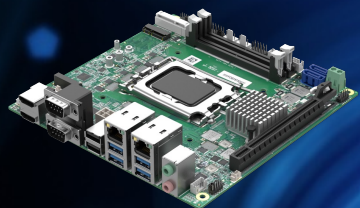


“

COMING SOON

Hello everyone!
We will wait 5 mins for
everyone to join.

”



MITX-1984



SIGM-2660

Speakers



Gary

Customer Solution Manager
JHCTECH Shenzhen Office



Reese Li

Customer Solution Manager
JHCTECH Shenzhen Office

NEW PRODUCT LAUNCH

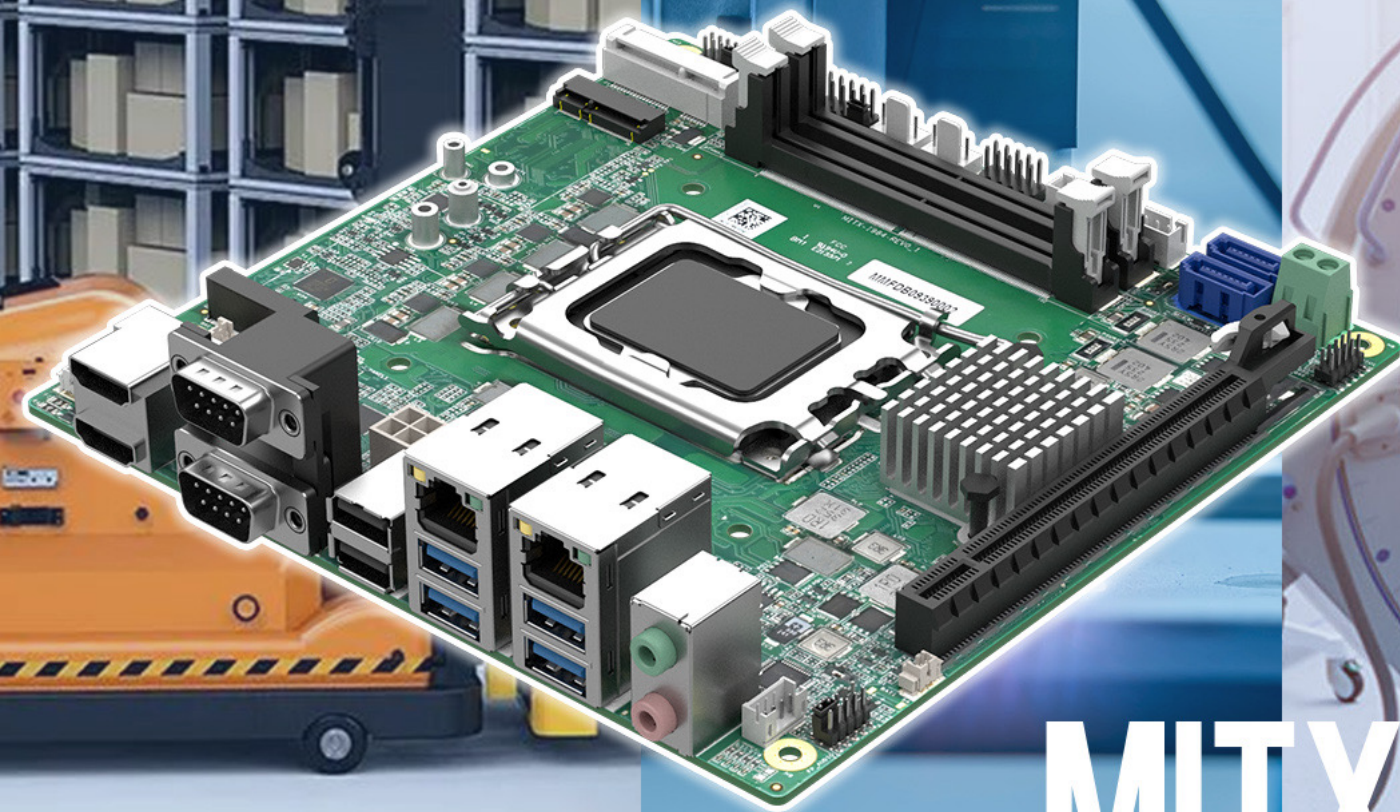


New Product Launch Announcement

Time	Agenda
16:00 ~ 16:05	Opening Chi Wang, Marketing Manager, Shenzhen Office
16:05 ~ 16:20	Introduction of New Product Intel Alder lake-S/Raptor Lake-S Platform Multi-functional & Expandable Mini ITX SBC MITX-I984 Reese Li, Customer Solution Manager, Shenzhen Office
16:20 ~ 16:35	Introduction of New Product Dedicated Controller for Urban Rail Transit AFC System SIGM-2660 Gary Shu, Customer Solution Manager, Shenzhen Office
16:35 ~ 16:40	Q&A

JHCTECH

Intel Alder Lake-S/Raptor Lake-S Platform
Multi-functional & Expandable Mini ITX SBC



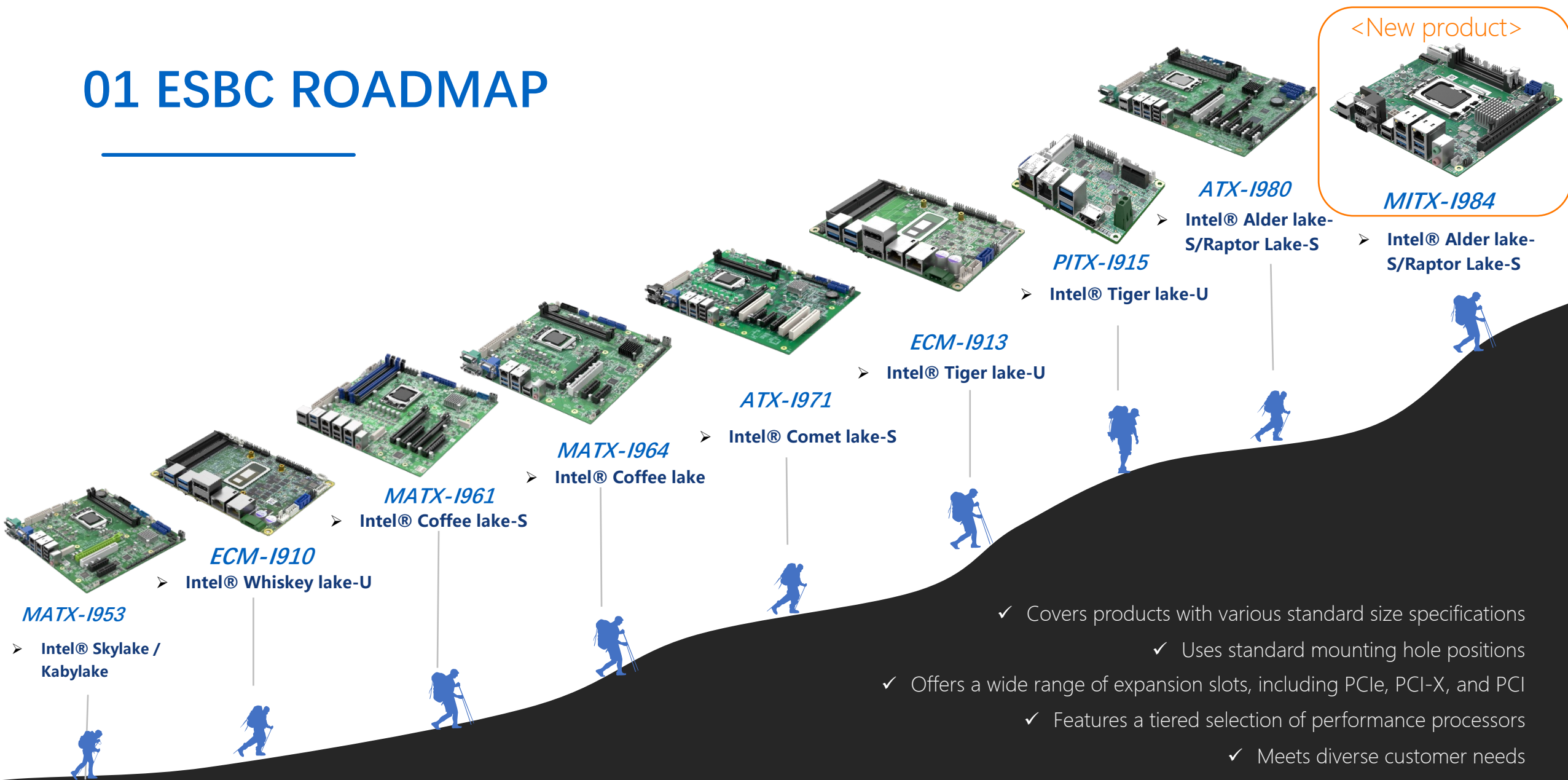
MITX-1984



- 01 ESBC Roadmap**
- 02 MITX-1984 Highlights**
- 03 MITX-1984 Ordering Info**
- 04 MITX-1984 Market Direction**
- 05 MITX-1984 Progress**

