



**FLEXMARK**

i p a r i   r e n d s z e r e k

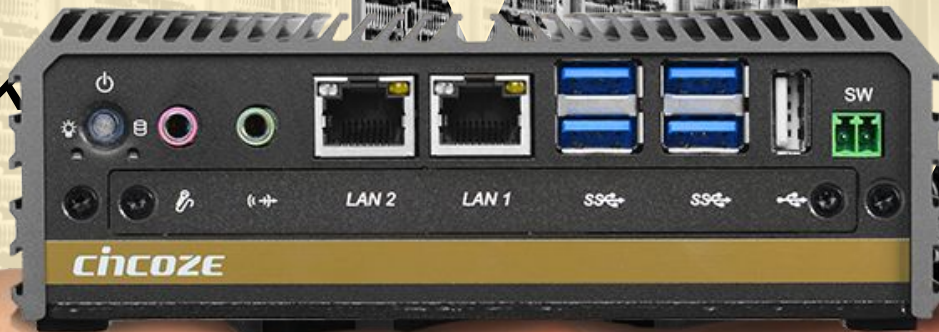
# Első Számítógépek

16m hosszú

4,3t

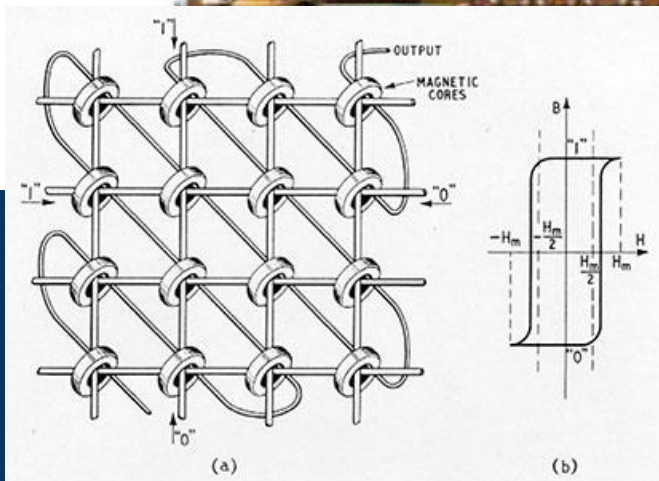
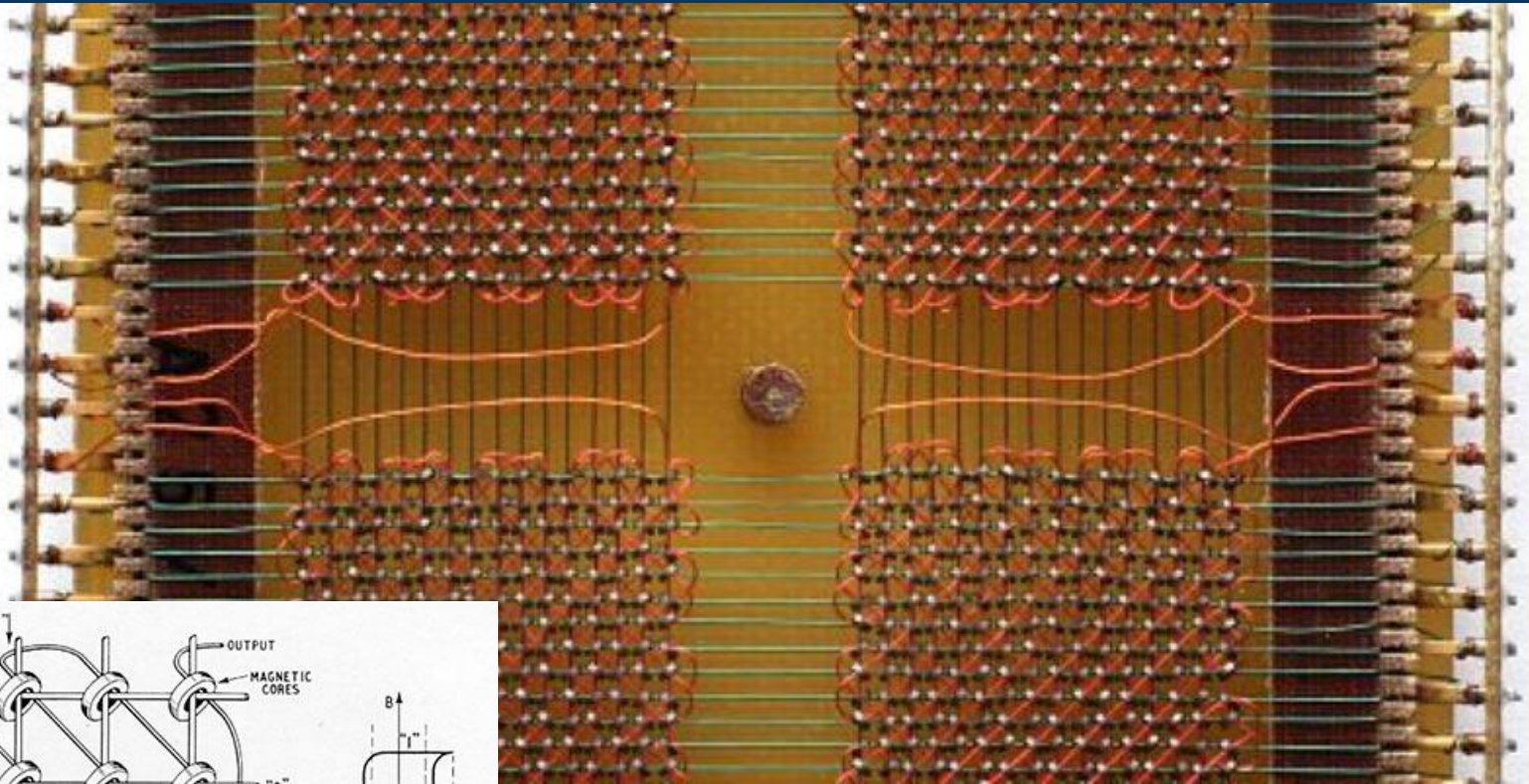
7500 relé

800k



# Memóriák

## Ferritgyűrűs tárolók





# 2023

Cincoze Ipari Számítógép Család







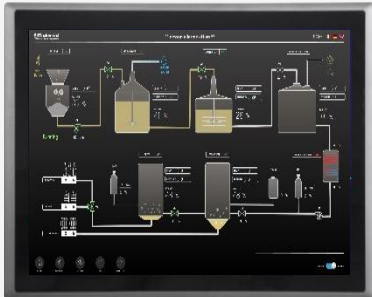
**CO-100 Series**

**All-New**

Convertible Open Frame Display Module

# Crystal Product Series

## CV



**Panel Mount - Standard Type**

- External Installation
- LCD Size: 8" – 24"
- Brightness: 300 – 450 nits

## CS



**Panel Mount - Sunlight Readable Type**

- External Installation
- LCD Size: 8" – 24"
- Brightness: 1000 – 1500 nits

## CO

**New Series**



**Open Frame / Standalone Type**

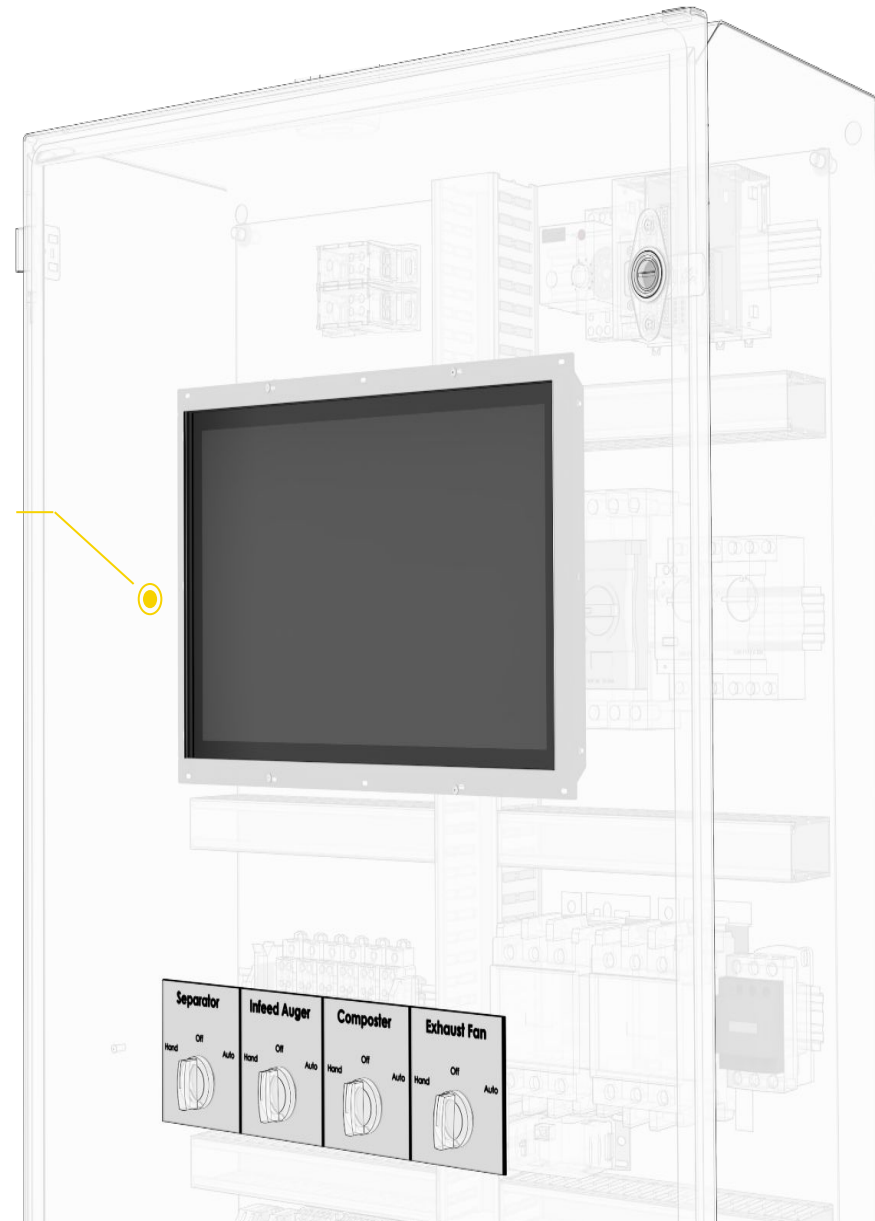
- Internal Integration
- LCD Size: 12" – 21"
- Brightness: 300 – 450 nits

# What is Open Frame Panel PC ?

Designed to be

**Integrated into Machine / Kiosk**

The design concept of open frame is to be integrated into machine or KIOSK, making the final product with more design integrity.





# Challenges for Open Frame Panel PC

## Highly Customizable

Customer has different needs for dimension, function or appearance for specific machine or equipment.

## Hard to Integrate

Need to take various considerations, such as mechanical integration, dust / water proof, shock, vibration, and EMC.

## Difficult to Maintain

There are various components such as LCD screen, touch panel, cable, M/B for on-site maintenance.

Open Frame  
Display



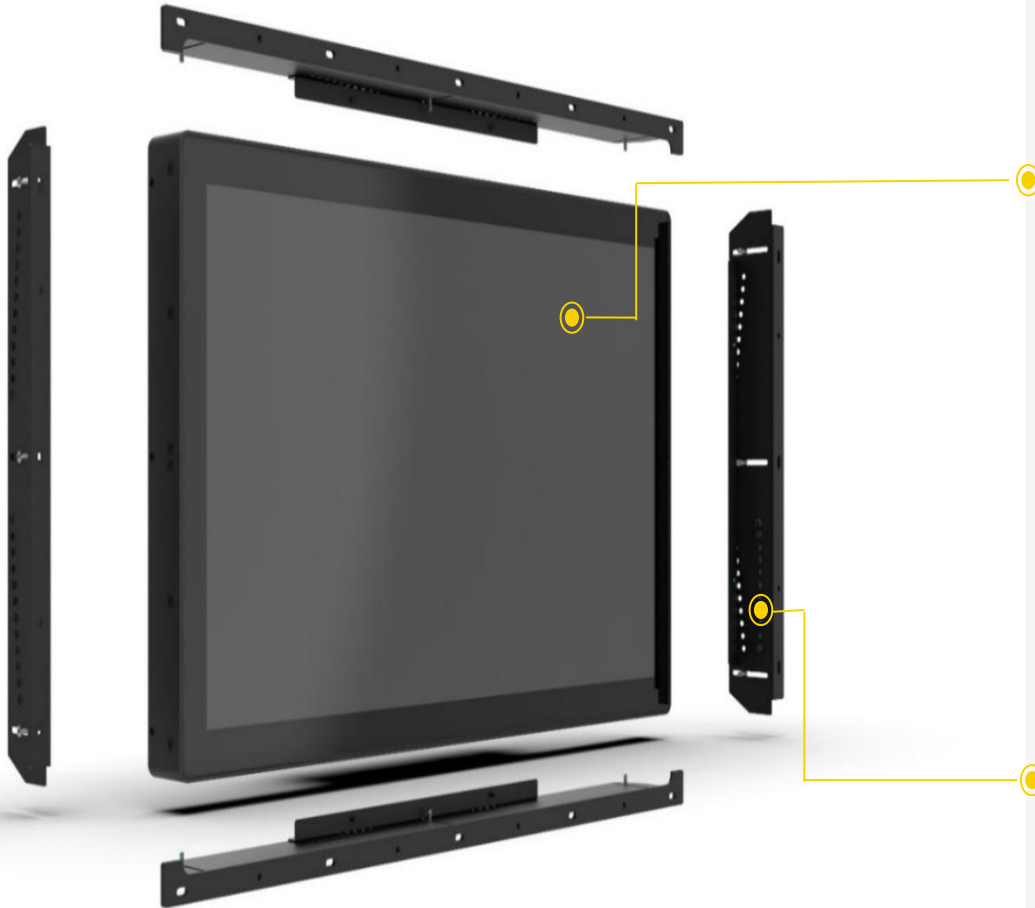
# New Series Debut !

## All-new Type of Open Frame Panel PC

Fit Any Machine Perfectly !



# System Structure



## Thin Bezel

### Display Module

- TFT-LCD 16:9 / 4:3 Display, Resolution up to 1920 x 1080
- Projected Capacitive Touch Screen
- Resolution up to 1920 x 1080 (Full HD)

## 4 Discrete

### Mounting Brackets

- Adjustable design to fit in any machines.
- Support different type of mounting methods.

# Mounting Bracket Adjustable Design



Four Sides

Back and Forth  
Adjustment

Patent  
Pending



# Support 2 Mounting Methods

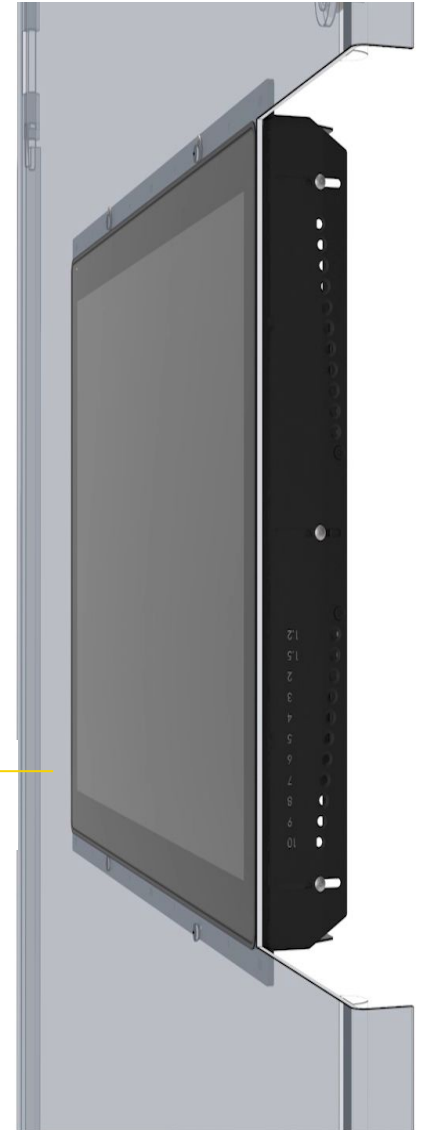
## Standard Mount

The screen of display module is fixed behind the surface of the cabinet, leaving "active touch and display area" open only.



## Flat Mount

The screen of display module is fixed and aligned to the same surface level of the cabinet, becoming a seamless appearance.



# Standard Mount

## Forward Adjusting

### Keep a Gap Between Screen and Cabinet Panel

CO-100's mounting bracket will be adjusted forward to protrude over the touch screen, preventing cabinet panel from pressing directly to touch screen.



# Flat Mount

## Backward Adjusting Support Cabinet Panel Thickness Up to 10mm

CO-100 series is able to fix in different types of enclosure or cabinet (steel or glass fiber reinforced plastics) with 11 different thickness: 1.2 - 10mm.



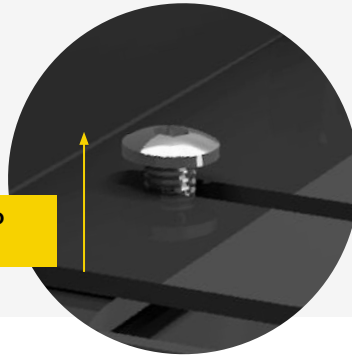
# Sliding Hole

Designed to

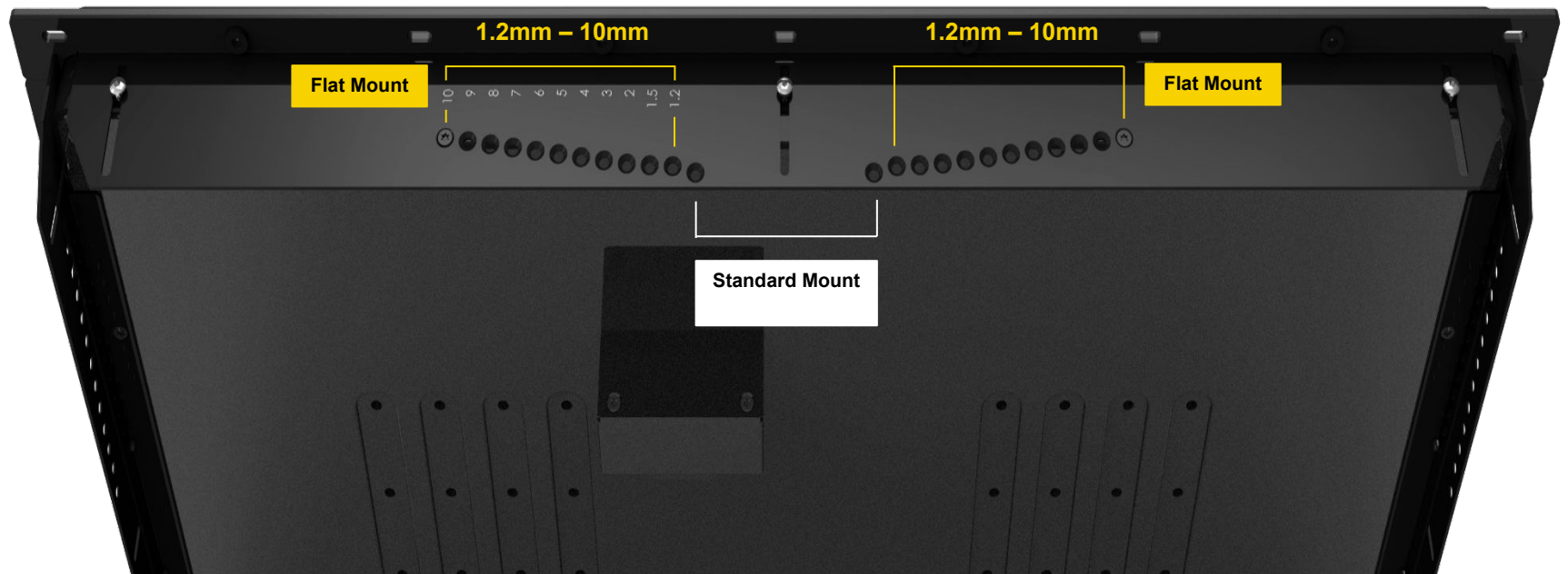
## Adjust Mounting Bracket

There are 3 sliding holes on each mounting bracket ensuring customer can adjust the bracket smoothly without removing screws.

