

VT-PICOITX-EKT

Single Board Computer

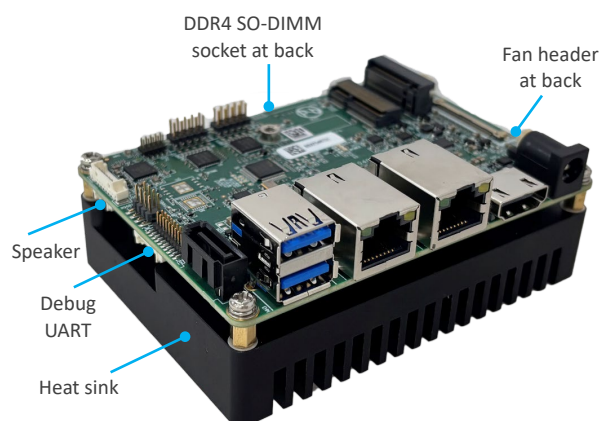
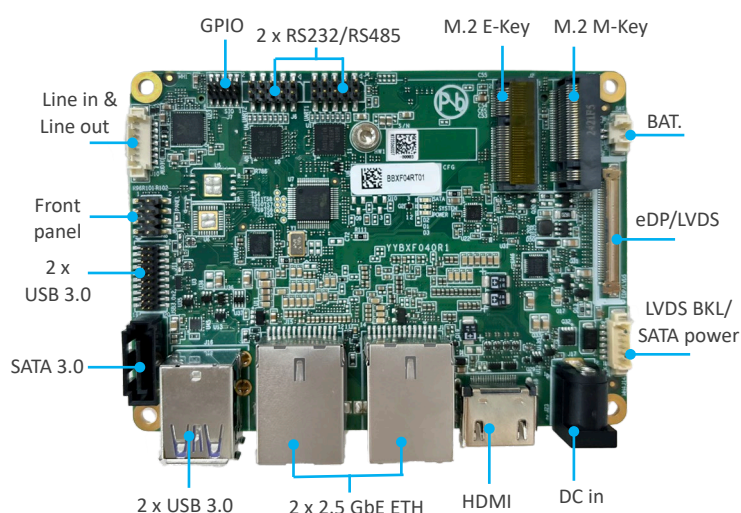


Product Brief

VT-PICOITX-EKT single board computer is built on the robust Intel® Elkhart Lake platform (J6412/6425E), delivering optimal performance via a quad-core, quad-thread structure with up to 3.0GHz turbo frequency and 9W/10W TDP in a space-saving PICO-ITX form factor (2.5"). The HDMI port, coupled with the LVDS/eDP multiplexer drives two independent displays, delivering up to 4K resolution—ideal for digital signage, kiosks and compact HMI solutions. The UHD Graphics GPU supports advanced graphics APIs such as OpenGL, OpenCL, DirectX, and Intel® Quick Sync Video, providing exceptional graphics performance for a range of applications. The 6425E variant offers wide-temperature support (-40°C to +70°C) for reliable operation in harsh environments.

Measuring just 100mm × 72 mm, VT-PICOITX-EKT packs dual 2.5GbE ports, high-speed USB 3.2, on-board TPM 2.0, and an M.2 E-Key (Wi-Fi/BT) plus an M.2 M-Key (SATA) for flexible expansions—perfect for edge computing, industrial control, and more. Ready-to-run Ubuntu and Windows drivers are pre-validated, minimizing the development time for AI inferencing, retail POS, and next-gen IoT gateways.

Exterior and Features



Intel® Elkhart Lake high-performance processor



HDMI, LVDS/eDP for high-quality display



2.5GbE, Optional Wi-Fi & BT connectivity



Rich I/O for flexible expansion



Multiple variants for diverse applications

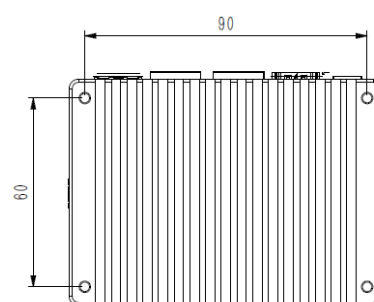
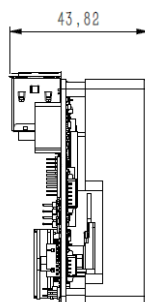
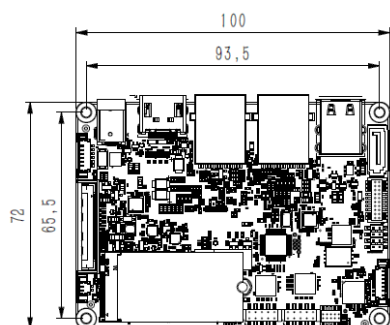