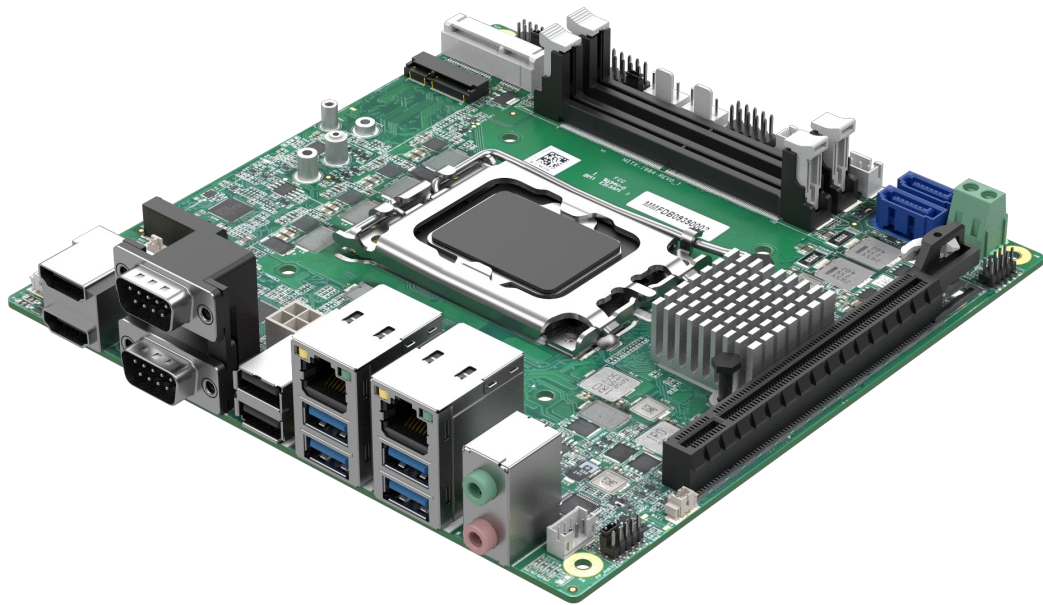
CONTENTS

01 ESBC ROADMAP



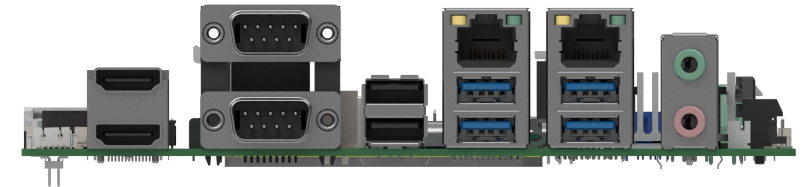
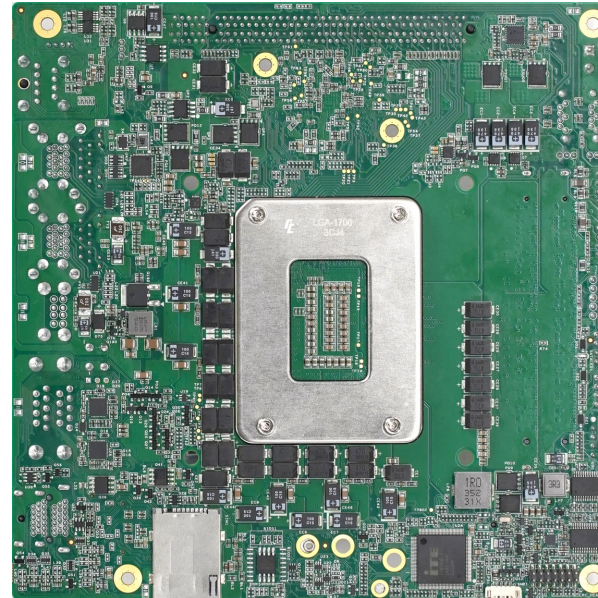
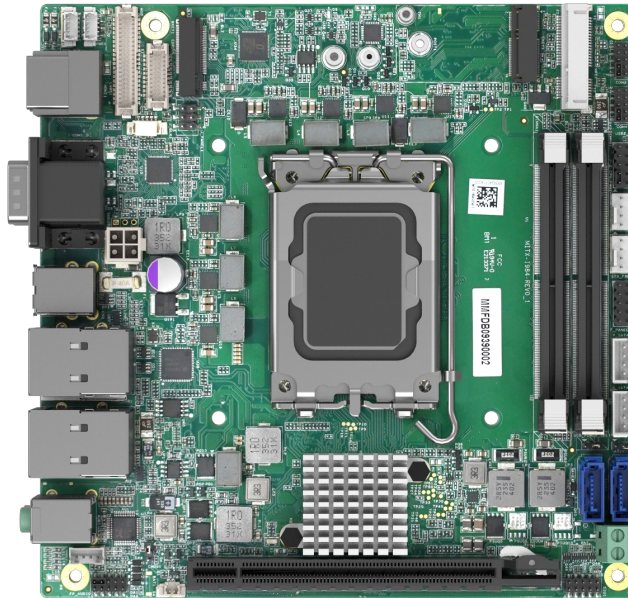
- ✓ Covers products with various standard size specifications
- ✓ Uses standard mounting hole positions
- ✓ Offers a wide range of expansion slots, including PCIe, PCI-X, and PCI
- ✓ Features a tiered selection of performance processors
- ✓ Meets diverse customer needs

02 MITX-I984 Features



CPU	Alder lake-S/Raptor Lake-S Core™ i9/i7/i5/i3/Pentium/Celeron
RAM	2*DDR5 SODIMM dual channel
LAN	2*LAN (RJ45 w/LED)
Display	1*eDP, 2*HDMI, 1*LVDS
USB	4*USB3.2, 4*USB2.0
Serial Ports	2*RS232/422/485, 2*RS232
Audio	1*Line out+1*Line in+1*Mic (ALC 897 chip)
Expansion	1*M.2 E-Key 2230, 1*M.2 B-Key3042/3052 1*PCIeX16 Expansion slots (gen5.0, X16 signal)
Storage	1*mSATA(default SATA signal, optional PCIeX1), 2*SATA3.0 triple storage
Power Supply	DC 12V DC power supply

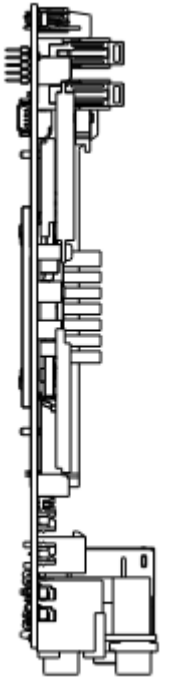
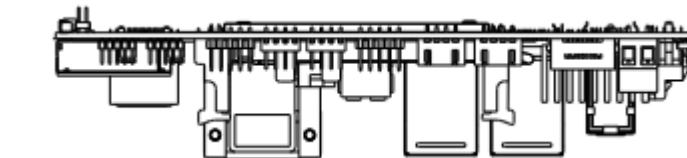
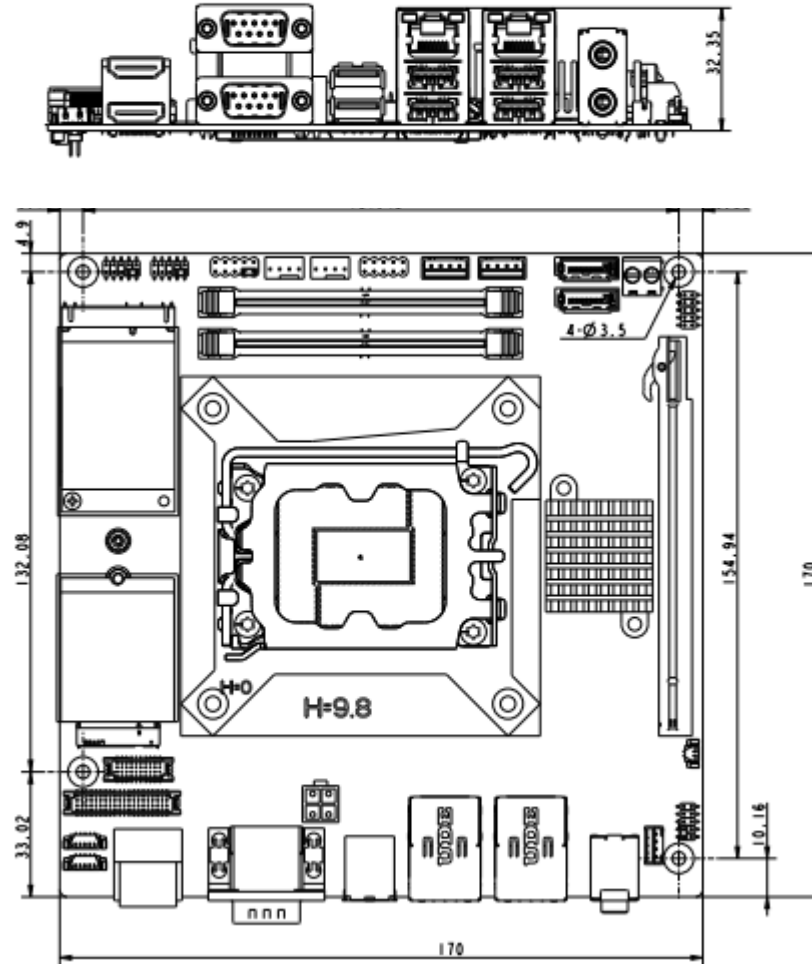
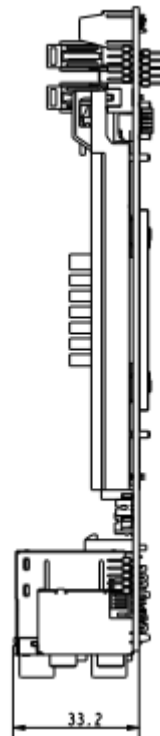
Images of Product Views



Product Dimensions Diagram

Dimensions:
(W*H): 170*170mm,
standard Mini ITX size

Thickness:
Front: 33.2mm;
PCB: 1.6mm



Product Design Highlights

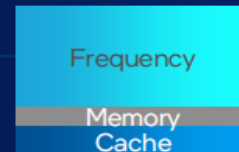
1 <i>Enhanced CPU performance</i>	2 <i>Ultra-high-performance integrated graphics</i>	3 <i>Supports high-frequency memory</i>	4 <i>2+1+1 multi-display</i>
5 <i>Comprehensive I/O functionality</i>	6 <i>Robust power design with X16 expansion slot</i>	7 <i>Standard Mini Mini ITX size</i>	

Compared to Alder Lake-S, Raptor Lake-S can achieve up to a **15%** increase in single-thread performance and a **41%** increase in multi-thread performance in the SPEC rate2017 Int test.

Raptor Lake Leading Performance

Single-thread
Performance

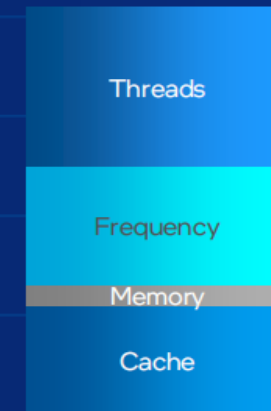
+15%



SPECrate2017_int_base 1 copy

Multi-thread
Performance

+41%



SPECrate2017_int_base n copy



Enhanced
CPU
Performance

★ Ultra-High-Performance Integrated Graphics

- Intel® UHD 770 Graphics with Xe architecture, up to 32 EUs
- Supports one 4K resolution display and one 8K resolution display output
- Genlock (frame synchronization) video sync supported in Windows
- Graphics and display virtualization, with 2 video decoders (VDbox)
- VNNI instructions, Intel® DL Boost, and int8/dp4 instructions + OpenVINO
- Enhances image AI inference performance



