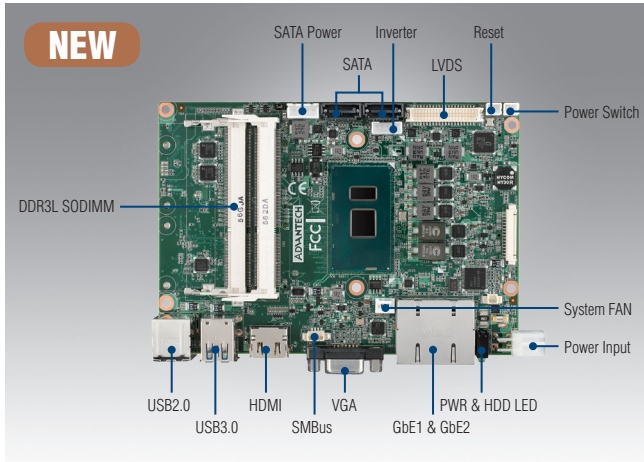


MIO-5272

7th & 6th Gen Intel® Core™ U-series (i7/i5/i3/Celeron®*), 3.5" MI/O-Compact SBC



WISE-PaaS/RMM CE FCC

Features

- 7th & 6th Gen Intel® Core™ U-series (i7/i5/i3/Celeron®*)
- DirectX 12, OpenGL 4.4, OpenCL 2.1
- 2 x 204-pin SO-DIMM up to 16GB DDR3L- 1600/1333 MHz DRAM
- Flexible I/Os expansion: MIOe to approach vertical market application
- Support TPM 2.0 (optional)
- Supports Intel AMT11.0, WISE-PaaS/RMM and Embedded Software APIs

Software APIs:



Utilities:

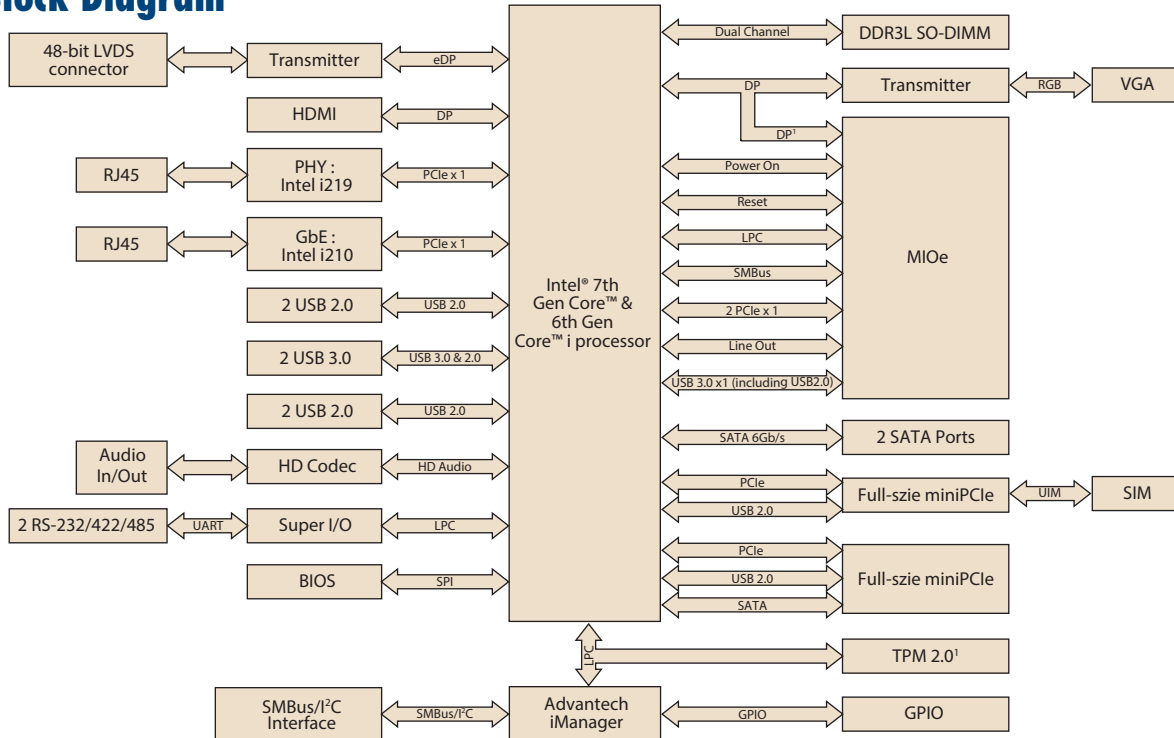


Specifications

| | | Intel 7th Core™ U-series | Intel 6th Core™ U-series | Intel Core i5 6300U | Intel Core i3 6100U | Intel Celeron 3955U* | |
|--------------------------|--|--|--------------------------|---------------------|---------------------|----------------------|--|
| Processor System | CPU | Intel Core i7 7600U | Intel Core i7 6600U | Intel Core i5 6300U | Intel Core i3 6100U | Intel Celeron 3955U* | |
| | Base Frequency | 2.8 GHz (Dual-Core) | 2.6 GHz (Dual-Core) | 2.4 GHz (Dual-Core) | 2.3 GHz (Dual-Core) | 2.0 GHz (Dual-Core) | |
| | Max Turbo Frequency | 3.9 GHz | 3.4 GHz | 3.0 GHz | - | - | |
| | L3 Cache | 4MB | 4MB | 3MB | 3MB | 2MB | |
| | BIOS | AMI UEFI 128 Mbit | | | | | |
| Memory | Technology | DDR3L 1600 MHz | | | | | |
| | Max. Capacity | 16 GB | | | | | |
| | Socket | 2 x 204-pin SODIMM | | | | | |
| Display | Controller | Intel HD Graphics 620/520/510 (Celeron) | | | | | |
| | Processor Graphics | DirectX 12, DirectX 11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode | | | | | |
| | VGA | 1920 x 1200 @ 60Hz or 2048 x 1152 @ 60Hz with reduced blanking | | | | | |
| | LVDS | LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 at 60Hz | | | | | |
| | HDMI | Supports HDMI 1.4 for HD Video playback Max resolution up to 4096 x 2160 at 24 Hz | | | | | |
| Multi-Display | VGA + HDMI, VGA + LVDS, HDMI + LVDS, VGA + HDMI + LVDS | | | | | | |
| Ethernet | Speed | 10/100/1000Mbps | | | | | |
| | Controller | GbE1: Intel i219, GbE2: Intel i210 | | | | | |
| | Connector | 2 RJ45 on Rear I/O | | | | | |
| Audio | Codec | High Definition Audio (HD), Line-in, Line out, Mic-in | | | | | |
| Amplifier | Optional via MIOe | | | | | | |
| WatchDog Timer | | Output System reset, Programmable counter from 1 - 255 minutes/ seconds | | | | | |
| Storage | SATA | 2, up to 6.0 Gb/s (600 MB/s) | | | | | |
| | mSATA | 1 x Full-size (support either mSATA or miniPCIe) | | | | | |
| Rear I/O | Ethernet | 2 | | | | | |
| | VGA | 1 | | | | | |
| | HDMI | 1 | | | | | |
| | USB 2.0 | 2 | | | | | |
| | USB 3.0 | 2 | | | | | |
| | LED | Power, HDD | | | | | |
| Internal I/O | DC Jack* | 1 | | | | | |
| | Serial | 2 x RS-232/422/485 with auto flow control (ESD protection: Air gap ±15kV, Contact ±8kV) | | | | | |
| | USB | 2 | | | | | |
| | I2C | 1 (Shares with SMBus pin) | | | | | |
| Security | SMBus | 1 | | | | | |
| | GPIO | 8-bit general purpose input/output | | | | | |
| | TPM2.0* | Support by request | | | | | |
| Expansion | Mini PCIe | 2 x Full-size (One with SIM card holder. Another one with mSATA support, default support mSATA) | | | | | |
| | MIOe | Displayport*, SMBus, USB3.0, LPC, 2 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset | | | | | |
| Power | Power Type | Single 12V DC power input | | | | | |
| | Power Supply Voltage | Supports single 12V input, ± 10% | | | | | |
| | Power Consumption (Typical) | i7 7600U: 6.46W, i7 6600U: 6.46 W, i5 6300U: 5.26 W, i3 6100U: 5.02 W, Celeron 3955U: 4.88 W | | | | | |
| | Power Consumption (Max) | i7 7600U: 22.03W, i7 6600U: 22.03 W, i5 6300U: 20.87 W, i3 6100U: 20.45 W, Celeron 3955U: 17.81 W | | | | | |
| | Power Management | ACPI | | | | | |
| Battery | Lithium 3 V / 210 mAh | | | | | | |
| Environment | Operating | 0 - 60 °C (32 - 140 °F) (Operating humidity: 40 °C @ 95% RH Non-Condensing) | | | | | |
| | Non-Operating | -40 °C - 85 °C and 60 °C @ 95% RH Non-Condensing | | | | | |
| Physical Characteristics | Dimensions (L x W) | 146 x 102 mm (5.7" x 4"), same as 3.5" | | | | | |
| | Weight | 0.67kg, weight of total package | | | | | |
| | Height | Top Side: 16.5 mm; Bottom Side: 7.8 mm; PCB: 2.0 mm | | | | | |

* Supported by request; please contact Advantech if this function is needed.