Loosen Screws to  
Adjust



# Position Hole



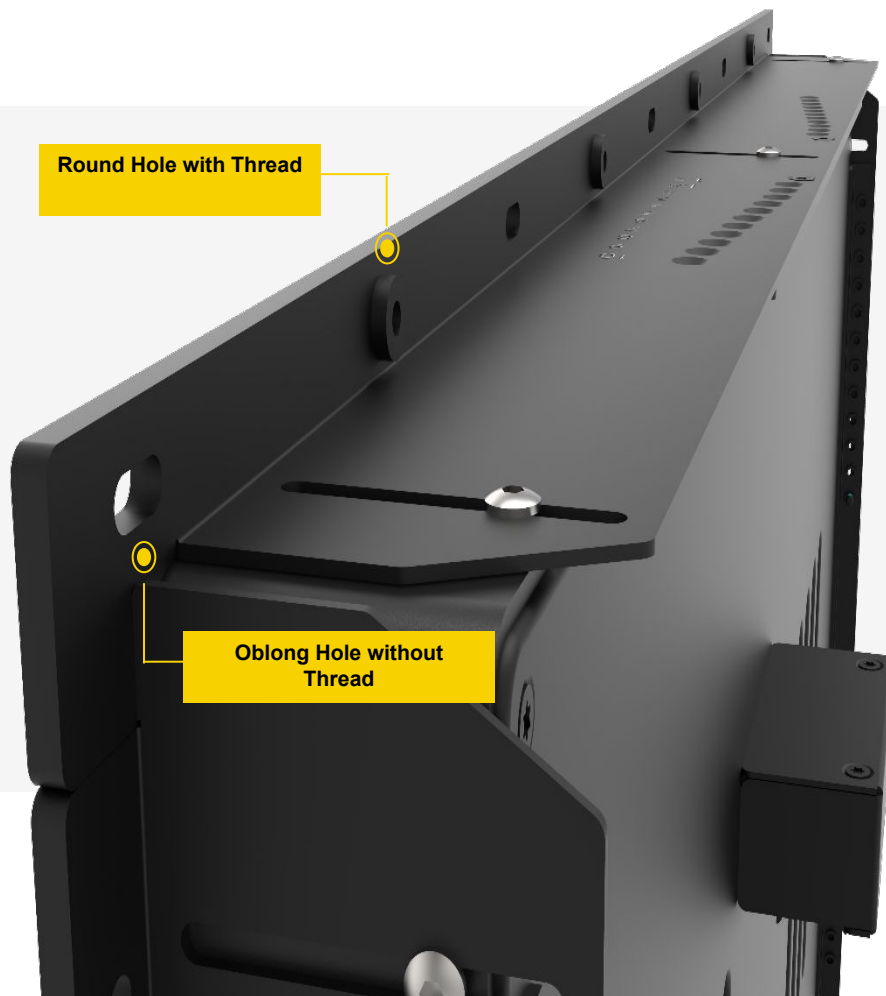
Designed to

**Position Mounting Bracket**

CO-100 is designed to fix mounting bracket with independent screw hole, preventing screws loosening from operations.



# Mounting Hole



Designed to

## Mount Open Frame Module

- Oblong mounting hole without thread: Need to fix through stud bolt or screw BOSS.
- Round mounting hole with thread: Allow to fix with screw directly.



VS



# 3 Fixing Methods



## Panel Type

1. Cabinet panel: Stud bolt
2. Mounting Hole: Oblong
3. Fixation Method: Nut

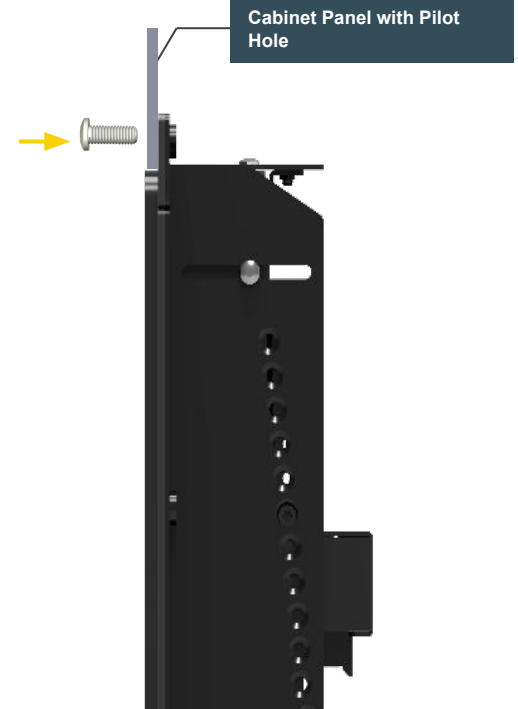
Tighten the nuts to fasten CO-100 to the cabinet panel.



## Boss Type

1. Cabinet panel: Boss
2. Mounting Hole: Oblong
3. Fixation Method: Screw

Tighten the screws to fasten CO-100 to the cabinet panel.



## Self-tapping Type

1. Cabinet panel: Pilot Hole
2. Mounting Hole: Round
3. Fixation Method: Screw

Tighten the screws to fasten CO-100 to the cabinet panel.

# Modular Design

## CDS

### Convertible Display System

Patent No.: M482908

CO-100 series supports CINCOZE patent technology – CDS which is compatible with existing PC modules (P1000 series & P2000 series) and monitor module (M1000 series).



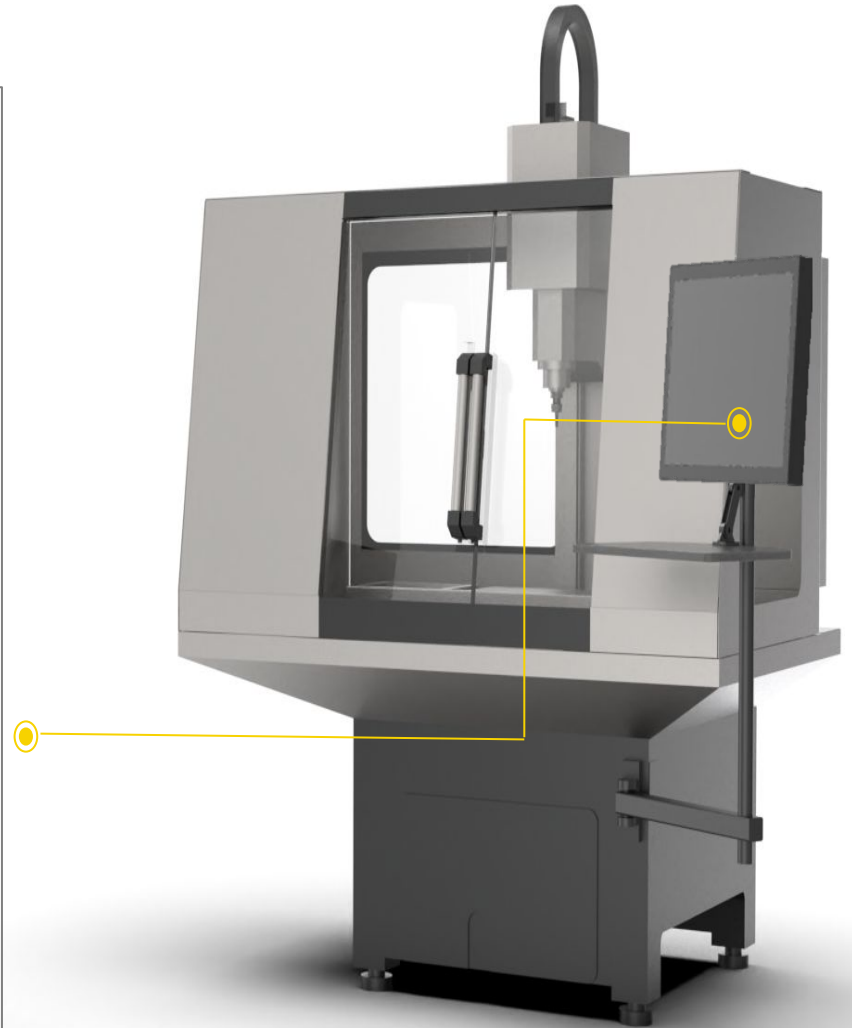
# VESA Mount



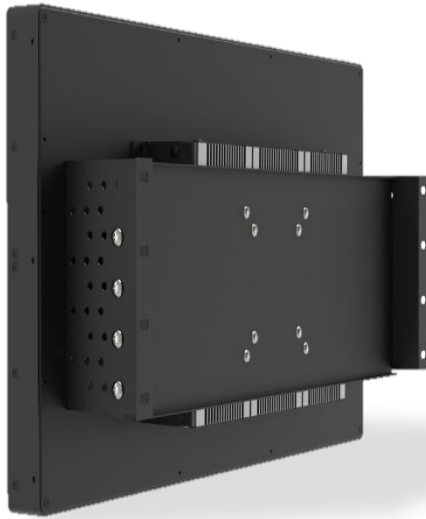
**75 / 100mm**

## Standard VESA Mounting Holes

All PC modules in Crystal Product Line comes with the VESA standard mounting holes on their top covers.



# 19" Rack Mount



## URM01

### Optional Universal Rack Mount Kit

CO-100 series is able to support 19" rack mount kit through VESA mounting holes on all PC modules in Crystal Product Line.





# Mount Anywhere You Need !



**Unique and Universal**

**CO-100 is More Than Just an Open Frame  
!**

# Front IP65 Protection

## IEC 60529

### Ingress Protection Standard

CO-100 series is designed with internal waterproof foam to against ingress of solid foreign objects or liquids.



# Waterproofing Reinforcement

## Waterproof Foam

### To Assist OEM in Waterproof Design

Closed-Cell Foam is made up of cells that are completely closed. It is sturdier and stiffer with a fine uniform cell structure compared to open-cell foam, providing excellent waterproof result.



# Wide Operating Temperature



**0°C - 70°C**

**Industrial Grade Panel & Touch  
Integrated**

# Safety Certification

| CERTIFICATE OF COMPLIANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | UL-CA-2231324-0                                                                                                                                                                                                                                                                                                                               |
| Report Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5525807-20220604                                                                                                                                                                                                                                                                                                                              |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Pending</b>                                                                                                                                                                                                                                                                                                                                |
| Issued to:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <br>2F No 130 Ln 235 Baogiao Rd<br>Xindian Dist New Taipei City 231407<br>Taiwan                                                                                                                                                                             |
| This is to certify that representative samples of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | AZOT8 - Audio/Video, Information and Communication Technology Equipment Certified for Canada - Component<br>See Addendum Page for Product Designation(s).                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC. |
| Standard(s) for Safety:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CSA C22.2 NO. 62368-1-14, 2nd Ed., Issue Date: 2014-12-01                                                                                                                                                                                                                                                                                     |
| Additional Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | See the UL Online Certifications Directory at <a href="https://iq.ulprospector.com">https://iq.ulprospector.com</a> for additional information                                                                                                                                                                                                |
| <p>This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.</p> <p>Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.</p> <p>Look for the UL Recognized Component Mark on the product.</p> |                                                                                                                                                                                                                                                                                                                                               |
| <br>Bruce Mahoney, Senior Vice President, Certification Program<br>UL LLC<br><br><small>Any information and documentation bearing UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact your local UL Customer Service Representative at <a href="mailto:UL@ulprospector.com">UL@ulprospector.com</a></small>                                                                                            |                                                                                                                                                                                                                                                                                                                                               |

## UL/c-UL 62368-1

### UL Component Recognition

UL Recognized Components have been evaluated by UL for installation within equipment where the component's limitations of use are known and investigated by UL

# Ordering Information



| Model Name   | LCD Size      | Touch Type | Description                                                                                           |
|--------------|---------------|------------|-------------------------------------------------------------------------------------------------------|
| CO-112C-R10  | 12" TFT-LCD   | Capacitive | 15" TFT-LCD Full HD 4:3 Open Frame Display Module with Projected Capacitive Touch                     |
| CO-115C-R10  | 15" TFT-LCD   | Capacitive | 17" TFT-LCD Full HD 4:3 Open Frame Display Module with Projected Capacitive Touch                     |
| CO-W121C-R10 | 21.5" TFT LCD | Capacitive | 21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch <b>Available</b> |



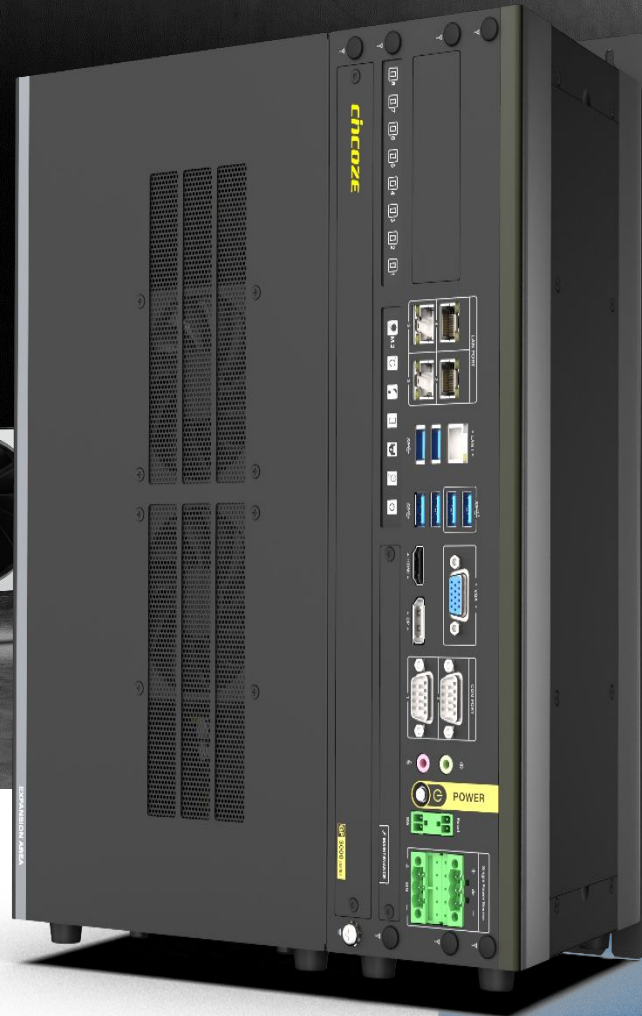
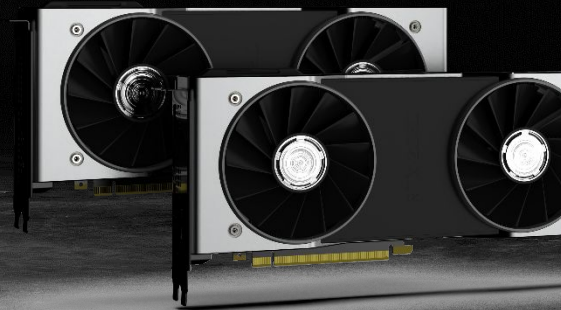
***cincoze***

Expertise in Embedded Computing

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# GP-3000 SERIES

Revolutionary Industrial GPU Computer



# Ultimate Performance



## 9/8<sup>th</sup> Gen CPU

Powered by Intel 9/8<sup>th</sup> Gen Xeon® / Core™ Processor with C246 Chipset.

## Dual GPU

Support Maximum Dual 250W Nvidia/AMD GPU Cards Expansion Up to 328mm in Length.

## 720W Power

Offer 720W Total System Power Budget for High-end CPU & GPU Computing.



# Scalable Design

Patent Pending



GPU Expansion Box

Embedded Computer

## Embedded PC

High Performance Standalone Embedded Computer.



## GPU Box

Offer Various Combination of PCIe Slots for High-end GPU and Add-on Cards Expansion

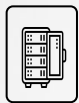


## GPU Computer

An Industrial AI and Machine Vision Computer

# Various Installation

With the unique system industrial design, GP-3000 is able to install in different industrial environment such as industrial control cabinet, 19" rack, in-vehicle, etc.



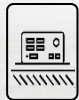
Industrial Control Cabinet



19" Rack



In-vehicle



Desktop

**Unprecedented Design !**



# Target Market

## Machine Vision



- Vision Guided Robotics
- Automated Optical Inspection
- Artificial Intelligence



## In-vehicle Computing



- Autonomous Driving
- Predictive Maintenance
- Fatigue Driving Detection



## Intelligent Transportation



- Traffic Monitoring
- Environmental Monitoring
- Object Screening



## Security & Surveillance



- Object Tracking & Detection
- Real-time Pose Estimation
- Video Analytics





# Embedded Computer



## Standalone Computer

## Scalable Design by Adding Versatile GPU Expansion Box

## High Computing Performance

GP-3000 is powered by the excellent performance of 9th and 8th generation Intel® Xeon®/Core™ processors with the Intel® C246 chipset

## Modular Design

Support Cincoze' innovative CMI (Combine Multiple I/O), CFM (Control Function Module), and MEC (Mini-PCle Expansion Card) Technology.

## Comprehensive Functionalities

Provide high speed connectivity, tippie display options, 4x front accessible HDD Trays, and various expansion sockets.

# GPU Expansion Box



## Discrete Box

Interdependent with Embedded Computer

### Dual GPU Cards Expansion

Offers maximum 500W power budget for dual GPU cards expansion (Single PCIe x16 slot offers up to 350W)

### Full-length GPU Card

Provides internal space sufficient for full-length GPU card expansion up to 328mm in length and 60mm in width.

### Various PCIe Slots

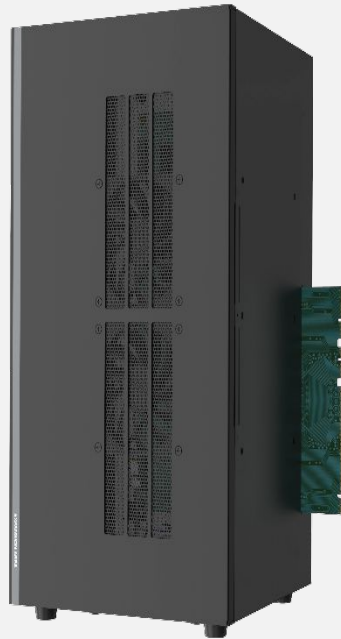
GPU Expansion Box (GEB) supports different combination of PCIe slots for add-on cards expansion such as high speed I/O card, frame grabber card, etc.

# Configure on Demand

Embedded Computer



GPU Expansion Box



+



Embedded GPU Computer



# Reliable Join Design

Patent Pending

## Rugged Structure

Design for Harsh Industrial Environment

1

Golden Finger Protection

2

Internal Card Guide Design

3

Fix GP-3000 Together with GEB Firmly  
with Internal Screws



# GP-3000 Series Overview



GP-3000 Embedded Computer

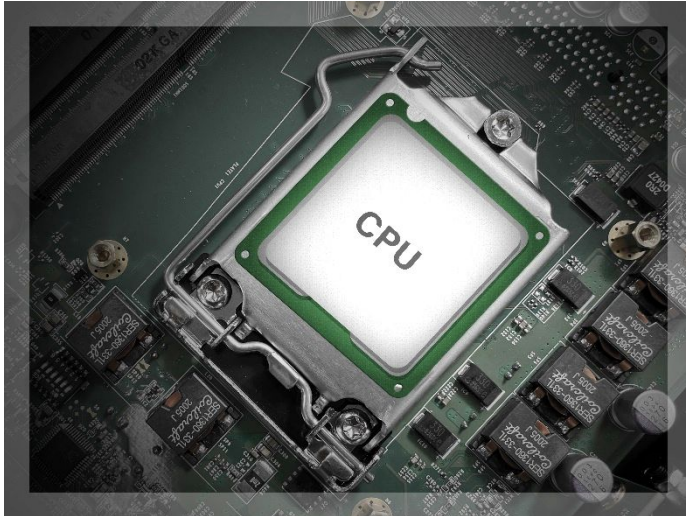


GP-3000 + 3-Deck GPU Expansion Box



GP-3000 + 6-Deck GPU Expansion Box

# 9/8<sup>th</sup> Gen Xeon / Core Processor



80W

Workstation Grade Processor Support!

## Xeon Series

### 9<sup>th</sup> Gen Coffee Lake-R Platform

- Xeon® E-2278GE 8 Cores up to 4.7 GHz, TDP 80W
- Xeon® E-2226GE 6 Cores up to 4.6 GHz, TDP 80W
- Xeon® E-2278GEL 8 Cores up to 3.9 GHz, TDP 35W

### 8<sup>th</sup> Gen Coffee Lake Platform

- Xeon® E-2176G 6 Cores Up to 4.7 GHz, TDP 80W
- Xeon® E-2124G 4 Cores Up to 4.5 GHz, TDP 71W

## Core i7 / i5 / i3 Series

### 9<sup>th</sup> Gen Coffee Lake-R Platform

- Core™ i7-9700E 8 Cores Up to 4.4 GHz, TDP 65W
- Core™ i5-9500E 6 Cores Up to 4.2 GHz, TDP 65W
- Core™ i3-9100E 4 Cores Up to 3.7 GHz, TDP 65W
- Core™ i7-9700TE 8 Cores Up to 3.8 GHz, TDP 35W
- Core™ i5-9500TE 6 Cores Up to 3.6 GHz, TDP 35W
- Core™ i3-9100TE 4 Cores Up to 3.2 GHz, TDP 35W

### 8<sup>th</sup> Gen Coffee Lake Platform

- Core™ i7-8700 6 Cores Up to 4.6 GHz, TDP 65W
- Core™ i5-8500 6 Cores Up to 4.1 GHz, TDP 65W
- Core™ i3-8100 4 Cores Up to 3.6 GHz, TDP 65W
- Core™ i7-8700T 6 Cores Up to 4.0 GHz, TDP 35W
- Core™ i5-8500T 6 Cores Up to 3.5 GHz, TDP 35W
- Core™ i3-8100 4 Cores Up to 3.6 GHz, TDP 35W

## Pentium & Celeron Series

### 8<sup>th</sup> Gen Coffee Lake Platform

- Pentium® G5400 2 Cores 3.7 GHz, TDP 58W
- Pentium® G5400T 2 Cores 3.1, TDP 35W

### 8<sup>th</sup> Gen Coffee Lake Platform

- Celeron® G4900 2 Cores 3.1 GHz, TDP 54W
- Celeron® G4900T 2 Cores 2.9 GHz, TDP 35W



# Dual GPU Cards

**500W**

**For GPU Expansion**



## Fulfill the Demanding GPU Market !

GP-3000 offers 500W power budget for Dual GPU cards expansion. In order to fulfill all kinds of high-end applications, GP-3000 is designed to support 350W for single GPU card expansion.

**Single GPU Card Expansion: 350W Power Budget**

**Dual GPU Card Expansion: 500W Power Budget**

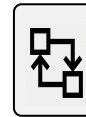
# 720W Total Power Budget



**Powerful and Reliable !**

## Single Power Source Design

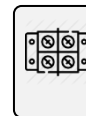
GP-3000 offers 720W system power budget for high-end GPU Computing applications. With the specialized power design, GP-3000 is able to allocate up to 500W for GPU Expansion Box (GEB), providing safe, easy and reliable solution for the edge!



Prevent Power Sequence Issue



No Setting required for On-site Installation



Dual Power Connector Design for Safety Operation

# System Heat Dissipation Design

Patent Pending

Exhaling



Inhaling

## Exchangeable Modular Fan Kit

New

GP-3000 accommodates two external smart fans on two sides of the aluminum extruded top cover. The fans are modular design for easy maintenance without cabling. With the unique system structure, fans are isolated from the electronics, preventing dust intake into the system for product longevity.



