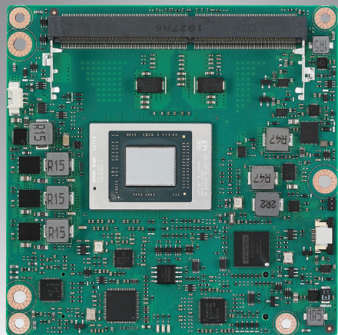


# SOM-6872

## AMD Embedded Ryzen V2000 COM Express® Compact Type 6

**NEW**



### Features

- AMD Embedded Ryzen 7nm SoC – V2000 APU
- COM Express® R3.0 Compact Module Type 6 Pinout
- Dual Channel DDR4 SODIMM, max. 64GB (Both ECC & Non-ECC)
- High Speed I/Os: 2 USB 3.2 Gen2, 1 PCIe x8 Gen3, 8 PCIe x1 Gen3, and 2 SATA3.0
- Four Display (DP++, HDMI, VGA, LVDS)
- Supports iManager, Embedded Software APIs and WISE-DeviceOn

Software APIs:



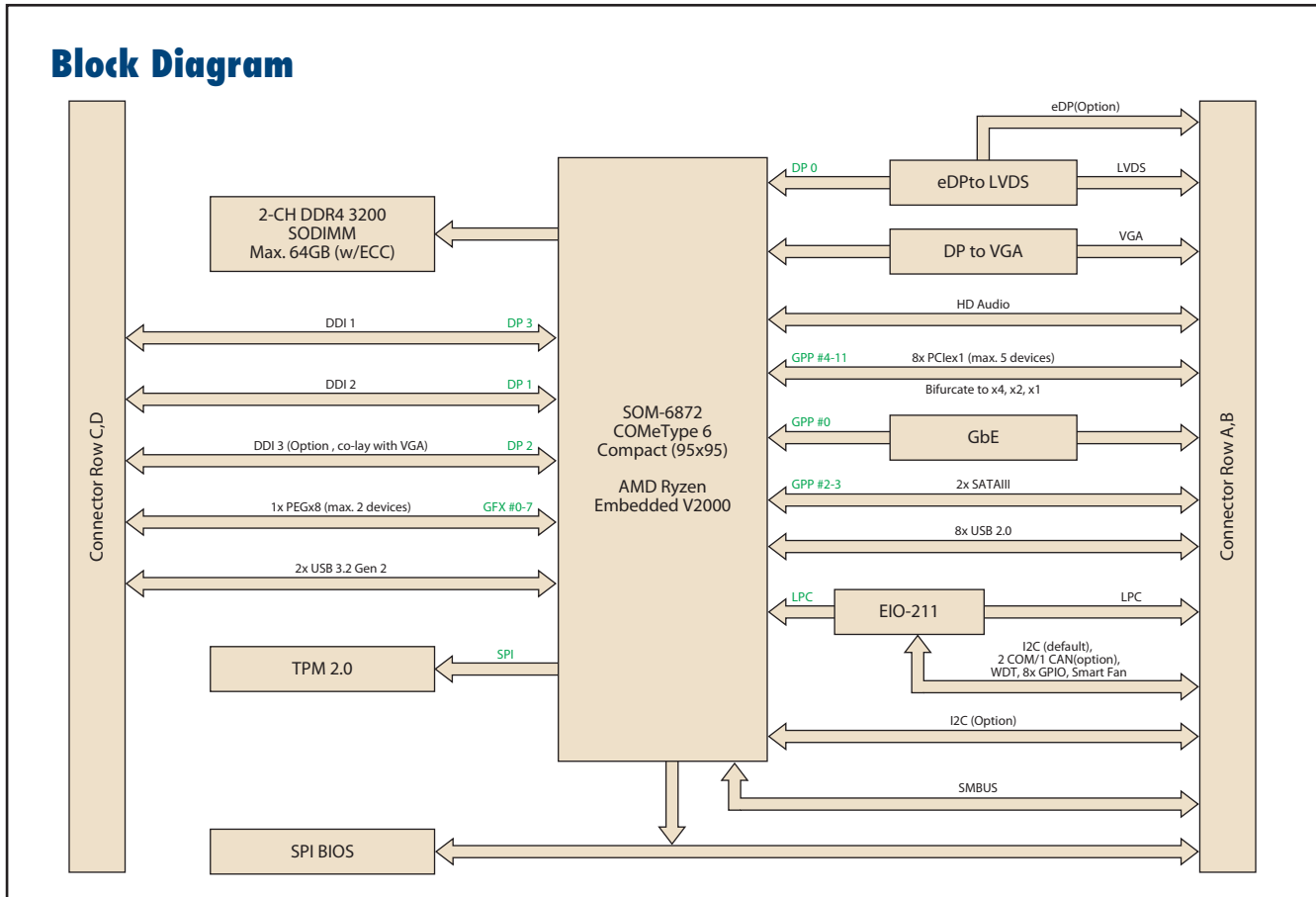
Windows Embedded

iManager WISE-DeviceOn CE FC

### Specifications

|                  |                                 |   |          |          |          |
|------------------|---------------------------------|---|----------|----------|----------|
| Form Factor      | Form Factor                     | COM Express Compact Module  |          |          |          |
|                  | Pin-out Type                    | COM Express R3.0 Type 6 compatible  |          |          |          |
| Processor System | CPU                             | V2748   | V2546    | V2718    | V2516    |
|                  | Base Frequency                  | 2.9 GHz   | 3.0 GHz  | 1.7 GHz  | 2.1 GHz  |
|                  | Max Single Core Turbo Frequency | 4.25 GHz  | 3.95 GHz | 4.15 GHz | 3.95 GHz |
|                  | Core/Thread                     | 8/16  | 6/12     | 8/16     | 6/12     |
|                  | LLC                             | 8MB   | 8MB      | 8MB      | 8MB      |
|                  | CPU TDP                         | 35W-54W   | 35W-54W  | 10W-25W  | 10W-25W  |
|                  | BIOS                            | AMI UEFI 256Mbit  |          |          |          |
| Memory           | Technology                      | DDR4 up to 3200 MT/s  |          |          |          |
|                  | Speed                           | 3200 MT/s   |          |          |          |
|                  | ECC Support                     | Yes   |          |          |          |
|                  | Max. Capacity                   | Up to 64GB  |          |          |          |
| Graphics         | Socket                          | 2 260P SO-DIMM (Dual Channel)   |          |          |          |
|                  | Controller                      | AMD Radeon Graphics Vega GPU  |          |          |          |
|                  | Max. Frequency                  | 1.6 GHz   | 1.6 GHz  | 1.6 GHz  | 1.6 GHz  |
|                  | Graphic Memory                  | Shared Memory   |          |          |          |
| Display          | 3D/HW Acceleration              | VCN2.2 (H.264/AVC HW 8b   H.265/HEVC HW 8/10b   VP9 HW 8/10b)   |          |          |          |
|                  | VGA                             | 1920 x 1200 @ 60Hz  |          |          |          |
|                  | LCD                             | LVDS dual channel: 1920 x 1200 @ 60Hz (option support eDP 1.3 4096 x 2160 @ 60Hz)   |          |          |          |
