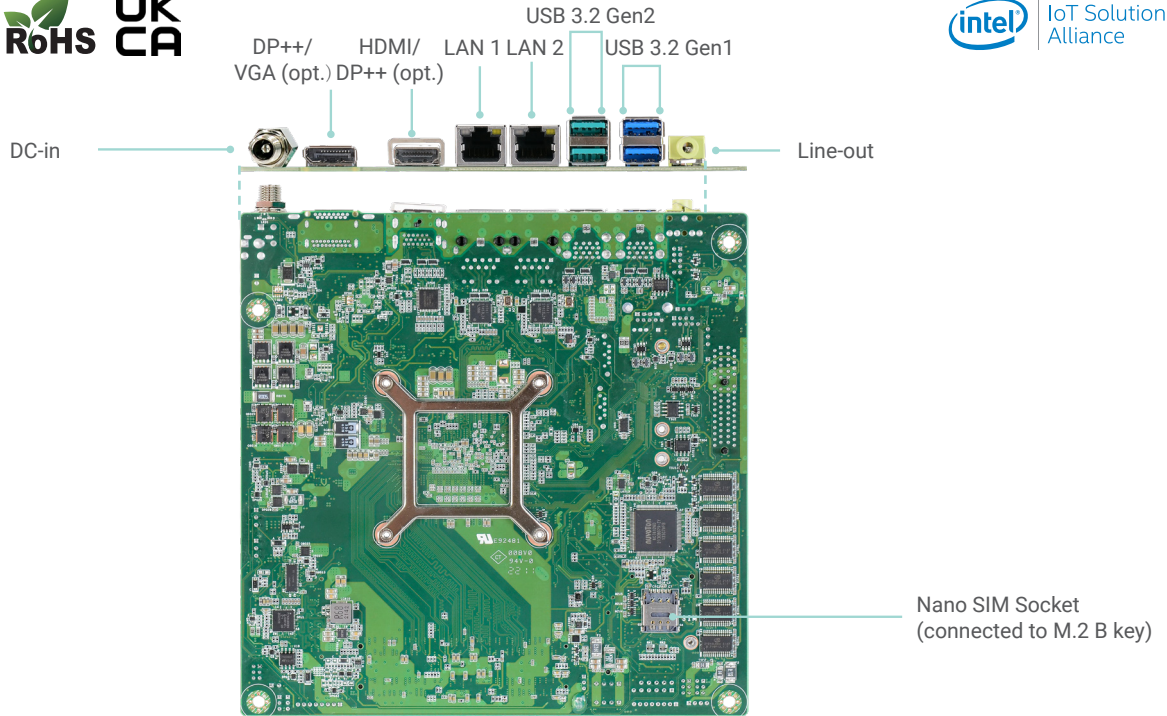
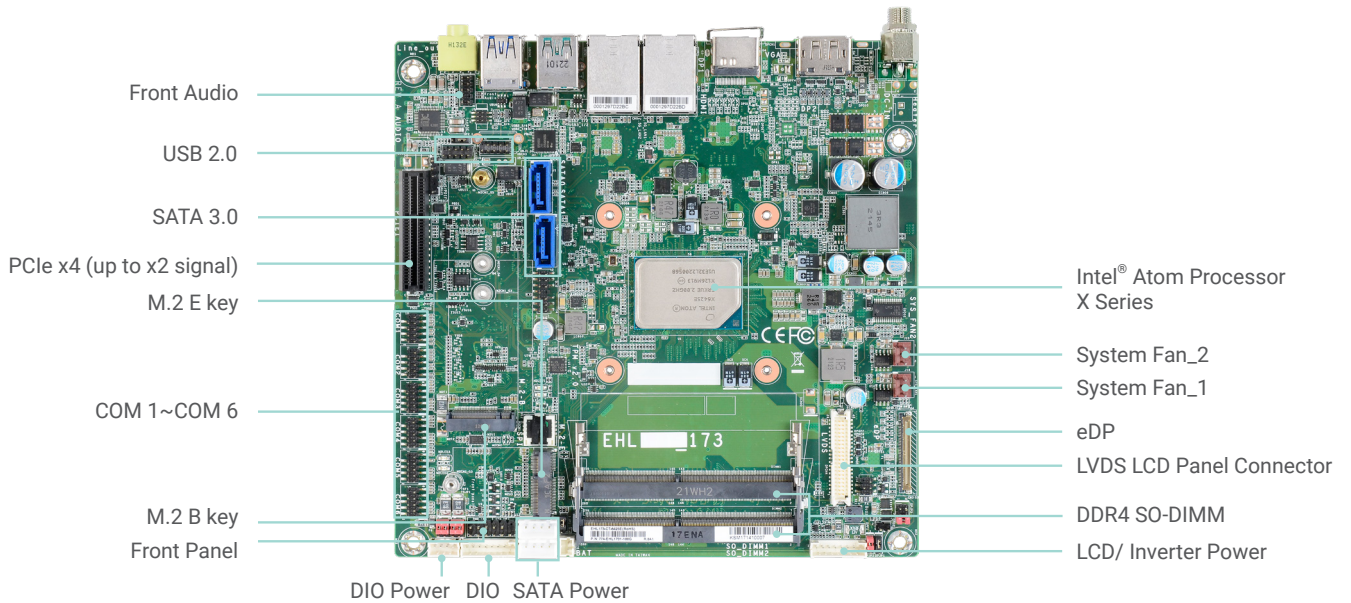