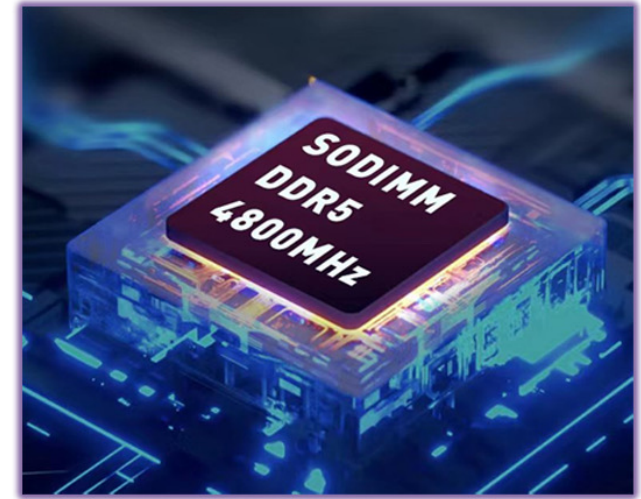
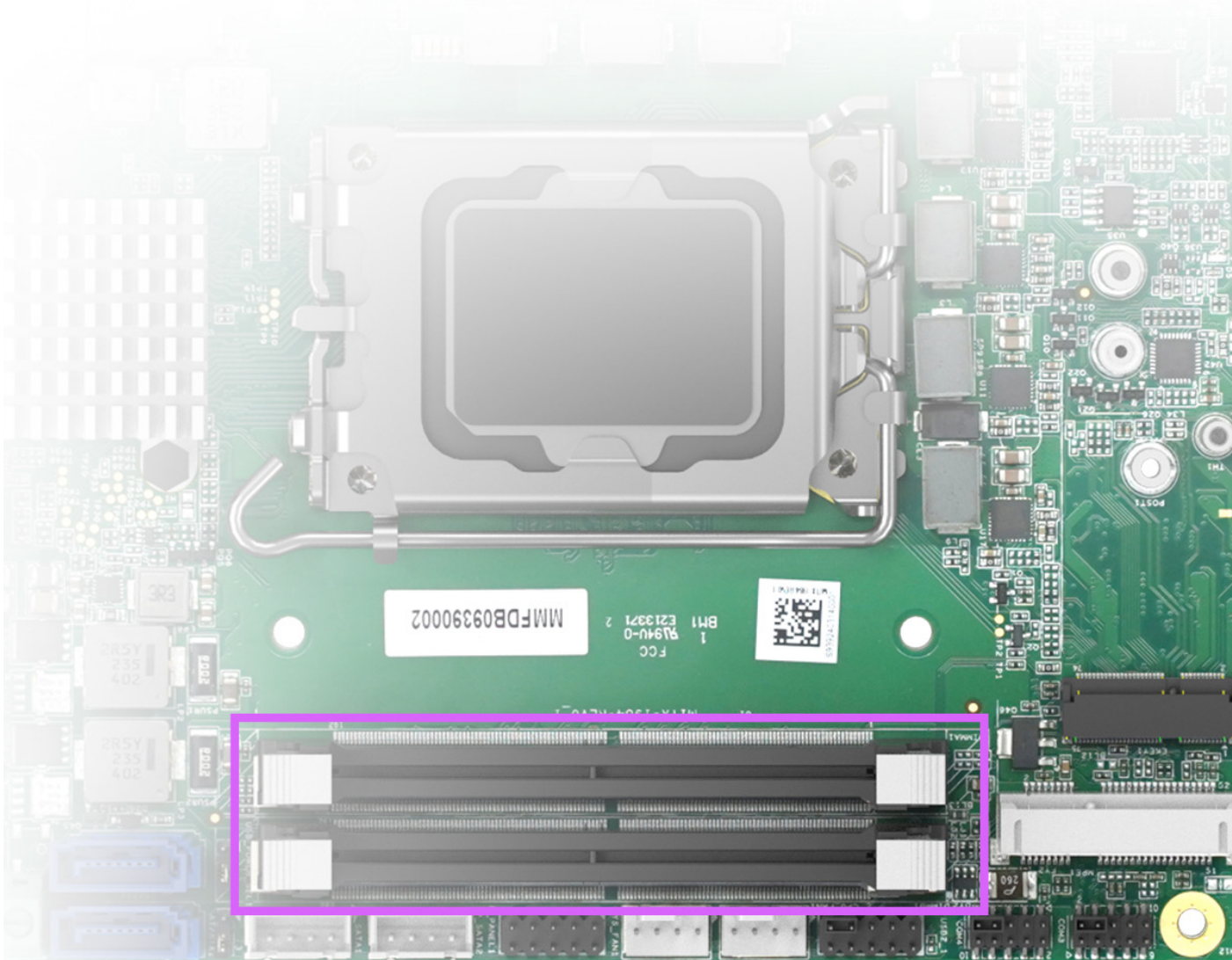
12th Gen Intel®
Core™ processor
performance gains
over 10th Gen
Intel® Core™ desktop
processors

Up to
1.94x
faster
graphics
performance³

Up to
2,81x
faster in GPU image
classification inference
performance³

Data sourced from Intel official documentation

★ Supports high-frequency memory

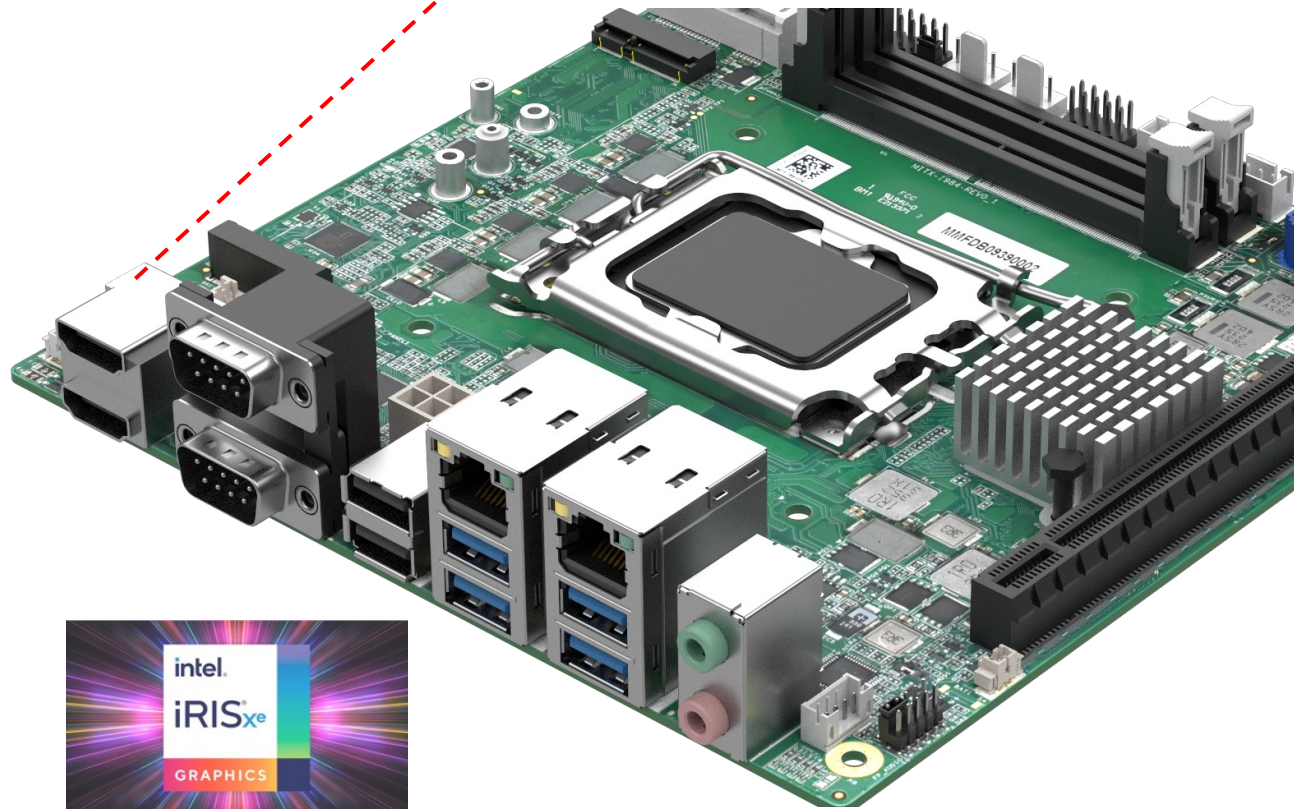


Dual-Channel DDR5 4800/5600MHz
up to 96GB

★ 2+1+1 4 Display

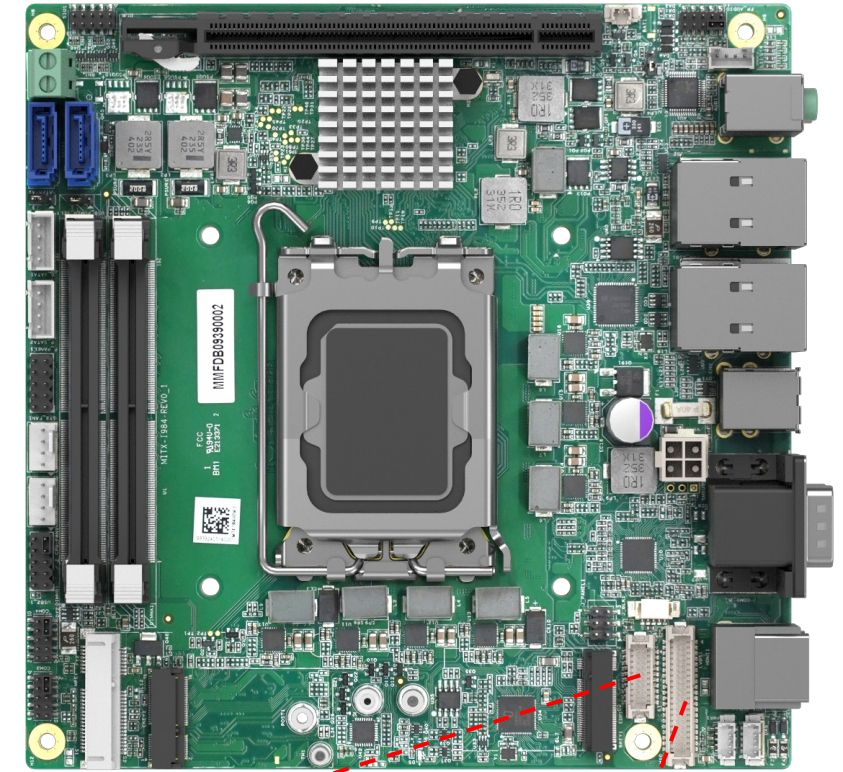
2*HDMI Display

1*HDMI(4K), maximum resolution 4096*2304@60Hz



eDP LCD screen, maximum resolution 4096*2304@60Hz

1*LVDS Display+1*eDP Display



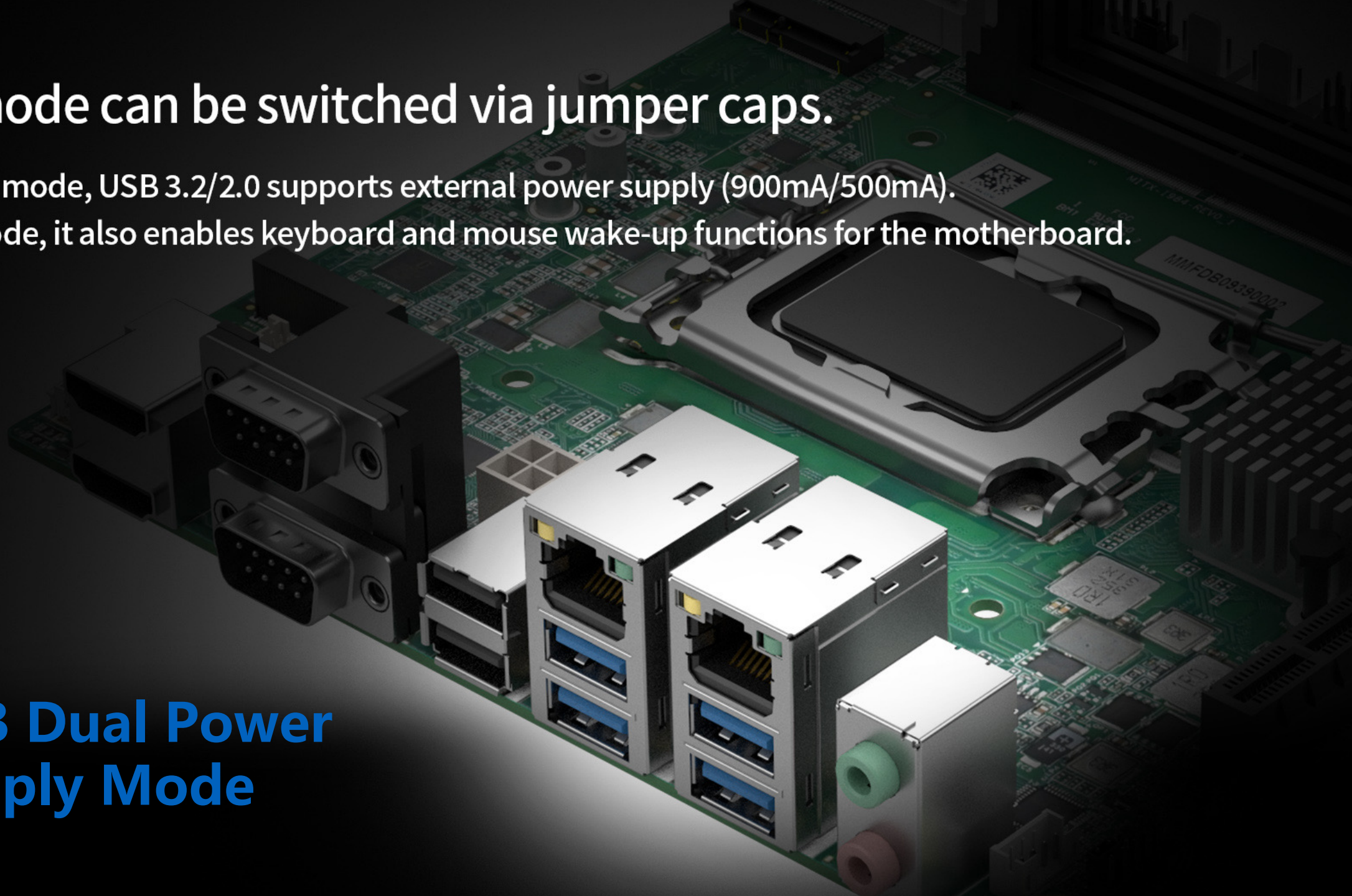
Supports dual-channel 48-bit LVDS LCD screens, with a maximum resolution of 1920x1200@60Hz

USB mode can be switched via jumper caps.

