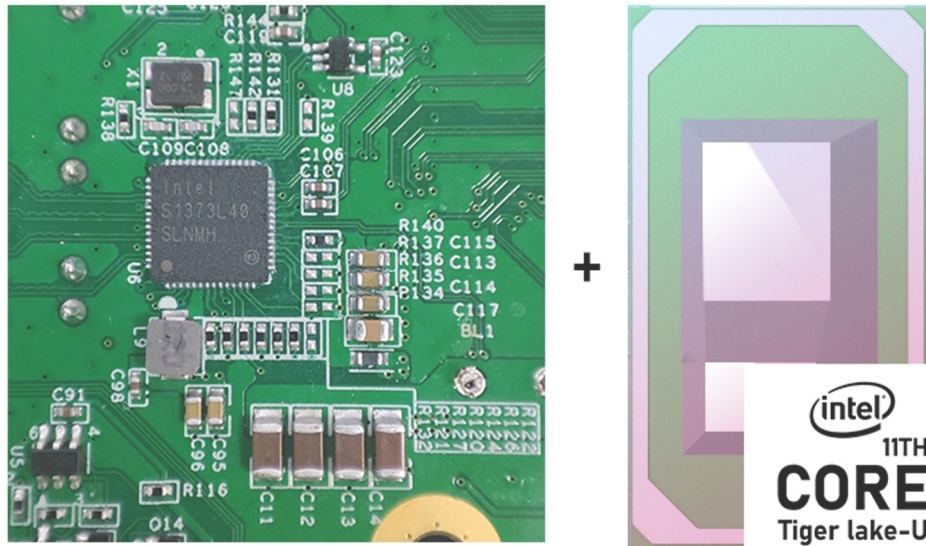
PCIe 4.0

Connect to CPU , support 36GT/s NVME

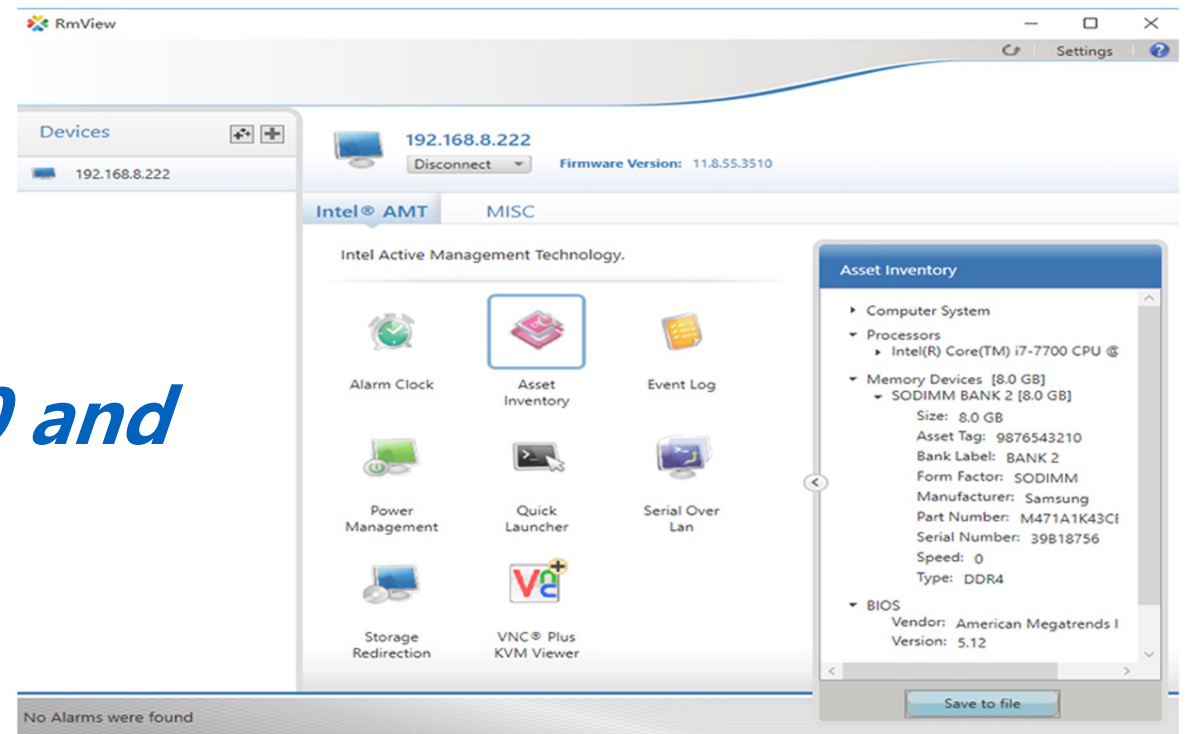
★ **Higher Network Bandwidth**

★ **PCIe High-Speed Storage**

1225V Chip + Core I5 / I7 Embedded CPU



JHCTECH Remote Management View Software



★ **Intel Active Management 13.0 and vPro Remote Management**



300M Camera



300M Camera



★ ***MIPI Camera Serial Interface***

Support MIPI to GMSL2 Conversion

Fanless 48W internal power supply

Operating Temperature of Single CPU up to 70°C



High Efficient Heat Dissipation Design

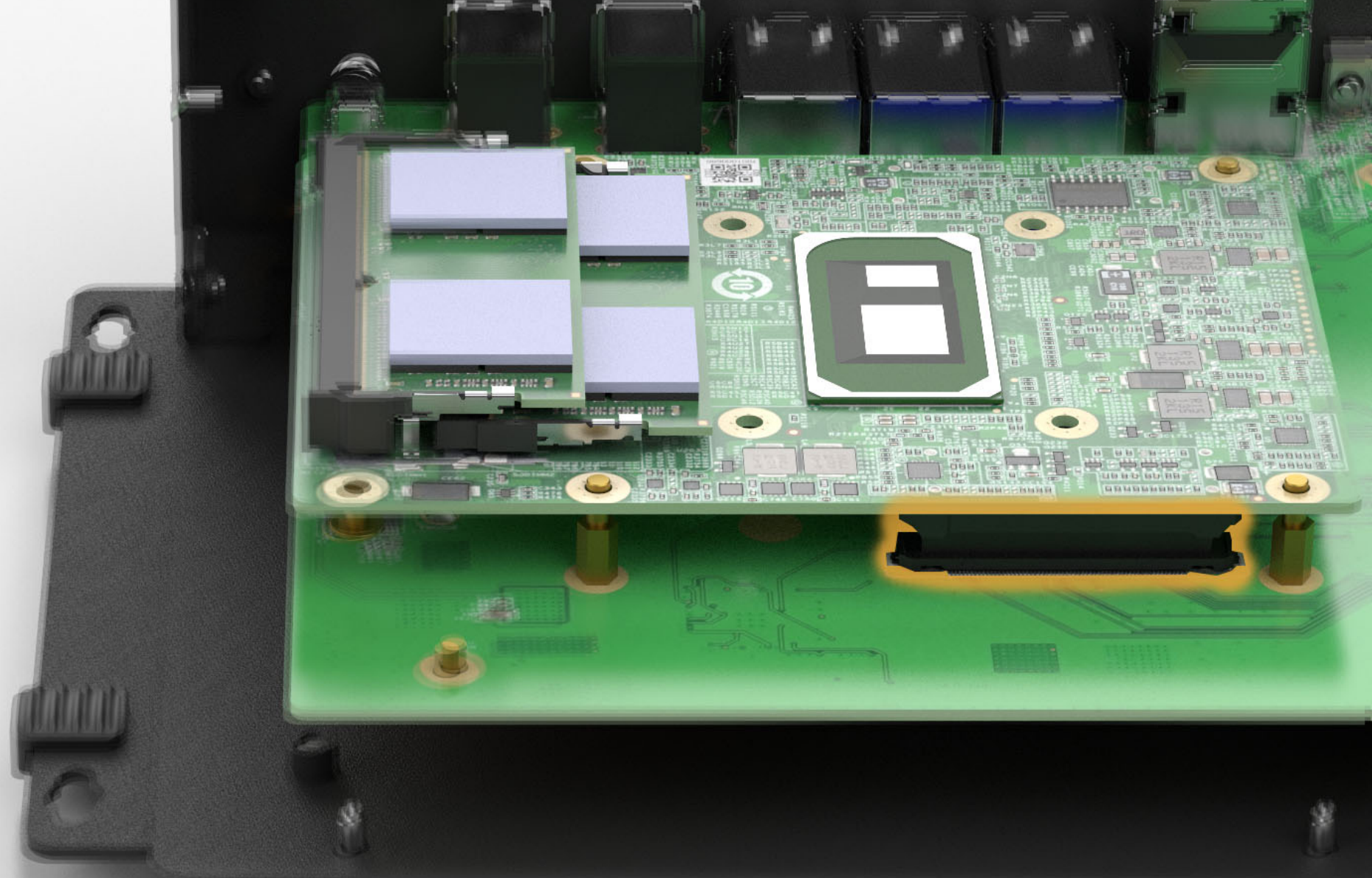
Operating Temp	70°C	65°C	60°C
CPU	✓	✓	✓
VPU		✓	✓
VPU			✓

