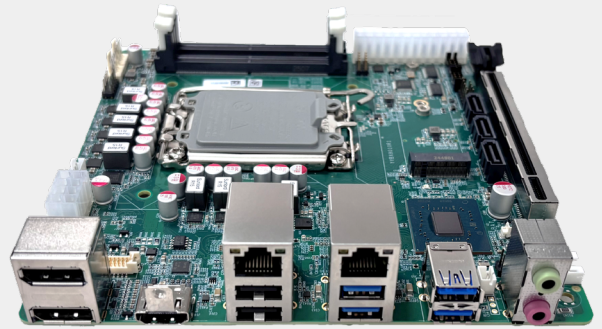


VT-MITX-RPL Single Board Computer



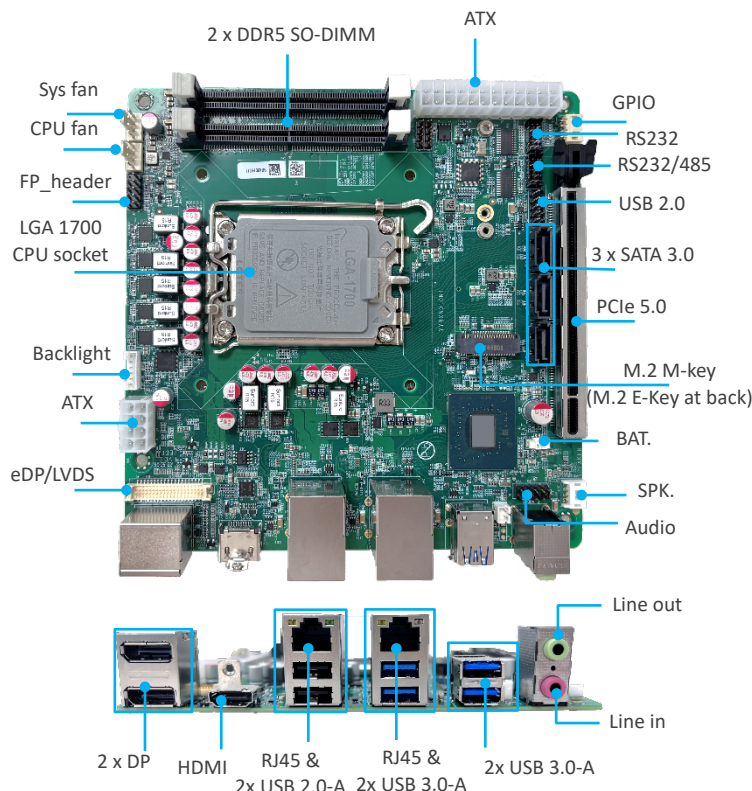
Product Brief

VT-MITX-RPL single board computer comes in the MITX form factor with a compact 170mm x 170mm footprint. It supports Intel's 12th (Alder Lake), 13th (Raptor Lake), and 14th (Raptor Lake Refresh) Gen Core™ processors, delivering cutting-edge performance that caters to the exacting demands of gamers, content creators, and professionals alike. Built on the LGA1700 socket, it seamlessly supports Intel's hybrid architecture, combining Performance and Efficient cores to optimize both single-threaded tasks and multi-threaded workloads. With support for PCIe 5.0, USB 3.0, high-speed DDR5 memory sockets, SATA 3.0, M.2 slots, along with additional header for front-panel expansion, the board is designed to break the barriers of speed and efficiency but also to guarantee long-term reliability.

For connectivity, the board offers 2.5G Ethernet, optional Wi-Fi and Bluetooth for lag-free networking. Supporting up to four independent displays via HDMI 2.0b, DisplayPort 1.4a, and optional LVDS/eDP interfaces, the board leverages Intel's UHD Graphics (up to 770) and Deep Learning Boost technology to deliver up to 4K video output.

VT-MITX-RPL delivers unmatched performance, expandability, and security for applications such as high-performance gaming, low-latency HMI, edge AI processing, and industrial automation.