In System mode, USB 3.2/2.0 supports external power supply (900mA/500mA).

In USB mode, it also enables keyboard and mouse wake-up functions for the motherboard.

★ **USB Dual Power
Supply Mode**

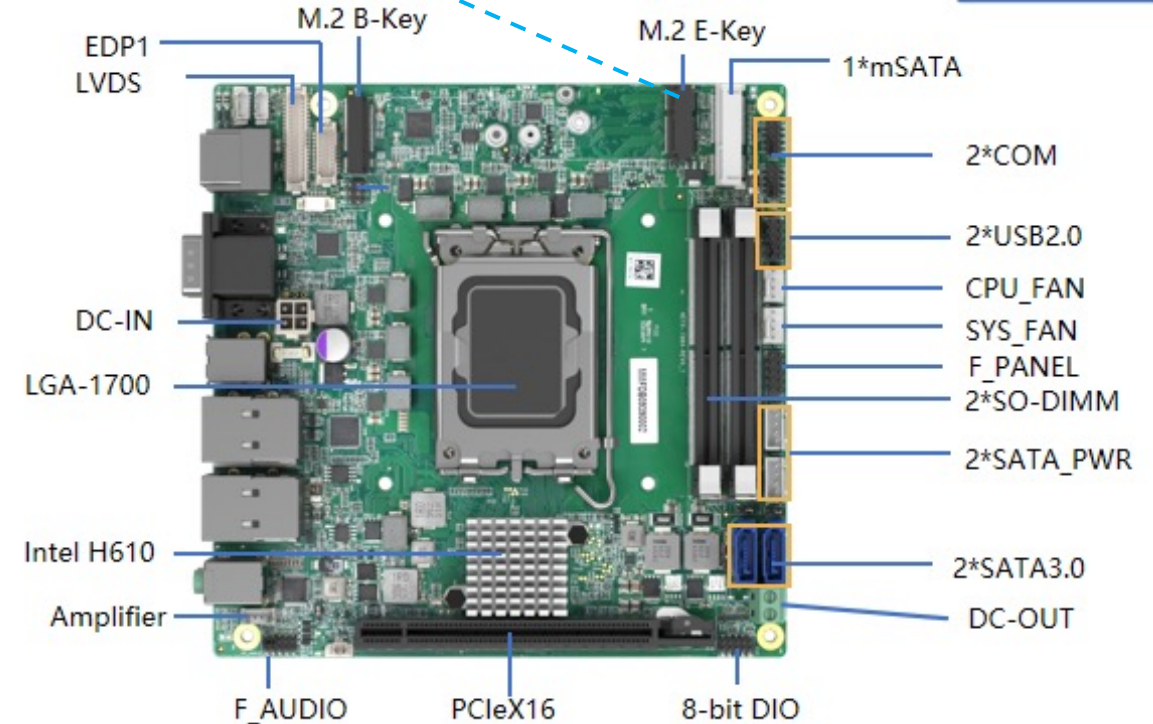
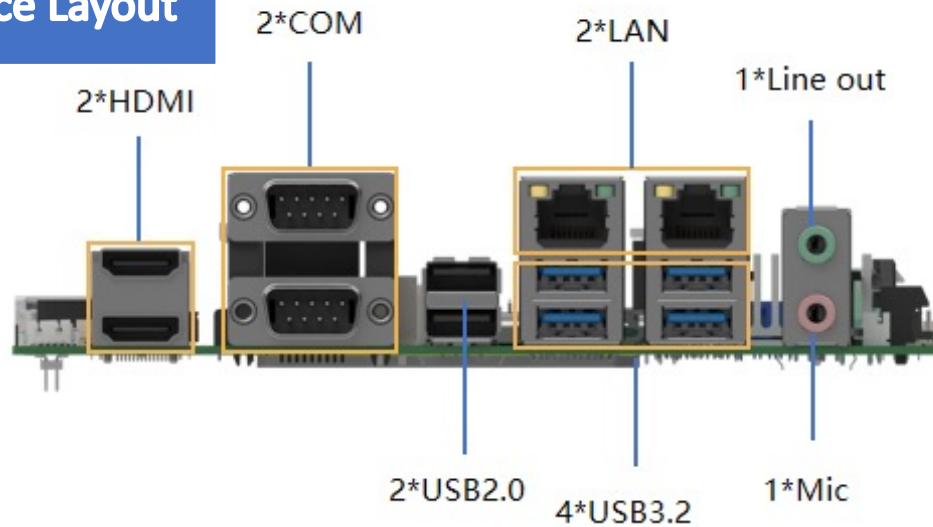


Optional support for M.2 slots

M.2 3052 B-key supports 5G, compatible with 4G
M.2 2230 E-key supports WiFi and Bluetooth