EHL171/EHL173 Atom

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

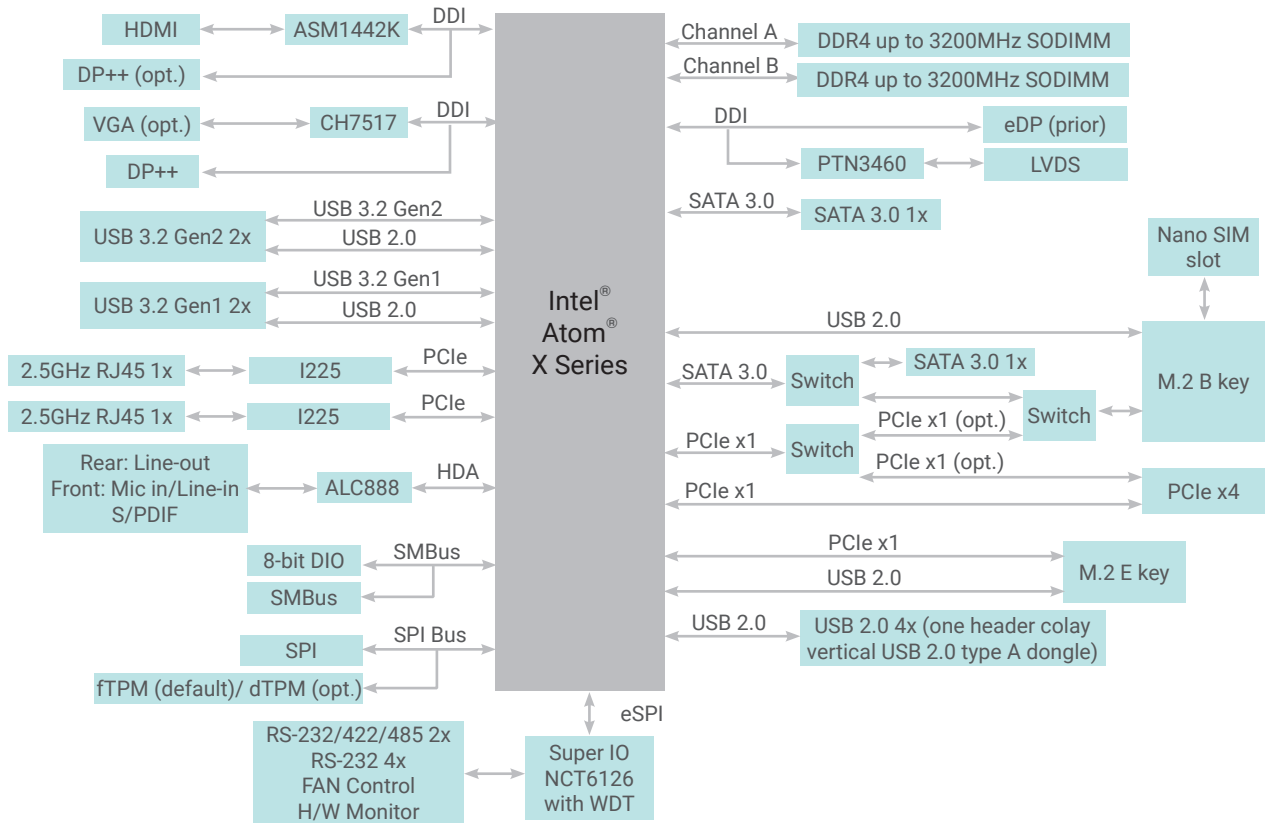
1 M.2 B Key, 1 M.2 E Key, 1 PCIe x4 (up to x2 signal)