Dual Channel DDR4 SODIMM

Operating temperature efficiently enhanced 3-5 °C

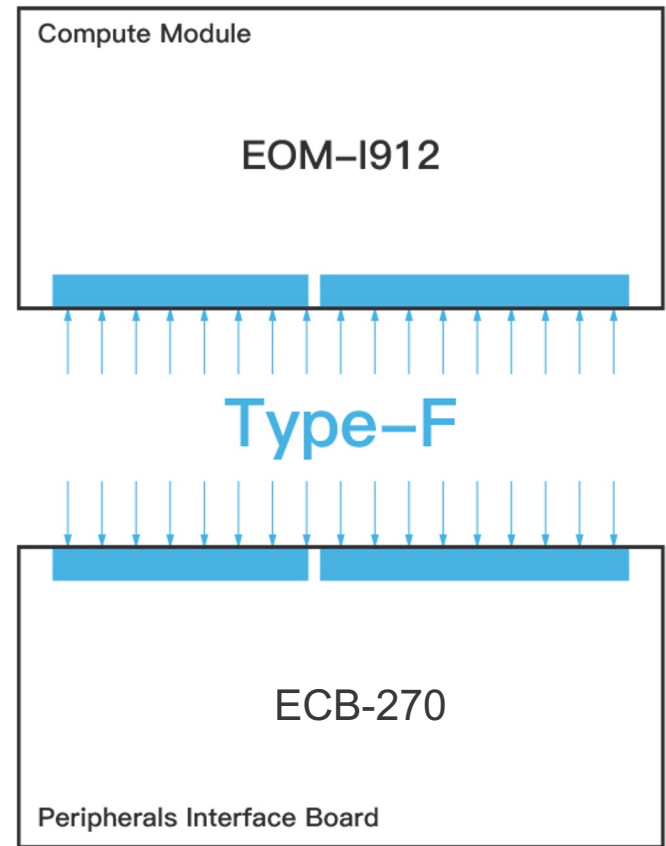
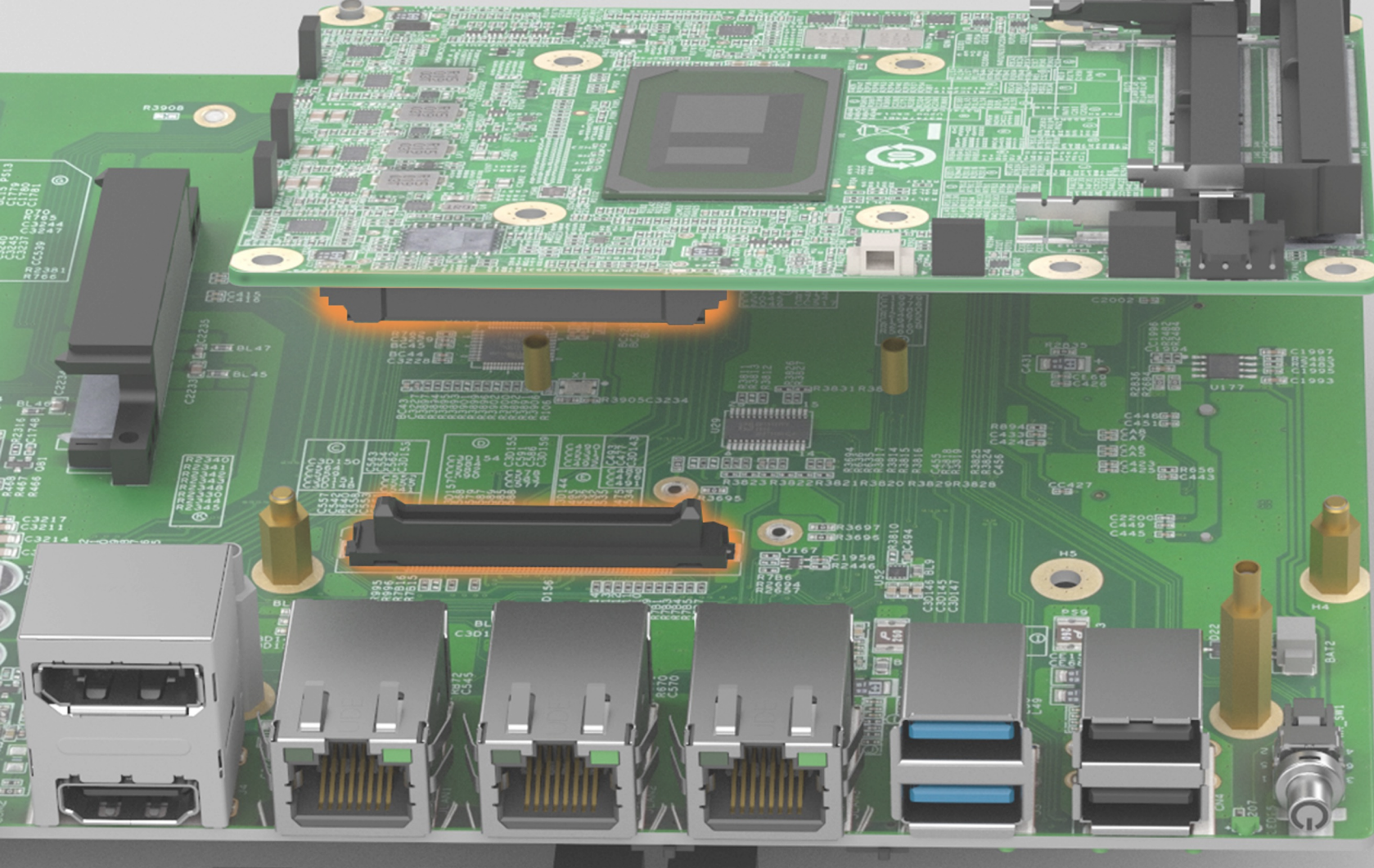


★ **DC 12V/3A**
External Power Supply Interface



Good Resistance of Vibration

PCB to PCB Stack up without a Cable
With Anti-vibration Mounting



★ **INTEL IEN Type F Design**



Flexible Installation

Horizontal Type, Din Rail Installation



03 BRAV-7220 Order Info

Model No.	Introduction
BRAV-7220-S001	Intel® Core I3-1115G4 , 2*DDR4 SODIMM, 3*2.5G LAN, 2*USB3.2, 3*USB2.0, 2*COM, 1*8bit Isolated DIO,1*DP, 1*HDMI, 1*MIPI CSI, 2*M.2 B-key (Dual SIM slot) , 2*M.2 M-Key, 1*mSATA, 1*2.5" SATA bay, DC-IN 9-36V, DC-OUT 12V
BRAV-7220-S002	Intel® Core I5-1135G7 , 2*DDR4 SODIMM, 3*2.5G LAN, 2*USB3.2, 3*USB2.0, 2*COM, 1*8bit Isolated DIO,1*DP, 1*HDMI, 1*MIPI CSI, 2*M.2 B-key (Dual SIM Slot) , 2*M.2 M-Key, 1*mSATA, 1*2.5" SATA bay, DC-IN 9-36V, DC-OUT 12V
BRAV-7220-S003	Intel® Core I7-1165G7 , 2*DDR4 SODIMM, 3*2.5G LAN, 2*USB3.2, 3*USB2.0, 2*COM, 1*8bit Isolated DIO,1*DP, 1*HDMI, 1*MIPI CSI, 2*M.2 B-key (Dual SIM slot) , 2*M.2 M-Key, 1*mSATA, 1*2.5" SATA bay, DC-IN 9-36V, DC-OUT 12V
BRAV-7220-S004	Intel® Celeron 6305E , 2*DDR4 SODIMM, 3*2.5G LAN, 2*USB3.2, 3*USB2.0, 2*COM, 1*8bit Isolated DIO,1*DP, 1*HDMI, 1*MIPI CSI, 2*M.2 B-key (Dual SIM Slot) , 2*M.2 M-Key, 1*mSATA, 1*2.5" SATA bay, DC-IN 9-36V, DC-OUT 12V
Gen3. Movidius™ VPU	Intel Movidius™ W047BN03, M.2 2280 M key, LPDDR4 4GB, 8TOPS(INT8)
MLU220-M.2	Cambricon AI Module, M.2 2280 M+B key(PCIeX2), LPDDR4 4GB, 8TOPS(INT8)
PA-120DC19	AC/DC Adapter, DC 19V/6.32A 120W
PA-60DC12	AC/DC Adapter, DC 12V/5A 60W

