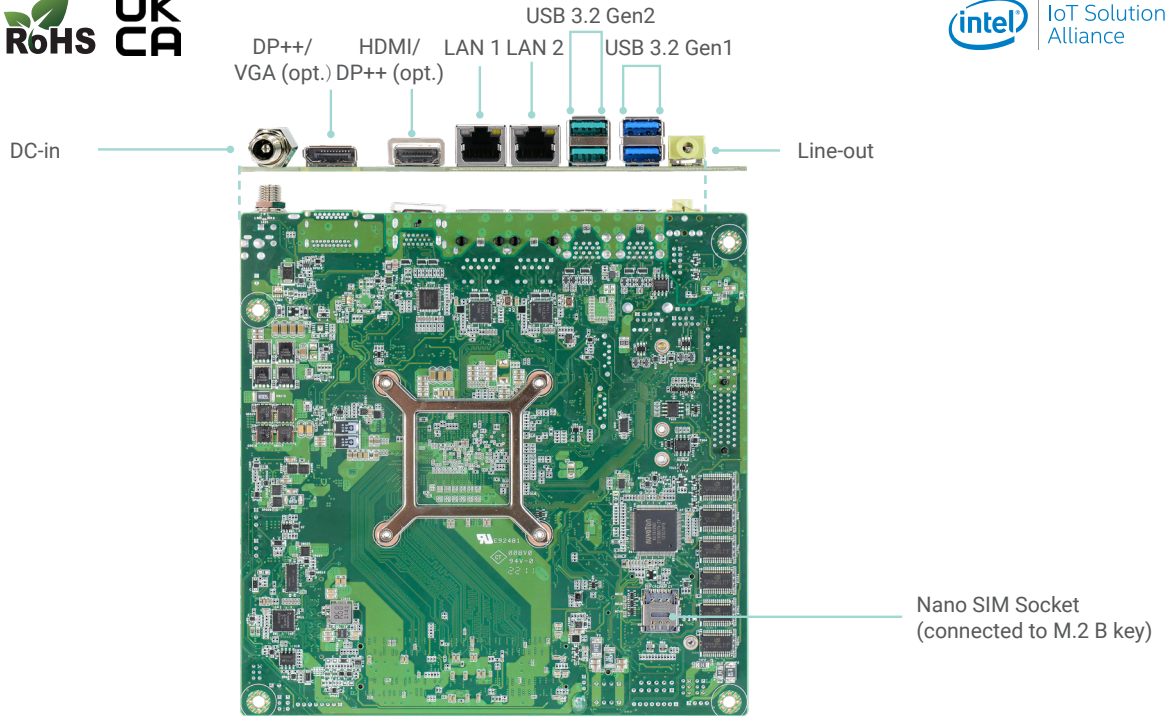
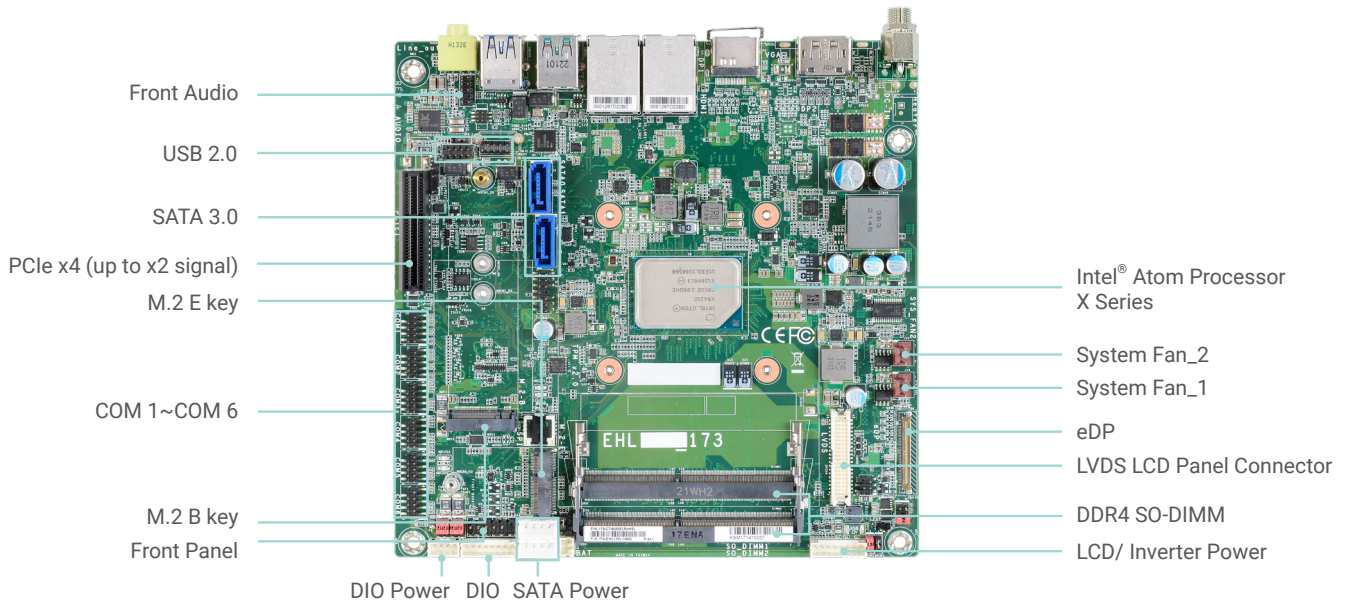