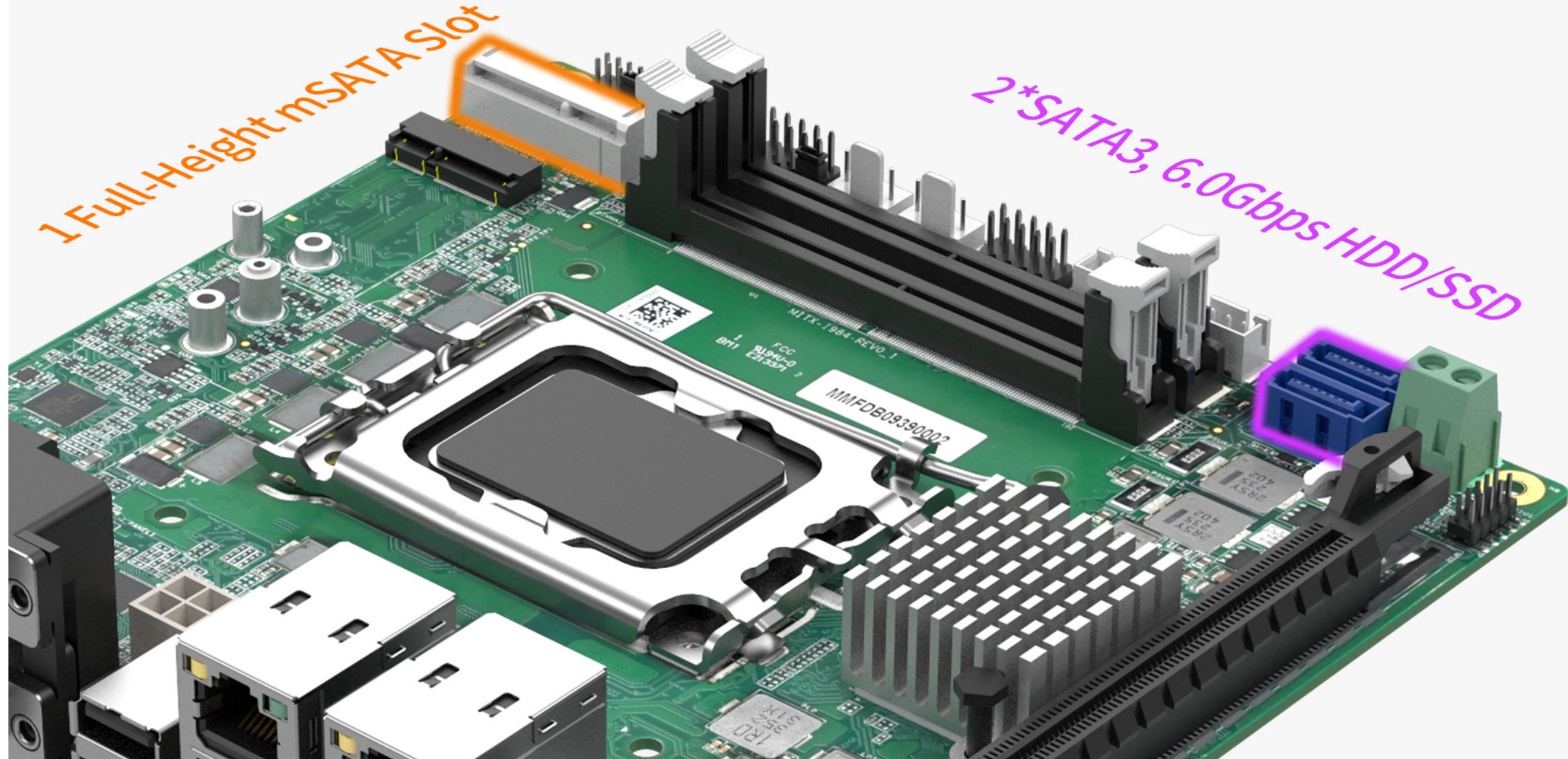


Interface Layout

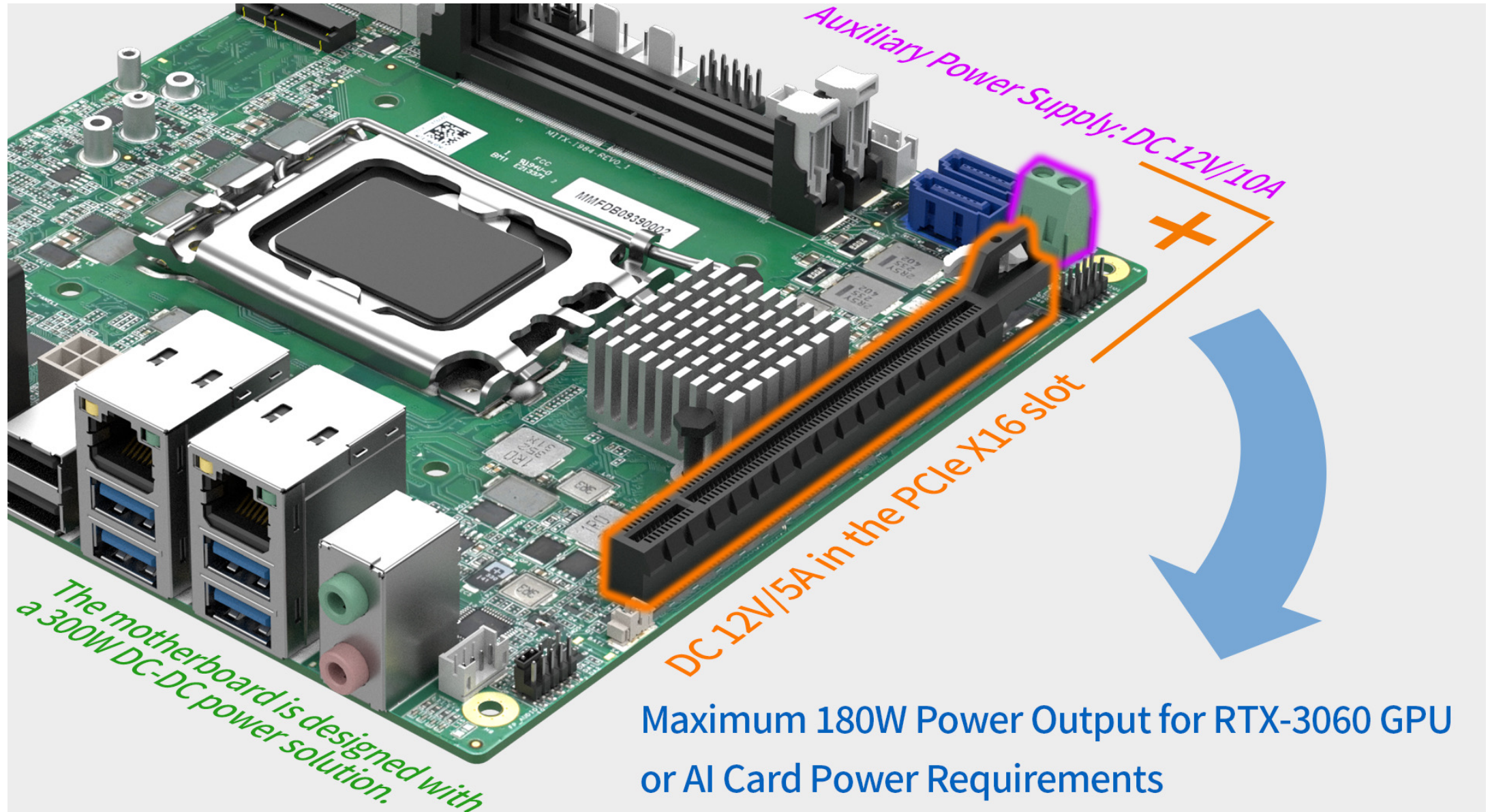


**Comprehensive and versatile
I/O features**

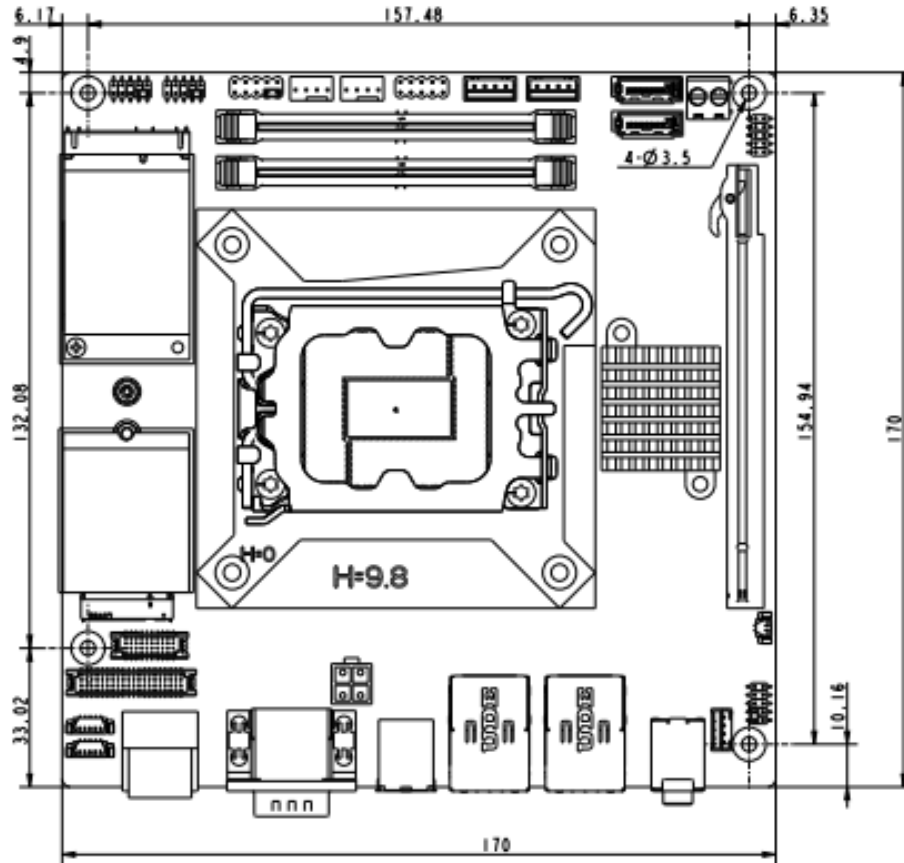
★ 2+1 Storage



★ Robust power design with X16 expansion



★ Standard MINI ITX Motherboard Form Factor



Standard MINI ITX Motherboard Mounting Holes Diagram

Standard Dimensions

Length x Width
170mm*170mm (6.7 inches×6.7 inches)

Standard Mounting Holes

The most traditional and standard form factor, designed according to the MINI ITX motherboard specifications

Standard Slot

Equipped with **one** expansion slot, offering strong expandability

03 MITX-1984 Ordering Info

Model	Description
MITX-1984-S001	Embedded single board computer, Intel Alder lake-S/Raptor lake-S CPU LGA1700 Socket +Intel H610 PCH, 2*LAN, 4*USB3.2, 4*USB2.0, 4*COM, 8-bit DIO, 1*PCIeX16, 2*HDMI, 1*eDP, 1*LVDS, 1*Line out and 1*Mic, 1*Amplifier, 1*mSATA+2*SATA3.0, DC 12V power supply
Power cable	2x2Pin DC-IN Power cable
SATA+Power cable	SATA (7+15)PIN, direct plug-in
984I/O shield	Full I/O Interfaces, 0.5mm stainless steel
Screw and jumper pack	2 M2 screws, 2 M2.5 + 2 2.0 and 2 2.5 jumper caps (for backup)
DIO cable (optional)	DB9 male, cable length 300mm
Serial cable (optional)	DB9 male, cable length 300mm
Power supply cable (optional)	Auxiliary power cable for GPU card
CPU cooler (optional)	LGA1700, TDP 65W air cooler



AGV/AMR

Unmanned delivery vehicle
Logistics sorting AGV
Video inspection AGV
Firefighting robot



3C machine vision
Logistics visual sorting
Photovoltaic visual inspection

Machine Vision



Medical Examination

B-ultrasound
Bone densitometer
Hematology analyzer
Surgical robot
G-arm-X-ray machine



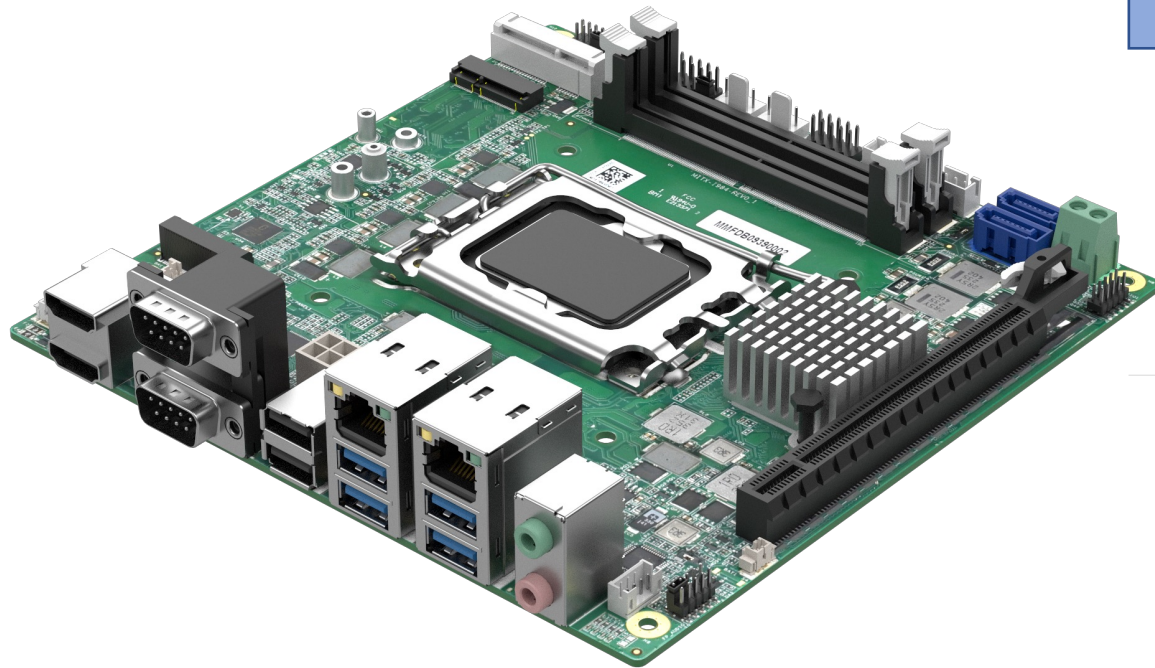
Industrial Robotic Arm
CNC Machine Tool
Injection Molding Machine
Vulcanizing Machine

Industrial Manufacturing

**04 MITX-1984
Market
Direction**

05 MITX-1984

New Product Progress



Test prototype period: Late June 2024

Small batch production: Late July 2024



JHCTECH

Urban Rail Transit AFC System

SIGM-2660



SIGM-2661



AGM (Automatic Gate Machine)



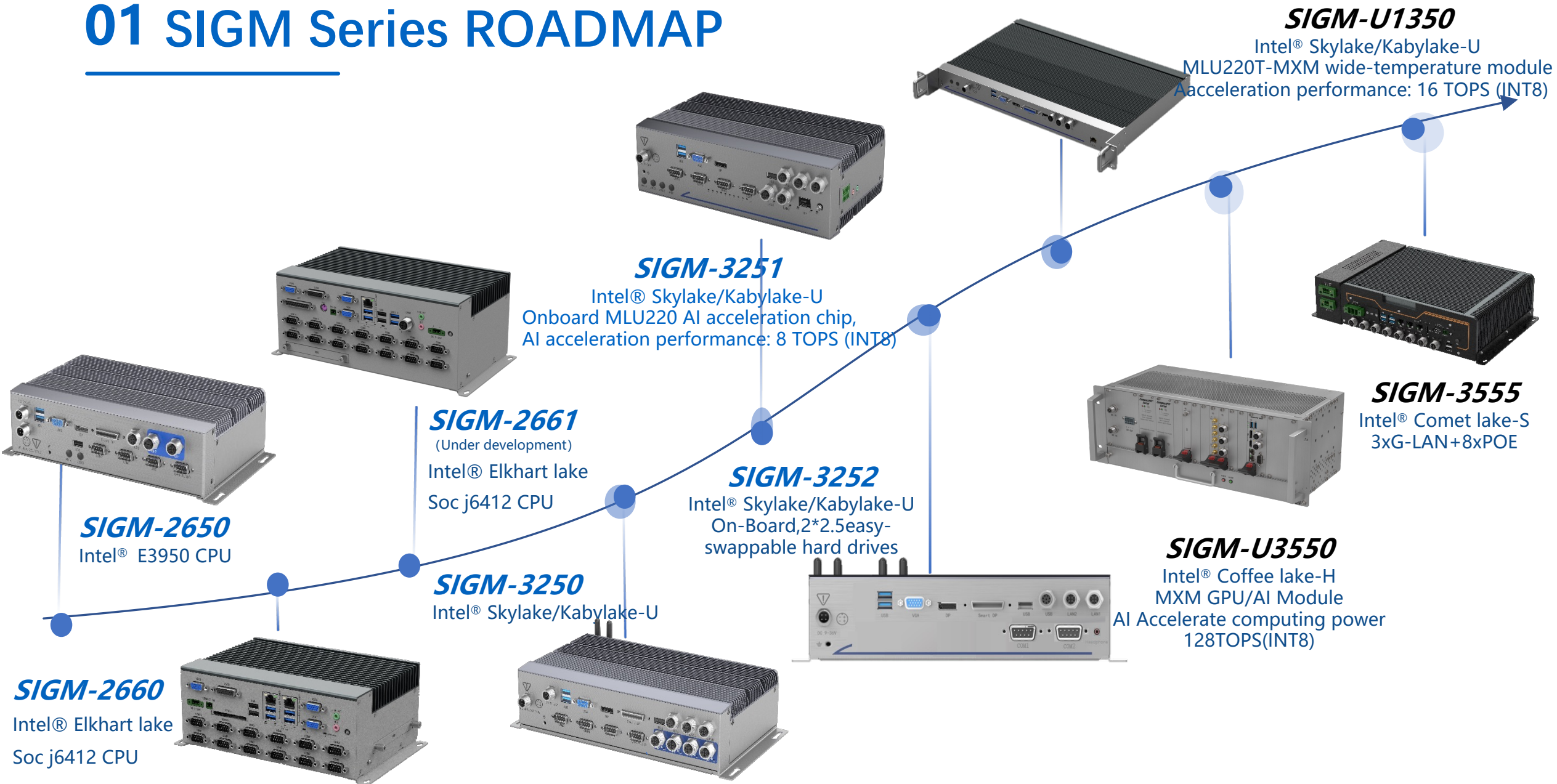
TVM (Ticket Vending Machine)



