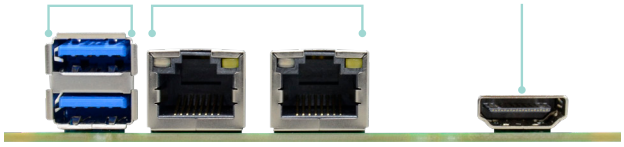
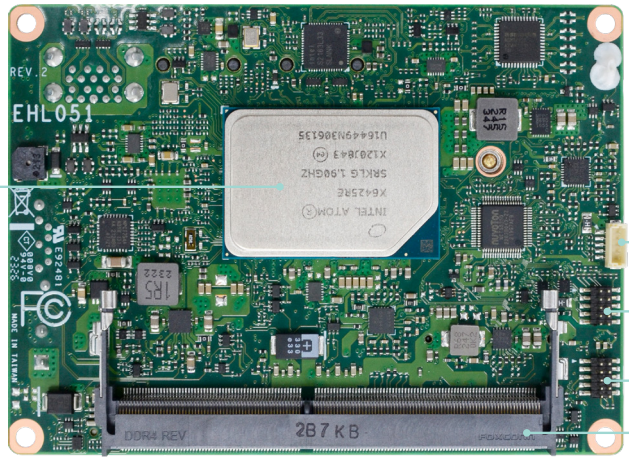
EHL051