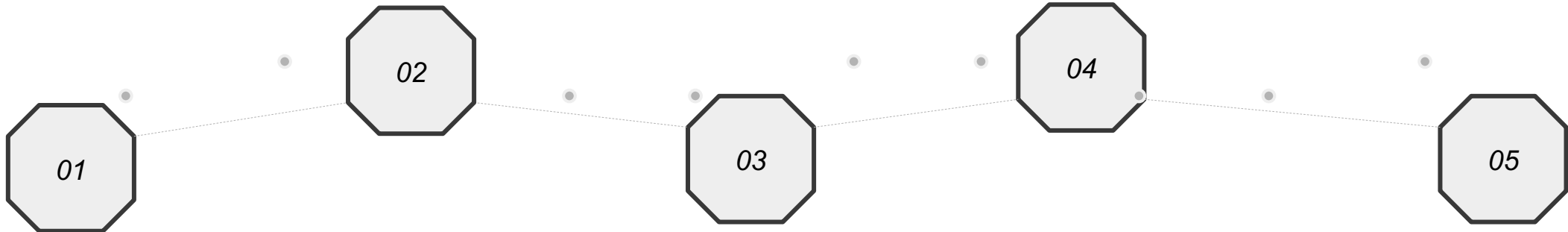
04 BRAV-7220 Target Market

- 3C industry Machine Vision
- AI Machine Vision
- Visual Logistics Sorting

- Single-channel, dual-channel, or even four channel AI Inspection Machine
- Portable face recognition analysis

Machine Vision

Smart Security



C-V2X Roadside MEC and In-vehicle MDC

Special Vehicle

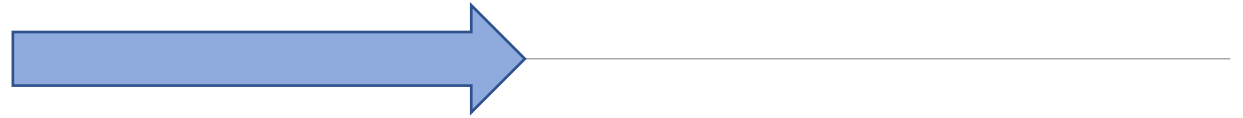
Medical Imaging

- Single Lidar+ Single Camera
- Dual Lidar + Dual Camera
- Dual Lidar+4 Camera
- 4 Lidar + Dual Camera

- Police video enforcement vehicle
- Emergency command vehicle
- Ambulance

- CT scan
- Functional magnetic resonance imaging (fMRI)
- X-Ray Machine
- AI Auxiliary diagnosis system

05 BRAV-7220 Schedule



EV Phase
End of May in 2022



PV Phase
Middle of August in 2022

**PART
02**

Introduction of Single Board Computer ECM-I910

Gary Shu, Customer Solution Manager, Shenzhen Office

Single Board Computer

ECM-I910



- 01 ECM-I910 Product Features**
- 02 ECM-I910 Order Info**
- 03 ECM-I910 Target Market**