- 01 SIGM Roadmap**
- 02 SIGM-2660 Highlights**
- 03 SIGM-2660 Ordering Info**
- 04 SIGM-2660 Market Direction**
- 05 SIGM-2660 Progress**

CONTENTS

01 SIGM Series ROADMAP

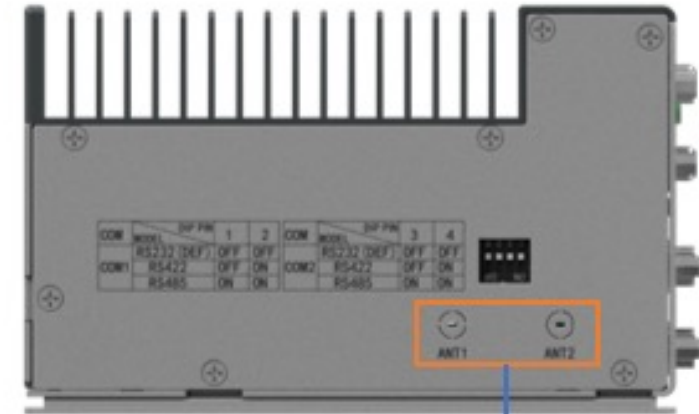
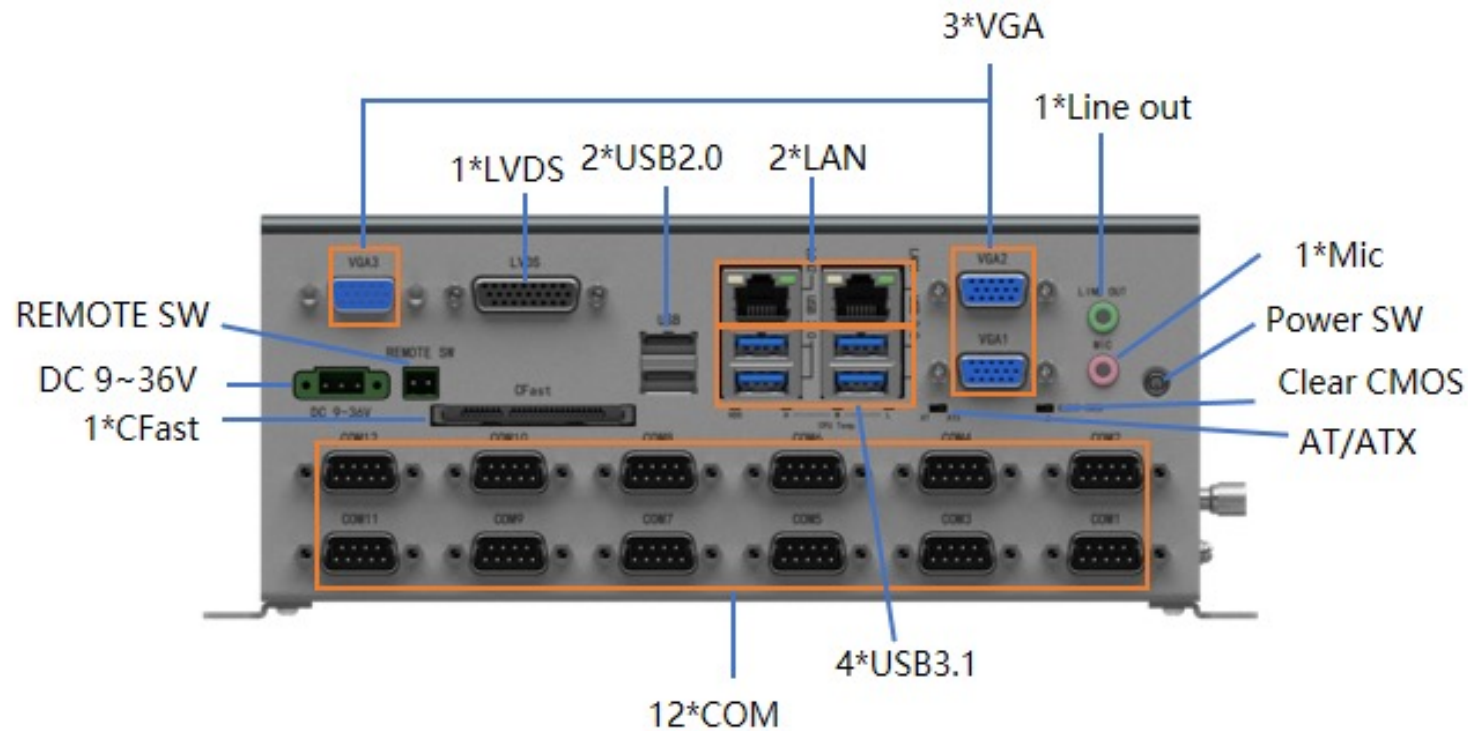


SIGM Series Product Line
Specification Comparison Table

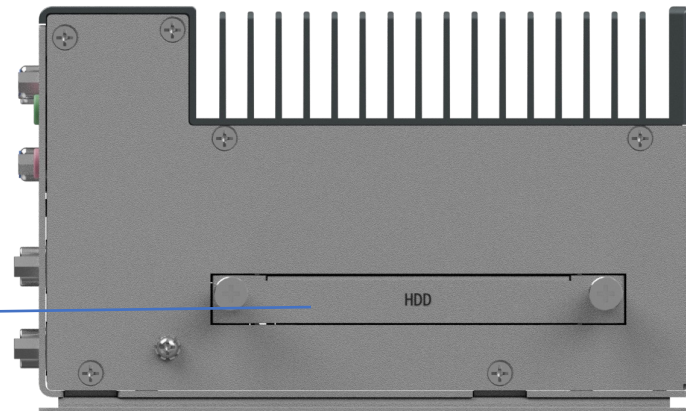
Model	SIGM-2650	SIGM-3250	SIGM-3251	SIGM-3252	SIGM-U3150	SIGM-U3550
CPU	Intel® Apollo Lake E3950 CPU	Intel® Skylake/Kabylake-U CPU	Intel® Skylake/Kabylake-U CPU	Intel® Skylake/Kabylake-U CPU	Intel® Skylake/Kabylake-U Core i3/i5/i7 Series CPU	Intel Coffee Lake-H Core i3/i5/i7 or Xeon CPU
Memory	DDR3L, supports up to 1866MHz, 1 on-board channel 4GB + 1*SODIMM, max 8GB	DDR4, 2133MHz, 1on-board channel, 4/8GB + 1*SODIMM, max 16GB	2-Ch DDR4, on-board 4GB + LPDDR4 4GB	2-Ch DDR4, on-board 4/8GB + SODIMM, max 16GB	2-Ch DDR4, Supports up to 2133MHz, 1 onboard channel 4GB + 1*SODIMM, max 12GB	Dual-channel DDR4, on-board 8GB + 1*SODIMM, max 40GB, Xeon and Core i3 CPUs support ECC
Graphics	1*DP, 1*VGA, 1*Smart Display, 3 display interfaces	1*DP, 1*VGA, 1*Smart Display, 3 display interfaces	1*DP, 1*VGA, 1*Smart Display, 3 display interfaces	1*DP, 1*VGA, 1*Smart Display, 3 display interfaces	1*DP, 1*VGA, 1*Smart Display, 3 display interfaces	1*DP, 1*HDMI
LAN	2*Intel I210AT	6*Intel I210AT	4*LAN (M12)	2*LAN (M12)	2*Intel I210AT	6*Intel I210AT (IT) 1*Intel I219LM
Storage	1*SATA, 1*mSATA	1*SATA, 1*mSATA	1*SATA	2*SATA	1*SATA, 1*mSATA	1*Full-size mSATA, optional max 4*2.5" SATA
USB	5*USB	5*USB	6*USB (2*M12)	5*USB (2*M12)	5*USB (2*M12)	14*USB
COM	2*Isolated COM	2*Isolated COM	4*Isolated COM	2*Isolated COM	1*Console RS232 (RJ45)	1*RS232/RS485
Power Supply	DC 9~36V input, 5-pin terminal interface (M12), optional railway power module 48V/72V/110V input, 4-pin terminal interface (M12)	Railway power input 48V/72V/110V input, 4-pin terminal interface (M12), optional DC 9~36V input, 5-pin terminal interface (M12)	Railway power input, DC 9~36V wide voltage power supply	Railway power input, DC 48/72/100V (+40%); optional DC 9~36V wide voltage power supply, with ITPS power management	DC 110V input, 4-pin connector (M12)	Standard single railway isolated power supply, wide range 16.6-160V DC input, 4-pin M12 terminal, optional 1+1 redundant power
Dimensions	250*154*72mm	270*154*64.5mm	272*154*83mm	270*154*64.5mm	430*283.05*44.05mm	435.8*208.5*177.0mm (without mounting brackets) 482.6*248.2*177.0mm (with rack mounting)

Model	SIGM-2660	SIGM-2661
CPU	Intel® Elkhart Lake Soc j6412 CPU	
Memory	Single-channel DDR4 3200MHz SODIMM, supports up to 32GB	
Graphics	1*LVDS + 2*VGA or 3*VGA, supports 3 independent displays	
LAN	2 * RTL8111H Dual Gigabit Ethernet Ports	
Storage	1*CFast, 1*2.5" SATA bay	1*mSATA, 1*2.5" SATA bay
USB	4*USB3.1 2*USB2.0	
COM	12*COM	14*COM
Audio	Optional support for Realtek ALC897 audio, with Audio Out and MIC	
Parallel Port	/	1*LPT, 1*PS2, 1*PS-ON
Power Supply	Power input: DC 9-36V wide voltage supply	
Dimensions	220 x 151 x 90.8 mm (Without Mounting Bracket) 247 x 151 x 94.9 mm(With Mounting Bracket)	260 x 151 x 110.8 mm (Without Mounting Bracket) 287 x 151 x 114.9 mm(With Mounting Bracket)