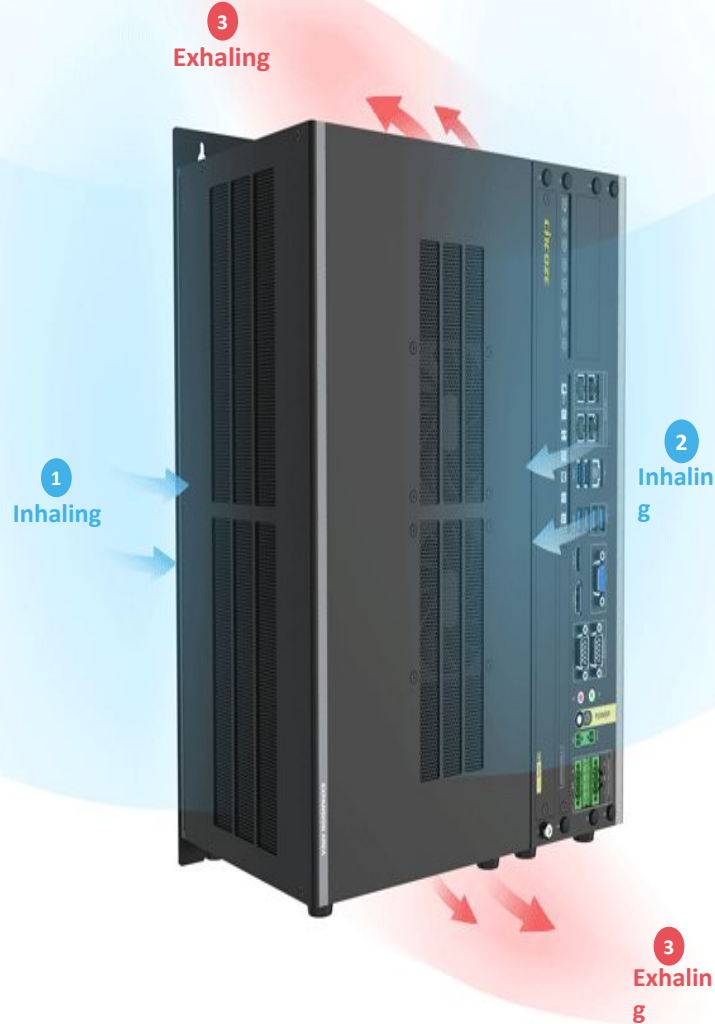
Isolated from the Electronics

Support Smart Fan Function

Touch-type Design

Easy Maintenance & Installation

# Intelligent GPU Cooling Design



## Omnidirectional Cooling for Thermal Optimization

In order to handle heavy power consumption from GPU cards, GP-3000 possesses several ventilation areas to regulate air flow, ensuring reliable operation for industrial environment.

1

### Ventilation Area

For GPU card's onboard fan to inhale cool air (Recommended for Single GPU card)

2

### Inhaling Fan

To provide enough air flow for the second GPU card or high-performance add-on cards.



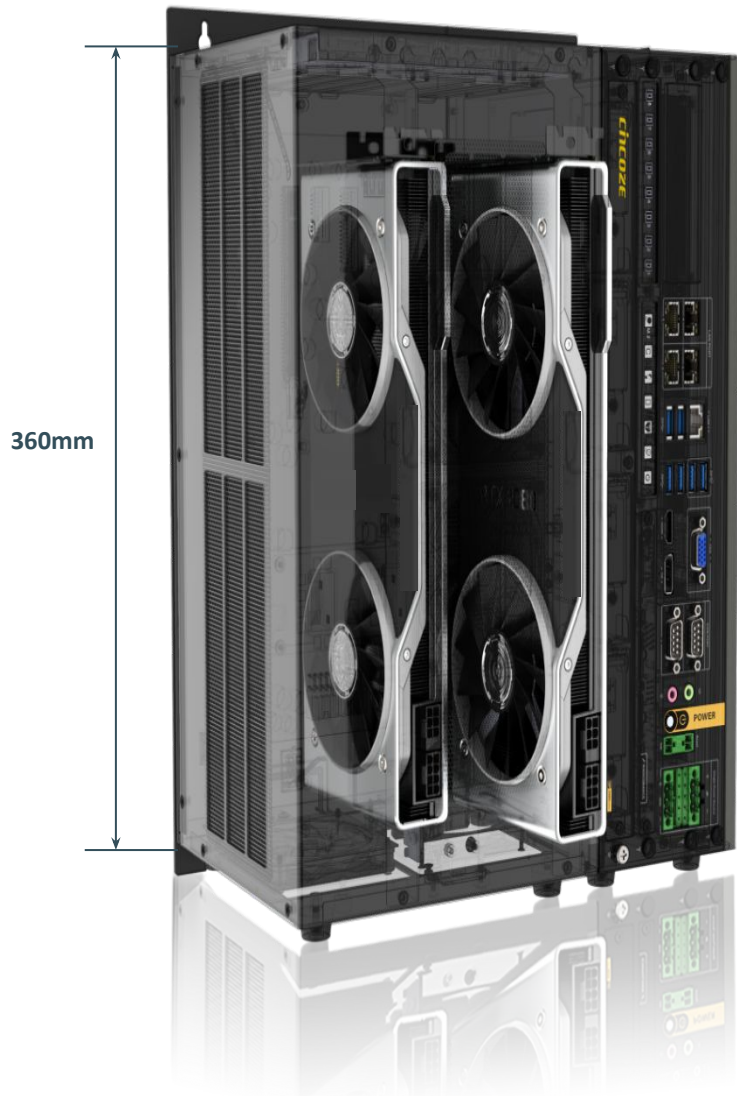
3

### Powerful Exhaling Fan

To exhale heat from inside of the system

Smart fan function is supported by dip switch settings  
Easy Maintenance Design

# Full-length GPU Card Expansion



## Great Possibilities for GPU Cards Expansion

With the unique system form factor design, GP-3000 is 360mm in length which provides sufficient space for high performance GPU card up to full-length 320mm and 60mm in width with its I/O facing up.

Length: 328mm

Height: 64mm

Width: 134 mm



**Suitable for All Kinds of GPU Cards !**

# Two Options for GPU Expansion

## 3-Deck GPU Expansion Box



- Single GPU Card Expansion (1x PCIe x16 Lanes )
- Support 350W GPU Card
- 1x PCIe4 for Add-on Card
- Independent Cooling Design

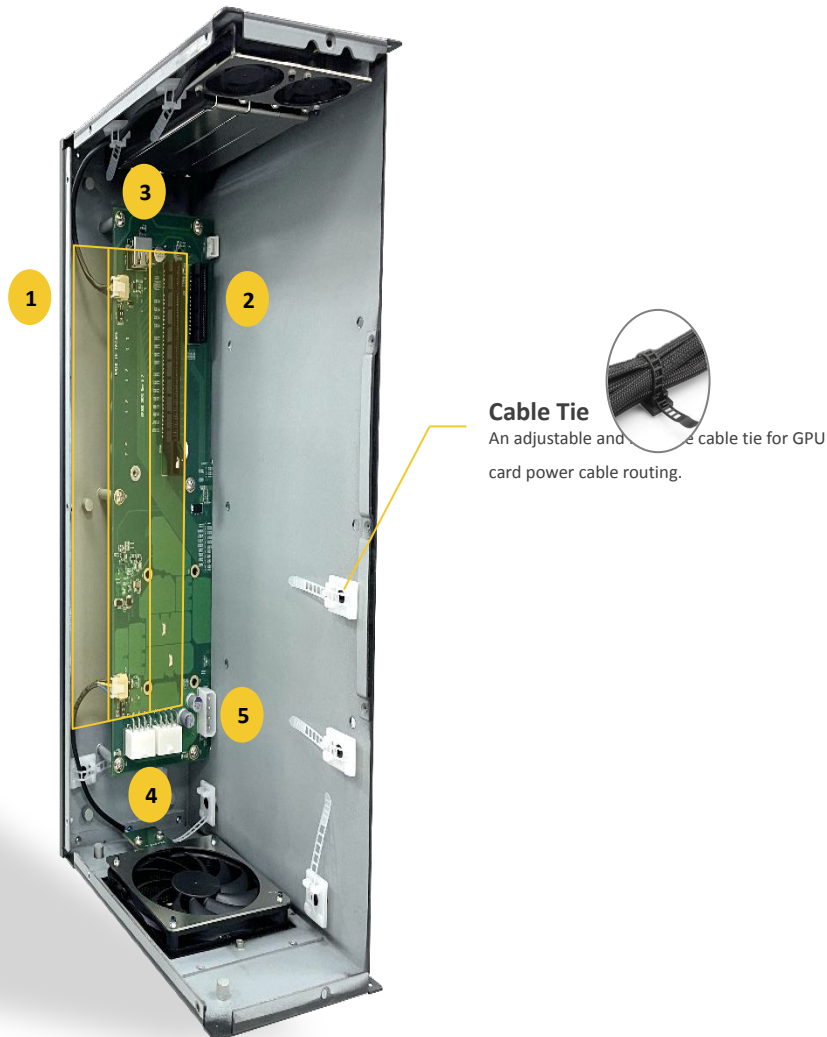
## 6-Deck GPU Expansion Box



- Dual GPU Cards Expansion (2x PCIe x8 Lanes )
- Support Dual 250W GPU Card
- 1x PCIe4 + 1x PCIe x1 for Add-on Cards
- Independent Cooling Design



# 3 Deck GPU Expansion Box



## Cable Tie

An adjustable and secure cable tie for GPU card power cable routing.

## PCIe x16 Slot

Support Up to 350W GPU Card with Additional Power from Item 4  
Support Maximum 3-Slot GPU Card ( Thickness 60mm )

## PCIe x4 Slot

1x PCIe4 Slot for Add-on Cards Expansion, Such as High Speed I/O Card, Frame Grabber Card, etc.

## Internal USB

USB2.0 Type A

New

Support USB-based Security Dongle for Encryption Applications

## 2x 8-Pin Power Connector

Designed for GPU Card

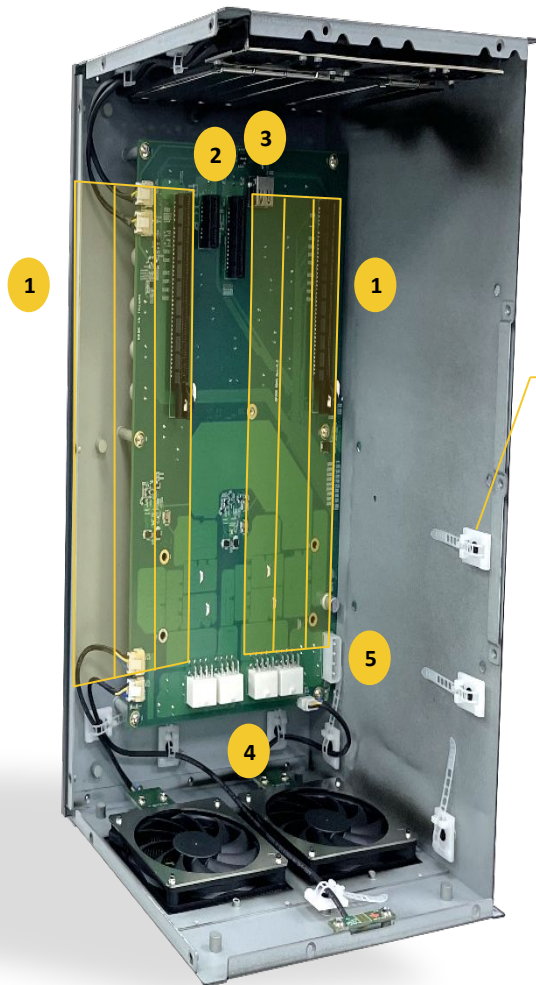
Provide Universal 8-Pin to 6+2-Pin Universal Power Cable



## Additional Power Connector

Support Additional 12V 4-Pin Connector onboard to satisfy different applications.

# 6 Deck GPU Expansion Box



## Cable Tie

An adjustable and reusable cable tie for GPU card power cable routing.

## 1 2x PCIe x16 Slot ( PCIe x8 Lanes )

Support Dual 250W GPU Cards with Additional Power from Item 4  
Support Maximum 3-Slot GPU Card ( Thickness 60mm )

## 2 1x PCIe4 Slot + 1x PCIe1 Slot

PCIe4 Slot for High Speed I/O Card or Frame Grabber Card  
PCIe1 Slot for Motion Card or Communication Card

## 3 Internal USB

USB2.0 Type A

New

Support USB-based Security Dongle for Encryption Applications

## 4 4x 8-Pin Power Connector

Designed for Dual GPU Card

Provide Universal 8-Pin to 6+2-Pin Universal Power Cable

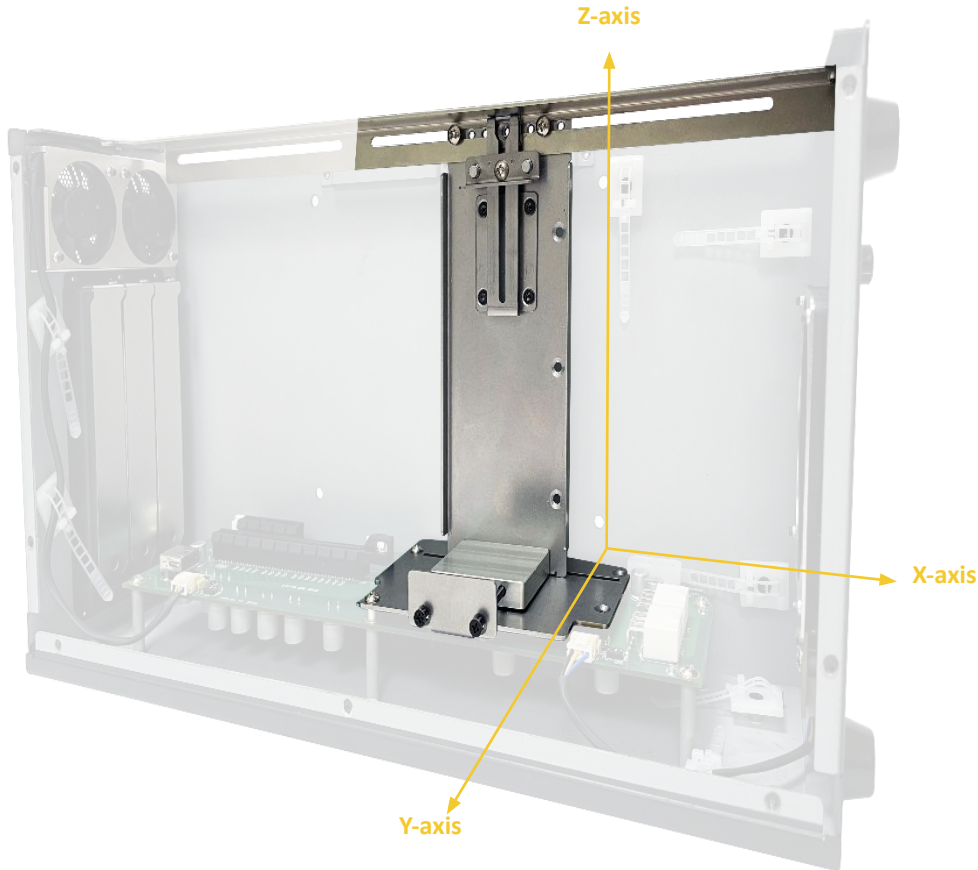


## 5 Additional Power Connector

Support Additional 12V 4-Pin Connector onboard to satisfy different applications.

Patent Pending

# Adjustable GPU Retainer

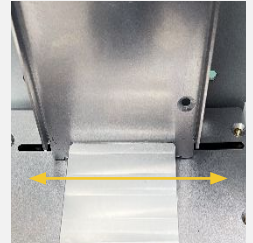


## Adjustable 3D Bracket

Design to Fix All Kinds of GPU Cards

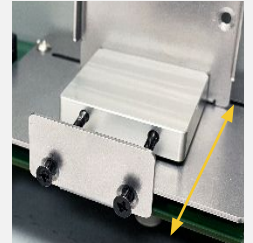
### X-axis

An adjustable X axis is able to fix the GPU card according to its length.



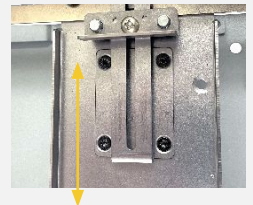
### Y-axis

To clamp different GPU cards based on their thickness from standard 2 slots (40mm) to 3 slots (60mm).



### Z-axis

To adapt different GPU cards based on their width.



Sponges for insulation are provided in case of using GPU cards without casing.

# System Overview

## High Speed Connectivity

5x 10/100/1000Mbps LAN Ports, RJ45  
2x 10Gbps USB3.2 Gen2 Ports, Type A Connector  
4x 5Gbps USB3.2 Gen1 Ports, Type A Connector

## Display Option

1x VGA Port ( 1920 x 1200 @ 30 Hz )  
1x HDMI Port ( 4096 x 2304 @ 30 Hz )  
1x DisplayPort ( 4096 x 2304 @ 60 Hz )

## 4x 2.5" HDD Trays

Support 4x 2.5" Front Accessible HDD/SSDD  
with Hot Swappable Function.

## Universal Bracket

For Cincoze' CMI / CFM / MEC Module Expansion.

## Other Function

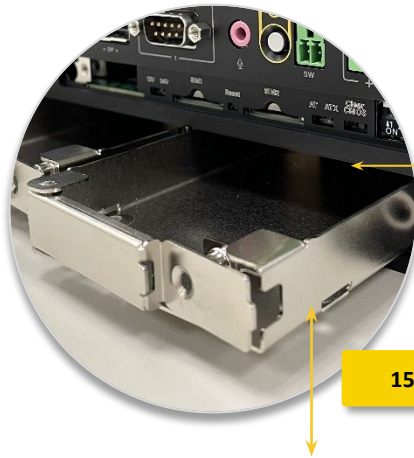
2x RS232/422/485 Serial Ports (Support 5V/12V)  
1x Mic-in, 1x Line-out  
1x Remote Power On/Off  
1x Remote Reset

## Maintenance Area

Support Removeable CMOS Battery, Dual SIM Card Slots,  
AT / ATX Mode Switch, IGN Function Switch, and Reset  
Switch



# 4x 2.5" HDD Trays



15mm Design

## Ruggedly Ensured

Front Accessible & Massive Storage Capability

Support 4x 2.5" Front Accessible SSD/HDD

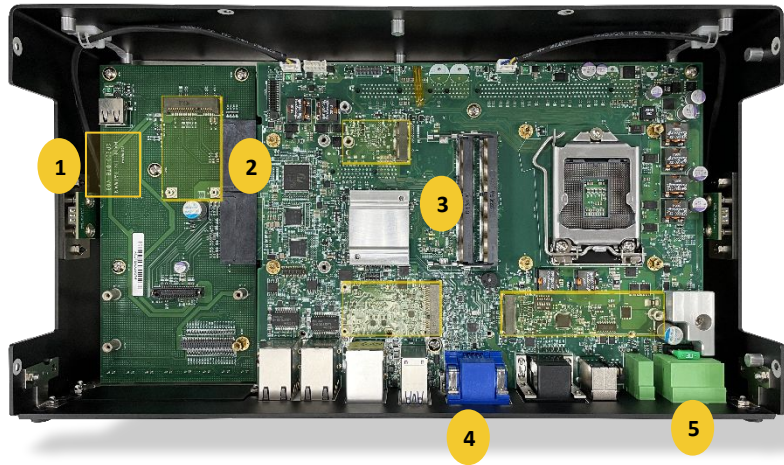
Up to 15mm in Height for High-Capacity Storage Device

Hot Swappable Function for Quick Data Maintenance

Support RAID 0 / 1 / 5 / 10



# Internal Expansion Sockets



Available with **7 Antenna Holes**

**Designed for Versatile Applications!**

## Internal USB

**New**

USB2.0 Type A

Support USB-based Security Dongle for Encryption Applications

## Mini PCIe 1 Socket

WIFI Module Expansion / GPS Expansion

MEC I/O Expansion

## M.2 E Key Type 2230 Socket

WIFI / Bluetooth Module Expansion

BIOS Selectable for Intel® CNVi High-speed Network

## Mini PCIe 2 Socket

WIFI Module Expansion / GPS Expansion

3G / 4G Module Expansion ( Interconnected with 2x SIM )

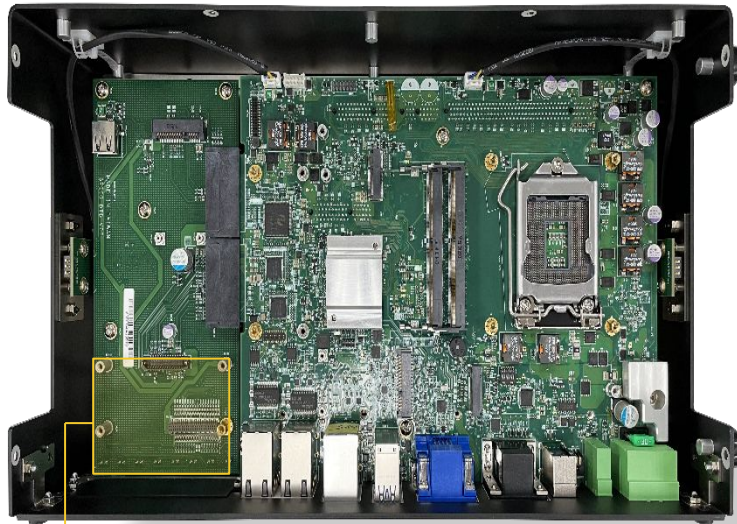
## M.2 M Key Type 2280 Socket

Storage Expansion ( Support NVMe Storage )

Auto-detection for PCIe4 SSD or SATA SSD



# CMI Modular Technology - High Speed



High Speed

CMI Expansion Interface



## CMI-10GLAN02

- 2x 10 GbE LAN, RJ45 Port
- Intel X550 LAN Chip



## CMI-LAN01

- 4x 10/100/1000 Mbps LAN, RJ45 Port
- Intel I210-IT LAN Chip



## CMI-M12LAN01

- 4x 10/100/1000 Mbps LAN, M12 A-Coded
- Intel I210-IT LAN Chip

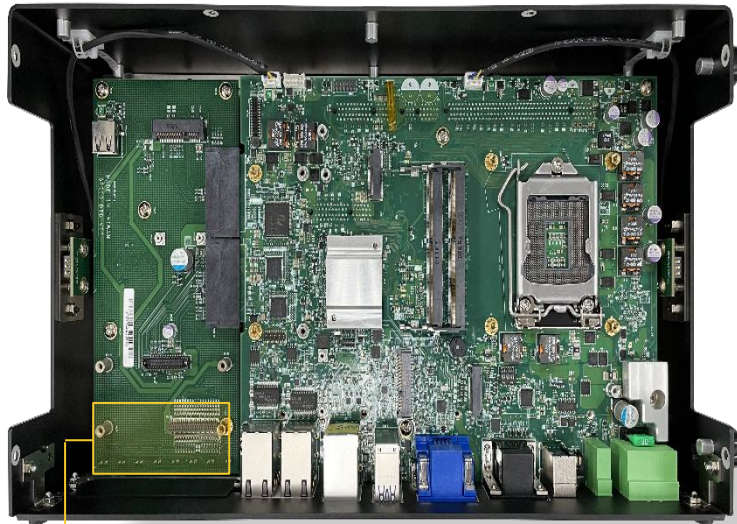


## CMI-XM12LAN01

Coming Soon !