Exterior and Features



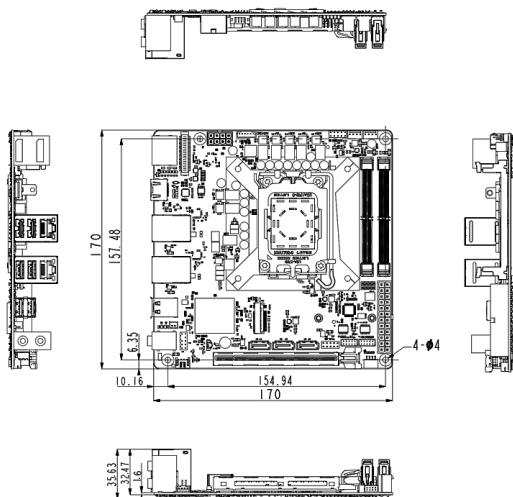
VT-MITX-RPL

- 12th/13th/14th Gen Intel® Core™ processor, LGA1700
- 2 x DDR5 SO-DIMM socket, up to 96GB
- High-speed I/O: PCIe 5.0, USB 3.0, SATA 3.0, M.2
- Up to 4 displays delivering up to 4K video output
- 2.5G Ethernet, optional Wi-Fi & Bluetooth
- Windows 10/11 IoT, Linux (support by request)
- Intel® Deep Learning Boost + GNA 3.0 AI acceleration
- MITX form factor

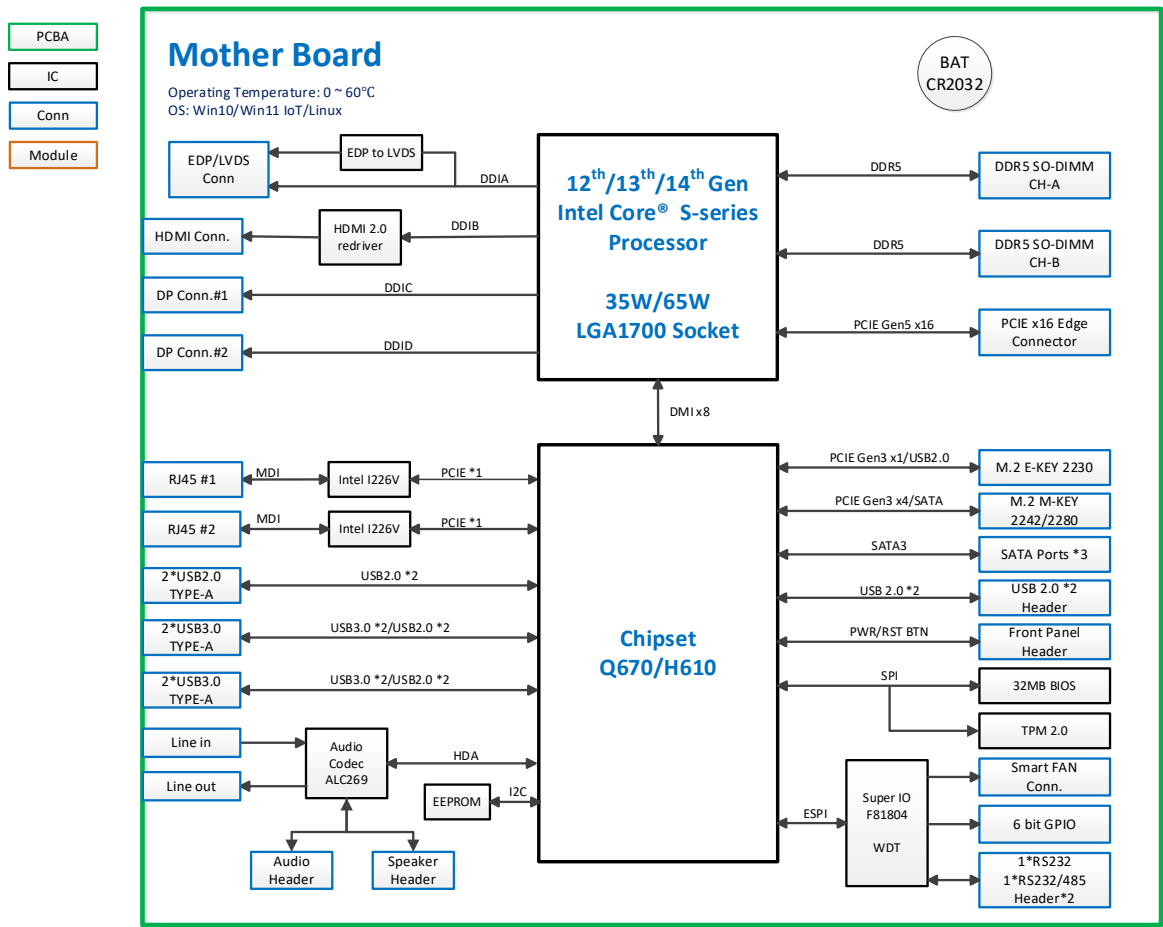
VT-MITX-RPL Single Board Computer Datasheet