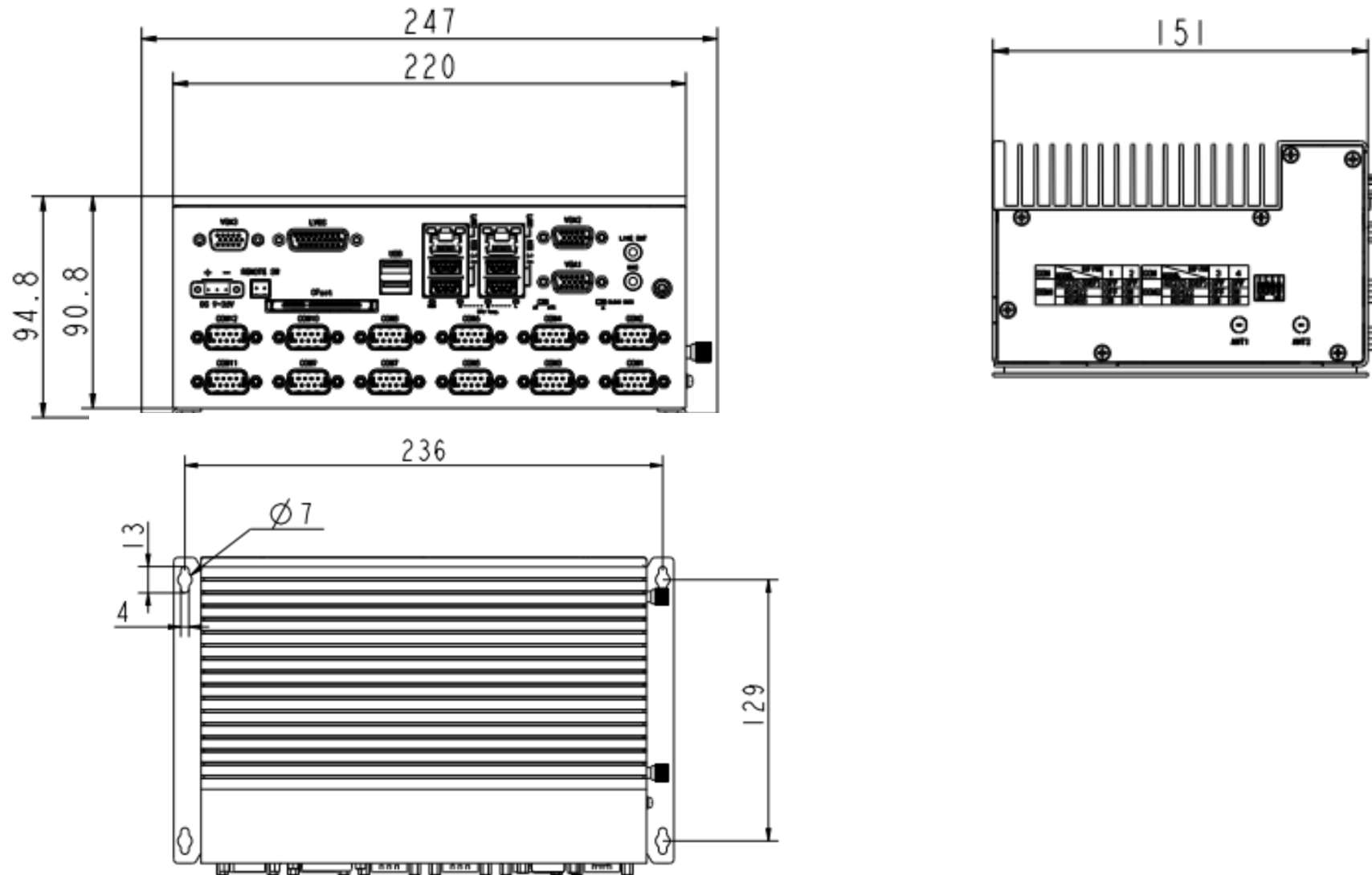
■ SIGM-2660 I/O Interface Overview



1* 2.5" SATA bay



■ SIGM-2660 Mounting Hole Dimensions Diagram



SIGM-2660 Product Highlights

- ★ Intel X86 platform with excellent openness
- ★ I/O design suitable for AFC scenarios
- ★ Easy-to-maintain storage design
- ★ Structural design tailored for AFC applications
- ★ Safety and EMC certifications

1

Intel Elkhart lake ULT CPU

Supports Windows, KylinOS, UnionTech OS, and custom Linux OS

2

I/O functionality designed for specific scenarios

- 3 independent displays with 2VGA + 1VGA (1*LVDS) and one mirrored display
- 12 serial ports (10RS232 + 2RS232/422/485)
- 2G-LAN (WOL) and 6USB (USB wake-up)

3

Easy-to-remove storage design

*1*CFast, 1*22.5-inch easy-swappable SATA drive*

4

Structural and installation design for specific scenarios

Single-sided I/O interfaces, saving installation space and facilitating wiring

5

3C safety certification and CE/FCC EMC certification

Suitable for domestic use and export overseas

SIGM-2661 Product Highlights

- ★ Intel X86 platform with excellent openness
- ★ I/O design suitable for AFC scenarios
- ★ Structural design tailored for AFC applications
- ★ AFC Power Remote Management
- ★ Safety and EMC Certifications

1

Intel Elkhart lake ULT CPU

Supports Windows, KylinOS, UnionTech OS, and custom Linux OS

2

I/O functionality designed for specific scenarios

- 2VGA + 1VGA (1*LVDS) for 3 independent displays and one mirrored display
- 14 serial ports (12RS232 + 2RS232/422/485)
- 2G-LAN (WOL), 6USB, 1LPT, 1PS2

3

Structural and installation design for specific scenarios

Single-sided I/O interfaces, saving installation space and facilitating wiring

4

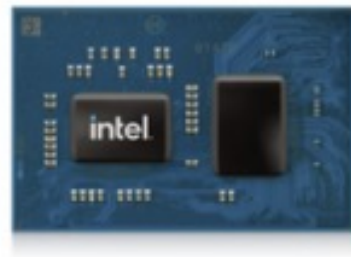
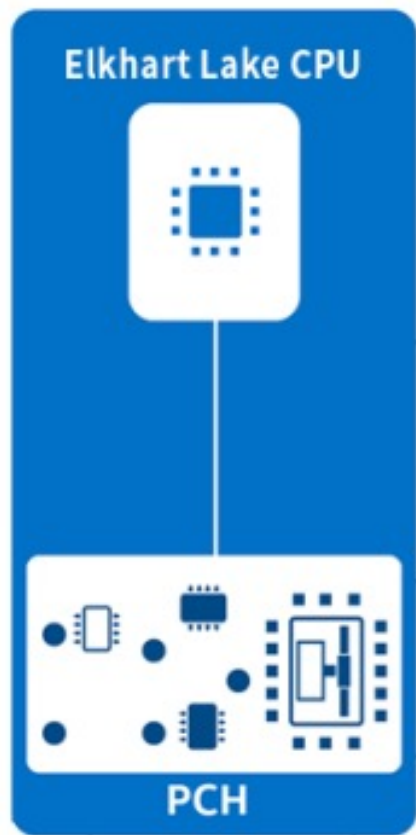
AFC Power Remote Management

*ACPI+1*PS-ON+WOL LAN*

5

3C safety certification and CE/FCC EMC certification

Suitable for domestic use and export overseas



Supports Windows, KylinOS, UnionTech OS,
and custom Linux OS

Intel Elkhart lake ULT CPU



★ Intel X86 platform with
excellent openness

★ I/O design suitable for AFC scenarios



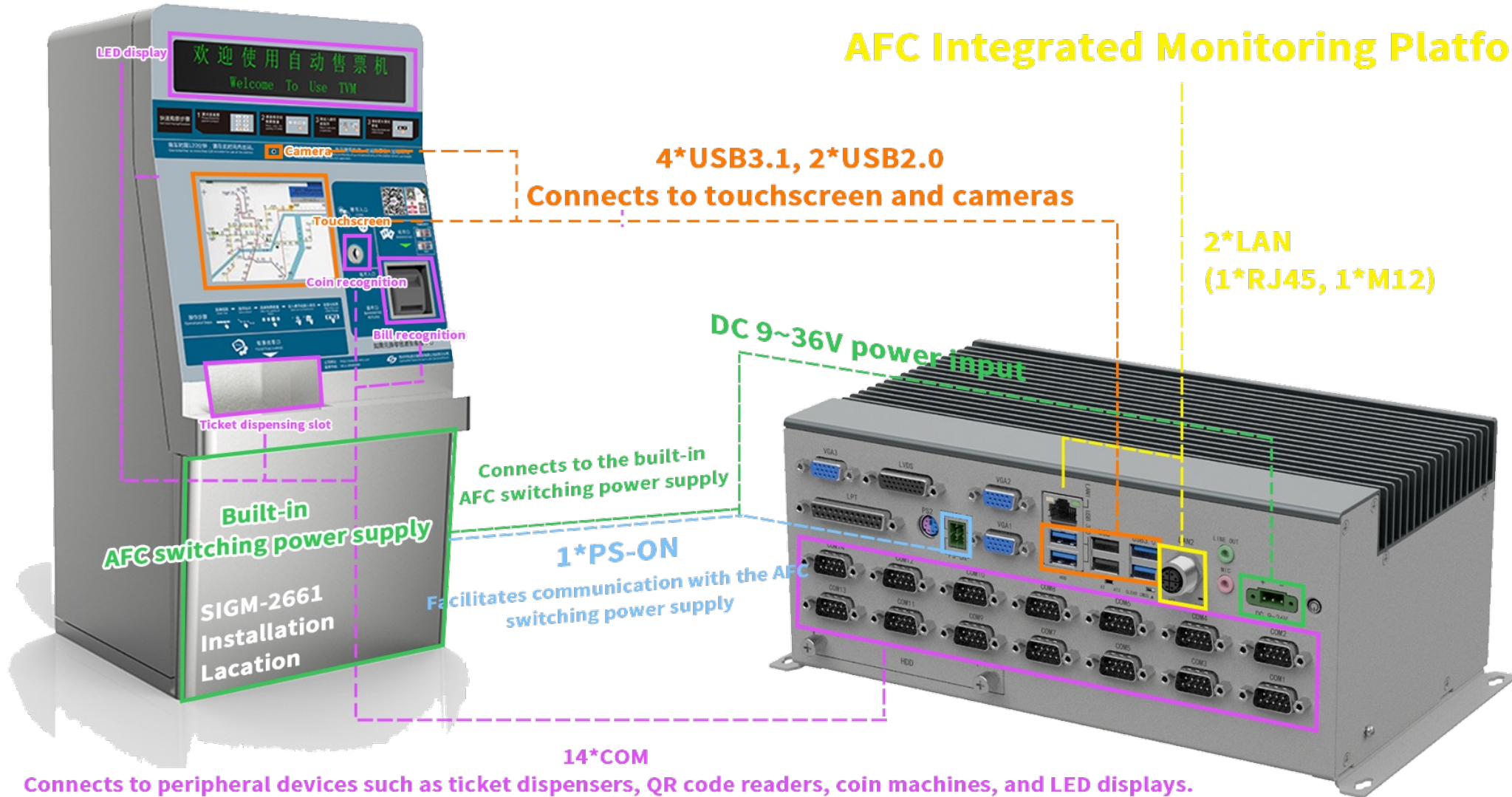
- 2*VGA + 1*VGA (1*LVDS) for 3 independent displays and 1 mirrored display
- 12 serial ports (10RS232 + 2 * RS232/422/485)
- 2*G-LAN (WOL)
- 6*USB (USB wake-up)

**SIGM-2661 also includes additional ports:
1*LPT, 1*PS2, and 1*PS-ON**

★ I/O design suitable for AFC scenarios

Scenario 1:
Ticket Vending Machine(TVM)

AFC Integrated Monitoring Platform



Built-in Sigm-2661

★ I/O design suitable for AFC scenarios

Scenario 2: Booking of Machine (BOM)