- 4x 10/100/1000 Mbps LAN, M12 X-Coded
- Intel I210-IT LAN Chip

# CMI Modular Technology - Low Speed



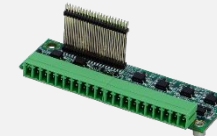
Low Speed

CMI Expansion Interface



## CMI-COM04

- 2x Serial Port, DB9 Connector
- BIOS Selectable RS-232/422/485
- Output Voltage: 5V / 12V
- Baud Rate: 921.8 Kbps
- Electrical Isolation: N/A



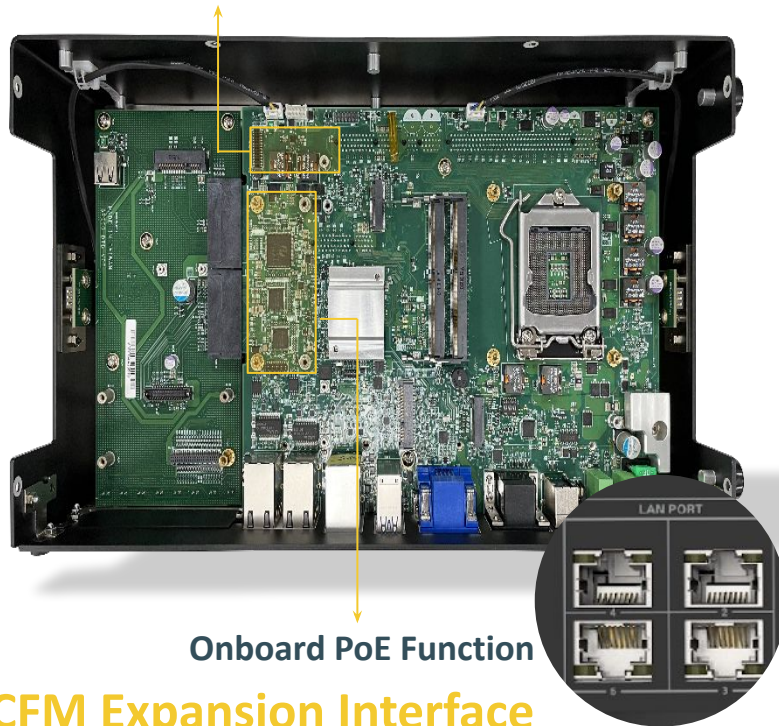
## CMI-DIO04

- 16x Optical Isolated Digital I/O
- Connector Type: 2x 10-Pin Terminal Block
- Support 8x DI + 8x DO
- Power Input: 9-30VDC
- Sample Code and DLL File Available

# CFM Modular Technology

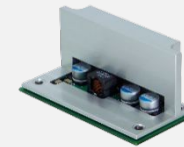
IGN Function

CFM Expansion Interface



## CFM-PoE01

- Enable PoE Function for Onboard LAN1 – LAN4
- Support 4x PoE+, Individual Port 25.5W



## CFM-PoE07

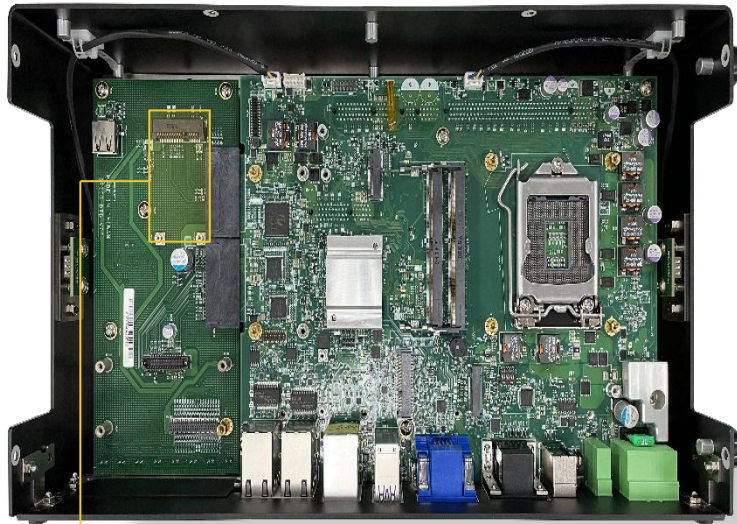
- Stack CFM-PoE Module on Top of CMI-LAN Module to Enable PoE Function
- Support 4x PoE+, Individual Port 25.5W



## CFM-IGN03

- Power Ignition Sensing Function
- Low Voltage Detection
- Support Power Off Delay Timer Setting

# MEC Modular Technology



Full-size

Mini-PCle Expansion Interface



**MEC-USB-M102-15**

- 2x USB3.2 Gen1 Port
- Connector Type: Type A
- Support 5Gbps Data Transfer Rate
- Voltage Output: 5V
- Current Output: 900mA
- Cable Length: 15cm





# Wide Range of Operating Temperature



## Fulfill Harsh Environment

GP-3000 is compliant with IEC60068-2-1 / IEC62268-2-2 / IEC60068-2-14 with Burn-in test at CPU / GPU 100% loading to ensure system stability under harsh environment.

| CPU  | Non-GPU      | 1x 250W GPU  | 1x 350W GPU  | 2x 250W GPU  |
|------|--------------|--------------|--------------|--------------|
| 35 W | -40°C ~ 70°C | -40°C ~ 40°C | -40°C ~ 35°C | -40°C ~ 35°C |
| 65 W | -40°C ~ 60°C | -40°C ~ 40°C | -40°C ~ 35°C | -40°C ~ 35°C |
| 80 W | -40°C ~ 50°C | -40°C ~ 40°C | -40°C ~ 35°C | -40°C ~ 35°C |

# Versatile Mounting Methods



## Wall Mount

Design for All GP-3000 Series:

- GP-3000
- GP-3000/GEB-33 Series
- GP-3000/GEB-36 Series

With Standard Wall Mount Bracket



## Desktop Mount

Design for GP-3000 Embedded Computer

With Standard Desktop Mount Bracket

- Rubber Foot can be mounted at the bottom for anti-shock and vibration purpose



## Face-up Mount

Design for All GP-3000 Series:

- GP-3000
- GP-3000/GEB-33 Series
- GP-3000/GEB-36 Series

With Standard Wall Mount Bracket



## Rack Mount

Design for All GP-3000 Series:

- GP-3000
- GP-3000/GEB-33 Series
- GP-3000/GEB-36 Series

With Optional Mounting Kit: RM01-R10





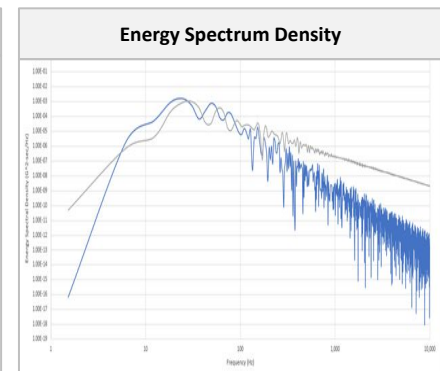
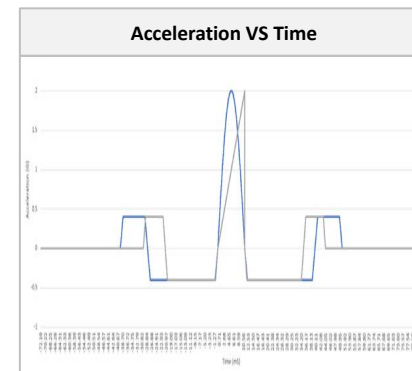
# MIL-STD 810G Proof



## Pass Military Standard Shock & Vibration Testing

A vibration testing is to assess the functionality and durability of a system after it has been exposed to intense shaking and juddering. A shock testing is to test a system's capability to survive a drop, hit or fall. GP-3000 passes military standard shock & vibration test to ensure the reliability during extreme conditions, providing the most rugged system for your applications.

■ IEC 60068-2-27 Half-sine  
■ MIL-STD Sawtooth Wave



The half-sine pulse has a smooth transition. The sawtooth wave pulse has a smooth ramp and a sharp transition back to zero. The sharp transition generates notably higher amounts of high-frequency energy.

# Industry Certifications



EM  
C

## Railway – EN50121-3-2

EN 50121-3-2 ( EN 50155 ) is an international standard covering electronic equipment used on rolling stock for railway applications

---



EM  
C

## Automotive – E-mark

E-mark is a mandatory certification mark released by European Commission for whole vehicles, safe components and systems used in member states according to EU directives.

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Safety

## Safety – EN62368-1

LVD (Low Voltage Directive) covers health and safety risks on electrical equipment operating with an input or output voltage between 75V-1500V

---

***cincoze***

Expertise in Embedded Computing

---



## DA-1100 Series

Diamond Affordable  
Fanless Embedded Computer





- 



# Palm Size Design



Suitable for space-limited environments

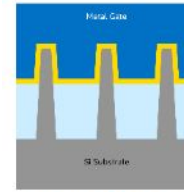


# Apollo Lake Platform



Intel Apollo Lake

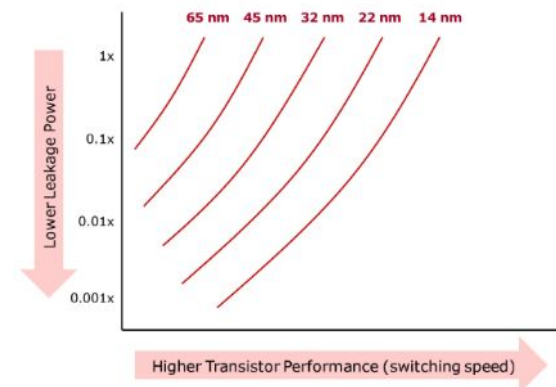
14nm Process Technology



22 nm 1<sup>st</sup> Generation  
Tri-gate Transistor  
**Bay Trail**



14 nm 2<sup>nd</sup> Generation  
Tri-gate Transistor  
**Apollo Lake**



## HIGH CPU PERFORMANCE

- Enormous Compute Capabilities
- Compute scalability



## FAST GFX & MEDIA PROCESSING

- Smooth / Rich images on up to 3 independent displays
- No need for external GFX with up to 18 GPUs
- Superior video encoding & decoding

Achieving new levels of CPU performance, fast graphics and media processing

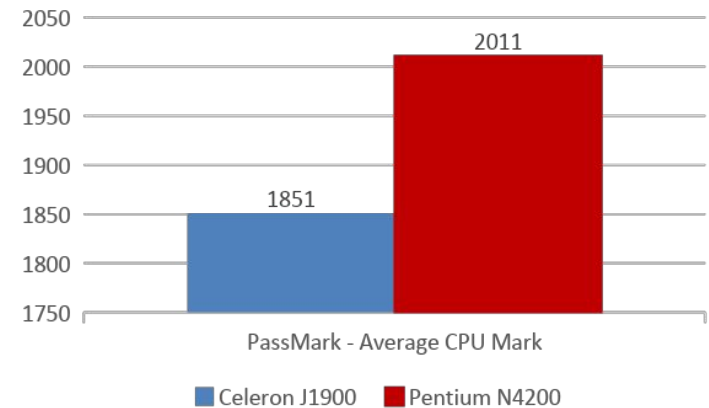
# Computing Performance



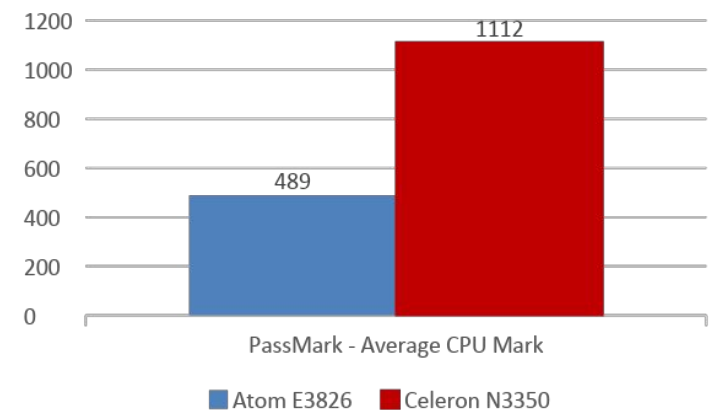
Up to  
**4 Cores**  
Up to  
**2.5GHz**



## Quad Core Processor



## Dual Core Processor



Bay Trail      Apollo Lake

Offering up to 1.7X (vs. Bay Trail) computing performance improvement

# Media & Display Capabilities



*Gen. 9 Graphics Architecture*



- *4K display performance*
- *Refresh rate at 60Hz*



- *Supports 3 display pipes, simultaneous multi-streaming on 3 independent display*



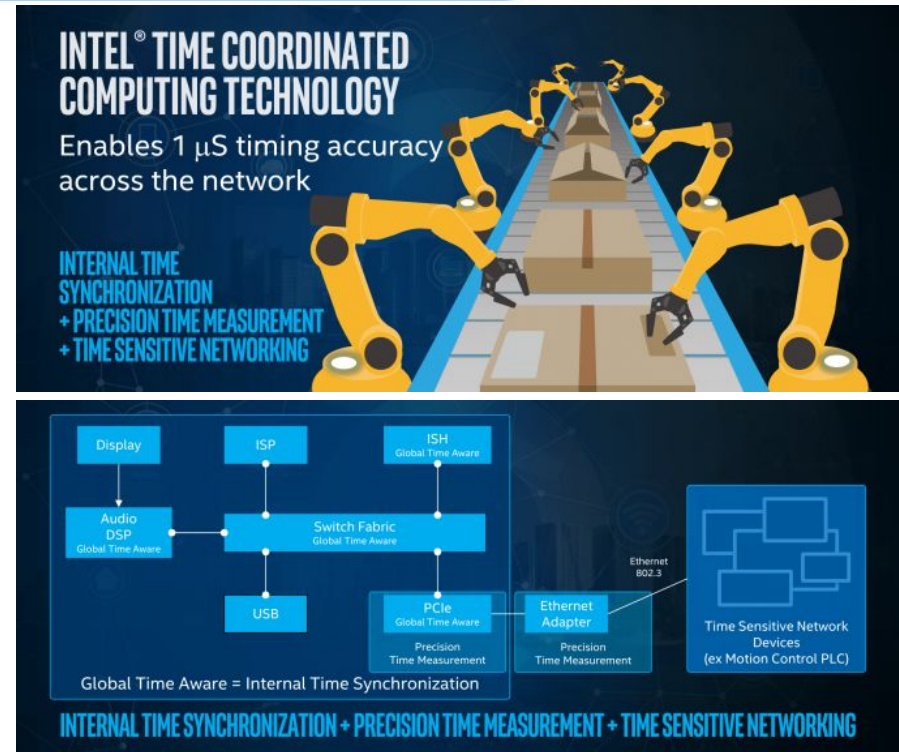
- *Advanced capabilities in media encoding and decoding*
- *HEVC 4K video format support*

Meeting a wide variety of multi-media applications

# Time Coordinated Computing (TCC) Technology



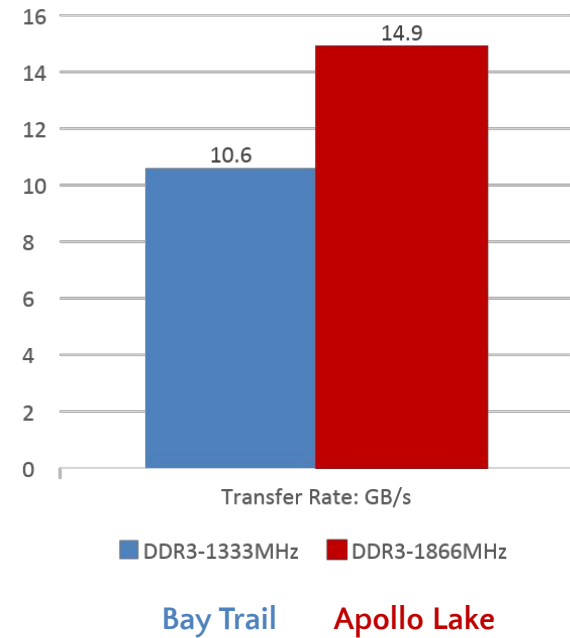
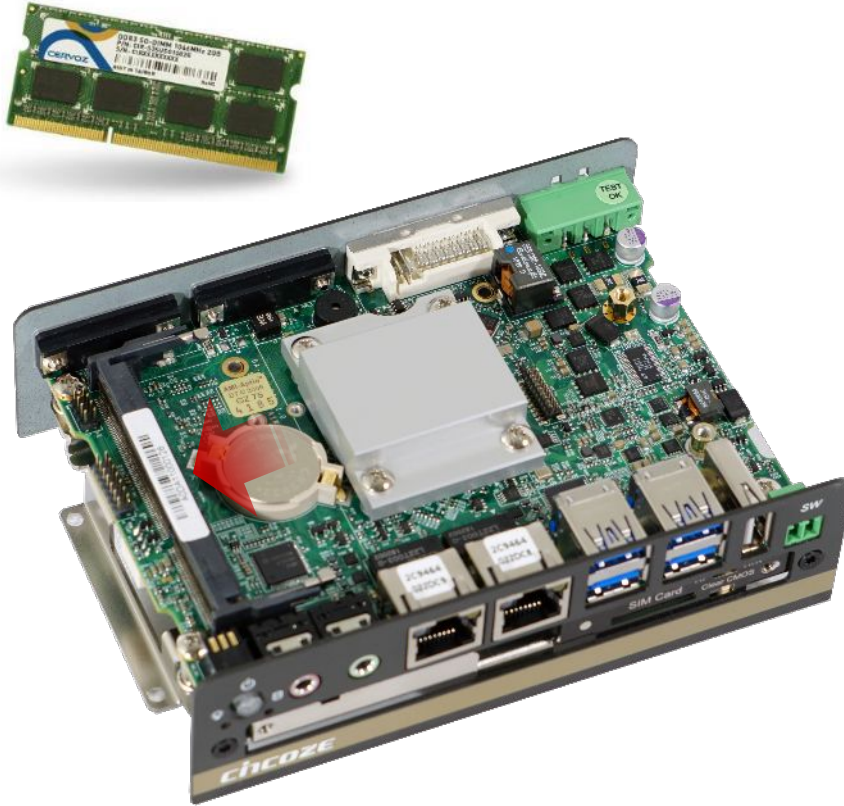
*Time Coordinated Computing*



1. *Measure between the clocks within SoC and peripherals*
2. *Translate the CPU time to the corresponding peripheral time without stalling the CPU*
3. *Synchronize CPU with network and I/O*

Improving efficiency, reliability, and productivity in complex manufacturing and industrial processes

# DDR3L Memory



*1x DDR3 SO-DIMM Socket, Up to 1866MHz, Max. 8GB*

1.4X transfer rate (vs.1333MHz)