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02 ECM-I910

Key Features

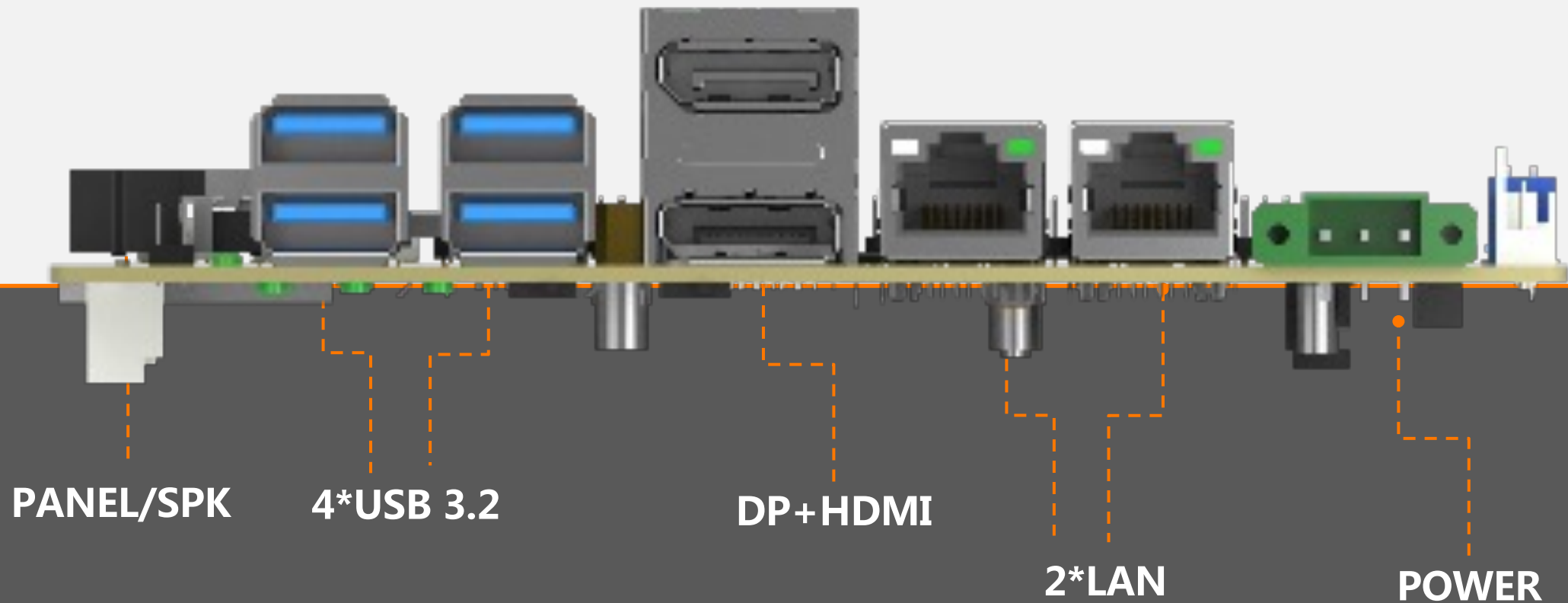


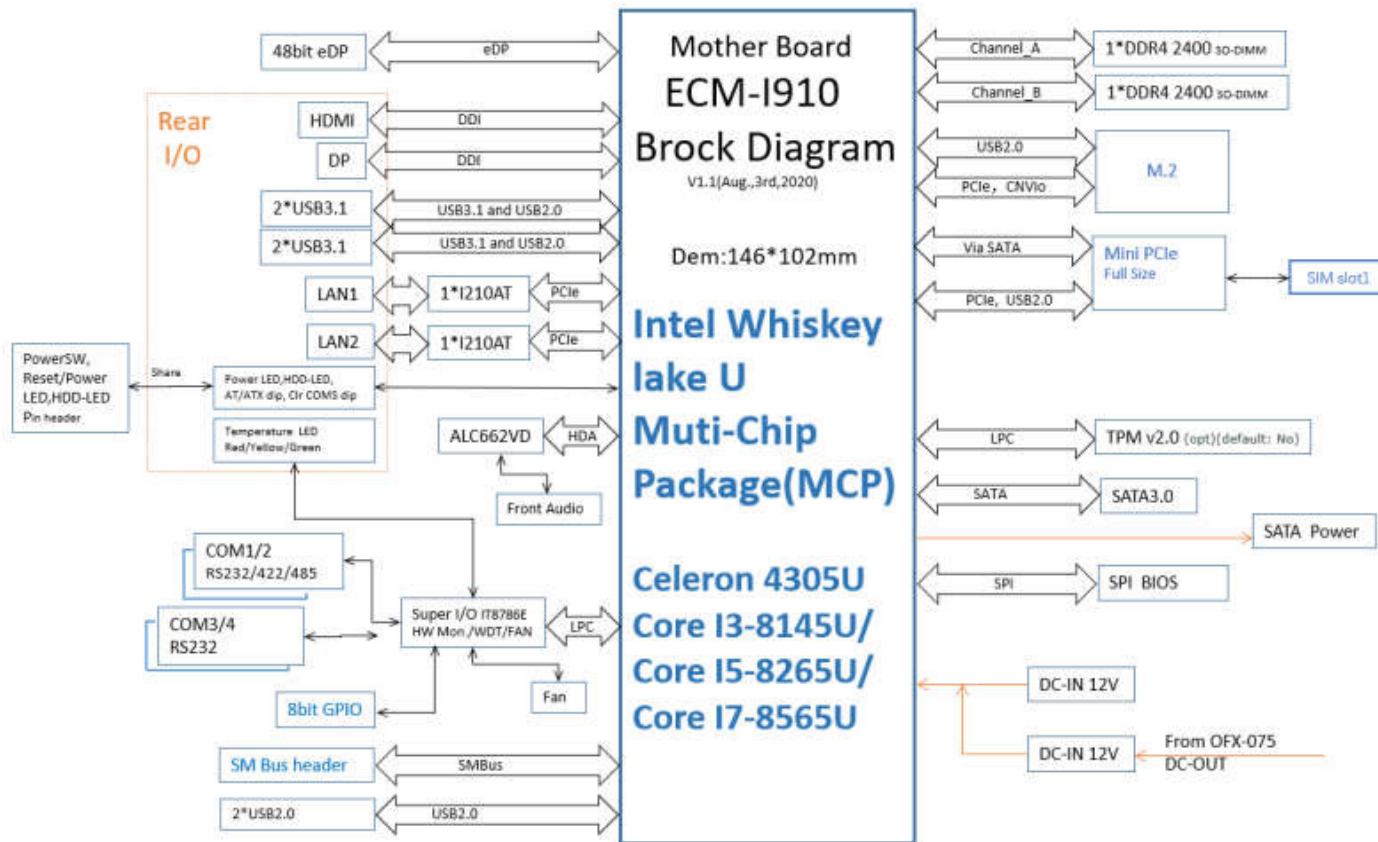
CPU	Intel® Whiskey lake U Celeron /Core I3/I5/I7 CPU
System Memory	2*260-pin DDR4 SODIMM , support 2133/2400MHz , up to 32GB
Expansion	1*Full size Mini PCIe(PCIe×1/mSATA+USB2.0 signal) with SIM slot 1* M.2 2230 E-key , support WiFi6/BT5.0
Graphics	Intel Gen. 9 UHD Graphics, support 3 independent 4K display, DirectX 12, HEVC/H265 HW HD codec, the highest dynamic frequency up to 1.2GHz; HDMI : up to 4096*2304@24Hz DP : up to 4096*2304@60Hz eDP : up to 1600*900 @60Hz
Audio	Realtek ALC662VD controller, Line out & Mic in, Support 5.1 channel(Opt.)
LAN	2*Intel® I210AT PCIe Gig. Ethernet , 10/100/1000 Mbps self-adaptive
Storage	1*SATA3.0 HDD/SSD , 1*mSATA(Opt.)
Front I/O	2*GbE LAN(RJ45) 4*USB3.0 gen1.0 TYPE A , support up to 10G bit/S transmission speed 1*HDMI 1.4 , 1*DP 1.2
Internal I/O	2*USB2.0 header , 2* RS232/422/485 header , 2*RS232 header , 1*8-bit GPIO header 1*eDP , 1*FAN 1*front audio (wafer) 1*SATA3.0
LED	1*Power LED; 1*HDD LED; 3*CPU Temp.LED(Red is warning, Yellow is high, Green is normal)
Switch	1*Power SW , 1*AT/ATX SW , 1*Clear CMOS SW , 1*RST SW
Power Supply	DC 12V (It can be connected to OFX-075 75W power board and supports 9-36V wide voltage input) TDP : 19.92W (CPU I5-8265U , 8GB DDR , 1*500G SSD)
Watchdog Timer	Watchdog timeout programmable via software 1 to 255 second
OS Support	Windows 10*IoT enterprise , Android , SUSE , Ubuntu , Wind River , Red Hat*Enterprise , Wind River VxWorks*7 , Yocto

ECM-I910 Product Highlight

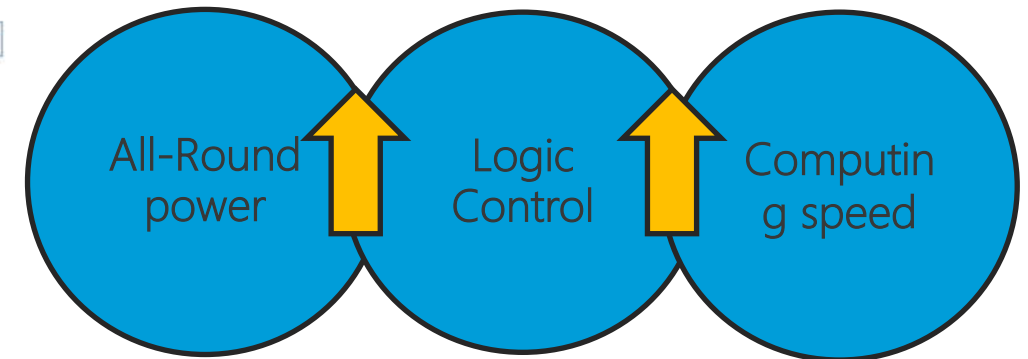
- 1 High-performance Processor
- 2 Rich display interface
- 3 Rich I/O and Expansion
- 4 Two kinds of Heat Dissipation
- 5 Wide Temperature and Wide Voltage Design

■ ECM-I910 I/O View



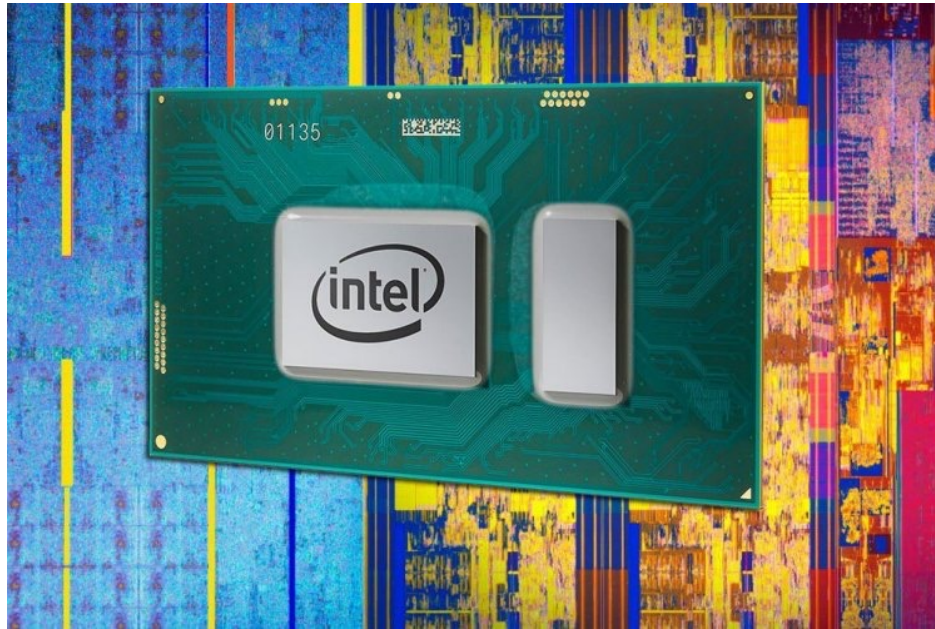


- Small Form Factor (Dimensions: 146mmx 102mm)
- Intel 8th Whiskey lake U Core TM i3/i5/i7/Celeron
- Dual-Channel DDR4 SODIMM, support 2400MHz, up to 32GB