|                  | DDI                             | 2 DDI ports support configurable HDMI/DisplayPort (option to have 3rd DDI port by disabling VGA)<br>-HDMI 2.1: 4096 x 2160 @ 60Hz<br>-DisplayPort 1.4: 4096 x 2160 @ 60Hz |          |          |          |
|                  | Multiple Display                | Four Simultaneous Independent Displays  |          |          |          |
|                  | PCI Express (Gen3)              | 1 PCIe x8 (PEG)<br>8 PCIe x1  |          |          |          |
|                  | Audio Interface                 | HD Audio  |          |          |          |
| Serial Bus       | LPC                             | Yes   |          |          |          |
|                  | SMBus                           | Yes   |          |          |          |
| Ethernet         | I2C Bus                         | Yes   |          |          |          |
|                  | Gigabit                         | Intel I210; 10/100/1000 Mbps  |          |          |          |
| I/O              | SATA3.0                         | 2 Ports (6 Gbps)  |          |          |          |
|                  | USB 3.2 Gen2                    | 2 Ports (10 Gbps)   |          |          |          |
|                  | USB2.0                          | 8 Ports (480 Mbps)  |          |          |          |
|                  | SPI Bus                         | Yes. For BIOS EEPROM  |          |          |          |
|                  | GPIO                            | 8-bit GPIO  |          |          |          |
|                  | Watchdog                        | 65536 level, 0 – 65535 sec  |          |          |          |
|                  | COM Port                        | 2 Ports (2-Wire)  |          |          |          |
|                  | TPM                             | TPM2.0  |          |          |          |
| Power            | Smart Fan                       | 2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board   |          |          |          |
|                  | Type                            | ATX: Vin, VSB; AT: Vin  |          |          |          |
|                  | Supply Voltage                  | Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25 V, RTC Battery: 2.0V ~ 3.3V  |          |          |          |
|                  | Power Consumption (Max.)        | 55.1W @ 12V (V2748 with 32GB DDR4 3200*2)   |          |          |          |
| Environment      | Power Consumption (Idle)        | 4.6W @ 12V (V2748 with 32GB DDR4 3200*2)  |          |          |          |
|                  | Operating Temperature           | 0 – 60 °C (32 – 140 °F)   |          |          |          |
|                  | Storage Temperature             | -40 – 85 °C (-40 – 185 °F)  |          |          |          |
|                  | Humidity                        | Operating: 40 °C @ 95% relative humidity, non-condensing<br>Storage: 60 °C @ 95% relative humidity, non-condensing  |          |          |          |
| Mechanical       | Vibration Resistance            | 3.5 Grms  |          |          |          |
|                  | Dimensions                      | 95 x 95 mm (3.74" x 3.74")  |          |          |          |