# Applications

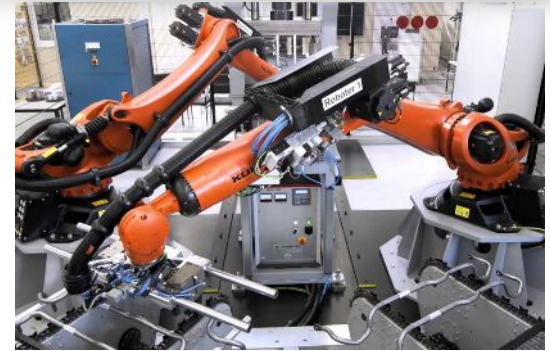
Automated Guided Vehicle



Machine Vision



Robot Controller



Automated Cash Handling



Smart Street Lighting

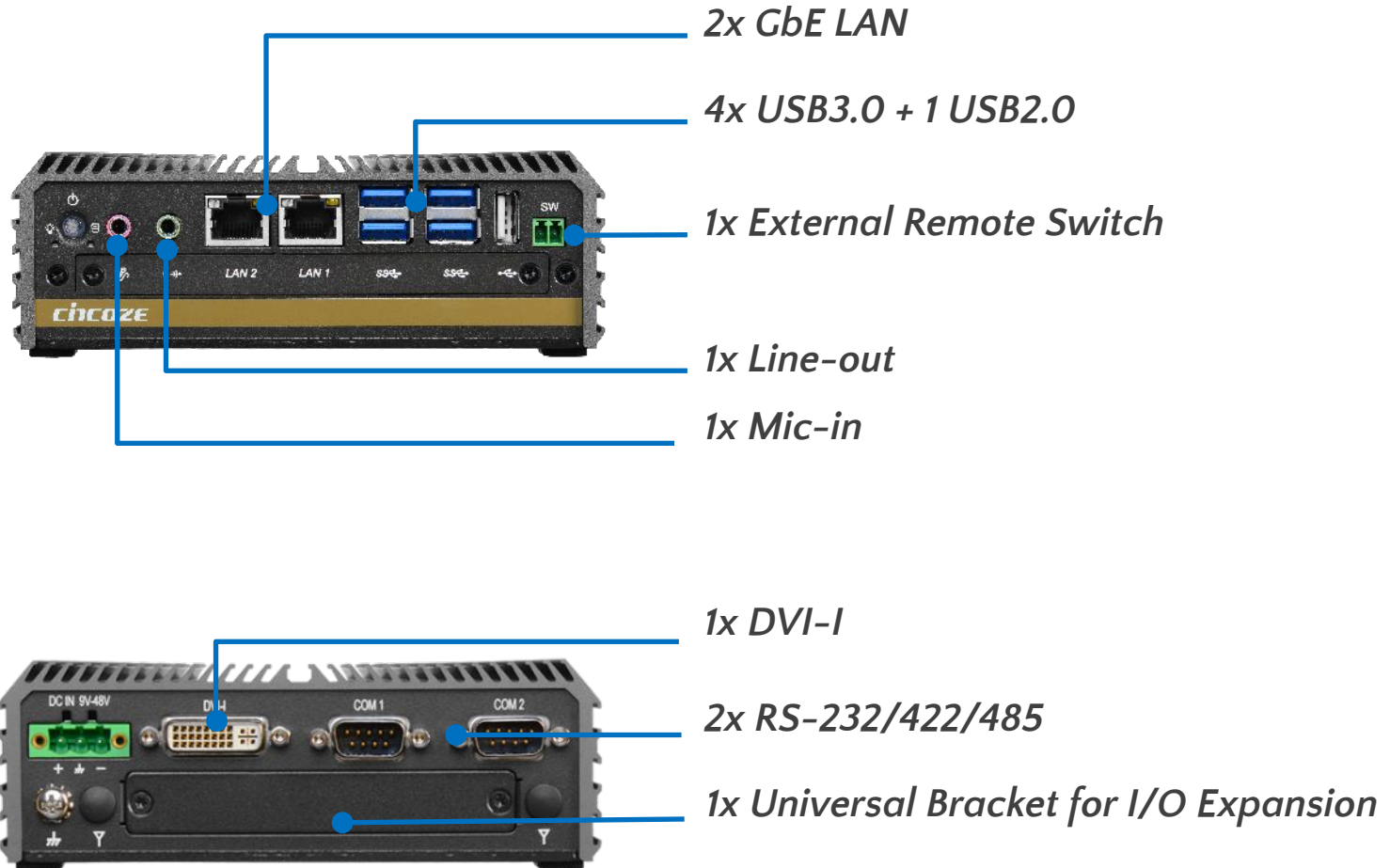


Mobile Surveillance Unit



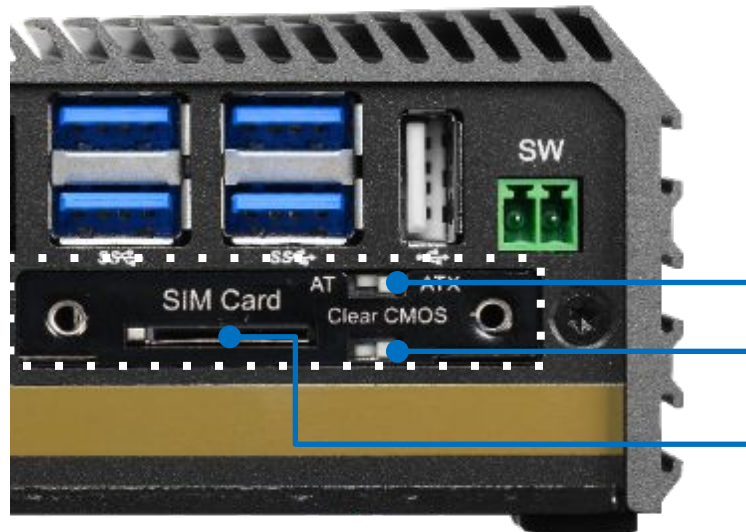


# A Variety of I/O Ports



A variety of I/O ports for many applications

# Maintenance Area



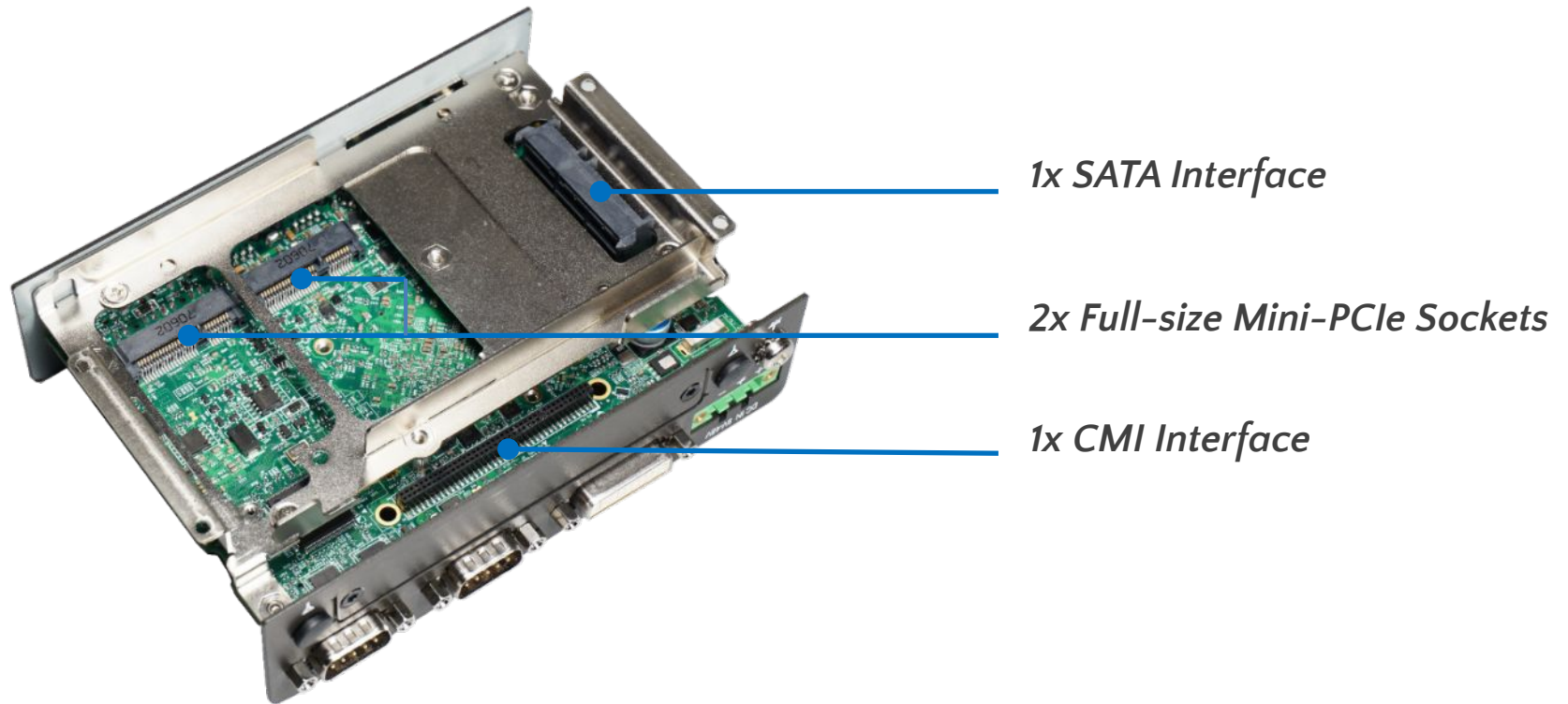
*AT/ATX Mode Switch*

*Clear CMOS Switch*

*SIM Socket*

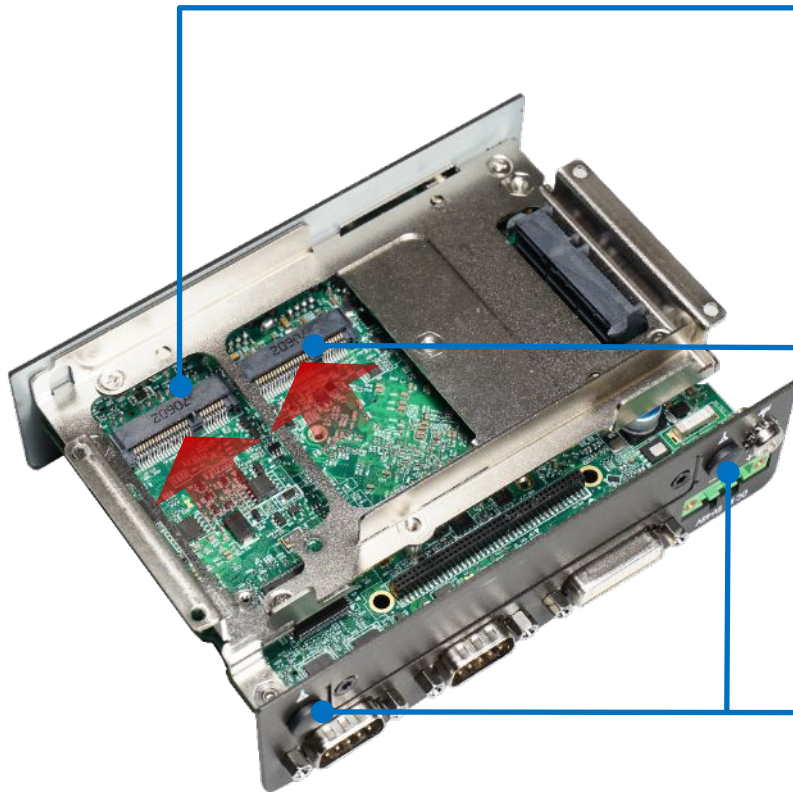
Reducing maintenance and downtime cost

# User Area



For user to set up peripherals easily

# Mini-PCle Expansion



## *Full-size Mini-PCle Socket Interconnected with SIM Socket*

- For wireless & I/O expansion
- 3G / LTE module support



## *Full-size Mini-PCle Socket / mSATA Socket*

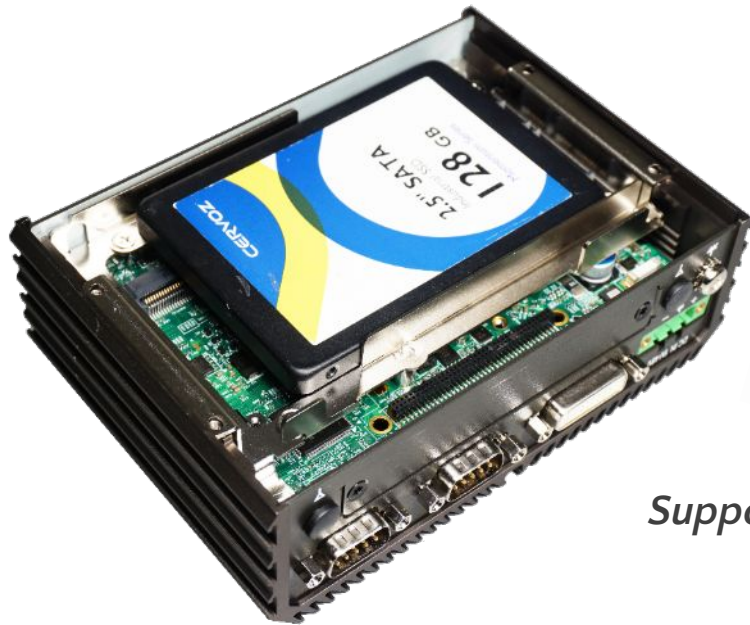
- For wireless & I/O expansion
- Selectable mSATA (SATA3.0)



## *2x Antenna Holes*

A flexible and easy installation for expansion

# 2.5-inch SSD/HDD Support



*Supports 7mm/9.5mm 2.5-inch SSD/HDD (SATA3.0)*

Providing mass storage capabilities



# Triple Independent Display



Delivering triple display capabilities for a wide range of applications

# Versatile Mounting Methods



*Wall Mount*



*(Standard Accessory)*

*DINRAIL*



*(Optional "DINRAIL")*

*VESA*



*Side Mount*



*(Optional "SIDE02")*

Installing in every location

# CMI Technology – Display Modules



## ***CMI-DP101***

- 1x DisplayPort output
- Up to 4Kx2K@60 Hz



## ***CMI-DVI101***

- 1x DVI-D output
- Up to 1920x1080@60 Hz



## ***CMI-HDMI101***

- 1x HDMI 1.4b output
- Up to 4Kx2K@30 Hz



## ***CMI VGA101***

- 1x VGA output
- Up to 1920x1200@60Hz



Supporting all kinds of display devices

# CMI Technology – I/O Modules



## ***CMI-COM102***

- 2x RS232/422/485 output
- Support 5V/12V



## ***CMI-DIO100***

- 8x optical isolated DIO
- 4 in
- 4 out (9-30V)



## ***CMI-LPPS102***

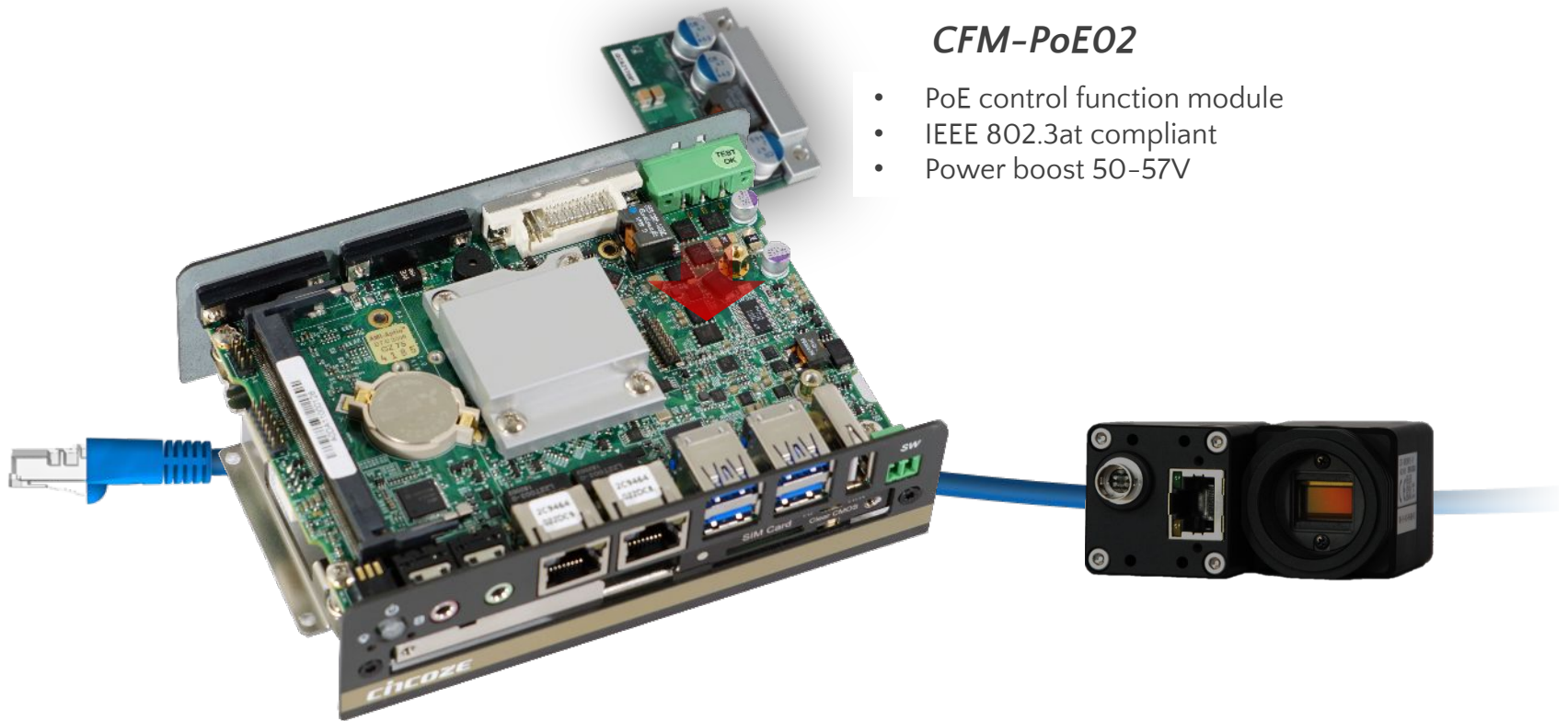
- 1x parallel port
- 1x PS/2 port



Cost effective and reliable expansion solution



# CFM Technology – PoE Module



## *CFM-PoE02*

- PoE control function module
- IEEE 802.3at compliant
- Power boost 50-57V

Saving cost and simplify cabling installation



# Rugged & Reliable



## *Fan-less Design*

- No moving parts
- No noise



## *Cable-less Design*

- Better signal performance
- No loosening cable



## *Jumper-less Design*

- Integrated DIP switch for easy configuration



## *Uni-body Design*

- Robust heavily mental against collision



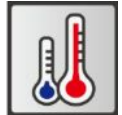
## *High Tolerance for Shock & Vibration*

- Shock: 50 Grms
- Vibration: 5 Grms



## *Industrial Grade Component*

- Selection of wide-temp components



## *Wide Operating Temperature*

- -40 to +70 degree Celsius



## *Wide Range DC Power Input*

- Support 9-48V DC



## *Reverse Power Input Protection*

- Won't start for wrong connection



## *Over Voltage Protection*

- DC-in: 58V DC



## *Over Current Protection*

- DC-in: 20A



## *ESD Protection*

- All I/O ports:  
+/-15kV(air), +/-8kV(contact)



## *Surge Protection*

- DC-in: 3.84kV

# Industry Certification

## *EN 60950-1 for Safety (Pending)*

EN60950-1 is applicable to mains-powered or battery-powered information technology equipment with a **RATED VOLTAGE** not exceeding 600 V



**SGS**

No: RL/2017/80046C  
Page 1 of 1

**VERIFICATION of COMPLIANCE**

|                         |                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------|
| Verification Report No. | RL/2017/80046C                                                                                  |
| Representative Model    | DS-1100                                                                                         |
| Series Model(s)         | DS-1101, DS-1102                                                                                |
| Product Name            | Rugged Embedded Computer                                                                        |
| Applicant               | Concrete Co., Ltd.                                                                              |
| Address of Applicant    | 7/F, No. 4, Aly. 1, Ln. 335, Rongxin Rd., Sindian Dist., New Taipei City 23445, Taiwan          |
| Date of Issue           | October 03, 2017                                                                                |
| Test Report Number(s)   | RL/2017/80046C                                                                                  |
| Applicable Standards    | IEC 60950-1:2005 (2nd Edition)+Am 1:2009+Am 2:2013<br>EN 60950-1:2006+A11:2006+A12:2011+A2:2013 |

**Conclusion:**

Based upon a review of the Test Report(s) and the Technical Construction File, the apparatus is deemed to meet the requirements of the applicable standards above.

**Note:** This verification is only valid for the apparatus and configuration described and in conjunction with the test report(s) detailed above.

**Authorized Signatory:**



**SGS TAIWAN LTD. Safety Lab**  
Jimmy Lu  
Manager

Unless otherwise stated, the results shown in this report shall only be for the specific product and test conditions as stated for the test item.

