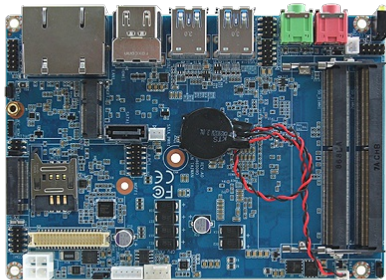




ECM-WHL

8th Gen Intel® Whiskey Lake 3.5" Micro Module



- > Bottom Layer Soldered
- > Intel® Core™/Celeron® BGA Processor
- > Intel® UHD Graphics 620/610
- > Dual DRAM Socket, Max. Up to 64GB DDR4 2400MHz
- > Triple Display (Dual HDMI, LVDS)
- > HDMI w/CEC Control (Factory Option)
- > Dual Expansion Slot, 2-M.2
- > Dual Gigabit Ethernet, HD Audio Code
- > Support TPM 2.0, RAID 0/1

+ Spec

-System Information-

| | |
|---------------------------|--|
| Processor | Intel® Core™ i7-8665UE Processor (8M Cache, up to 4.40 GHz) Intel® Core™ i5-8365UE Processor (6M Cache, up to 4.10 GHz) Intel® Core™ i3-8145UE Processor (4M Cache, up to 3.90 GHz) Intel® Celeron® Processor 4305UE (2M Cache, 2.00 GHz) |
| System Memory | 2 x 260-Pin SO-DIMM Socket, Max. Up to 64 GB DDR4 2400 |
| I/O Chipset | EC ITE IT8528E |
| BIOS Information | AMI uEFI BIOS, 256 Mbit SPI Flash ROM |
| Watchdog Timer | H/W Reset, 1sec. ~ 65535sec. |
| H/W Status Monitor | Monitoring CPU Temperature, Voltage and FAN Status with Auto Throttling Control |
| TPM | 2.0 |

Expansion

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|------------------|---|
| Expansion | 1 x M.2 (Key-B, 2242/3042, PCIe, SATA, USB 3.0, USB 2.0, SIM Slot) 1 x M.2 (Key-E, 2230, PCIe, USB2.0, CNVi) |
|------------------|---|

Storage

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|----------------|---|
| Storage | 1 x SATA III 1 x M.2 (Key-B, 2242) Support RAID 0/1 |
|----------------|---|

I/O

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|-------------------------------|---|
| Internal I/O Connector | 2 x USB 2.0 1 x RS-232 1 x 8-bit GPIO 1 x LPC 1 x SPI 1 x SMBus |
| Rear I/O Connectors | 4 x USB 3.1 (Gen. 2) 2 x RJ-45 2 x HDMI (Factory CEC Controller Option) 1 x Mic-In 1 x Line-Out 1 x LED for Power 1 x LED for Data Access |

Display

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|-------------------------------|--|
| Graphic Chipset | Intel® UHD Graphics 620 (i7-8665UE, i5-8365UE, i3-8145UE) Intel® UHD Graphics 610 (4305UE) |
| Spec. & Resolution | 2 x HDMI 1.4: Max. Resolution 4096x2160@24/30Hz 1 x Dual-Channel 18/24-bit LVDS: Max. Resolution 1920x1200@60Hz |
| Multiple Display | Triple Display |

Audio

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|------------------------|----------------------------------|
| Audio Codec | Realtek ALC888S, supports 5.1-CH |
| Audio Interface | 1 x Mic-In 1 x Line-Out |

Certifications

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|----------------------------------|-------------------|
| Certification Information | CE FCC Class B |
|----------------------------------|-------------------|

Ethernet

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|---------------------------|--|
| LAN Chipset | 1 x Intel® I210AT 1 x Intel® I219LM |
| Ethernet Interface | 10/100/1000 Base-Tx GbE compatible |
| LAN Port | 2 x RJ45 with ACT/LINK and SPEED LEDs |

Mechanical & Environmental



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|------------------------------|--|
| Operating Temperature | 0°C ~ 60°C (32°F ~ 140°F), with 0.2m/s air flow |
| Storage Temperature | -40°C ~ 75°C (-40°F ~ 167°F) |
| Operating Humidity | 40°C @ 95% Relative Humidity, Non-condensing |
| Weight | 0.041lbs(0.03kg) |
| Vibration Test | 1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/Axis, 3 Axis |
| Shock Test | 10G, IEC 60068-2-27, Half Sine, 11ms, Z Axis |
| Drop Test | ISTA 2A, IEC-60068-2-32 Test : Ed, 1 Corner, 3 Edges, 6 Faces |
| Power Requirement | +12V |
| ACPI | Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant |
| Power Mode | AT/ATX |
| Dimension (L x W) | 5.7" x 4" (146mm x 101mm) |
| Software Support | |
| OS Information | Win 10 Linux |
| Ordering Information | |
| Ordering Information | ECM-WHL-4305-B2R 3.5" w/Celeron 4305UE/2-DRAM Socket/2-HDMI/6-USB/2-LAN/2-M.2/TPM2.0/Cooler ECM-WHL-8145-B2R 3.5" w/i3-8145UE/2-DRAM Socket/2-HDMI/6-USB/2-LAN/2-M.2/TPM2.0/Cooler ECM-WHL-8365-B2R 3.5" w/i5-8365UE /2-DRAM Socket/2-HDMI/6-USB/2-LAN/2-M.2/TPM2.0/Cooler ECM-WHL-8665-B2R 3.5" w/i7-8665UE/2-DRAM Socket/2-HDMI/6-USB/2-LAN/2-M.2/TPM2.0/Cooler |