Block Diagram



¹ Supported by request

Ordering Information

| Part No. | CPU ¹ | L3 Cache | Memory | LVDS | VGA | HDMI | GbE | HD Audio | RS-232/422/485 | USB 3.0 | USB 2.0 | SATAIII | Full-size Mini PCIe ² | MIOe | Power connector ³ | Thermal Solution | Operating Temp. |
|---------------------------------------|----------------------------|----------|--------|--------|-----|------|-----|----------|----------------|---------|---------|---------|----------------------------------|------|------------------------------|------------------|-----------------|
| 7th Gen. Intel® Core™ U-series | | | | | | | | | | | | | | | | | |
| MIO-5272U-U8A1E | Intel i7 7600U, 2.8GHz 15W | 4MB | SODIMM | 48 bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | 0 - 60 °C |
| MIO-5272Z-U8A1E | Intel i7 7600U, 2.8GHz 15W | 4MB | SODIMM | 48 bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | -20 - 80 °C |
| MIO-5272Z2-U8A1E | Intel i7 7600U, 2.8GHz 15W | 4MB | SODIMM | 48 bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | -40 - 85 °C |
| 6th Gen. Intel® Core™ U-series | | | | | | | | | | | | | | | | | |
| MIO-5272U-U6A1E | Intel i7 6600U 2.6GHz 15W | 4MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | 0 - 60 °C |
| MIO-5272U-U4A1E | Intel i5 6300U 2.4GHz 15W | 3MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | 0 - 60 °C |
| MIO-5272U-U3A1E | Intel i3 6100U 2.3GHz 15W | 3MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | 0 - 60 °C |
| MIO-5272Z2-U6A1E | Intel i7 6600U 2.6GHz 15W | 4MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | -40 - 85 °C |
| MIO-5272Z2-U4A1E | Intel i5 6300U 2.4GHz 15W | 3MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | -40 - 85 °C |
| MIO-5272Z-U4A1E | Intel i5 6300U 2.4GHz 15W | 3MB | SODIMM | 48-bit | Yes | Yes | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 2x2 pin | Passive | -20 - 80 °C |

¹ Intel Celeron 3955U is supported by request

² One Mini PCIe default support mSATA

³ DC jack is supported by request

Packing List

| Part No. | Description | Quantity |
|----------------|---|----------|
| | MIO-5272 SBC | 1 |
| 2006527200 | Startup Manual | 1 |
| 1700006291 | M Cable SATA 7P/SATA 7P 30cm C=R 180/90 | 1 |
| 1700018785 | SATA 35cm power cable | 1 |
| 1701200220 | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 1 |
| 1700019584 | Audio Cable 2*5P-2.0/JACK*3 20cm | 1 |
| 9689000002 | Mini Jumper pack | 1 |
| 1960068763T001 | Heatsink (145 x 84 x 24 mm) for MIO-5272 | 1 |
| 1960072272T001 | Heatsink (145.4 x 84.2 x 34 mm) for MIO-5272Z/Z2 only | 1 |

Rear I/O View



Optional Accessories

| Part No. | Description |
|--------------------|---|
| 1960074236N001 | Heat spreader (145 x 84 x 16 mm) for MIO-5272 |
| 1700002172 | Internal 2 ports USB cable 17CM |
| SQR-SD3N-8G1K6HNEC | SODIMM 204pin DDR3L 1600 8GB (0-85oC) Hynix |

Embedded OS/API

| Embedded OS/API | Part No. | Description |
|-----------------------------|------------|--------------|
| Windows Embedded 10 | TBD | |
| Windows Embedded 7 Standard | 2070014274 | EN/JP/TC/SC |
| VxWorks | | 7.0 (TBD) |
| Linux | | Ubuntu 15.10 |
| Software API | | SUSI 4.0 |

1. Intel i7 7600U support Win10 only

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