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10000, 2, Jinhua Rd., Taipei City, Taiwan  
10000, 2, Jinhua Rd., Taipei City, Taiwan  
10000, 2, Jinhua Rd., Taipei City, Taiwan

# Ordering Information



| No. | DA-1100 Series | Processor      | Core Count | Base Frequency | Burst Frequency |
|-----|----------------|----------------|------------|----------------|-----------------|
| 1   | DA-1100-N42    | Pentium™ N4200 | 4          | 1.1 GHz        | 2.5 GHz         |
| 2   | DA-1100-N33    | Celeron™ N3350 | 2          | 1.1 GHz        | 2.4 GHz         |



## DS-1200 Series

**Rugged Embedded Computer**

**High Performance, Expandable and Modular System**



# Key Features

- 01 | High Performance
- 02 | Unique System Design
- 03 | Ultimate Expandability
- 04 | Application-Driven





# Desktop S Series Processor

- LGA 1151 socket type

## Intel® Core™ Processors

- Intel® Core™ i7-8700 **Hexa Core** 3.2 GHz  
12M Cache, up to 4.6 GHz, TDP 65W
- Intel® Core™ i5-8500 **Hexa Core** 3.0 GHz  
9M Cache, up to 4.1 GHz, TDP 65W
- Intel® Core™ i3-8100 **Quad Core** 3.6 GHz  
6M Cache, TDP 65W
- Intel® Core™ i7-8700T **Hexa Core** 2.4 GHz  
12M Cache, up to 4.0 GHz, TDP 35W
- Intel® Core™ i5-8500T **Hexa Core** 2.1 GHz  
9M Cache, up to 3.5 GHz, TDP 35W
- Intel® Core™ i3-8100T **Quad Core** 3.1 GHz  
6M Cache, TDP 35W

## Intel Pentium® /Celeron® Processors

- Pentium® G5400 **Quad Core** 3.7 GHz  
4M Cache, TDP 58W
- Pentium® G5400T **Quad Core** 3.1 GHz  
4M Cache, TDP 35W
- Celeron® G4900 **Quad Core** 3.1 GHz  
2M Cache, TDP 54W
- Celeron® G4900T **Quad Core** 2.9 GHz  
2M Cache, TDP 35W

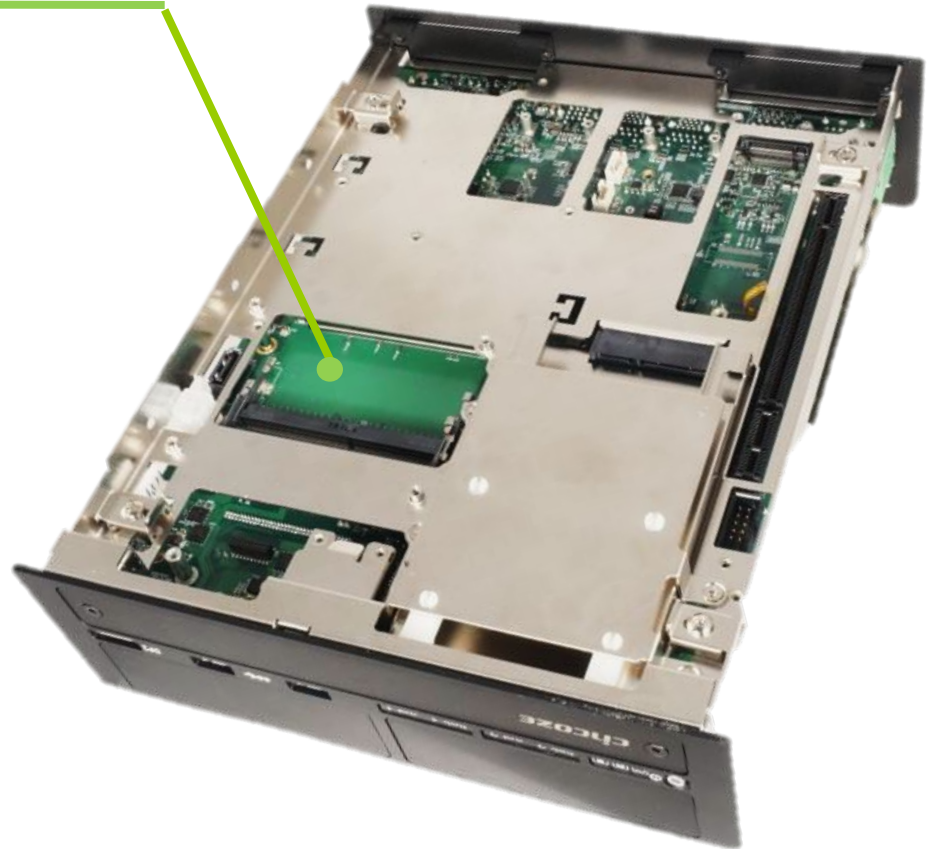
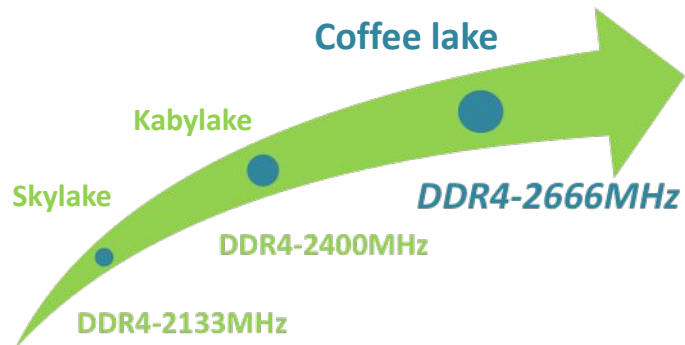
**Wide range CPU selection**  
**2X cores compare to previous generation**

# DDR4 Memory

## 2x DDR4 SO-DIMM Sockets



- Transfer rate up to 2666 MHz for Core i7/i5
- Transfer rate up to 2400 MHz for Core i3
- Max. capacity 32 GB



Up to 1.1X memory speed

# Unique System Design

For the ease of installation and maintenance



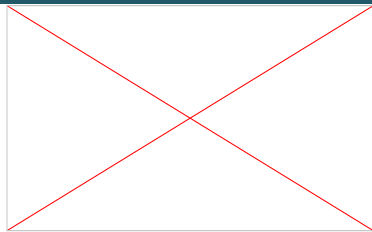
## ***Module Expansion Area***

For expansion of CMI or MEC modules.



## ***Maintenance Area***

For user to maintain the system after deployment.



## ***User Area***

For user to expand PCI/PCIe add-on card or Cincoze CFM module.



## ***System Area***

For partner to configure the system.

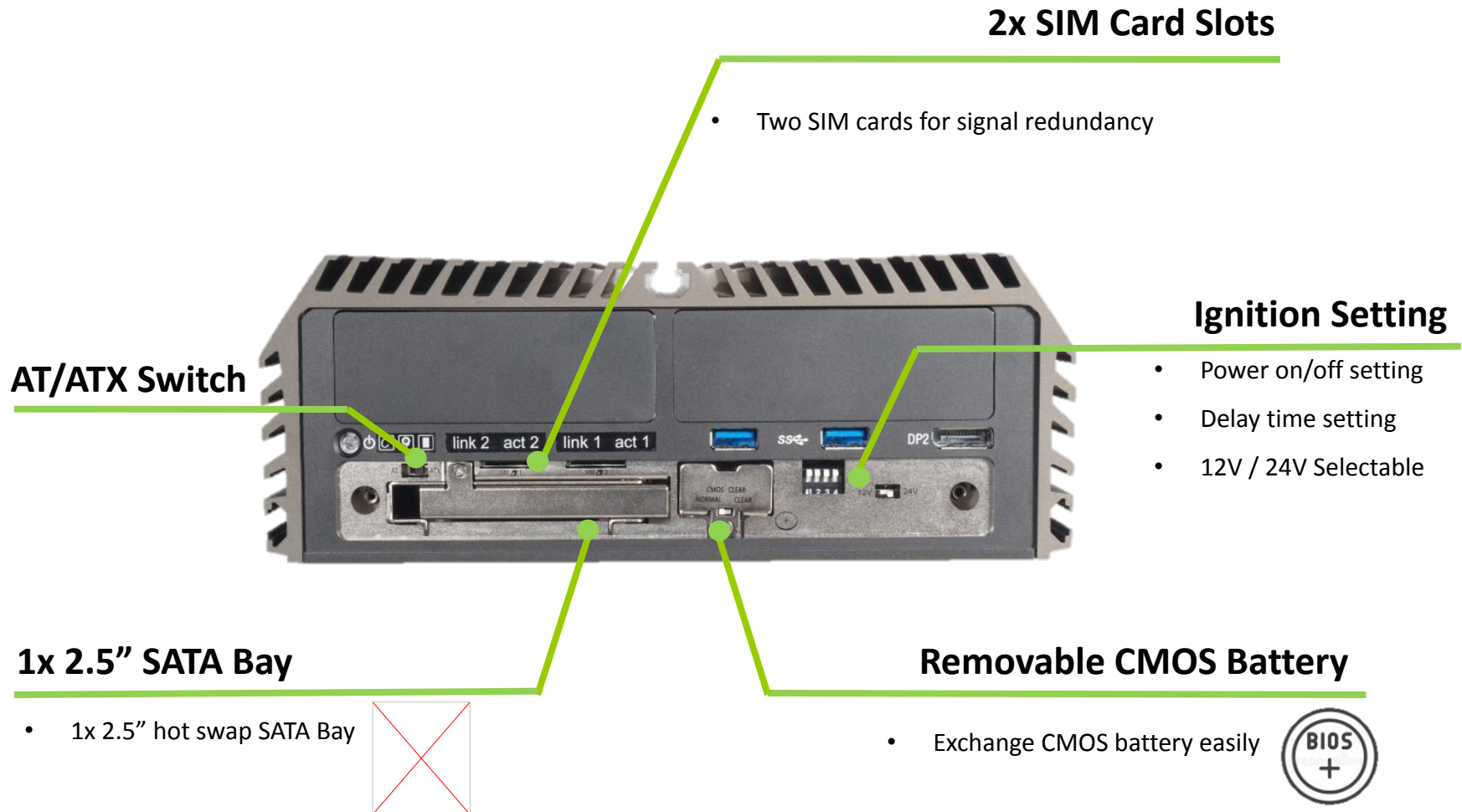
# Rich I/O



- Triple Independent Display (DVI-I, DP1, DP2)
- 2x Gigabit LAN Ports ( 10/100/1000 )
- 2x USB3.1, 4x USB3.0, 2x USB2.0
- 1x PS/2
- 1x External Fan Connector
- 2x All in One COM Port ( RS-232/422/485)
- 1x Mic-in , 1x Line-out
- 1x Remote Power On/Off Connector
- 1x Remote Reset Connector
- 1x 2.5" SATA Bay

Rich I/O for great device connectivity

# Maintenance Area



Maintain a ruggedized system with ease

# User Area

## 2x Full Size Mini-PCle Interface

- For wireless and I/O expansion
- BIOS selectable mSATA

## RAM Socket

- 2x DDR4 SO-DIMM Sockets
- Max. capacity 32 GB

## CFM Interface

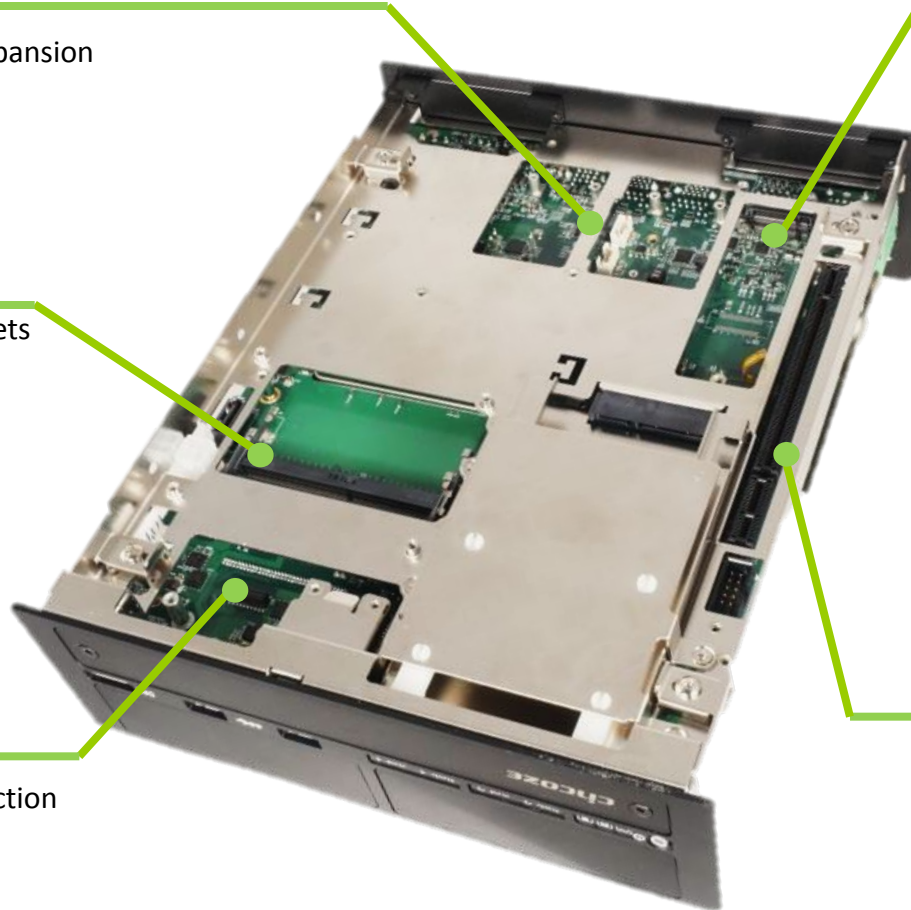
- For ignition sensing function

## M.2 Interface

- M.2 Key M 2280 socket
- Auto-detection for PCIe x4 NVMe SSD or SATA SSD

## Riser Card Expansion

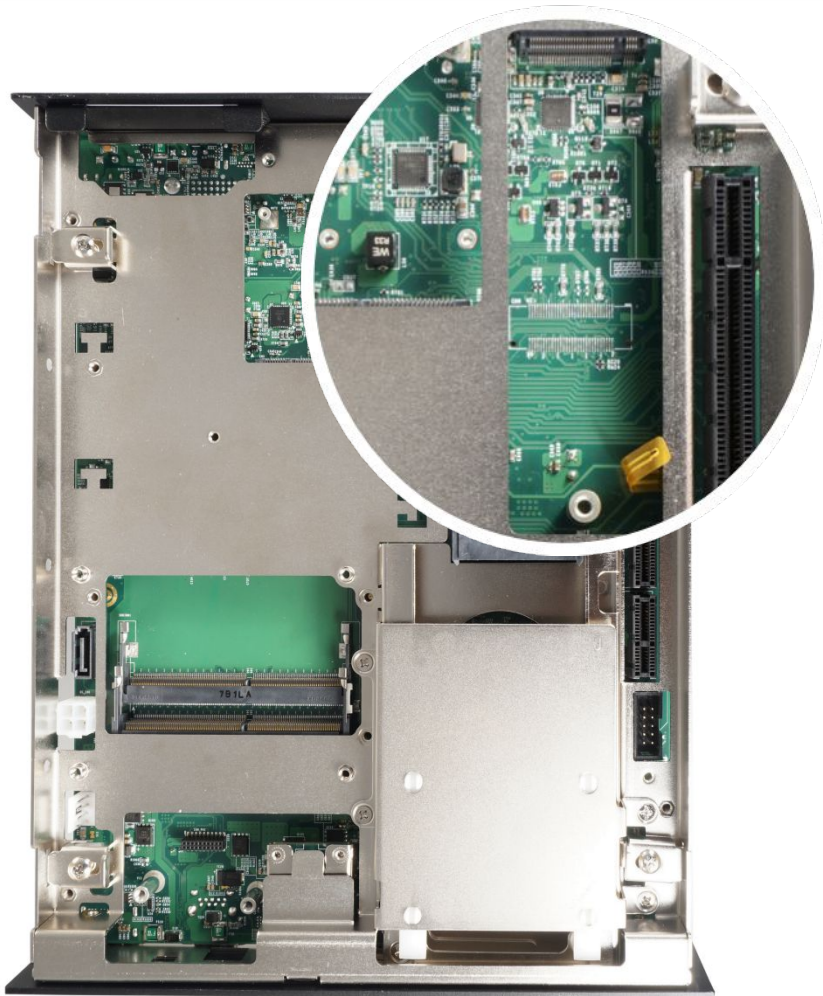
- Up to 2x PCI/PCIe card expansion
- Support 6 x riser card



For user to quickly set up peripherals



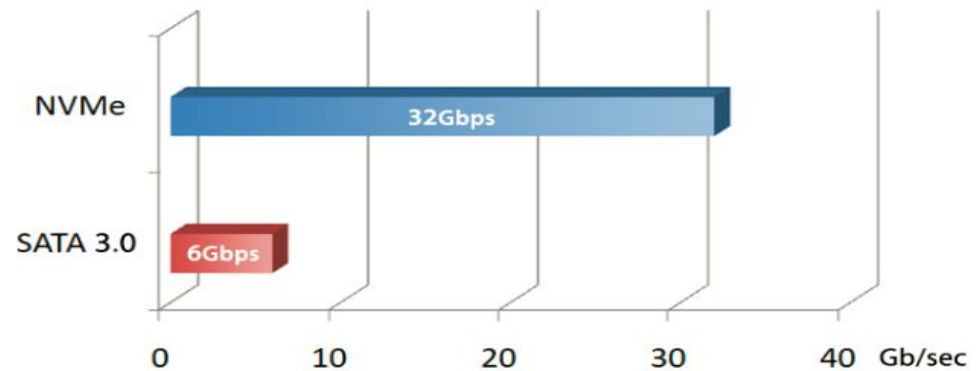
# New Function - M.2



## M.2 Key M Type 2280 Socket

- Auto-detection for PCIe x4 NVMe SSD or SATA SSD
- PCIe x4 NVMe can transfer data at a max of 32Gb/s

NVMe vs. SATA Speed Comparison



PCIe x4 NVMe SSD is 4X faster than traditional SATA SSD

# System Area

## SATA Interface

- 1x SATA III (6GB/s) socket.
- Support 2.5" HDD / SSD.

## CPU Socket

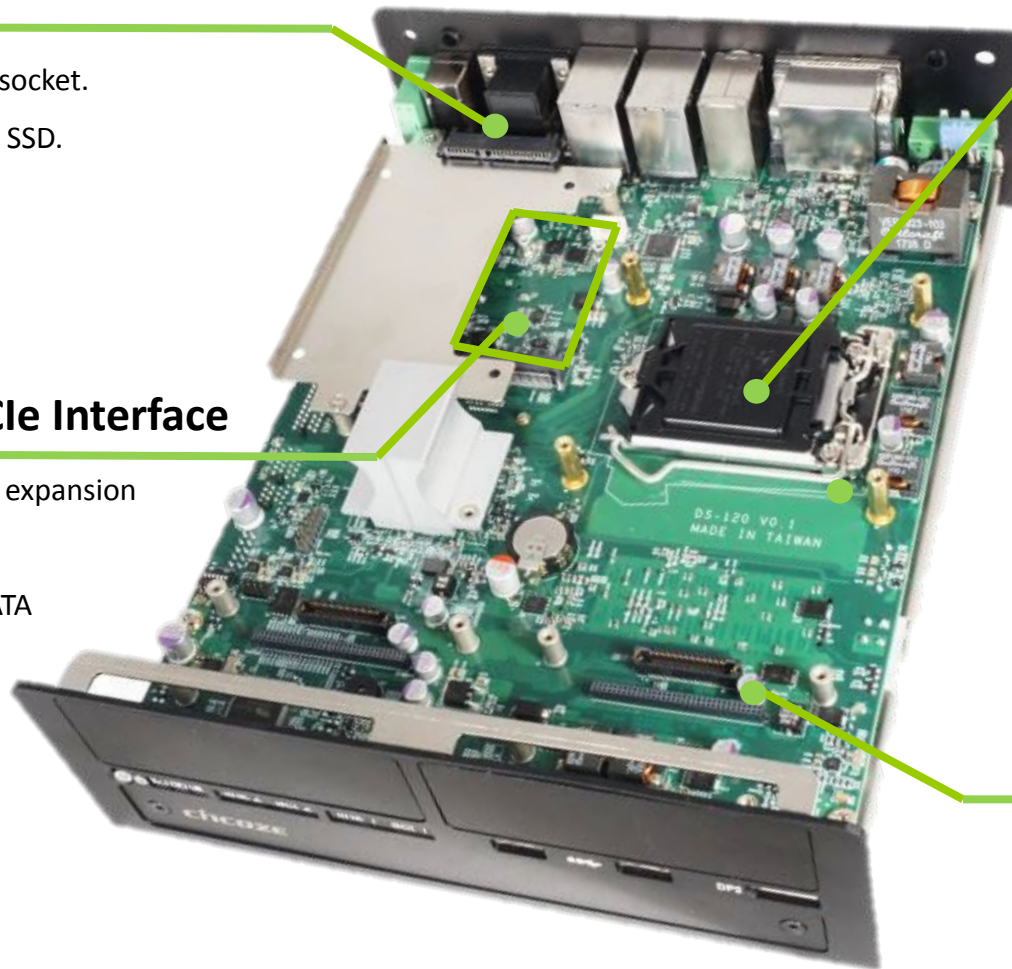
- LGA1151 Socket type

## Full Size Mini-PCIe Interface

- For wireless and I/O expansion
- Support 3G/4G Card
- BIOS selectable mSATA

## CMI Interface

- 2x High Speed CMI Interface
- 2x Low Speed CMI Interface



Highly secured system area protecting important devices

# Ultimate Expandability

## A Scalable and Expandable System



***DS-1200 Series***

**CMI**  
TECHNOLOGY

- Combined Multiple I/O
- Exclusive Technology
- Support Proprietary Module

**CFM**  
TECHNOLOGY

- Control Function Module
- Exclusive Technology
- Support Proprietary Module

**MEC**  
TECHNOLOGY

- Mini-PCIe Expansion Card
- Open Standard Technology
- A Full Series of Mini-PCIe Card

**PCIe**  
EXPANSION

- Riser Card Series Available
- Open Standard Technology
- Support Third Party Add-on Card

# CMI Modules

## High Speed CMI Module



### ***CMI-M12LAN01***

- 4x GbE LAN, M12 connector
- Up to 2x CMI-M12LAN01 on DS-1200



### ***CMI-LAN01***

- 4x GbE LAN, RJ45 connector
- Up to 2x CMI-LAN01 on DS-1200

## Low Speed CMI Module



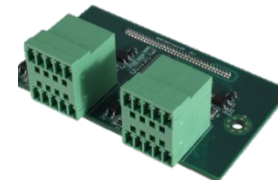
### ***CMI-COM02***

- 4x RS-232/422/485 serial ports
- Support 1x CMI-COM02 on either side.



### ***CMI-ICOM01***

- 4x isolated RS-232/422/485 serial ports
- Support 1x CMI-ICOM01 on either side.