★ High-Performance Processor

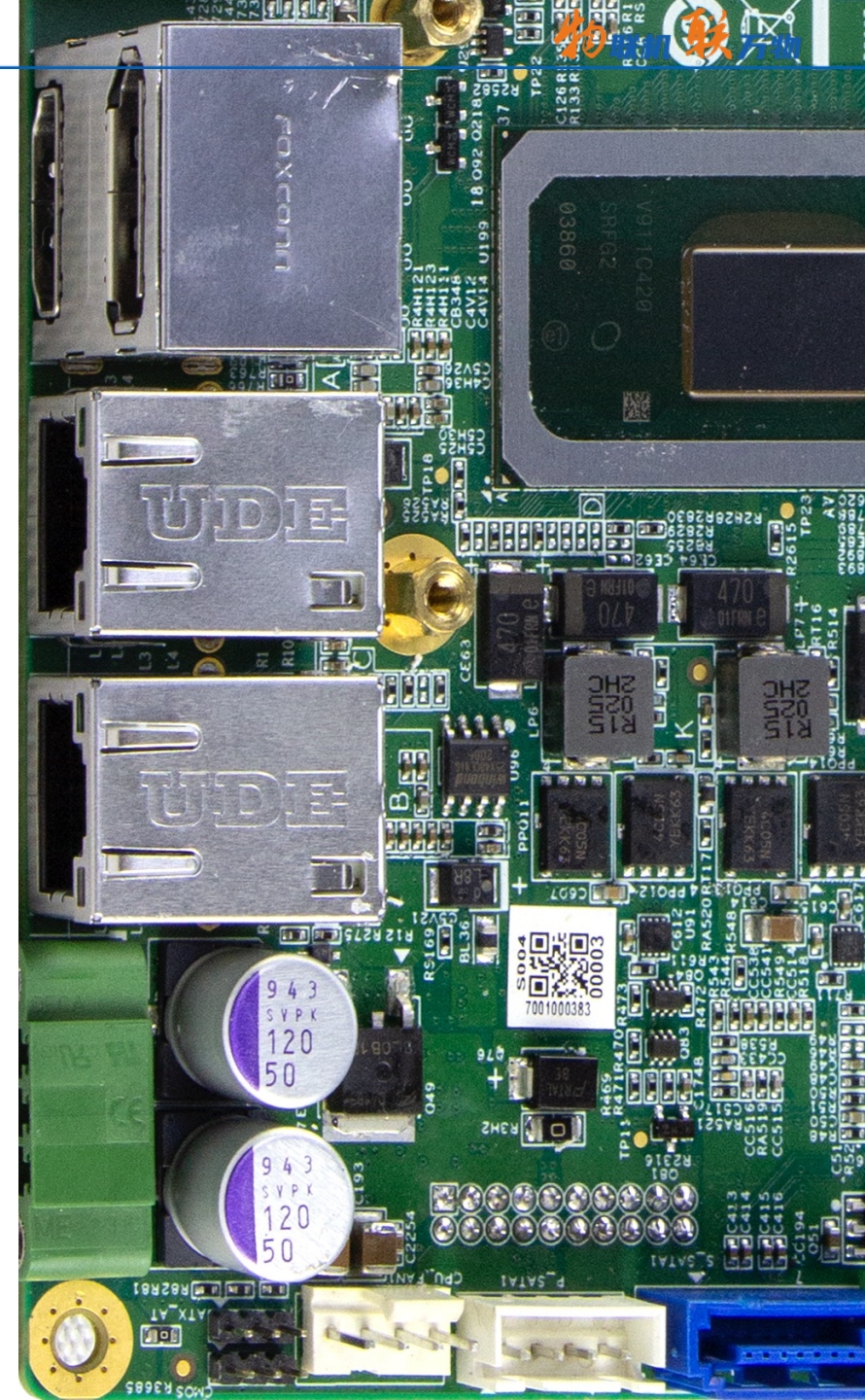
8th Gen Intel® Core™ U-series Processor (Whiskey Lake)



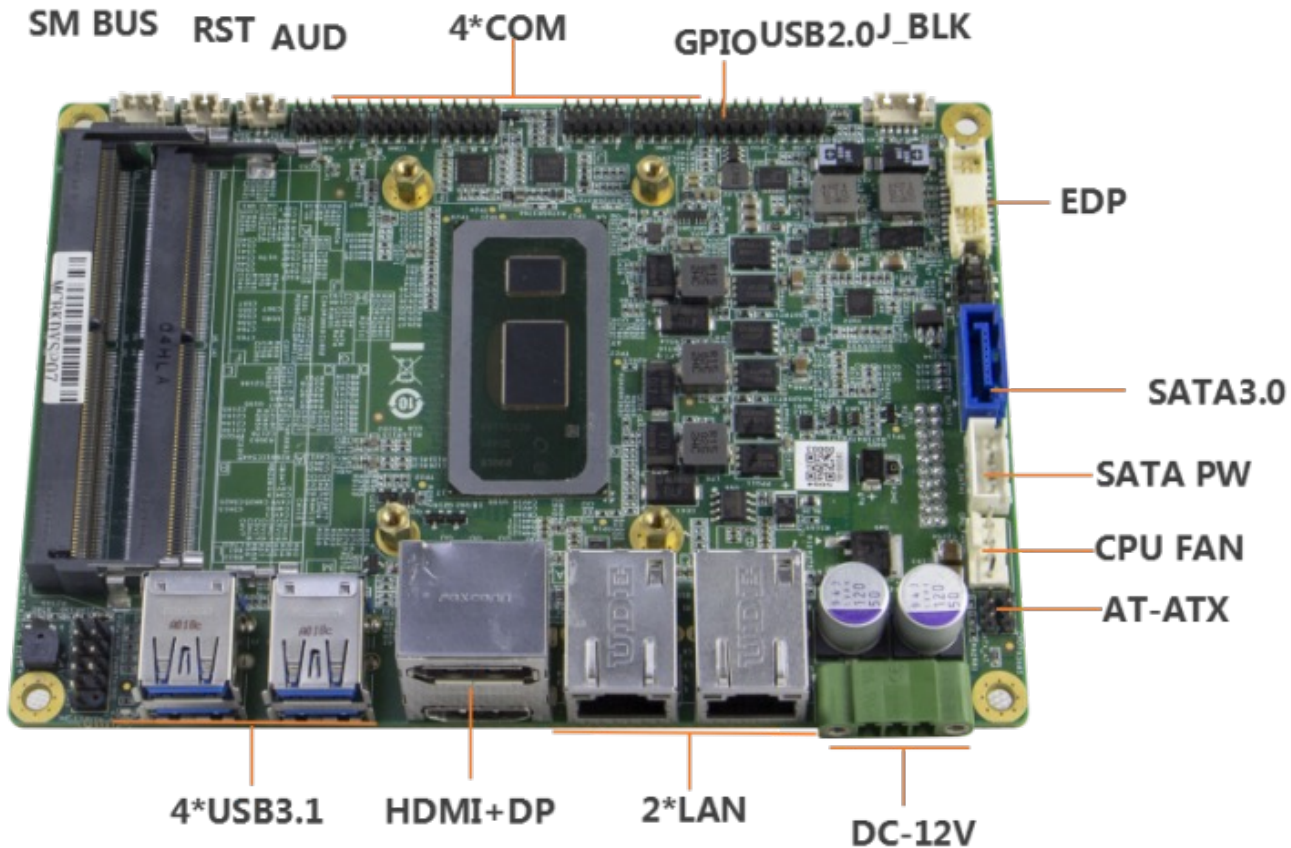
★ ***Rich Display Port***

Intel Gen. 9 UHD Graphics supports three independent 4K displays, asynchronous or synchronous displays.

- HDMI: up to 4096*2304@24Hz
- DP: up to 4096*2304@60Hz
- eDP: up to 1600*900 @60Hz



★ Rich I/O and Expansion



- Support USB 3.1 Gen2.0 at 10 Gbps
- 2 LAN, 4 COM, 2 USB2.0, 1 GPIO, 4 USB 3.1
- 1*M.2 2230 E-Key, support WiFi6(1000M bandwidth), support WiFi/BT5.0
- 1*full size Mini PCIe, default PCIe signal, mSATA signal selection can be realized through BIOS, with SIM card slot, support 4G LTE

★ *Two kinds of Heat Dissipation*

With its compact size and complete functions, suitable for various compact embedded system application requirements



Radiator with Fan

Total height does not exceed 37mm.



Fanless Radiator

Total Height of Board after installing the heat sink does not exceed 52mm

★ *Wide Temperature & Wide Voltage Design*

- DC 12V, connected to OFX-075 75W power board
- Support 9-36V wide voltage input
- Operate in 0-60°C
- 38*53mm, Min 54W/ Max 78W Power Consumption