EHL171/EHL173 Atom

Intel® Atom® Processor X Series
mini-ITX



Bottom View



Top View

*The photo above refers to EHL173.

KEY FEATURES



DDR4

2 DDR4 SODIMM up to 32GB



4K High Resolution

Supports 4K/ 2K resolution



3 Independent Displays

1 DP++/VGA, 1 HDMI/ DP++, 1 eDP/LVDS



Multiple Expansion

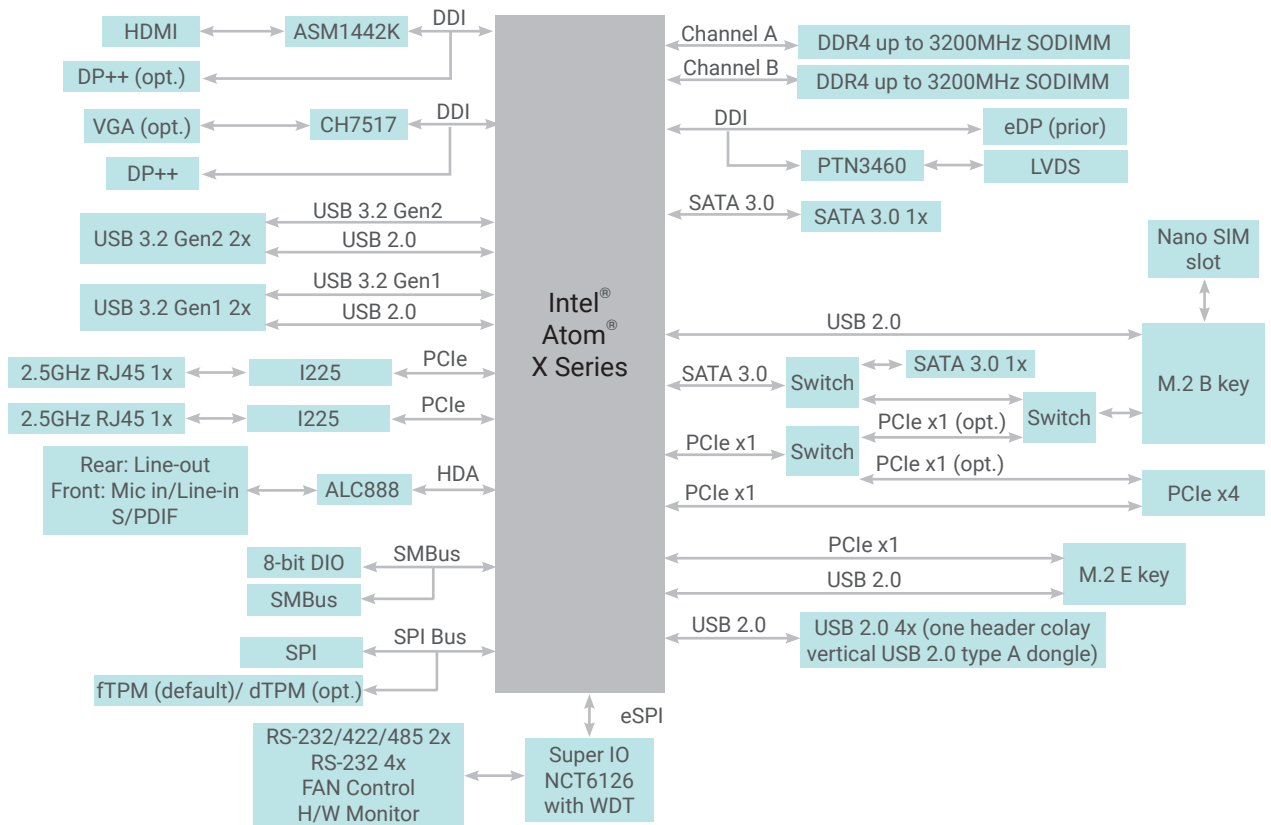
1 M.2 B Key, 1 M.2 E Key, 1 PCIe x4 (up to x2 signal)