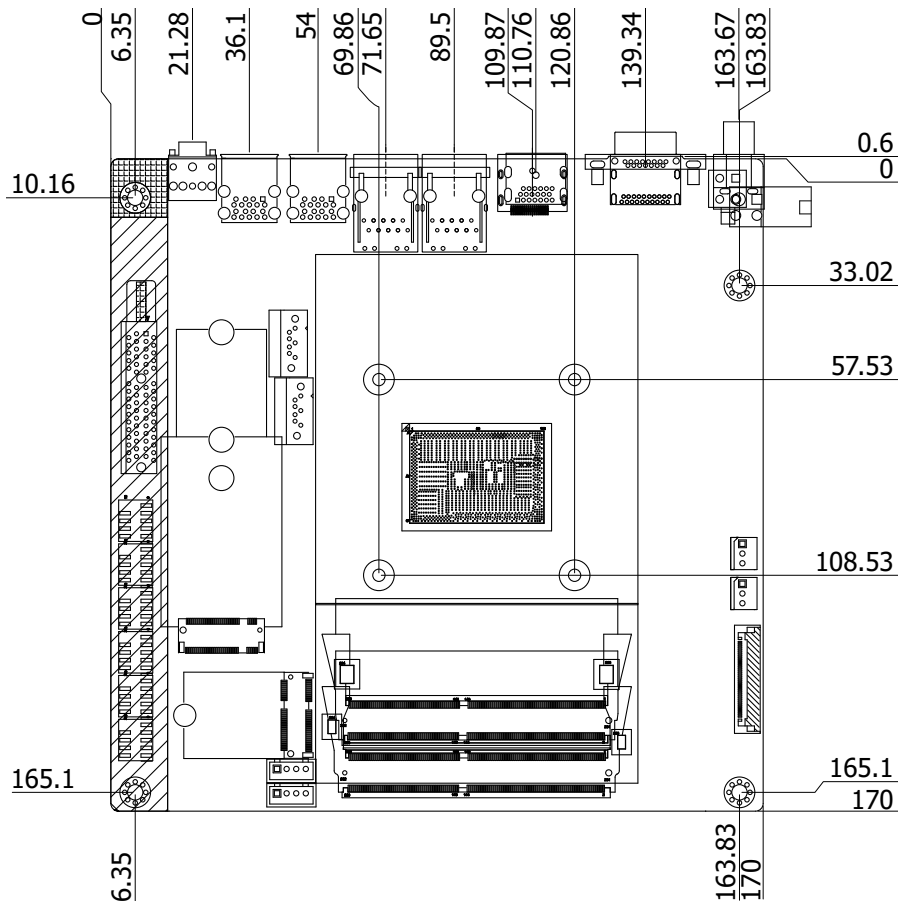
Rich I/O

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

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)	
	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	
	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
	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)	
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)	
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 (EHL171) (DC-In jack by default) Wide Range 9~36V (EHL173) (4P vertical type 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 22H2	
	Linux	Linux	
ENVIRONMENT	Temperature	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
	MTBF	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	
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm	Top Side: TBD
STANDARDS AND CERTIFICATIONS	Certifications	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	2 SODIMM	VGA + HDMI	2	2	4	2	2	4	12V DC	Fanless	-5 to 65°C
EHL173-CT-6425E	770-EHL1731-100G	x6425E	2 SODIMM	DP+++ + HDMI	2	2	4	2	2	4	9-36V DC	Fanless	-40 to 85°C
EHL173-CT-6211E	770-EHL1731-200G	x6211E	2 SODIMM	DP+++ + DP+++	2	2	4	2	2	4	9-36V DC	Fanless	-40 to 85°C
EHL173-CT-6413E	770-EHL1731-400G	x6413E	2 SODIMM	DP+++ + HDMI	2	2	4	2	2	4	9-36V DC	Fanless	-40 to 85°C
EHL173-CB-6413	770-EHL1731-300G	J6413	2 SODIMM	VGA + HDMI	2	2	4	2	2	4	9-36V DC	Fanless	-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