OFX-075

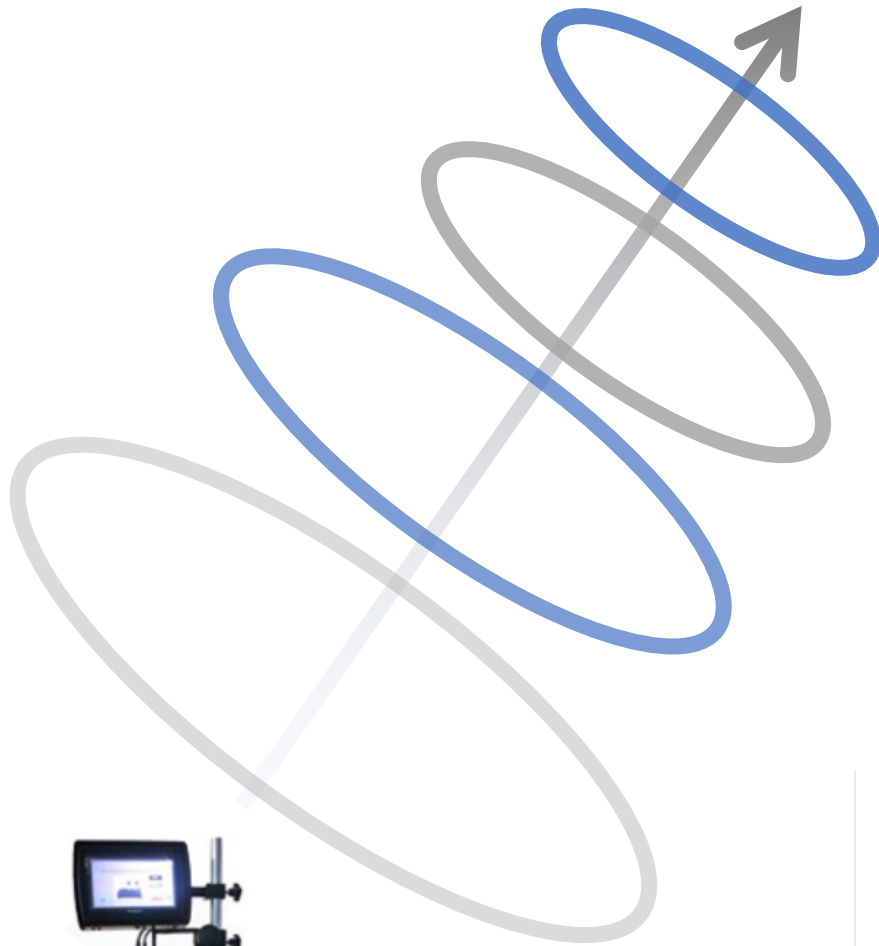
DC OUT 12V



03 ECM-I910 Order Info

Model No.	CPU	Introduction
ECM-I910/S001	Intel® Core I3-8145U	3.5" Embedded Single Board Computer , 2*SODIMM DDR4 , 2*LAN , 4*USB3.0 , 2*USB2.0 1*M.2 2230 E-Key , 1* Full size mini PCIe/mSATA , 4*COM, 1*8-bit GPIO, 1*DP , 1*HDMI , 1*eDP , 1*Mic & Line out , 1*SATA3.0 , DC 12V
ECM-I910/S002	Intel® Core I5-8265U	
ECM-I910/S003	Intel® Core I7-8565U	
ECM-I910/S004	Intel® Celeron 4305U	
OFX-075	75W power board , DC IN 9-36V , DC OUT 12V, 38*53mm, TDP mini 54W, max 78W	

04 ECM-I910 Target Market



Machine Vision



Industrial Automation



Edge AI Computing



Smart Security



Smart Transportation

**PART
03**

Introduction of Embedded Box Computer

PADR-M101

Gary Shu, Customer Solution Manager, Shenzhen Office



Embedded Box Computer

PADR-M101



- 01 PADR-M101 Product Features**
- 02 PADR-M101 Order Info**
- 03 PADR-M101 Target Market**

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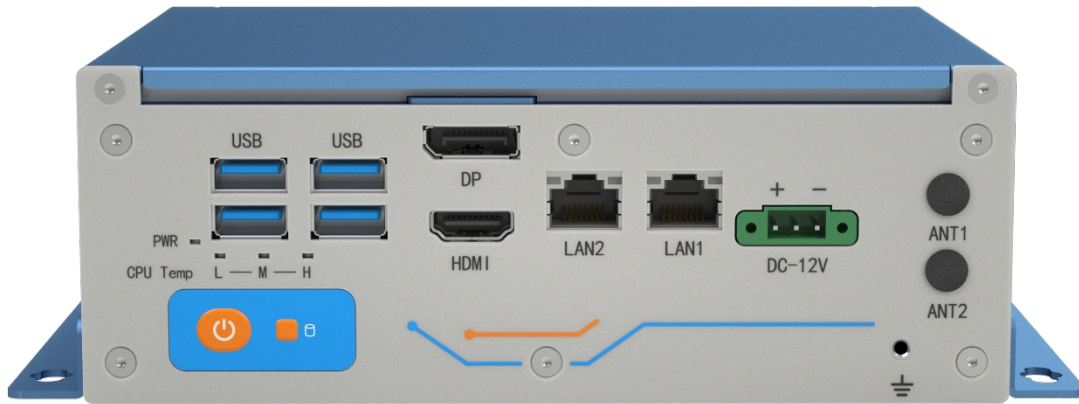
02 PADR-M101

Key Features



	Celeron 4305U	Core I3-8145U	Core I5-8265U	Core I7-8565U
CPU	Cores	2	2	4
	Threads	2	4	8
	Frequency(GHz)	2.2	2.1-3.9	1.6-3.9
System Memory	Dual channel DDR4 2400MHz SO-DIMM , up to 32GB			
Expansion	1* M.2 E-key 2230, expansion of Wifi/BT module			
	1* Full Mini PCIe with 1*SIM card slot, support 3G/4G/Wifi/ BT/ GPRS wireless functions, can be selected in BIOS for mSATA			
Display	Intel® gen.9 UHD Graphics, supports dual independent display			
	1*HDMI max. res. 4096* 2304@24hz 1*DP max. res. 4096* 2304@60hz			
Aduio	Realtek ALC662VD controller, 1*Line out&Mic high fidelity audio interface, support 5.1 channel(Opt.)			
LAN	2*Intel® I210AT PCIe Gig. Ethernet · 10/100/1000Mbps adaptive			
Storage	1*2.5"SATA port · can support 15mm SSD/HDD			
	2* RS232/422/485 (DB9), 1*RS232(DB9), 1*8-bit DIO (DB9) optional RS232			
I/O ports	4*USB3.0, 2*G-LAN (RJ45) ·			
	1*HDMI · 1*DP, 1*Line out &Mic(Phone jack) optional			
LED	1*Power LED, 1*HDD LED, 3*CPU temp. LED (Red is warning , Yellow is high, Green is normal)			
Control SW	1*Power button			
Structure	SGCC			
Color	Silk grey+Pastel Blue			
Mounting	Desktop Mounting			
Dimension	(W*D*H) : 200*140*67.5mm			
Net weight	1.51KG			
Operating Temperature	-0°C~50°C			
Storage Temperature	-40°C~+85°C			
Storage Humidity	10~90%@40°C, Non-condensing			
Vibration	5grms/5~500Hz/random/in working(SSD)			
	1grms/5~500Hz/random/in working(HDD)			
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)			
Certification/EMC	CE/FCC Class B			

PADR-M101 Product Highlight



1 High-Performance Processor

2 Small Size

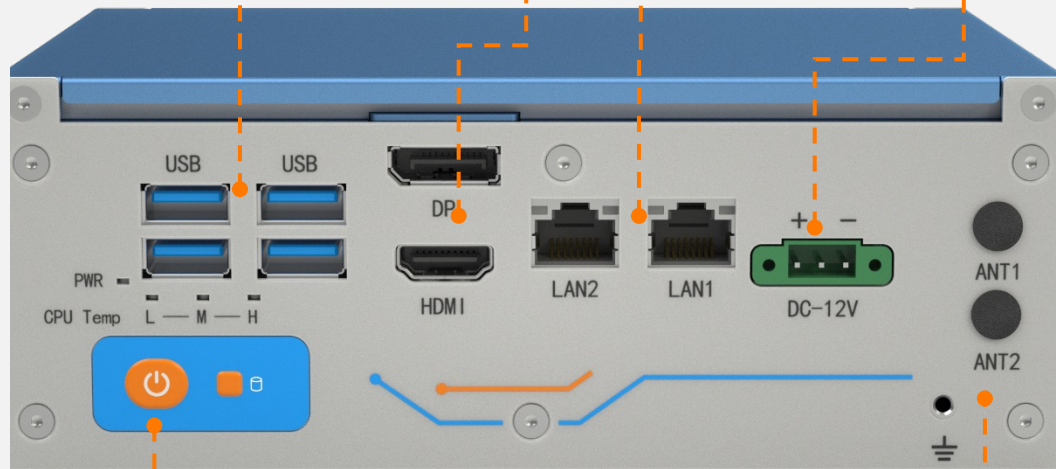
3 Intelligent Temperature-Controlled Cooling Fan