## Block Diagram



## Ordering Information

| Part No.         | SoC   | eDP/LVDS | Core/Thread | Base Freq. | 1T Boost Freq. | SoC TDP | LLC | DDR4 SODIMM | Thermal solution | Operating Temp. |
|------------------|-------|----------|-------------|------------|----------------|---------|-----|-------------|------------------|-----------------|
| SOM-6872VC-U9A1  | V2748 | eDP      | 8/16        | 2.9GHz     | 4.25GHz        | 35-54W  | 8MB | 3200MT/s    | Active           | 0 ~ 60 °C       |
| SOM-6872VCA-U9A1 | V2748 | LVDS     | 8/16        | 2.9GHz     | 4.25GHz        | 35-54W  | 8MB | 3200MT/s    | Active           | 0 ~ 60 °C       |
| SOM-6872VC-H0A1  | V2546 | eDP      | 6/12        | 3.0GHz     | 3.95GHz        | 35-54W  | 8MB | 3200MT/s    | Active           | 0 ~ 60 °C       |
| SOM-6872VC-S7A1  | V2718 | eDP      | 8/16        | 1.7GHz     | 4.15GHz        | 10-25W  | 8MB | 3200MT/s    | Active           | 0 ~ 60 °C       |
| SOM-6872VC-U1A1  | V2516 | eDP      | 6/12        | 2.1GHz     | 3.95GHz        | 10-25W  | 8MB | 3200MT/s    | Active           | 0 ~ 60 °C       |

Any other SKUs or combination is project based support. Please contact sales for details.

## Optional Accessories

| Part No.       | Description |
|----------------|-------------|
| 1970004870T001 | Semi-Cooler |

## Development Board

| Part No.         | Description                            |
|------------------|--|
| SOM-DB5830-00A2  | Development Board SOM-DB5830 A2 (LVDS) |
| SOM-DB5830A-00A2 | Development Board SOM-DB5830 A2 (eDP)  |

## Packing List

| Part No.       | Description  | Quantity |
|----------------|--|----------|
| -              | SOM-6872 CPU Module                                  | 1        |
| 1970005034T001 | Aluminum Heatspreader (include in 10W-25W SKUs only) | 1        |
| 1970005033T001 | Heatpipe Heatspreader (include in 35W-54W SKUs only) | 1        |