FTPM 2.0 supported

VT-PICOITX-EKT Single Board Computer Datasheet

VT-PICOITX-EKT			
System	CPU	Intel® Atom® x6425E Processor, 4C4T, 2.0GHz (base), 3.0GHz (turbo), 12W TDP / Intel® Celeron® J6412 Processor, 4C4T, 2.0GHz (base), 2.6GHz (turbo), 10W TDP	
	GPU	Intel® UHD Graphics for 10th Gen processors, support OpenGL, OpenCL, DirectX, Intel® Quick Sync Video	
	AI acceleration	Intel® Gaussian & Neural Accelerator (GNA) for audio and speech-centric AI workloads	
	Memory	DDR4 SO-DIMM socket, up to 16GB	
	SIO	Fintek SuperIO	
	Storage	1x SATA 3.0, up to 2TB	SSD expansion via M.2 M-Key supported
Communication	Ethernet	2 x RJ45, 2500Mbps (Intel® I226-V controller)	
	Wi-Fi & Bluetooth	Optional (expansion via M.2 E-Key)	
Media	Video processing	4K @60Hz HEVC (H.265)/AVC (H.264) decoder, 4K @60Hz HEVC (H.265)/AVC (H.264) encoder	
	Display interface	1 x HDMI 1.4b, up to 4096 x 2160 @ 30 Hz 1 x eDP 1.4/LVDS (combo), up to 4096 x 2304 @60Hz (eDP 1.4) / 1920 x 1200 @60Hz (LVDS)	
	Multi-display support	Up to 2 independent displays	
	Audio interface	1 x Line in & line out header	1 x 2W Speaker header
I/O	Serial port	2 x RS232/RS485	1 x Debug UART
	USB	2 x USB 3.2 Type-A	2 x Internal USB 3.0
	GPIO	1 x 8-bit GPIO	
	Front panel	1 x Front panel header (Reset, LED)	
	Power header	1 x SATA power / LVDS backlight	
Expansion	M.2	1 x M.2 M-Key (2242, PCIe 3.0 x4 / SATA for SSD expansion) 1 x M.2 E-Key (2230, PCIe 3.0 x1 / USB 2.0 for Wi-Fi & BT expansion)	
Miscellaneous	Security	FTPM 2.0 (Optional: DTPM)	
	Reliability	RTC, Watchdog Timer, Buzzer	
Software	BIOS	Insyde UEFI BIOS	
	Operating system	Windows IoT, Ubuntu	
Mechanical	Dimensions	100mm x 72mm x 43.82mm	
	Heat dissipation	1 x Smart fan header, 1 x Heat sink (Optional)	
Power	Input	12V DC (1 x DC jack)	
	Consumption	Typical 15W (CPU dependent)	
Environmental Condition	Temperature	Operating: 0°C~+70°C (J6412), -40°C~+70°C (x6425E) Storage: -40°C~+85°C	
	Humidity	10%-85% RH (Non-condensing)	

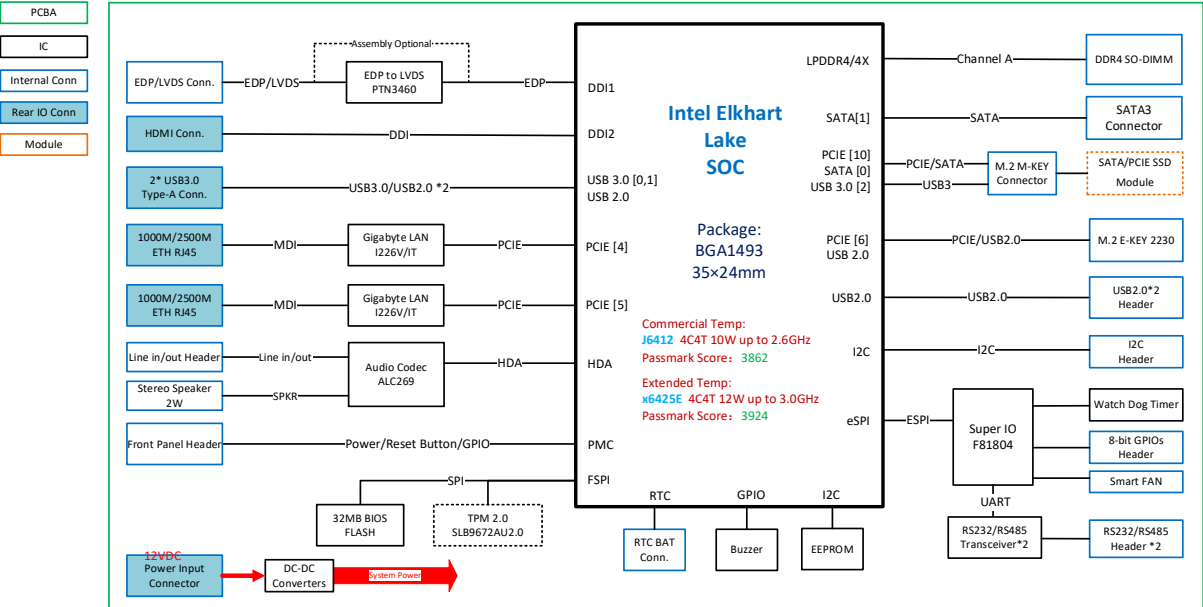
Product Outlines



Block Diagram

VT-PICOITX-EKT Single Board Computer

Operating Temperature: 0 ~ 70°C
Extended Temperature option: -40 ~ 70°C
OS: Win10, Win11, Linux
Dimension: 100x72mm



Ordering Information

Nomenclature

VT-PICOITX-[P]-[M-S-W-OS]

P (Processor): 6425-x6425E; 6412-J6412

M (Memory): Null-NA; M8-8GB; M16-16GB

S (SATA storage): Null-NA; S1-32GB, S2-64GB, S3-128GB, S4-256GB, S5-512GB, S6-1TB, S7-2TB

W (Wi-Fi & BT): Null-NA; W-Wi-Fi & BT

OS (Operating system): X-Windows IoT; U-Ubuntu

Example Ordering No.	Processor	Memory	SATA	WLAN	Operating System
VT-PICOITX-EKT-6425-X	Intel® Atom® x6425E processor	-	-	-	Windows IoT
VT-PICOITX-EKT-6425-M8S1WU		8GB	32GB	Wi-Fi & BT	Ubuntu
VT-PICOITX-EKT-6412-S3WX	Intel® Celeron® J6412 processor	-	128GB	Wi-Fi & BT	Windows IoT
VT-PICOITX-EKT-6412-M16S7U		16GB	2TB	-	Ubuntu

Packing List	
VT-PICOITX-EKT single board computer	1

Optional Accessories	
12V 5A power adapter kit	1
Heat sink	1