Atom

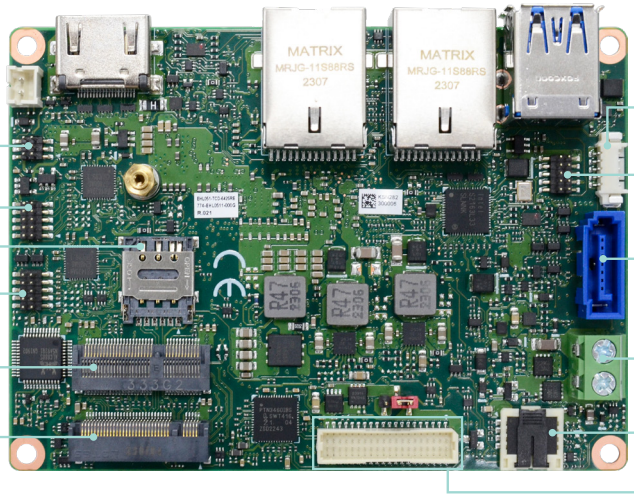
Intel® Atom® Processor
2.5" Pico-ITX

IoT Solutions Alliance





Bottom View



Top View

KEY FEATURES

DDR4

1 DDR4 3200MHz SODIMM

4K High Resolution

Supports 4K/2K resolution

Dual Display

HDMI + LVDS

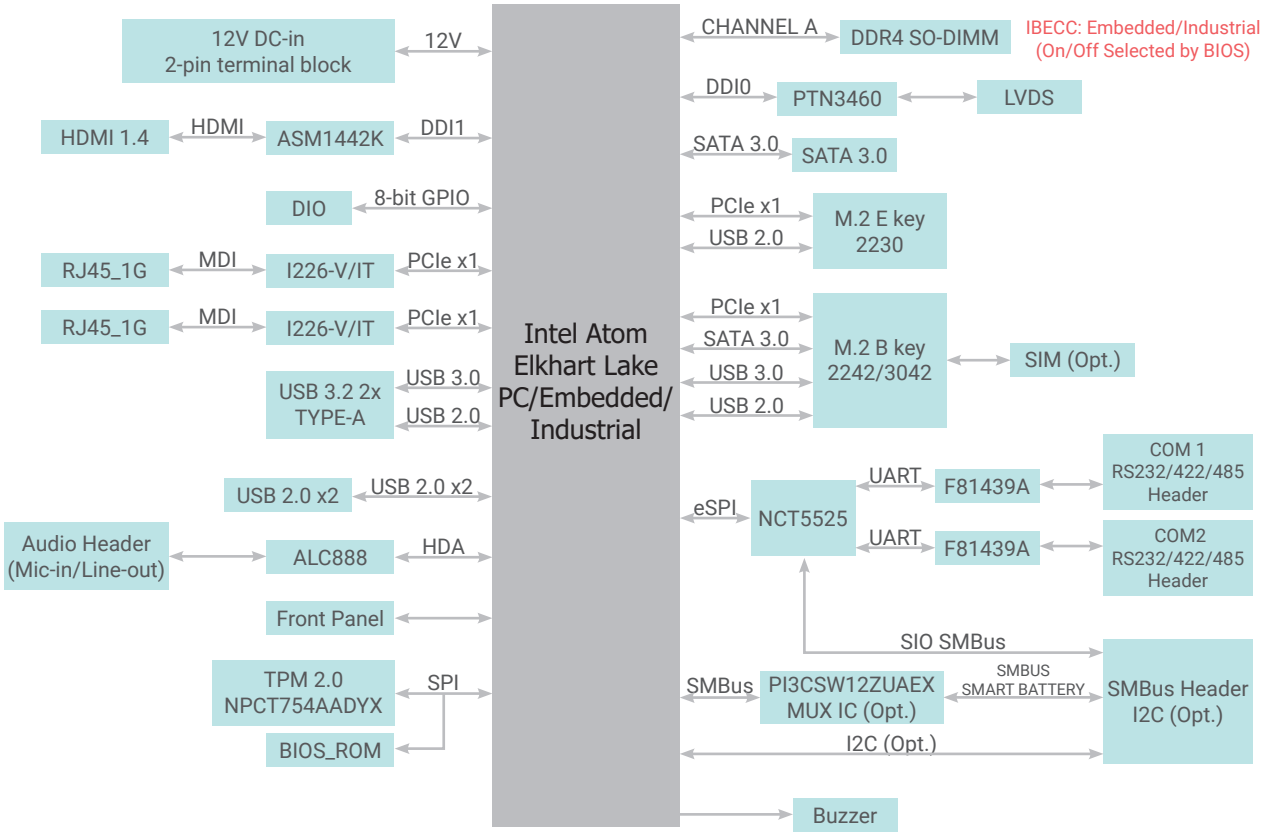
Multiple Expansion

1 M.2 E Key,
1 M.2 B Key,
1 SATA

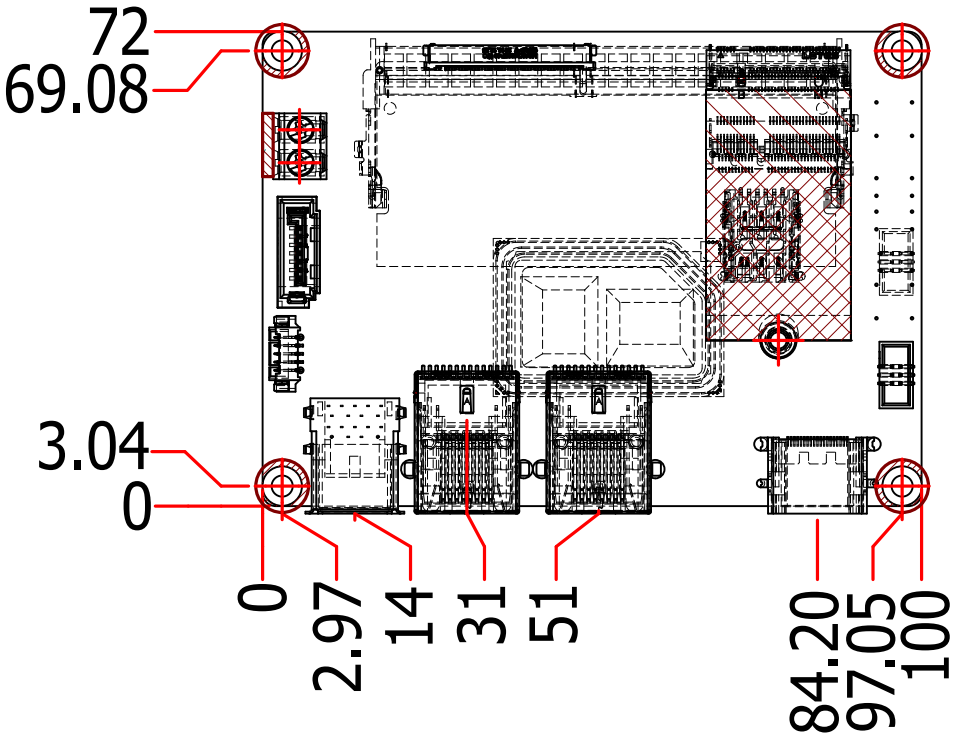
Rich I/O

2 Intel GbE, 2 COM,
2 USB 3.2 Gen2,
2 USB 2.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

System	**Processor**	Intel® Atom Processor, Elkhart Lake **Industrial** Intel® Atom x6425RE, 4C, 1.9GHz, 12W Intel® Atom x6416RE, 4C, 1.7GHz, 9W (Performance Update) Intel® Atom x6214RE, 2C, 1.4GHz, 6W (Performance Update) **Embedded** Intel® Atom x6425E, 4C, 2.0GHz(3.0GHz), 12W Intel® Atom x6413E, 4C, 1.5GHz(3.0GHz), 9W Intel® Atom x6211E, 2C, 1.3GHz(3.0GHz), 6W **PC Client** Intel® Pentium J6412, 4C, 2.0GHz(2.6GHz),10W Intel® Celeron N6210, 2C 1.2GHz(2.6GHz), 6.5W	
	Memory	Single DDR4-3200 SODIMM Up to 32GB (in-band ECC support in embedded/industrial SKU)	
	BIOS	AMI SPI 256Mbit	
Graphics	**Controller**	Intel® HD Graphics	
	Feature	OpenGL 5.0, DirectX 12, OpenCL 2.1	
		HW Decode: AVC/H.264, MPEG2, VC1, WMV9, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC HW Encode: AVC/H.264, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC	
	Display	1 x HDMI 1 x LVDS	HDMI: resolution up to 4096×2160 @24Hz LVDS: dual channel 18/24-bit, resolution up to 1920x1200 @60Hz
	Dual Displays	HDMI + LVDS	
Expension	**Interface**	1 x M.2 2230 E Key (PCIe/USB2.0) (for Wi-Fi/BT) 1 x M.2 3042/2242 B Key (PCIe*/USB3.0/SATA), optional with 1 x SIM slot. (for 4G/5G) *PCIe share with SATA LED (BOM Optional)	
AUDIO	**Audio Codec**	Realtek ALC888S-VD2-GR	
Ethernet	**Controller**	2 x Intel® I226-V/IT (10/100/1000Mbps)	
Rear I/O	**Ethernet**	2 x GbE (RJ-45)	
	USB	2 x USB 3.2 Gen2	
	Display	1 x HDMI	
Internal I/O	**Serial**	2 x RS-232/422/485 (1.27mm pitch)	
	USB	2 x USB 2.0 (1.27mm pitch)	
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Backlight Power (5V/12V)	
	Audio	1 x Audio (Line-out/Mic-in)	
	SATA	1 x SATA 3.0 (up to 6Gb/s) 1 x 5V SATA Power (support SATA LED by BOM option)	
	DIO	1 x 8-bit DIO	
	Front Panel	1 x front panel (power button/reset button, power LED, HDD act LED)	