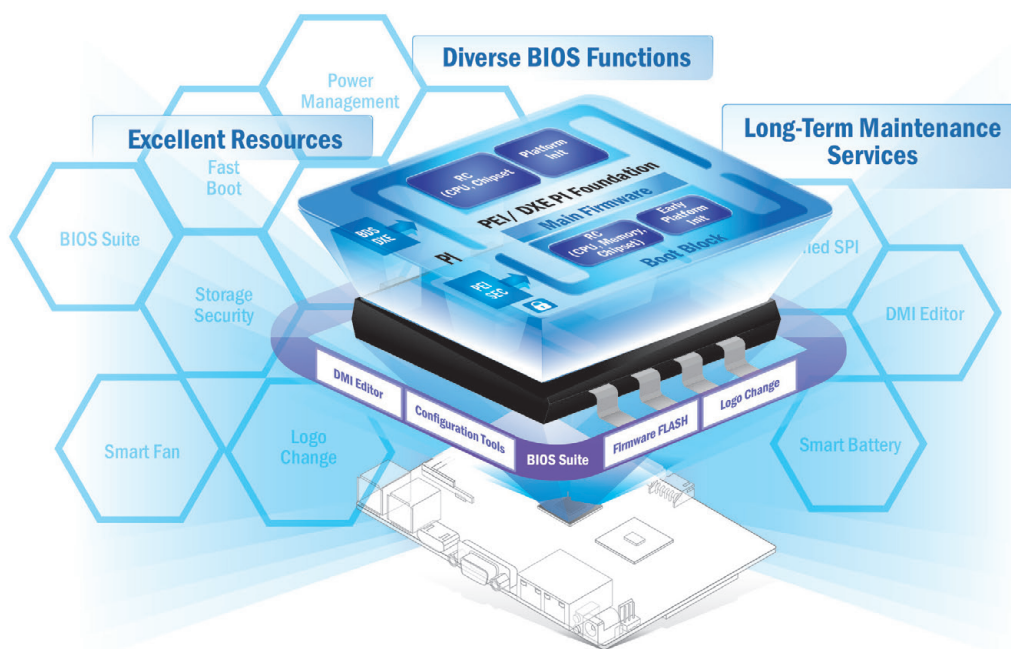
## Embedded OS

| OS         | Part No.       | Description  |
|------------|----------------|--|
| Win10 (HL) | 20706WX9HS0140 | Img Win10 IoT Ent_2019 LTSC 64 bit (V2748 & V2718) |
| Win10 (VL) | 20706WX9VS0144 | Img Win10 IoT Ent_2019 LTSC 64 bit (V2546 & V2516) |

# Reliable Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech's high-quality embedded BIOS solutions deliver rapid execution and feature expert BIOS team support. These solutions feature multi-functional designs that ensure security and enable power/boot management. Advantech further provides 10+ years of BIOS version management, internal management, and longevity support for both hardware and BIOS — enhancing application efficiency, diversifying functionality, and optimizing performance.



## Embedded BIOS Solution Advantages

### Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

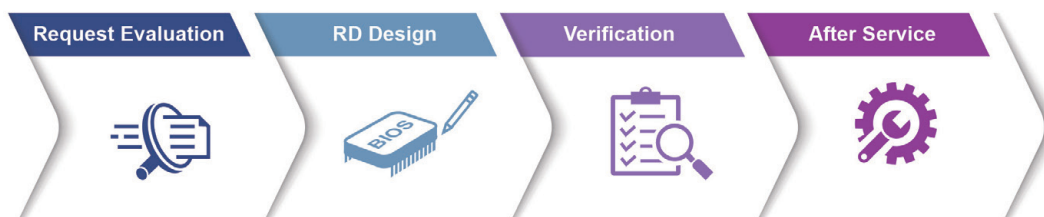
### Diverse BIOS Functions

- Multi-layer security
- 3 second fast boot
- Power management
- BIOS suite utility

### Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

## Value-Added Customization Process



# WISE-DeviceOn

## Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.



### Features

| Comprehensive Management   | Remote Access  | Efficient Operations   |
|--|--|--|
| <ul style="list-style-type: none"> <li>• Devices status</li> <li>• Peripherals/firmware</li> <li>• Open for extension</li> </ul> | <ul style="list-style-type: none"> <li>• Real-time monitoring</li> <li>• Remote controls</li> <li>• Troubleshooting</li> </ul> | <ul style="list-style-type: none"> <li>• Zero-touch on-boarding</li> <li>• OTA updates</li> <li>• Batch control</li> </ul> |

### Product Highlights



**SOM-6883**

High-performance 11<sup>th</sup> Gen Intel® COMe Type 6 Module



**MIO-5375**

Compact 11<sup>th</sup> Gen Intel® Outdoor Focused 3.5" SBC



**EPC-B5587**

10<sup>th</sup> Gen Intel® Xeon® based Edge server



**EPC-R3220**

Arm based IoT Edge Gateway

# Edge AI Suite

AI development for diverse application at the Edge

Increasing demand for AI inference/analytic capabilities at the Edge make AI training models, software development environments, and hardware configuration key factors in successful solution deployment. Advantech's Edge AI Suite helps users build AI demo devices quickly and choose optimal hardware solutions easily.



| 5x Performance Boost  | All-in-one Installation   | One Click AI Experience   | Plug-and-play Environment   | Discover Cost-effective Hardware  |
|---|---|---|---|---|
| <ul style="list-style-type: none"> <li>Integrated Intel® OpenVINO™ technology</li> <li>Boost AI using Advantech hardware</li> </ul> | <ul style="list-style-type: none"> <li>Build AI environment in under 5 minutes</li> <li>Ready-to-use configuration</li> </ul> | <ul style="list-style-type: none"> <li>User friendly configuration guidance</li> <li>One-click Benchmark acquisition</li> </ul> | <ul style="list-style-type: none"> <li>Easy access to 100+ AI inference extensions</li> <li>Software development package available</li> </ul> | <ul style="list-style-type: none"> <li>Diverse CPU/RAM options</li> <li>Find hardware solutions for AI development</li> </ul> |

# Embedded Linux Support and Design-in Services

## Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.



### Features

|  |  |  |   |
|--|--|--|---|
| <p><b>Certified OS and BSP</b></p> <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul> | <p><b>Licensed Services</b></p> <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul> | <p><b>Numerous AI and Edge Resources</b></p> <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul> | <p><b>Local Partner Alliance</b></p> <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul> |
|--|--|--|---|

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