4 Simple Hard Disk configuration for Easy Installation and Maintenance

5 Rich I/O Ports

6 Wide Voltage Design

1*DP
4*USB3.0 1*HDMI 2*LAN DC 12V



Power

2*ANT



DIO/ COM1

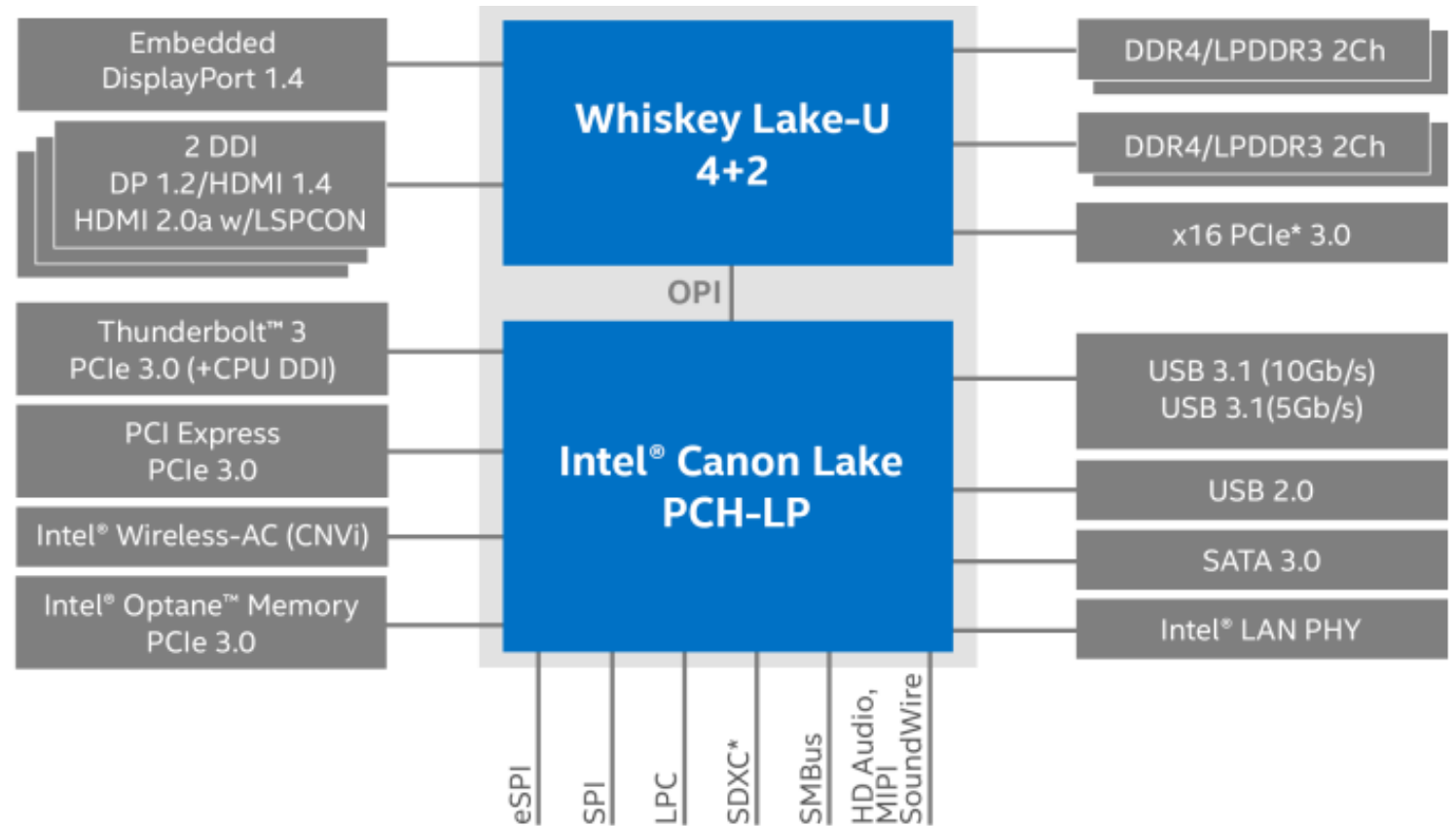
3* COM

1* LINE OUT
1* MIC

■ PADR-M101 I/O View

★ High-Performance Processor

- The 8th Generation Intel® Core™ U-Series processors for IoT applications are feature-rich delivering high performance per watt.
- Dual-channel DDR4 2400MHz SO-DIMM, up to 32GB



★ *Small Size*

- Only 200*140*62.1mm
- Easily integrated into KIOSKS self-service terminal machines, advertising machines, small AGVs, medical analysis equipment, and other applications.



★ *Silent Heat Dissipation Fan with Intelligent Temperature Control*

Equipped with a dual-ball 4-wire speed-adjusting fan, the speed can be intelligently adjusted according to the CPU temperature to achieve precise cooling of the CPU.



★ *Wide Voltage Design*

- Suitable for various application scenarios
- DC12V power supply, OFX-075 wide-voltage power supply is added.
- With the optional functions of DC12V input and DC9~36V wide-voltage input without changing the DCIN power supply interface and physical structure.



★ *Rich I/O Ports*



- 2* RS232/422/485 (DB9), 1*RS232(DB9), 1*8-bit DIO (DB9) optional RS232
- 4*USB3.0, 2*G-LAN (RJ45) ,
- 1*HDMI , 1*DP, 1*Line out &Mic(Phone jack) optional
- 1* M.2 E-key 2230, expansion of Wifi/BT module
- 1* Full Mini PCIe with 1*SIM card slot, support
- 3G/4G/Wifi/ BT/ GPRS wireless functions, can be selected in BIOS for mSATA

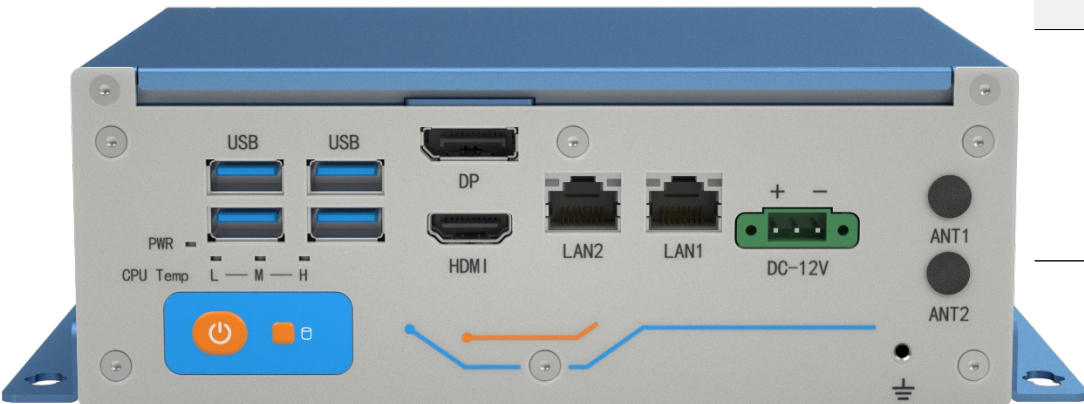
★ *Simple hard disk configuration for easy installation and maintenance*

- Equipped with 2.5-inch easy-swap hard disks
- Support the application of **15mm** thick hard disks
- Support maximum capacity up to 6T
- Disassembly and assembly are simple
- Convenient for customers to install and maintain