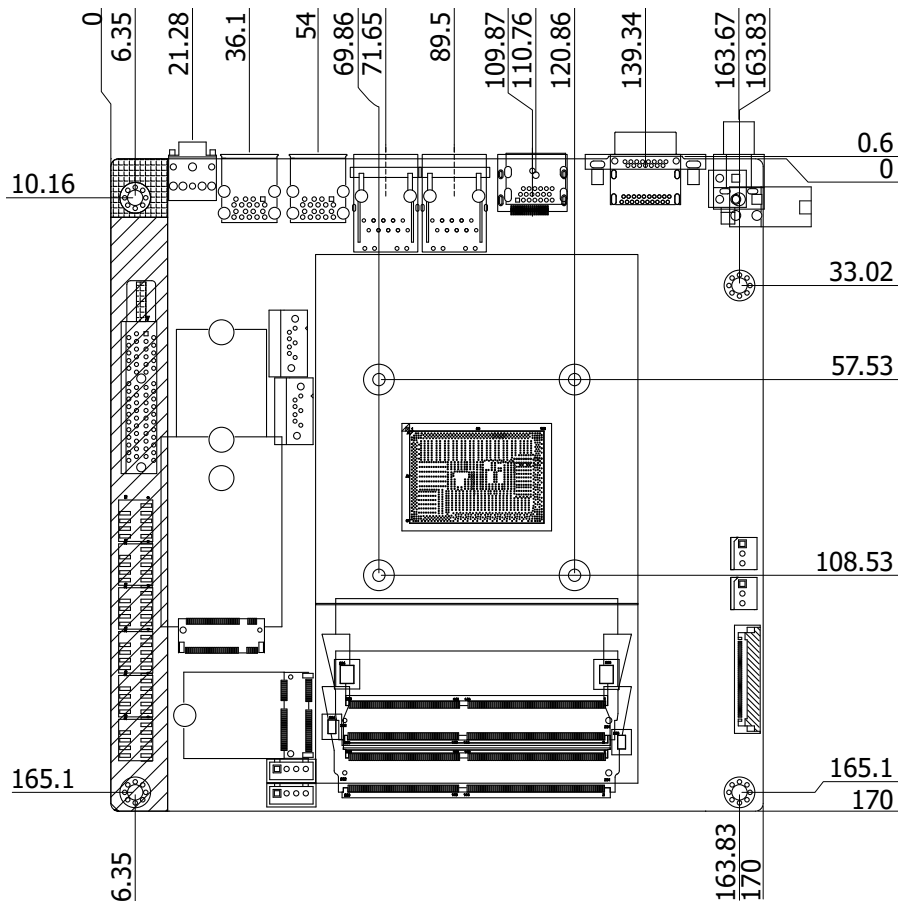
Rich I/O

2 x 2.5GbE, 2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 6 COM, up to 4 USB 2.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