2*VGA+1*LVDS/3*VGA
Three Independent Displays

AFC Integrated Monitoring Platform

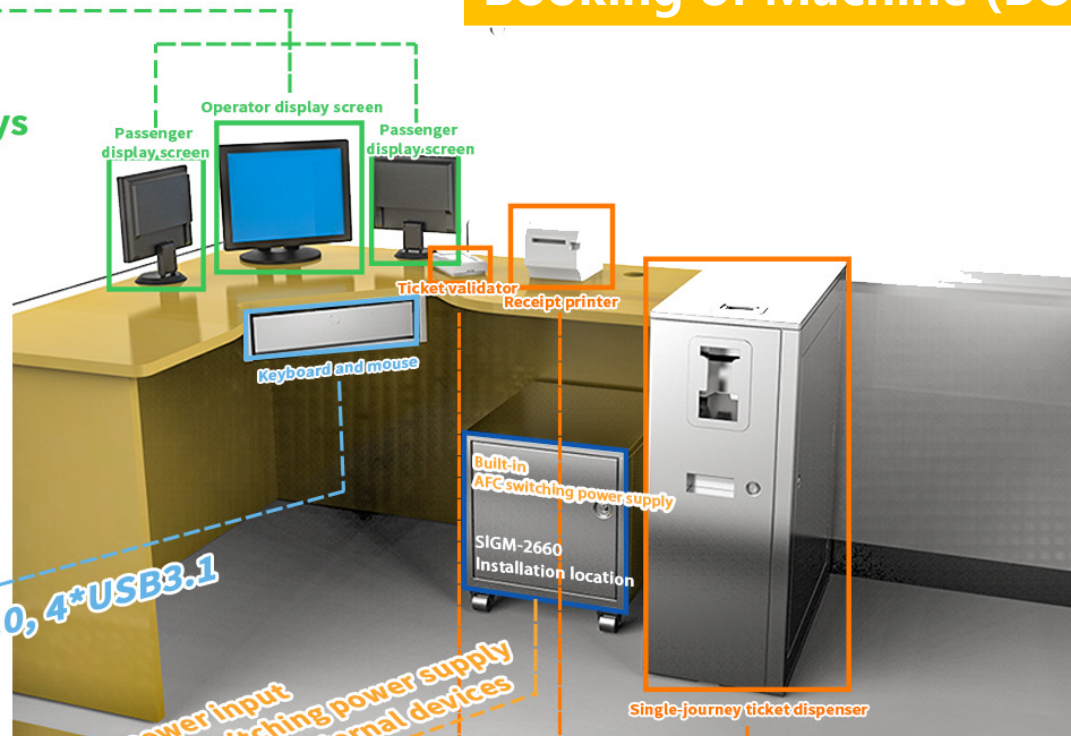
Built-in SGM-2660

2*LAN

2*USB2.0, 4*USB3.1

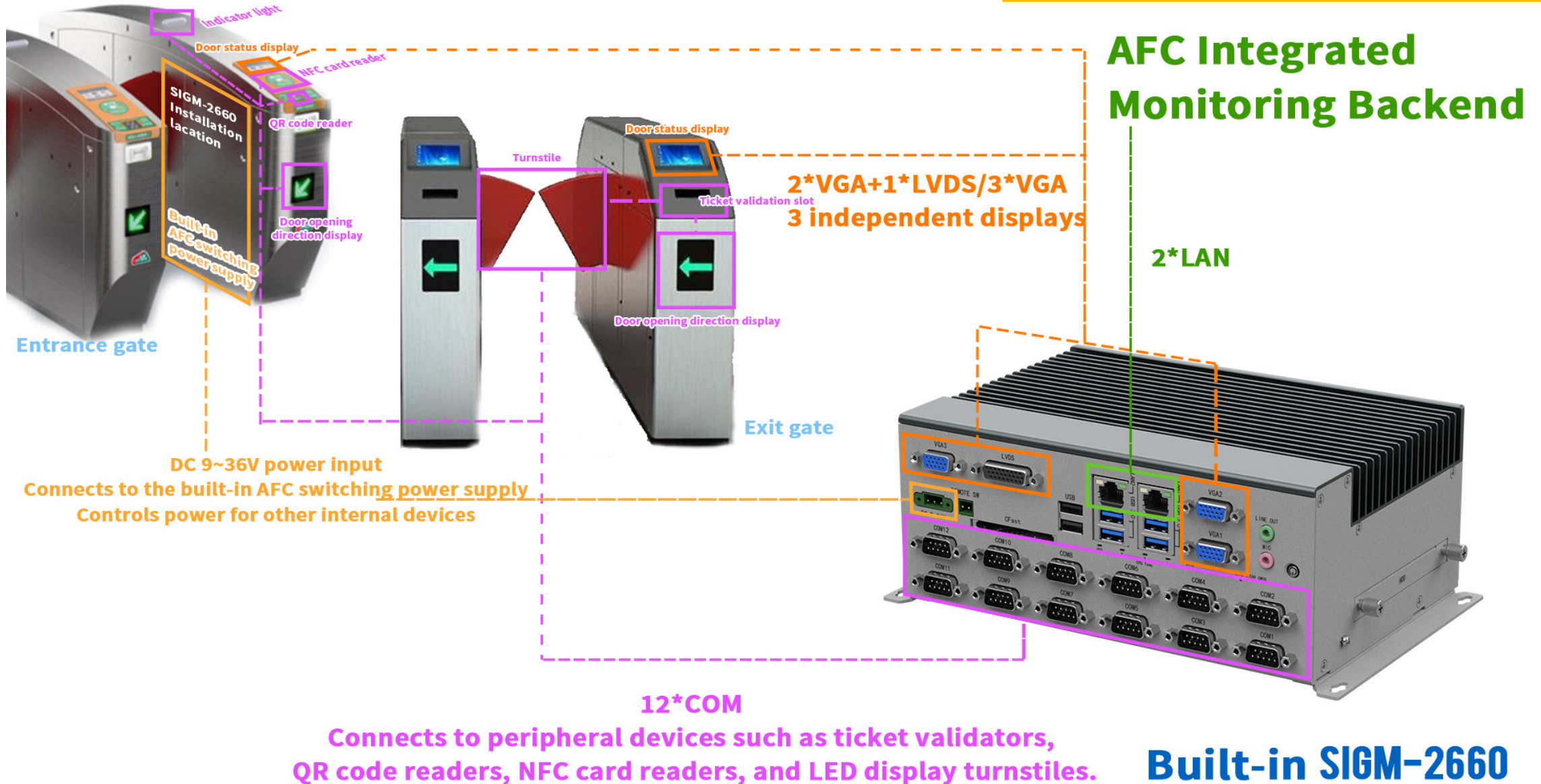
DC 9~36V power input
Connects to the built-in AFC switching power supply
Enables power control for other internal devices

12* COM
Connects to peripheral devices such as single-journey ticket dispensers,
receipt printers, and ticket validators.



★ I/O design suitable for AFC scenarios

Scenario 3: Automatic Gate Machine (AGM)





Structural design tailored for AFC applications

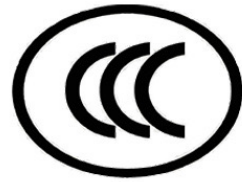
The small-sized model features I/O interfaces on a single side, making it easier to manage wiring and saving installation space for users.



Single-Sided Output Interface

★ Safety and EMC Certifications

Certified with 3C Safety Regulations and CE/FCC EMC Certifications, the product offers exceptional reliability. The international certifications make it suitable for both domestic use and export overseas.



SIGM-2661

SIGM-2660

03> Ordering Info



Ordering Info

Model No.	CPU	Introduction
SIGM-2660-S001	Intel® Elkhart lake J6412	Fanless In-Vehicle Computer, 1* DDR4 3200MHz SODIMM, 2*LAN, 4*USB3.1, 2*USB2.0, 12*COM, 1*Mini PCIe, 1*LVDS+2*VGA(or 3*VGA), 1*Audio out, 1*Mic, 1*CFast, 1* 2.5" SATA bay, DC-IN 9~36V
LVDS cable	LVDS+ backlight is one to two lines*1	
SATA cable	SATA+SATA Power cable *1	
power cable	AC/DC Power Adapter*1 (60W)	

04> Market Direction



AFC (Automatic Fare Collection) System

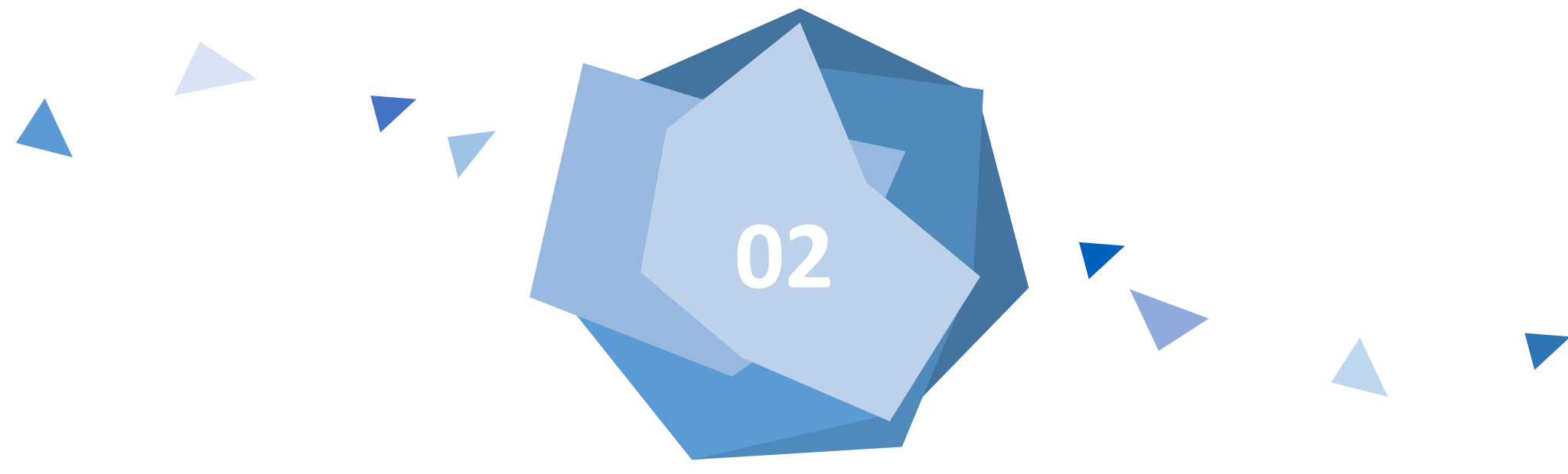


**Automatic Platform Screen Doors (PSDs)
for Metro Systems**

05 New Product Progress

**SIGM 2660 Small Batch Production
Late August 2024**

**SIGM 2661 Test prototype period
Late July 2024**



02

Q&A

Q1: Can SIGM-2660/2661 support 4G/5G module?

A1: No, because there's no SIM slot on the motherboard.

Q2: Can SIGM-2660/2661 support another LAN port or CAN module?

A2: No, because there's no space to install expansion modules.

Q3: What's the PCIe speed of MITX-I984?

A3: For now, except for the RTX-40 series GPU is GEN3.0, other GPU cards can support GEN4.0.

Stay in Touch



JHC Technology Development Co.,Ltd.



@ Shenzhen JHC Technology
Development Co., Ltd.



@JHCTECH



Website



Youtube

CONTACTS

Marketing Department

marketing@jhctech.com.cn

sales@jhc-technology.com

Customer Solution Manager

shuyang@jhctech.com.cn