	SMBus	1 x SMBus/I2C (Opt.) ***Enable smart battery interface upon request.**	
Watchdog Timer	**Output & Interval**	System Reset, Programmable via Software from 1 to 255 Seconds	
Security	**TPM**	dTPM2.0	
Power	**Type**	Single 12V +/-10% DC	
	Connector	2-pin Terminal Block 2-pin Vertical Type Connector (Opt.)	
	Consumption	Typical: J6426:12V @ 1.1A (13.2Watt) Max.: J6426:12V @ 1.6A (19.2Watt)	
	RTC Battery	CR2032 Coin Cell	
OS Support	**OS Support (UEFI Only)**	Windows 10 IoT Enterprise (64-bit)	
		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	x6425RE: 563,338 hrs @ 25°C; 391,802 hrs @ 45°C ; 278,646 hrs @ 60°C; 146,635 hrs @ 85°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
Mechanism	**Dimensions**	2.5" Pico-ITX Form Factor	100mm (3.94") x 72mm (2.83")
	Height	PCB: 1.6 mm	
		Top Side: 15 mm	
		Bottom Side: 8 mm	
Standards and Certifications	**Certifications**	CE, FCC, RoHS, UKCA, KC	

ORDERING INFORMATION

Model Name	P/N	Processor	Memory	Display	GbE	RS-232/ 422/485	USB 3.2 Gen2	USB 2.0	Power	Thermal	Temp.
EHL051-TCD-6425RE	770-EHL0511-000G	x6425RE	1 DDR4 SO-DIMM	HDMI + LVDS	2	2	2	2	12VDC	Fanless	-40 to 85°C
EHL051-TCD-6416RE	770-EHL0511-100G	x6416RE									-40 to 85°C
EHL051-TCD-6214RE	770-EHL0511-200G	x6214RE									-40 to 85°C
EHL051-TCD-6425E	770-EHL0511-300G	x6425E									-40 to 85°C
EHL051-TCD-6413E	770-EHL0511-400G	x6413E									-40 to 85°C
EHL051-TCD-6211E	770-EHL0511-500G	x6211E									-40 to 85°C
EHL051-BCD-J6412	770-EHL0511-600G	J6412									-5 to 65°C
EHL051-BCD-N6210	770-EHL0511-700G	N6210									-5 to 65°C

PACKING LIST

• 1 EHL051 board	
• 1 Serial ATA data cable (Length: 152mm)	A81-002000-000G
• 1 Y cable for SATA and inverter power (Length: 155mm)	A81-020016-018G
• 1 Heat spreader (Height: 11mm) for x6000 series	A71-808359-000G
for N/J series	A71-808359-010G

OPTIONAL ITEMS

• USB port cable (Length: 200mm)	A81-001084-016G
• 1 COM port cable (Length: 300mm)	A81-015050-016G
• Power adapter (60W, 12V, DC Jack)	671-106012-000G
• 2 pole terminal to DC Jack cable	A81-004013-000G
• 1 Audio cable (Length: 160mm)	A81-022037-016G
• 1 Heat sink	
for x6000 series -40~85°C (Height: 22.6mm)	A71-008182-020G
for N/J series -6~65°C (Height: 18.9mm)	A71-008182-010G

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