### ***CMI-DIO02***

- 16x Digital I/O ports (8in / 8out )
- Up to 2x CMI-DIO02 on DS-1200

Optional 5 CMI modules available for selection, I/O bracket will come as a bundle



# Easy Installation



## Installation Steps

1. Remove the bracket
2. Add CMI Module
3. Fixed with screws and assemble the bracket

Becoming a value-added system with simple steps

# CMI + CFM Technology

*New Technology : Stack CFM Module on Top of CMI Module to Enable PoE Function*



Heat Sink for Heat  
Dissipation

CFM Module for PoE  
Function

CMI LAN/M12LAN Module  
for I/O Expansion





# MEC Technology

**MEC**  
TECHNOLOGY

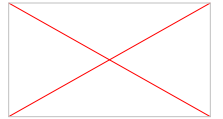
## MEC Modules

- 2x COM Module (2- port RS-232 serial board)
- 2x LAN Module
- 2x USB3.0 Module



Optional 3 MEC kits available for selection, I/O bracket will come as a bundle

# PCI/PCIe Expansion

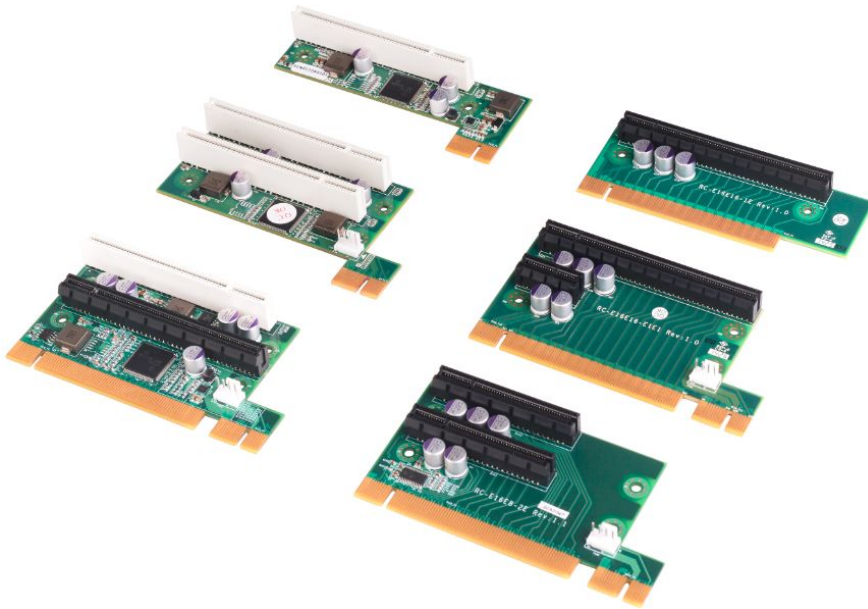


## PCI/PCIe Expansion

- Support various combinations of PCI/PCIe interface through riser card modules
- Maximum support card length 235 mm
- Adjustable card retainer for reliable fixation
- Total power budget for expansion slot : 65W

**Up to 2x PCI/PCIe cards expansion for versatile application add-on cards**

# Riser Card



## Riser Card Modules – 1 slot

- 1x PCI riser card
- 1x PCIe x16 riser card

## Riser Card Modules – 2 slots

- 2x PCI riser card
- 2x PCIe x8 riser card
- 1x PCI and 1x PCIe x16 riser card
- 1x PCIe x1 and PCIe x16 riser card

**Optional 6 riser cards for selection**

# Modular Design for Tailored Functionalities

## CMI Module Expansion



2x High Speed CMI-4LAN Module



2x Low Speed CMI-16DIO Module



1x High Speed CMI-4LAN Module  
1x Low Speed CMI-4COM Module

## MEC Module Expansion



1x MEC-2USB Module  
2x MEC-2LAN Module



2x MEC-2LAN Module



1x MEC-2COM Module  
1X MEC-2LAN Module

# Rugged and Reliable



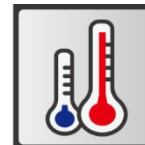
## Fanless design

No moving parts  
No noise



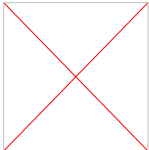
## Over voltage protection

DC in : 58VDC



## Wide temperature support

-40 ~ +70 degree Celsius



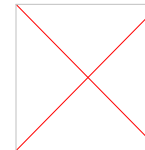
## Cable-less design

Better signal performance  
No loosening cable



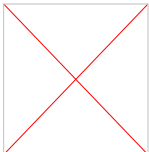
## Over current protection

DC in: 15A



## Industrial grade component

Selection of wide-temp components



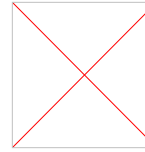
## Unibody chassis

Robust heavily mental against collision



## ESD protection

All I/O ports :  
+/-15kV(air), +/-8kV(contact)



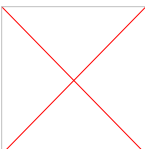
## Special heat-dissipation

Unique heat sink design  
Dedicated thermal module



## Jumper-less design

Integrated dip switch for easy configuration



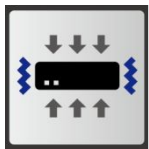
## Surge protection

DC in: 3.84KV



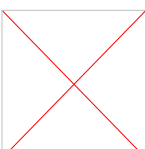
## Reverse power input protection

Won't start for wrong connection



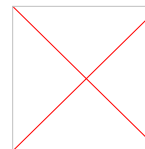
## High tolerance for shock & vibration

Shock:50 Grms, Vibration:5 Grms



## Wide range DC power input

Support 9-48 VDC



## Super capacitor Integrated

Never need to change CMOS battery



# Industry Certifications

## EN 50155 for Railway

EN50155 compliance is an international standard covering electronic equipment used on rolling stock for railway applications



## EN 60950-1 for safety

EN60950-1 is applicable to mains-powered or battery-powered information technology equipment with a RATED VOLTAGE not exceeding 600 V



To fulfill vertical market applications

# DS-1200 Series Ordering Information



| Model Name  | Description                                                                                                                                           | Dimension<br>(W x D x H mm) | PCI/PCIe<br>Expansion |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------|
| DS-1200-R10 | 8th Generation Intel Core Series Processors,<br>High Performance, Expandable and Modular Rugged Embedded<br>Computer                                  | 227 X 261 X 86              | -                     |
| DS-1201-R10 | 8th Generation Intel Core Series Processors,<br>High Performance, Expandable and Modular Rugged Embedded<br>Computer with 1x PCI/PCIe Expansion Slot  | 227 X 261 X 106             | 1                     |
| DS-1202-R10 | 8th Generation Intel Core Series Processors,<br>High Performance, Expandable and Modular Rugged Embedded<br>Computer with 2x PCI/PCIe Expansion Slots | 227 X 261 X 126             | 2                     |

# Thank You



## **DX-1100 Series**

**Diamond Extreme – Rugged Workstation**



# Compact but Powerful



## Workstation-Grade Intel® Coffee Lake Platform



### ***Performance***

Enhanced performance over previous generation with up to 6 cores.

**I/O**

### ***Improved I/O Capability***

Integrated USB3.1 Gen2 (10Gb/S).

**wifi**

### ***Compelling Platform Integration***

Integrated Intel® Wireless-AC for Wi-Fi 802.11ac R2 & Bluetooth® 5.0



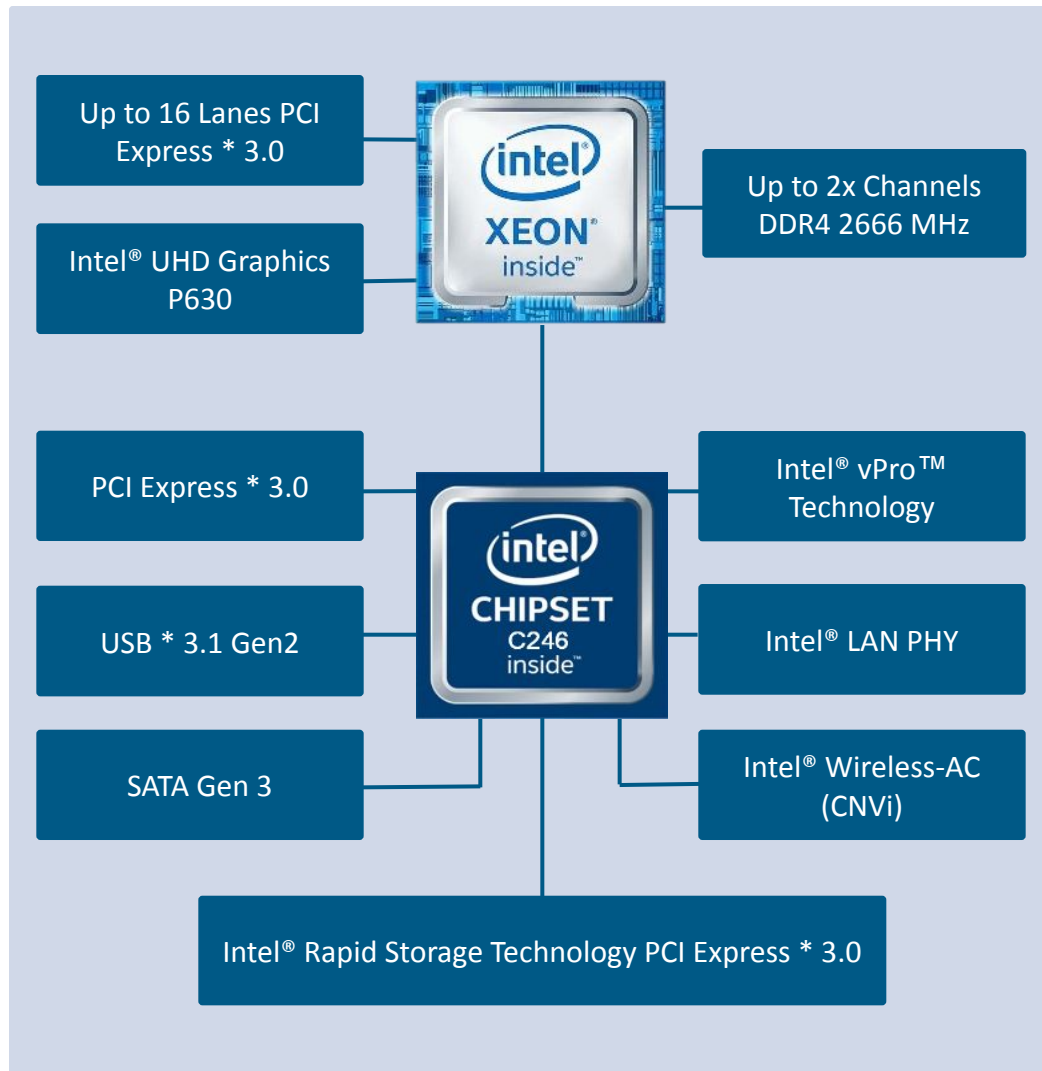
### ***Security Feature***

Support Intel® Platform Trust Technology  
Support Intel® vPro™ Technology

**The smallest workstation in the world !**



# Workstation Architecture

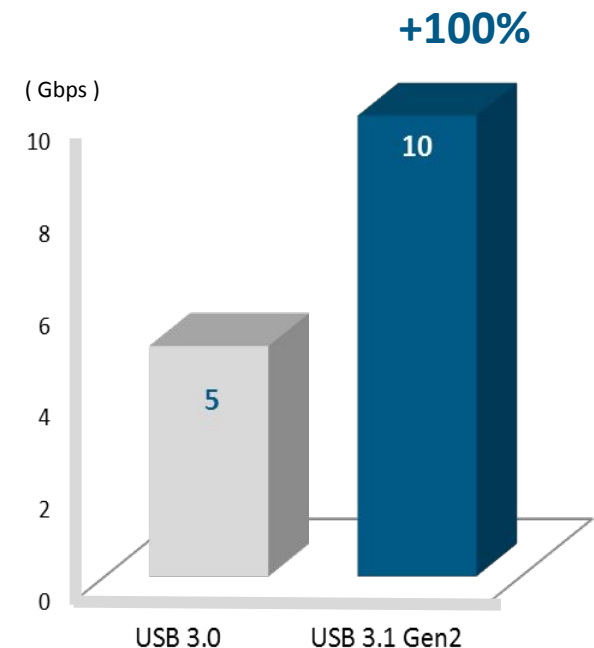


## C246 Chipset Integrated

- Integrated USB 3.1 Gen 2
- Support data transfer speed up to 10Gbps



## Up to 2X Faster Data Transfer Speed

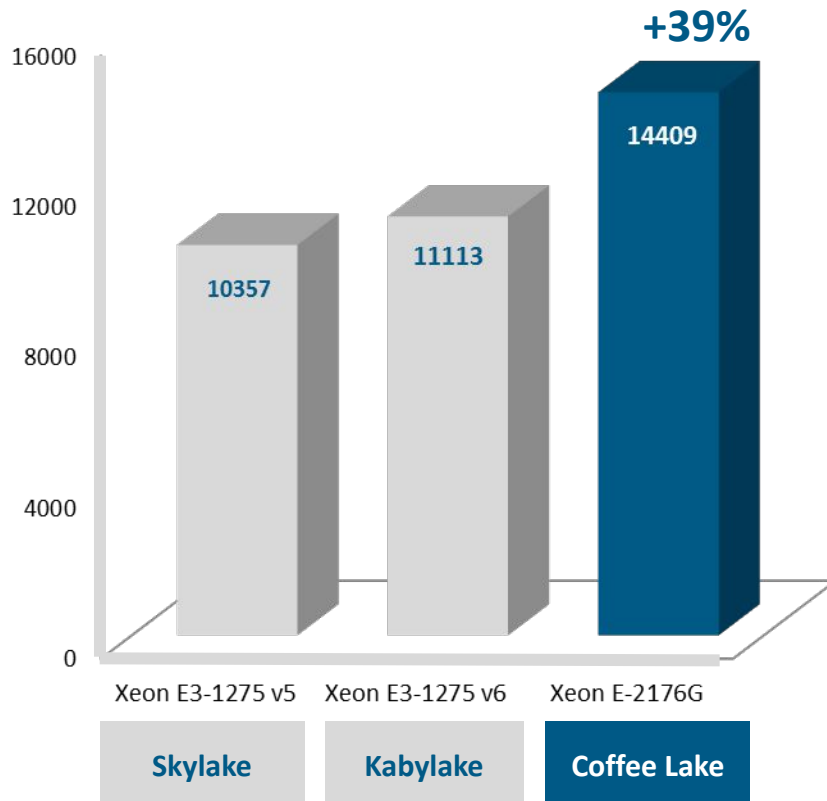


# Workstation Series Processors



- C246 Chipset Integrated
- Support Both Intel® Xeon® & Core® Series Processors

Up to 39% Higher Computing Performance



Wide Range of CPUs for Selection

## Intel® Xeon® Series

- Intel® Xeon® E-2176G Hexa Core up to 4.70 GHz, TDP 80W
- Intel® Xeon® E-2124G Quad Core up to 4.50 GHz, TDP 71W

## Intel® Core® Series

- Intel® Core™ i7-8700 Hexa Core up to 4.6 GHz, TDP 65W
- Intel® Core™ i5-8500 Hexa Core, up to 4.1 GHz, TDP 65W
- Intel® Core™ i3-8100 Quad Core 3.6 GHz, TDP 65W
- Intel® Core™ i7-8700T Hexa Core up to 4.0 GHz, TDP 35W
- Intel® Core™ i5-8500T Hexa Core up to 3.5 GHz, TDP 35W
- Intel® Core™ i3-8100T Quad Core 3.1 GHz, TDP 35W

## Intel® Pentium® Series

- Intel® Pentium® G5400 Dual Core 3.7 GHz, TDP 58W
- Intel® Pentium® G5400T Dual Core 3.1 GHz, TDP 35W

## Intel® Celeron® Series

- Intel® Celeron® G4900 Dual Core 3.1 GHz, TDP 54W
- Intel® Celeron® G4900T Dual Core 2.9 GHz, TDP 35W

# Triple Independent Display



- Intel® UHD Graphics integrated
- Provide various types of display interface : HDMI / DP / DVI-I (DVI-D + VGA)
- Enable both extended screen and individual screens

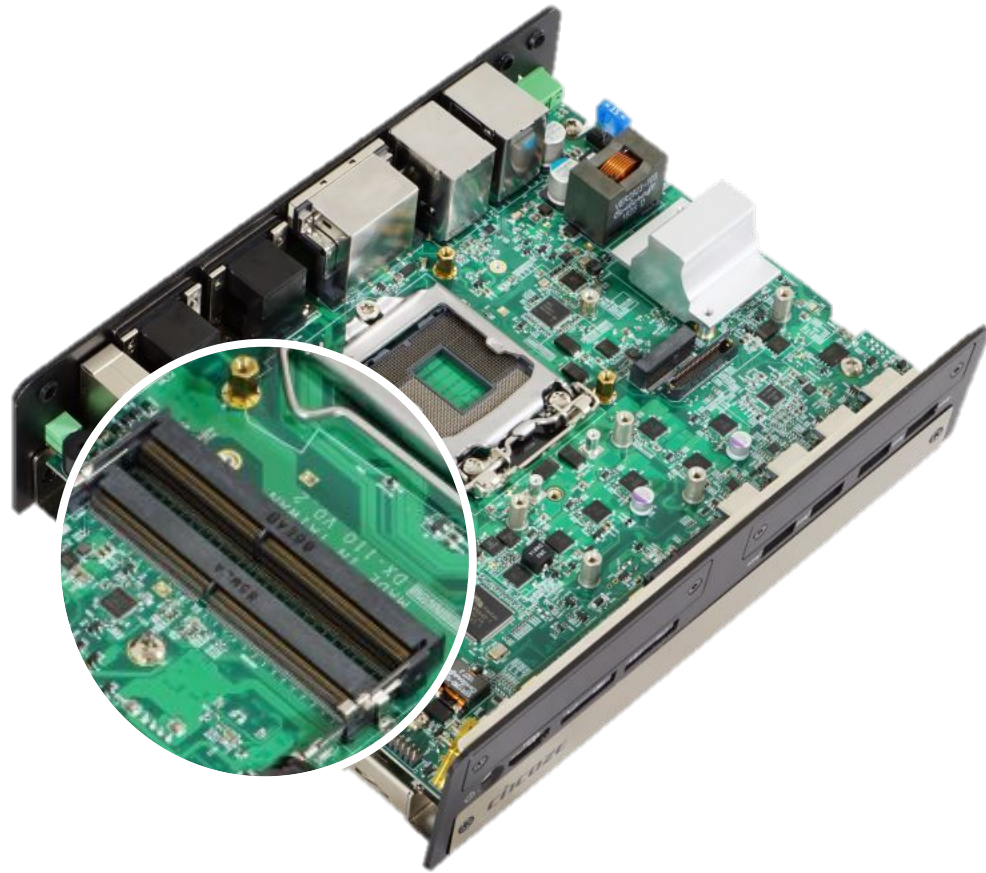
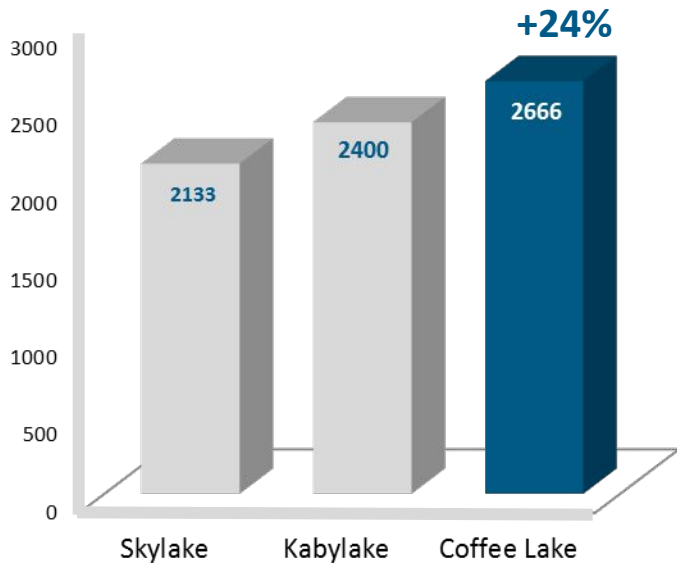


# DDR4 Memory

## 2x DDR4 SO-DIMM Sockets

- Transfer rate up to 2666 MHz for Xeon and Core i7/i5
- Transfer rate up to 2400 MHz for Core i3, Pentium and Celeron
- Max. capacity 32 GB

## Up to 24% Faster Memory Speed



# Comprehensive Functions

Offer the maximum possibilities for demanding industrial market



## Rich I/O

For greater device connectivity

## Maintenance Area

Reducing maintenance and downtime cost

## User Area

For user to set up peripherals easily

## System Area

Highly secured system area protecting important components

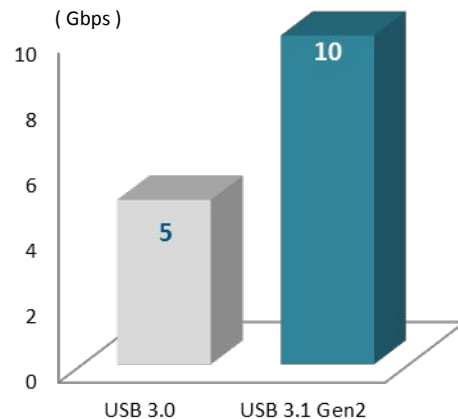
# Rich I/O

Front View



- 1x HDMI Port (Support Resolution 3840x2160 at 30Hz )
- 2x USB 3.1 Gen2
- 2x USB 3.0

2X Faster than USB 3.0



Rear View



- 1x 3 Pin Power Connector
- 2x Gigabit LAN Ports ( 10/100/1000 )
- 4x USB 3.0 Ports
- 1x DVI-I Port(Support Resolution 1920x1200 at 60Hz )
- 1x Display Port( Support Resolution 3840x2160 at 30Hz )
- 1x 4 Pin External Fan Connector
- 4x All in One COM Port ( RS-232/422/485)
- 1x Mic-in , 1x Line-out
- 1x Remote Power On/Off Connector