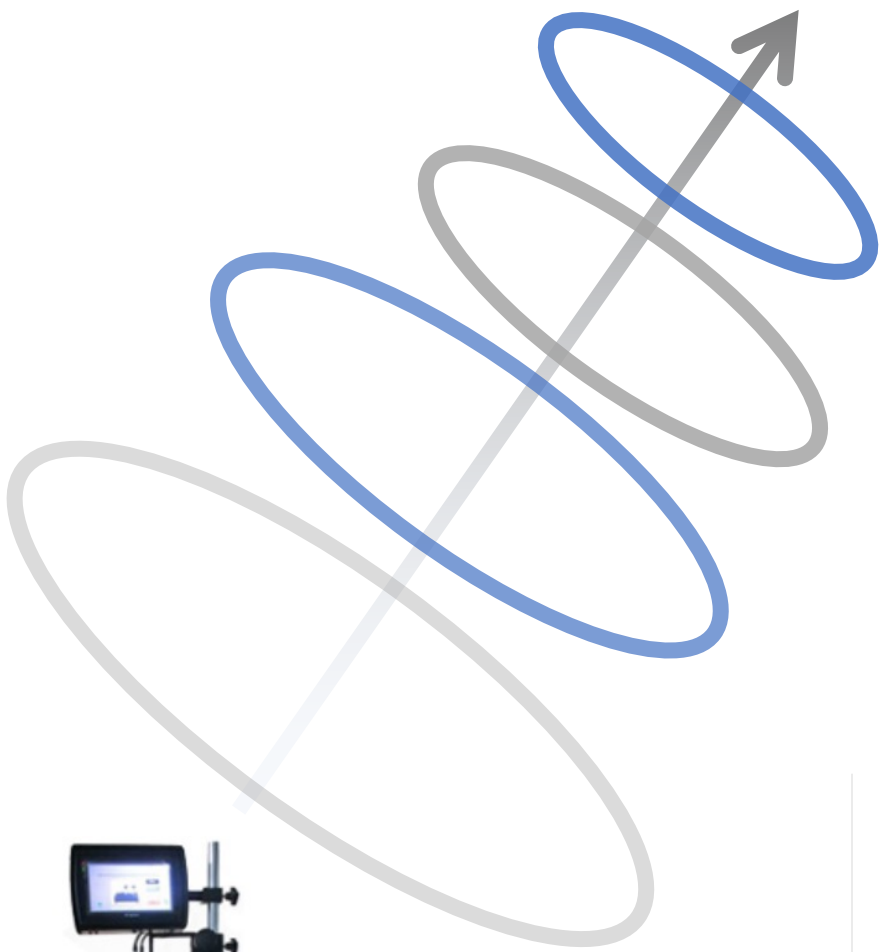


03 PADR-M101 Order Info

Model No.	CPU	Introduction
PADR-M101/S001	Intel® Core I3-8145U	Embedded box computer Dual-channel DDR4 2*SO-DIMM, 1*HDMI, 1*DP, 1*Line out&Mic(Optional), 2*LAN, 4*USB3.0, 3/4*COM, 8-bit DIO, 1*M.2, 1*Mini PCIe, 1*2.5" SATA, DC 12V
PADR-M101/S002	Intel® Core I5-8265U	
PADR-M101/S003	Intel® Core I7-8565U	
PADR-M101/S004	Intel® Celeron 4305U	
OFX-075	75W power board, DC IN 9-36V, DC OUT 12V, 38*53mm. Consumption: Min. 54W, Max. 78W	



06 PADR-M101 Target Market



Intelligent Manufacturing



Kiosk Service



Medical Analysis

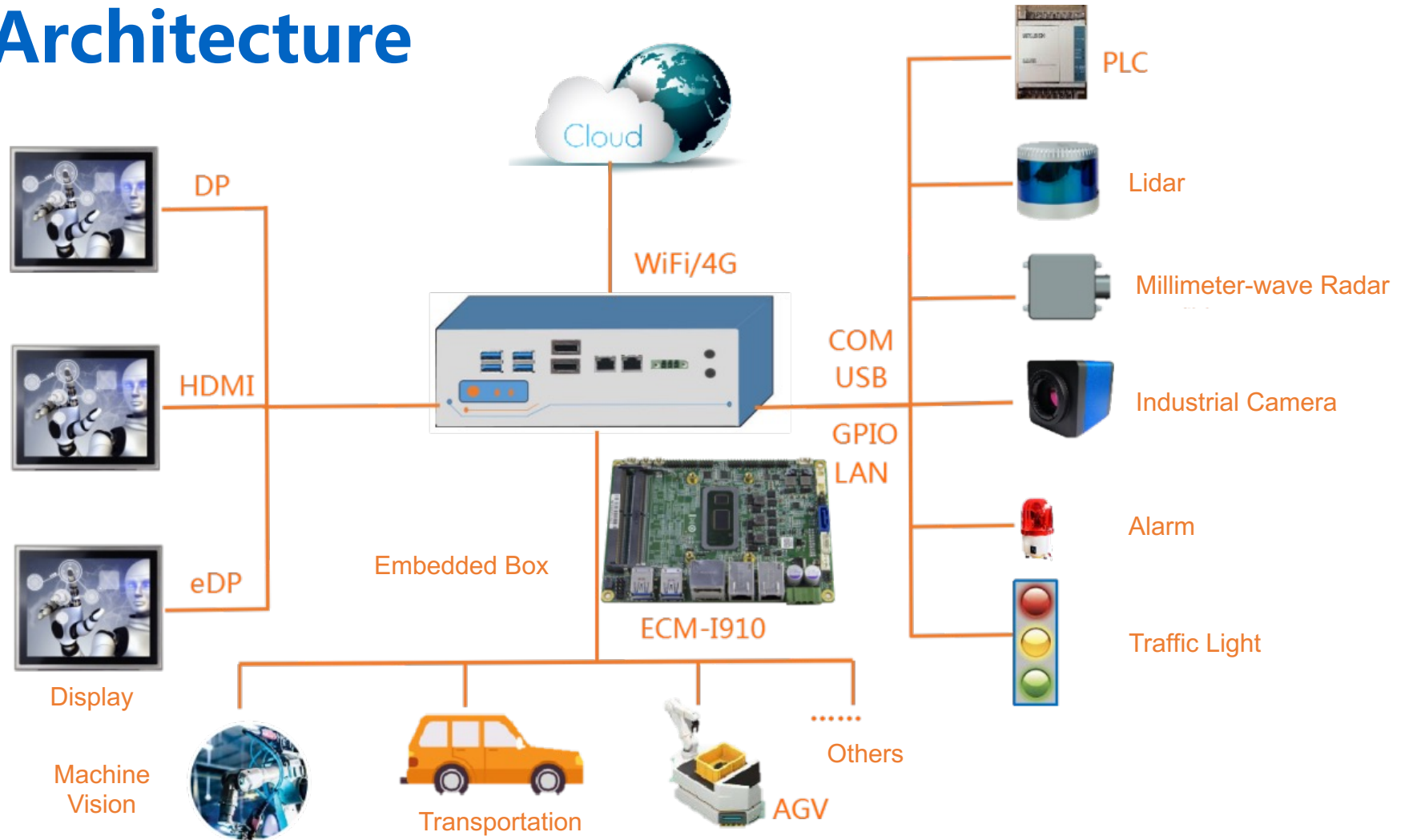


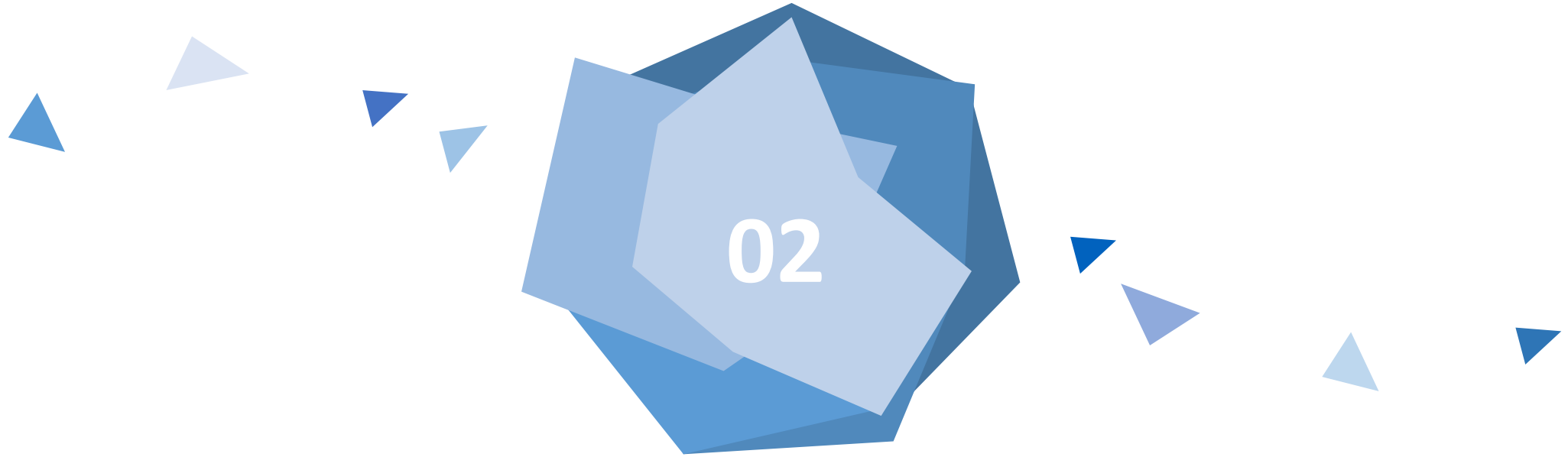
AGV



Machine Vision

ECM-I910 & PADR-M101 Application Architecture





Q&A

Q1: What's the input voltage of ECM-I910 or PADR-M101?

DC **12V** default.(It can be connected to OFX-075 75W power board and supports **9-36V** wide voltage input)

Q2: What's the expansion of the motherboard ECM-I910?

There's a mini PCIe slot (with pcieX1 or USB signal, support msata)and an M.2 2230 E-key, support WIFI module.

Q3: What's MIPI to GMSL2 Conversion in BRAV-7220?

GMSL is a popular interface on vehicle industry, so we provide MIPI interface for general purpose as well conversion capability on GMSL interface.



Stay in Touch



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