| Model Name | | EHL171 | EHL173 |
|----------------|-------------------|--|--|
| SYSTEM | Processor | Intel Atom® X Series Processors, BGA 1493 Intel® Atom® x6425E Processor, Quad Core, 1.5M Cache, 2.0GHz (3.0GHz), 12W Intel® Atom® x6211E Processor, Dual Core, 1.5M Cache, 1.3GHz (3.0GHz), 6W Intel® Atom® x6413E Processor, Quad Core, 1.5M Cache, 1.5GHz (3.0GHz), 9W Intel® Celeron® J6413 Processor, Quad Core, 1.5M Cache, 1.8GHz (3.0GHz), 10W | |
| | Memory | Two 260-pin SODIMM up to 32GB Dual channel DDR4 up to 3200MHz (in-band ECC support in embedded/industrial SKU) | Two 260-pin SODIMM up to 32GB Dual channel DDR4 up to 3200MHz (in-band ECC support in embedded/industrial SKU) |
| | BIOS | AMI SPI 256Mbit (supports UEFI boot only) | |
| GRAPHICS | Controller | Intel® UHD Graphics | |
| | Feature | OpenGL 4.5, DirectX 12, Open CL 1.2, Vulkan 1.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H.265, VP8, VP9 HW Encode: AVC/H.264, JPEG/MJPEG, HEVC/H.265, VP9 | OpenGL 4.5, DirectX 12, Open CL 1.2, Vulkan 1.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H.265, VP8, VP9 HW Encode: AVC/H.264, JPEG/MJPEG, HEVC/H.265, VP9 |
| | Display | 1 x DP++ (Colay VGA, MOQ required) 1 x HDMI 2.0 (Colay DP++, MOQ required) 1 x eDP/LVDS (eDP in priority) HDMI: resolution up to 4096x2160 @24Hz DP++: resolution up to 4096x2160 @ 60Hz eDP: resolution up to 4096x2160 @ 60Hz VGA: resolution up to 2560x1600 @ 60Hz LVDS: resolution up to 1920x1200 @ 60Hz | 1 x DP++ (Colay VGA, MOQ required) 1 x HDMI 2.0 (Colay DP++, MOQ required) 1 x eDP/LVDS (eDP in priority) HDMI: resolution up to 4096x2160 @24Hz DP++: resolution up to 4096x2160 @ 60Hz eDP: resolution up to 4096x2160 @ 60Hz VGA: resolution up to 2560x1600 @ 60Hz LVDS: resolution up to 1920x1200 @ 60Hz |
| | Triple Displays | DP++/VGA + HDMI/DP++ + eDP/LVDS | |
| EXPANSION | Interface | 1 x PCIe x4 (Default: PCIe x1 signal with M.2 B key active/ Opt: PCIe x2 signal with M.2 B key inactive) 1 x M.2 2242/2280/3052 B Key (PCIe x1/SATA/USB2.0) 1 x M.2 2230 E Key (PCIe x1/USB2.0) 1 x Nano SIM socket (connected to M.2 B key) | 1 x PCIe x4 (Default: PCIe x1 signal with M.2 B key active/ Opt: PCIe x2 signal with M.2 B key inactive) 1 x M.2 2242/2280/3052 B Key (PCIe x1/SATA/USB2.0) 1 x M.2 2230 E Key (PCIe x1/USB2.0) 1 x Nano SIM socket (connected to M.2 B key) |
| AUDIO | Audio Codec | Realtek ALC888 | |
| ETHERNET | Phy | -40~85°C: 2 x Intel® I225IT (10/100/1000/2500Mbps) or -5~65°C: 2 x Intel® I225LM (10/100/1000/2500Mbps) | -40~85°C: 2 x Intel® I225IT (10/100/1000/2500Mbps) or -5~65°C: 2 x Intel® I225LM (10/100/1000/2500Mbps) |
| REAR I/O | Ethernet | 2 x 2.5GHz RJ45 | |
| | USB | 2 x USB 3.2 Gen2 2 x USB 3.2 Gen1 | |
| | Display | 1 x HDMI/DP++ (opt., MOQ required) 1 x DP++ /VGA (opt., MOQ required) | |
| | Audio | 1 x Line-out | |
| INTERNAL I/O | Serial | 2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 4 x RS-232 (2.0mm pitch) | |
| | USB | 4 x USB 2.0 (2.0mm pitch) or 2 x USB 2.0 (2.00mm pitch) + 1 x Vertical USB 2.0 (type A) (opt., MOQ required) | |
| | Display | 1 x eDP LCD Panel Connector (Colay LVDS LCD, auto-detection) 1 x LCD/Inverter Power | |
| | Audio | 1 x S/PDIF 1 x Line-in/Mic-in | |
| | SATA | 2 x SATA 3.0 (up to 6Gb/s) (one SATA port shared with M.2 B key) | |
| | DIO | 1 x 8-bit DIO | |
| | SMBus | 1 x SMBus | |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | |
| SECURITY | TPM | fTPM (default) dTPM (option) | |
| POWER | Type | Single 12V +/-10% DC (DC-In jack by default) | |
| | Connector | DC-in Jack Right Angle Connector (4-pin) Vertical Type Connector (4-pin) | |
| | Consumption | Idle: Celeron J6413 10W: 12V @ 0.66A (7.92W) Max: Celeron J6413 10W: 12V @ 1.98A (23.76W) | |
| | RTC Battery | CR2032 Coin Cell | |
| OS SUPPORT | Microsoft | Windows 10 IoT Enterprise 64-bit Windows 11 GAC | |
| | Linux | Linux | |