VT-MITX-RPL		
System	CPU	Intel® Desktop 12 th /13 th /14 th Gen Core™ processor, LGA1700 socket
	Chipset	Q670/H610
	GPU	Up to Intel® UHD Graphics 770, support OpenGL, OpenCL, Vulkan, DirectX
	AI acceleration	Intel® Deep Learning Boost & Intel® Gaussian & Neural Accelerator 3.0 (GNA 3.0)
	Memory	2 x DDR5 SO-DIMM socket, 5600MHz (CPU dependent), up to 96GB
Communication	Storage	3 x SATA 3.0, up to 600MB/s SSD expansion by M.2 M-Key supported
	Ethernet	2 x RJ45, 2500Mbps (Intel® I226-V controller)
	Wi-Fi & Bluetooth	Optional (expansion by M.2 E-Key)
Media	Video processing	Intel® UHD Graphics 770: 8K@60Hz HEVC (H.265) / 4K@60Hz AVC (H.264) decoder, 8K@30Hz/4K@120Hz HEVC (H.265) / 4K@60Hz AVC (H.264) encoder
	Multi-display support	Up to 4 independent displays (chipset dependent)
	Display interface	1 x HDMI 2.0b, up to 3840 x 2160 @ 60Hz
		2 x DP 1.4a, up to 4096 x 2304 @ 60Hz
	Audio interface	1 x eDP/LVDS (combo), up to 4096 x 2304 @60Hz 1 x Backlight connector 1 x 3.5mm Line in jack; 1 x 3.5mm Line out jack 1 x Audio header; 1 x Speaker header
I/O	Serial port	1 x RS232 header 1 x RS232/RS485 header
	USB	4 x USB 3.0 Type-A; 2 x USB 2.0 Type-A 2 x Internal USB 2.0
	GPIO	1 x 6-bit GPIO
	Front panel	1 x Front panel header (power, reset, LED)
Expansion	M.2	1 x M.2 M-Key (2242/2280, 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)
	PCIe	1 x PCIe 5.0 x16 (32GT/s)
Miscellaneous	Security	TPM 2.0
	RTC	Supported
	Watchdog timer	Supported
Software	BIOS	Insyde UEFI BIOS
	Operating system	Windows 10/11 IoT, Linux (support by request)
Mechanical	Dimensions	170mm x 170mm x 35.63mm
	Heat dissipation	Active cooling, 2 x 12V Fan header
Power	Input	1 x 24-pin ATX header; 1 x 8-pin ATX header
	Consumption	Typical 70W, Max. Turbo ~240W (CPU dependent)
Environmental Condition	Temperature	Operating: 0°C~+60°C Storage: -40°C~+85°C
	Humidity	10%-85% RH (Non-condensing)

Product Outlines



Block Diagram



Ordering Information

Ordering No.	CPU	Memory	Ethernet	Expansion
VT-MITX-RPL	LGA1700 socket	2 x DDR5 SO-DIMM socket	2 x 2.5GbE	USB 3.0, COM, M.2, PCIe, SATA 3.0

Sample Kit	CPU	Memory	Storage	Wi-Fi & BT	Cooling	PSU	Display
VT-MITX-RPL-H610	Core™ i5-14500	2 x 8GB DDR5	256GB M.2	Intel AX210	CPU	1 x 750W	4: HDMI, 2 x DP, LVDS/eDP
VT-MITX-RPL-Q670		SO-DIMM	SATA SSD	(2 x Antenna)	Cooler	ATX PSU	3: HDMI, 2 x DP, LVDS/eDP

Packing list	
VT-MITX-RPL single board computer/sample kit	1