**DX-1100 supports a variety of I/O ports with only 3.2L in volume for greater device connectivity**





# User Area

## CMI Low Speed Interface

- For COM & DIO Expansion

## Full Size Mini-PCIe Interface

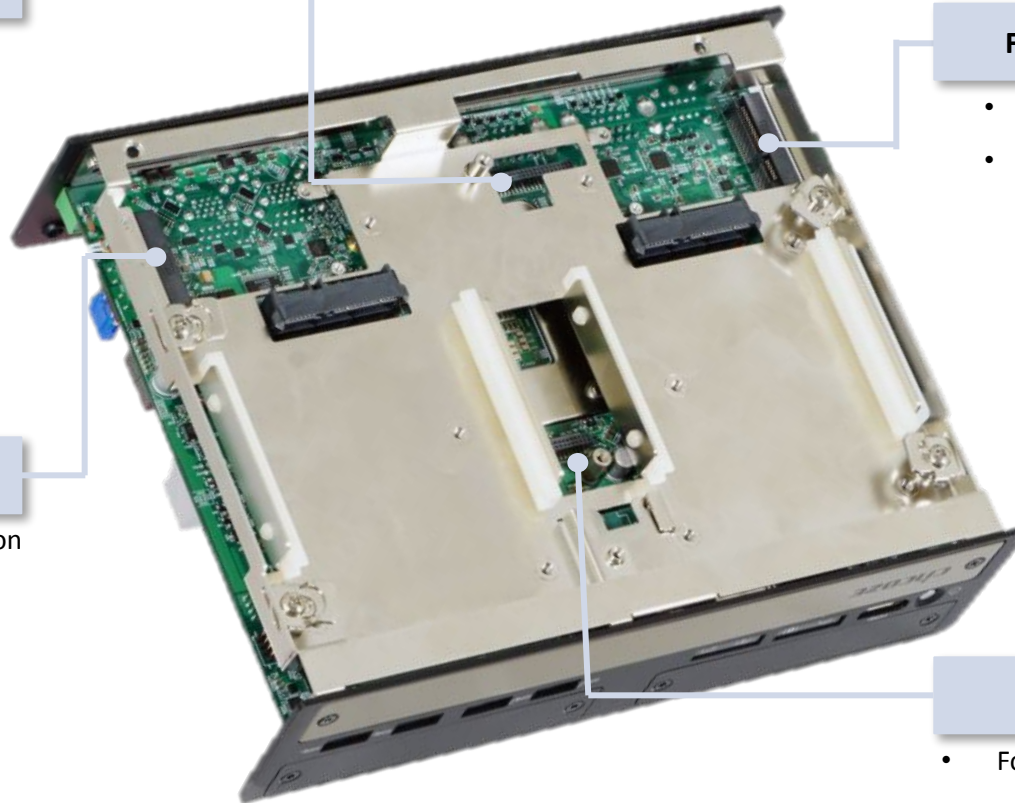
- For wireless and I/O expansion
- BIOS selectable mSATA

## Full Size Mini-PCIe Interface

- For wireless and I/O expansion
- BIOS selectable mSATA

## CFM Interface

- For power ignition sensing module



For user to set up peripherals easily

# System Area

## CPU Socket

- LGA1151 Socket type

## M.2 Key E 2230 Socket

- For Wireless / Bluetooth Expansion
- BIOS selectable Intel® CNVi

## RAM Socket

- 2x DDR4 SO-DIMM Sockets
- Max. capacity 32 GB

## High Speed CMI Interface

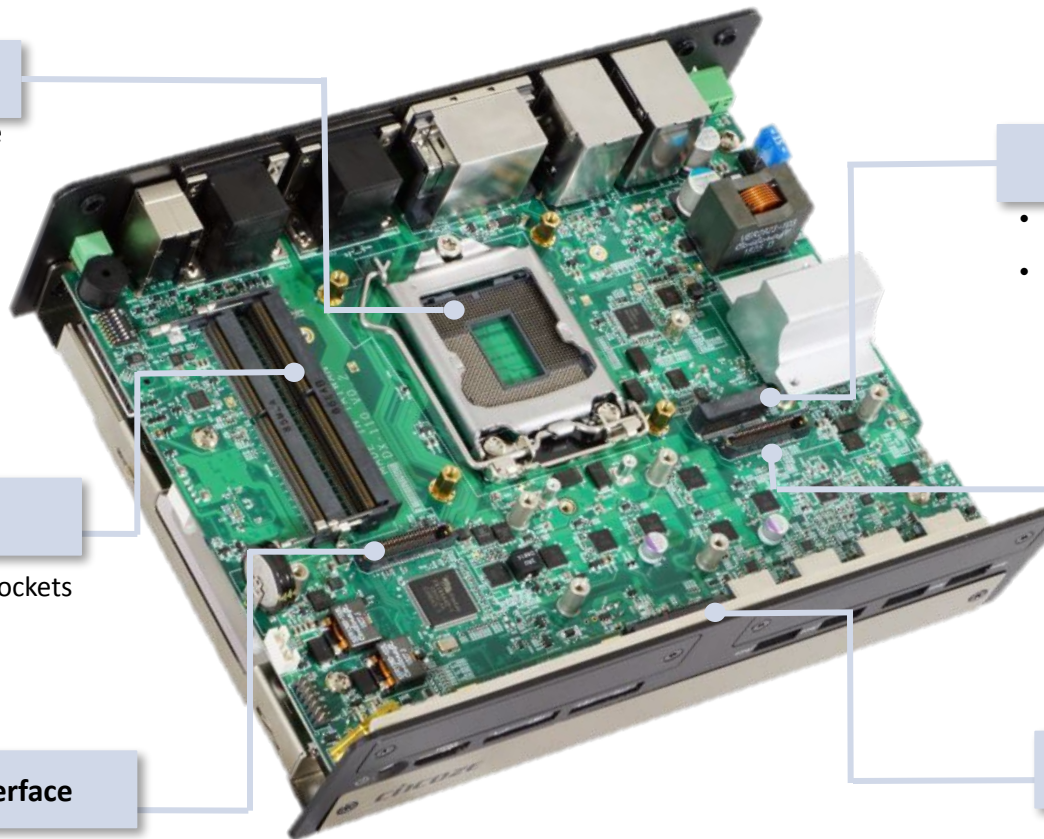
- For RJ45 & M12 LAN Expansion

## High Speed CMI Interface

- For RJ45 & M12 LAN Expansion

## Full Size Mini-PCIe Interface

- For wireless and I/O expansion
- Support 3G/4G Card
- BIOS selectable mSATA

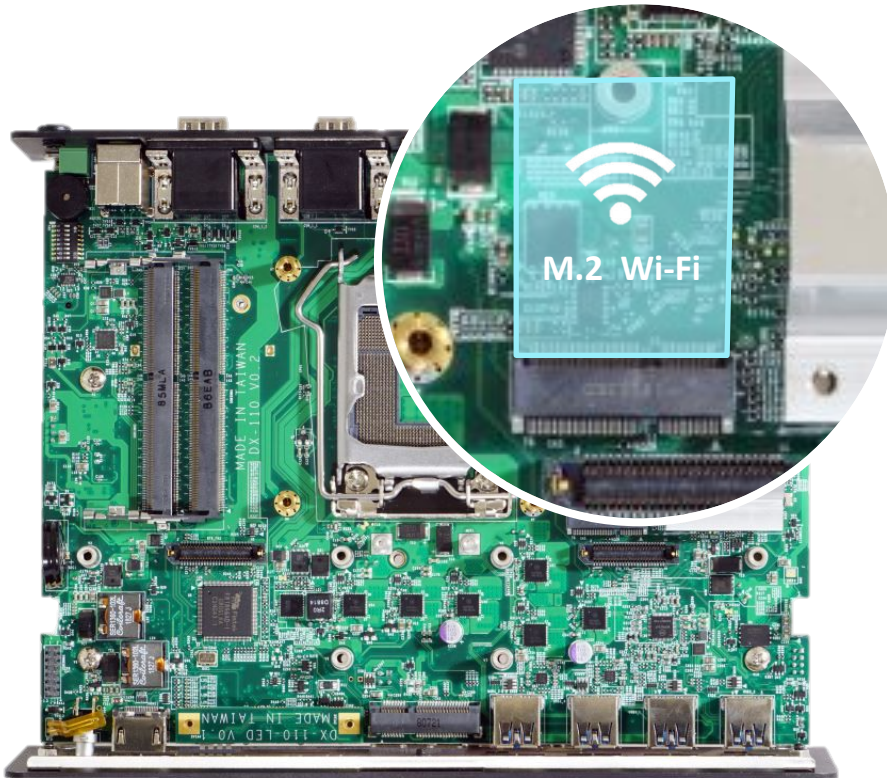


Highly secured system area protecting important components

# M.2 E Key

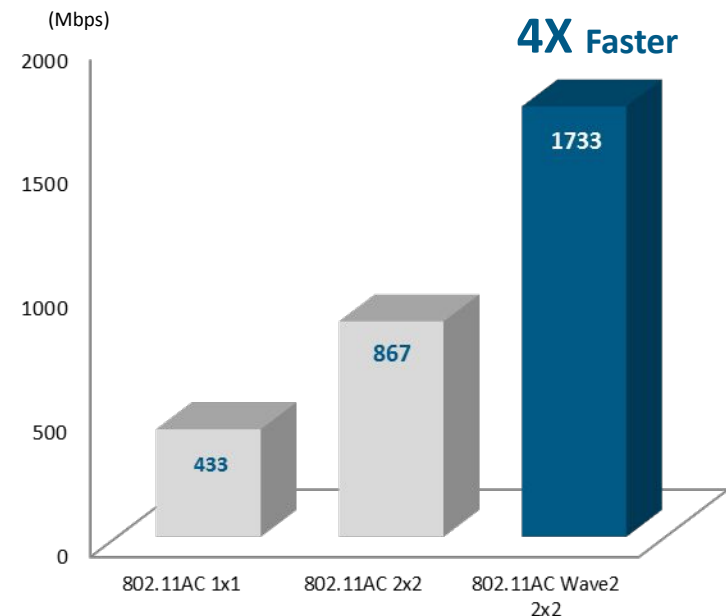
## Standard M.2 E Key Type 2230 Socket

- Support wireless LAN and Bluetooth function



## Support Intel® CNVi Technology

- Intel® CNVi Technology moves key elements of Wi-Fi and Bluetooth® into Intel® Chipset providing high-speed network connectivity up to 1733Mbps
- Currently can only be used on 8th Gen Intel® Core™ processors





# Modular Computing

Provides a flexible system with innovative technology



DX-1100 is a highly flexible system with 4x I/O expansion areas for Cincoze ready-to-use modules which bundle with corresponding universal bracket.

**CMI**  
TECHNOLOGY

- Combined Multiple I/O
- Cincoze Own Defined Interface
- Cost Effective and Reliable Solution
- Expanding Additional LAN, DIO, etc

**CFM**  
TECHNOLOGY

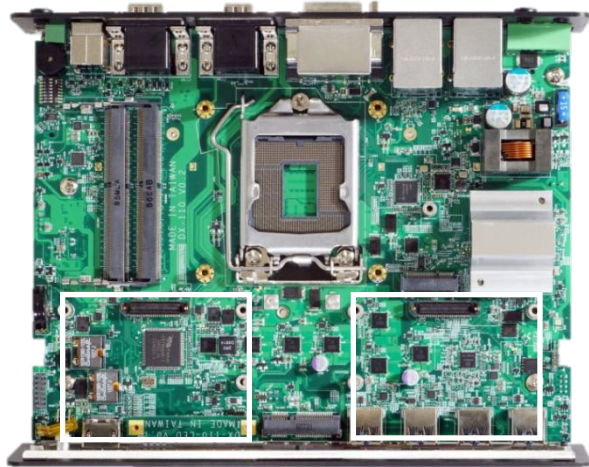
- Control Function Module
- Exclusive Technology
- For Application-driven Functionalities
- Adding Power Ignition, PoE, etc

**MEC**  
TECHNOLOGY

- Mini-PCle Expansion Card
- Open Standard Technology
- A Full Series of Mini-PCle Card
- Expanding Additional LAN, COM

# CMI Technology

**CMI**  
TECHNOLOGY



2x High Speed CMI  
Interface



## CMI-LAN01



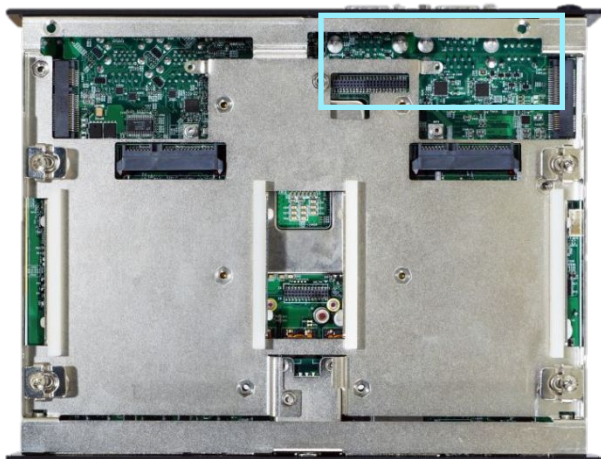
- 4x GbE RJ45LAN
- Up to 2x CMI-LAN01 on DX-1100



## CMI-M12LAN01



- 4x GbE M12LAN
- Up to 2x CMI-M12LAN01 on DX-1100



1x Low Speed CMI  
Interface



## CMI-COM01



- 2x RS-232/422/485 serial ports



## CMI-DIO01



- 16x Digital I/O ( 8in/8out )





# Modular Design for Tailored Functionalities



2x CMI-LAN01



2x CMI-M12LAN01



1x MEC-COM-M212 / 1x CMI-M12LAN01



1x MEC-COM-M334



1x CMI-DIO01



1x CMI-COM01



1x MEC-LAN-M002



1x MEC-COM-M212 / 1x CMI-DIO01

# External Fan



With external fan kit, an active circulation of airflow can be created for best heat dissipation on DX-1100 and able to control fan speed by BIOS settings based on CPU temperature.

## FAN-EX101 Ideal Maintenance Design

- External fan kit for the ease of installation and maintenance
- Support smart fan function to control fan speed
- Support wide-operating temperature for high performance CPU (65W/80W).

## Adapted for airflow limited environment

- ANPR ( Automatic Number Plate Recognition )
- In-vehicle Application



# Rugged and Reliable



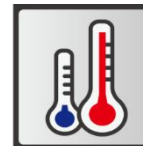
## Fanless design

- No moving parts
- No noise



## Over voltage protection

- DC in : 58VDC



## Wide temperature support

- -40 ~ +70 degree Celsius



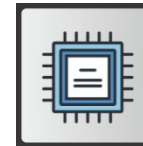
## Cable-less design

- Better signal performance
- No loosening cable



## Over current protection

- DC in: 15A



## Industrial grade component

- Selection of wide-temp components



## Unibody chassis

- Robust heavily mental against collision



## ESD protection

- All I/O ports :  
+/-15kV(air), +/-8kV(contact)



## Special heat-dissipation

- Unique heat sink design
- Dedicated thermal module



## Jumper-less design

- Integrated dip switch for easy configuration



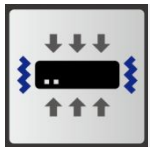
## Surge protection

- DC in: 3.84KV



## Wide range DC power input

- Support 9-48 VDC



## High tolerance for shock & vibration

- Shock:50 Grms ; Vibration:5 Grms



## Reverse power input protection

- Won't start for wrong connection



## Super capacitor Integrated

- Never need to change CMOS battery

# Industry Certifications (Pending)



## EN 50155 for Railway Application

EN 50155 is an international standard covering electronic equipment used on rolling stock for railway applications.



This Verification of Compliance is hereby issued to the below named company and for below described product, based on  
**Technical Standard : EMC DIRECTIVE 2014/30/EU (EN 50121-3-2)**

**General Information**  
Applicant: CINCOZE CO., LTD.  
Address of Applicant: 7F, No. 4, Aly. 1, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 23145, Taiwan

**Product Description**  
Product Name: Rugged Embedded Computer  
Brand Name: CINCOZE  
Model Number: DX-11000

**Measurement Standard**  
EN 50155: 2007 / A2: 2012 Clause 5.4, 5.5  
EN 50121-3: 2017  
EN 50121-3-2: 2016, including  
EN 61000-3-2: 2014  
EN 61000-3-3: 2013  
EN 61000-4-2: 2009, EN 61000-4-3: 2006 + A1: 2009 + A2: 2010, EN 61000-4-4: 2012  
EN 61000-4-5: 2014 + A1: 2017, EN 61000-4-6: 2014

**Measurement Facilities**  
Company Name: Compliance Certification Services Inc.  
Test Laboratory: SINDIAN LAB  
Address of Test Lab: No. 163-1, Zhongsheng Rd., Xindian Dist., New Taipei City, 23151, Taiwan

This device has been tested and found to be in compliance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report with the number: T190108001-E

The test results shown in this report are applicable only to the investigated sample identified in this report.

Sam Hu / Assistant Manager  
Date: February 14, 2019



## EN 60950-1 for Safety

EN60950-1 is applicable to mains-powered information technology equipment with a RATED VOLTAGE not exceeding 600 V.

Test Report issued under the responsibility of:

| TEST REPORT<br>IEC 60950-1<br>Information technology equipment – Safety –<br>Part 1: General requirements                                                                                                                                                                                                                                                  |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Report Number.....                                                                                                                                                                                                                                                                                                                                         | RL/2017/90069                                                                         |
| Date of issue.....                                                                                                                                                                                                                                                                                                                                         | 2017-11-03                                                                            |
| Total number of pages.....                                                                                                                                                                                                                                                                                                                                 | 41                                                                                    |
| Applicant's name.....                                                                                                                                                                                                                                                                                                                                      | Cincoze Co., Ltd.                                                                     |
| Address.....                                                                                                                                                                                                                                                                                                                                               | 7F, No. 4, Aly. 1, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 23145, Taiwan |
| Test specification:                                                                                                                                                                                                                                                                                                                                        |                                                                                       |
| Standard.....                                                                                                                                                                                                                                                                                                                                              | IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013                             |
| Test procedure.....                                                                                                                                                                                                                                                                                                                                        | Commission testing                                                                    |
| Non-standard test method.....                                                                                                                                                                                                                                                                                                                              | N/A                                                                                   |
| Test Report Form No. ....                                                                                                                                                                                                                                                                                                                                  | IEC00950_1F                                                                           |
| Test Report Form(s) Originator.....                                                                                                                                                                                                                                                                                                                        | SGS Fimko Ltd                                                                         |
| Master TRF.....                                                                                                                                                                                                                                                                                                                                            | Dated 2014-02                                                                         |
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| If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.                                                                                                                                                                                                                   |                                                                                       |
| This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IEC 602.                                                                                                                                                                         |                                                                                       |
| General disclaimer:                                                                                                                                                                                                                                                                                                                                        |                                                                                       |
| The test results presented in this report relate only to the object tested.                                                                                                                                                                                                                                                                                |                                                                                       |
| This report shall not be reproduced, except in full, without the written approval of the issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.                                                                                                     |                                                                                       |



## E-mark for In-Vehicle Application

E-mark is a mandatory certification mark released by European Commission for whole vehicles, safe components and systems used in member states according to EU directives.

| GRAND-DUCHÉ DE LUXEMBOURG<br>Ministère du Développement durable<br>et des Infrastructures<br>Département des Transports<br>L-2958 Luxembourg |                                                                  | SOCIÉTÉ NATIONALE DE<br>CERTIFICATION ET D'HOMOLOGATION<br>S.A. P.L.<br>Registre de Commerce: B 27180<br>L-5291 Sandweiler<br>snch                                                                                                                                                               |  |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Référence:                                                                                                                                   | E13*10B05/01*14546*00                                            |                                                                                                                                                                                                                                                                                                  |  |
| Annexes:                                                                                                                                     | - Rapport Technique<br>- Fiche de Renseignements du constructeur | Luxembourg, le 03 janvier 2018                                                                                                                                                                                                                                                                   |  |
| Communication concernant: <sup>(2)</sup><br>Communication concernant:                                                                        |                                                                  | <ul style="list-style-type: none"> <li>la délivrance d'une homologation approval granted</li> <li>l'extension d'homologation approval extended</li> <li>le retrait d'homologation approval withdrawn</li> <li>l'arrêt définitif de la production production definitively discontinued</li> </ul> |  |
|                                                                                                                                              |                                                                  | d'un type de sous-ensemble électrique/électronique <sup>(2)</sup> en ce qui concerne le Règlement N° 10<br>of a type of electrical/electronic sub-assembly with regard to Regulation N° 10                                                                                                       |  |
| Nom de l'homologation par type:                                                                                                              | E13*10B05/01*14546*00                                            |                                                                                                                                                                                                                                                                                                  |  |
| Approuvé par:                                                                                                                                |                                                                  |                                                                                                                                                                                                                                                                                                  |  |
| Marque d'homologation:                                                                                                                       | E13 10B - 05 14546                                               |                                                                                                                                                                                                                                                                                                  |  |
| Approuvé par:                                                                                                                                |                                                                  |                                                                                                                                                                                                                                                                                                  |  |
| 1. Fabricant (marque commerciale du constructeur):                                                                                           | CINCOZE                                                          |                                                                                                                                                                                                                                                                                                  |  |
| Make (trade name of manufacturer):                                                                                                           |                                                                  |                                                                                                                                                                                                                                                                                                  |  |
| 2. Type:                                                                                                                                     | DX-1000                                                          |                                                                                                                                                                                                                                                                                                  |  |
| Type:                                                                                                                                        |                                                                  |                                                                                                                                                                                                                                                                                                  |  |
| Dénomination(s) commerciale(s) générale(s):                                                                                                  | Embedded computing system                                        |                                                                                                                                                                                                                                                                                                  |  |
| General commercial description(s):                                                                                                           |                                                                  |                                                                                                                                                                                                                                                                                                  |  |

# Thank You