SPECIFICATION

| Model Name | | EHL171 | EHL173 |
|------------------------------|----------------|--|--|
| ENVIRONMENT | Temperature | Operating: -5 to 65°C, -40 to 85°C Storage: -40 to 85°C | Operating: -5 to 65°C, -40 to 85°C Storage: -40 to 85°C |
| | Humidity | Operating: 5 to 90% RH Storage: 5 to 90% RH | Operating: 5 to 90% RH Storage: 5 to 90% RH |
| | MTBF | EHL171-CT-6427FE MTBF 349,721 hrs @ 25°C; 236,303 hrs @ 45°C; 164,112 hrs @ 60°C; 82,397 hrs @ 85°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled | EHL173-CT-6425E MTBF 430,473 hrs @ 25°C; 267,529 hrs @ 45°C; 176,755 hrs @ 60°C; 132,188 hrs @ 70°C; 84,901 hrs @ 85°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled |
| MECHANICAL | Dimensions | Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7") | Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7") |
| | Height | PCB: 1.6mm Top Side: TBD | PCB: 1.6mm Top Side: TBD |
| STANDARDS AND CERTIFICATIONS | Certifications | CE, FCC, RoHS, UKCA | CE, FCC, RoHS, UKCA |

ORDERING INFORMATION

| Model Name | P/N | Processor | Memory | Display | GbE | RS-232 | RS-232/422/485 | USB 3.2 Gen2 | USB 3.2 Gen1 | USB 2.0 | Power | Thermal | Temp. |
|-----------------|------------------|-----------|----------|-------------|-----|--------|----------------|--------------|--------------|---------|----------|---------|-------------|
| EHL171-CT-6425E | 770-EHL1711-100G | x6425E | 2 SODIMM | DP++ + HDMI | 2 | 2 | 4 | 2 | 2 | 4 | 12V DC | Fanless | -40 to 85°C |
| EHL171-CB-6413 | 770-EHL1711-300G | J6413 | | VGA + HDMI | | | | | | | 12V DC | | -5 to 65°C |
| EHL173-CT-6425E | 770-EHL1731-100G | x6425E | | DP++ + HDMI | | | | | | | 9-36V DC | | -40 to 85°C |
| EHL173-CT-6211E | 770-EHL1731-200G | x6211E | | DP++ + DP++ | | | | | | | 9-36V DC | | -40 to 85°C |
| EHL173-CT-6413E | 770-EHL1731-400G | x6413E | | DP++ + HDMI | | | | | | | 9-36V DC | | -40 to 85°C |
| EHL173-CB-6413 | 770-EHL1731-300G | J6413 | | VGA + HDMI | | | | | | | 9-36V DC | | -5 to 65°C |

PACKING LIST

| | |
|---|-----------------|
| • 1 EHL171/EHL173 motherboard | |
| • 1 COM port cable (Length: 250mm, 1 x COM ports) | A81-015011-001G |
| • 1 Serial ATA data & power cable w/lock(Length: 300mm) | A81-002013-000G |
| • 1 Heat sink | |
| -(Height: 32mm) for Wide Temp X series CPU | A71-008157-020G |
| -(Height: 32mm) for Normal Temp J series CPU | A71-008157-030G |

OPTIONAL ITEMS

| | |
|--|-----------------|
| • USB port cable (Length: 200mm) | A81-001032-016G |
| • COM port cable (Length: 250mm, 1 x COM port) | A81-015011-001G |
| • Serial ATA data & power cable w/lock (Length: 300mm) | A81-002013-000G |
| • I/O shield w/ icon(DC in, VGA/HDMI, Standard type) | A49-EHL171-000G |
| • I/O shield w/ icon(DC in, DP/HDMI, Standard type) | A49-EHL171-010G |
| • I/O shield w/ icon(DC in, DP/DP, Standard type) | A49-EHL171-020G |
| • I/O shield w/ icon(DC in, VGA/DP, Standard type) | A49-EHL171-030G |