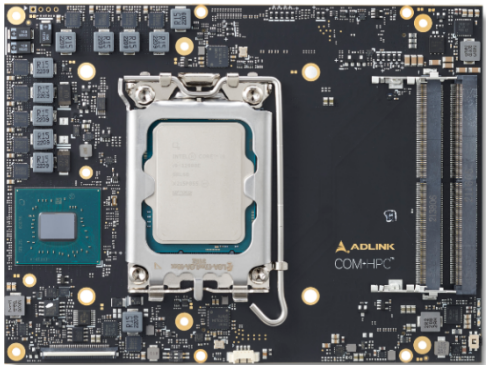
COM-HPC-cRLS

Client Type COM-HPC Size C Module based on Intel® Raptor Lake-S platform



Features

- Advanced hybrid architecture combining Performance-cores with Efficient–cores supporting up to 24 cores / 32 threads for superior multi-threaded performance
- Up to 128GB DDR5 SODIMM at max. 4000MT/s
- 1x PCIe Gen5 x16, 4x PCIe Gen4 x4, Multiple PCIe Gen3
- 2x 2.5 GbE LAN
- Best-in-class longevity support

Specifications

Core System	SoC	13th Gen Intel® Core Processors (formerly Raptor Lake-S)

Processor	Cores/Threads	Cache	TDP
i9-13900E	8P 16E/32T	36MB	65W 32EU
i7-13700E	8P 8E/24T	30MB	65W 32EU
i5-13500E	6P 8E/20T	24MB	65W 32EU
i3-13100E	4P/8T	12MB	65W 24EU

Note:
1. Lower TDP 35W SKUs and specific 125W SKUs are supported by project basis. Please consult your local ADLINK representative.
2. ECC and TCC are supported by pairing with R680E PCH.

Supports: Intel® VT (including VT-x / VT-d), Intel® Turbo Boost Technology 2.0, Intel® VNNI, Intel® TCC and Time-Sensitive Networking (TSN),Intel® Hardware Shield, Intel® TXT, Intel® System Security Report, Intel® APIC-v, Intel® PTT, Intel® TDT, Intel® CET, Intel® AMT, Intel® UPID, Intel® PMT, Intel® Thermal Velocity Boost (TVB) (by SKU)
Note: Availability of features may vary between processor SKUs.

	Memory	Up to 128GB (4x 32GB) DDR5 SODIMM memory, max. 4000MT/s at four sockets (two on top, two at the bottom) Note: It is recommended to check that the bottom side specifications are suitable for your application purposes.
	Embedded BIOS	AMI UEFI with CMOS backup in 32MB SPI BIOS (dual BIOS opt.)
	Cache	36/30/24/12MB

Note: "Build option""indicates an alternative BOM configuration to support additional or alternative functions that are not available on the standard product. Be aware that these "build option" part numbers will need to be newly created and this will result in production lead times.

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Specifications

Core System	Expansion Busses	• 1 PCIe Gen5 x16 at 16-31 and 1 PCIe Gen4 x4 at 8-11 • 6 PCIe Gen3 x1 at 0-5 (x4, x2, x1) • More lanes with R680E/ 670E (all x4, x2, x1): o 1 PCIe Gen4 x4 at 12-15 o 1 PCIe Gen4 x4 at 32-35 o 1 PCIe Gen4 x4 at 36-39 Note: PCIe lanes 0-5, USB 3.0, SATA, NBASE-T and PCIe_BMC source from HSIO. The available total raw bandwidth is equivalent to PCIe x16 Gen3 • SMBus, 2x I2C, 1x GP SPI, 1x Boot SPI and eSPI
	SEMA Board Controller	Voltage/current monitoring, power se uence debug support, AT/ATX mode control, logistics and forensic information, flat panel control, general purpose I2C, watchdog timer, fan control and failsafe BIOS (dual BIOS by build option)
	Debug Headers	40-pin multipurpose flat cable connector for use with DB40-HPC debug module providing BIOS POST code LED, MMC/EC access, SPI BIOS flashing, power testpoints, debug LEDs
Video	GPU Feature Support	Intel UHD Graphics 770 driven by Xe architecture, supporting multiple independent and simultaneous display combinations of DisplayPort/HDMI, eDP outputs (4x 4K60) Hardware encode/transcode of HD content (including HEVC) DirectX 12 support OpenGL 4.6 support
	Display Interface	DDI 0/1/2 supporting DisplayPort/HDMI/DVI DP1.4a and HDMI2.0b
	eDP	4 lane support, eDP 1.4b
Audio	Chipset	Intel HD Audio integrated on CPU
	Audio Codec	On COM-HPC Client Base Carrier (Realtek solution on carrier, TBC)
NBASE-T Ethernet	Intel® MAC/PHY	Intel® Ethernet Connection I226 Series (I226 supports TSN by build option, TBC)
	Interface	2x 2.5GbE and 1000/100/10 Mbit/s Ethernet connection
Multi I/O and Storage	USB	4x USB 3.2/2.0/1.1 (USB 0,1,2,3)
		4x USB 2.0/1.1 (USB 4,5,6,7)
	SATA	2x SATA (SATA 0, 1)
	Serial	2x UART ports with console redirection
	GPIO	12x GPIO (GPI with interrupt, TBC)
TPM (Optional)	Chipset	Infineon
	Type	TPM 2.0 (SPI based)
Power	Standard Input	ATX (TBC): 12V±5% / 5Vsb ±5%; or AT: 12V±5%
	Management	ACPI 5.0 compliant
	Power States	TBC
	ECO mode	TBC

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Specifications

Mechanical and Environmental	Form Factor	PICMG COM-HPC: Rev 1.1 Client Type
	Dimensions	Size C 160X120 mm
	Operating Temperature	Standard: 0°C to 60°C (storage: -20°C to 80°C)
	Humidity	5-90% RH operating, non-condensing 5-95% RH storage (and operating with conformal coating)
	Shock and Vibration	IEC 60068-2-64 and IEC-60068-2-27 MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D (TBC)
	HALT	Thermal Stress, Vibration Stress, Thermal Shock and Combined Test
Operating Systems	Standard Support	Windows 10 IoT Enterprise LTSC
		Yocto project-based Linux 64-bit

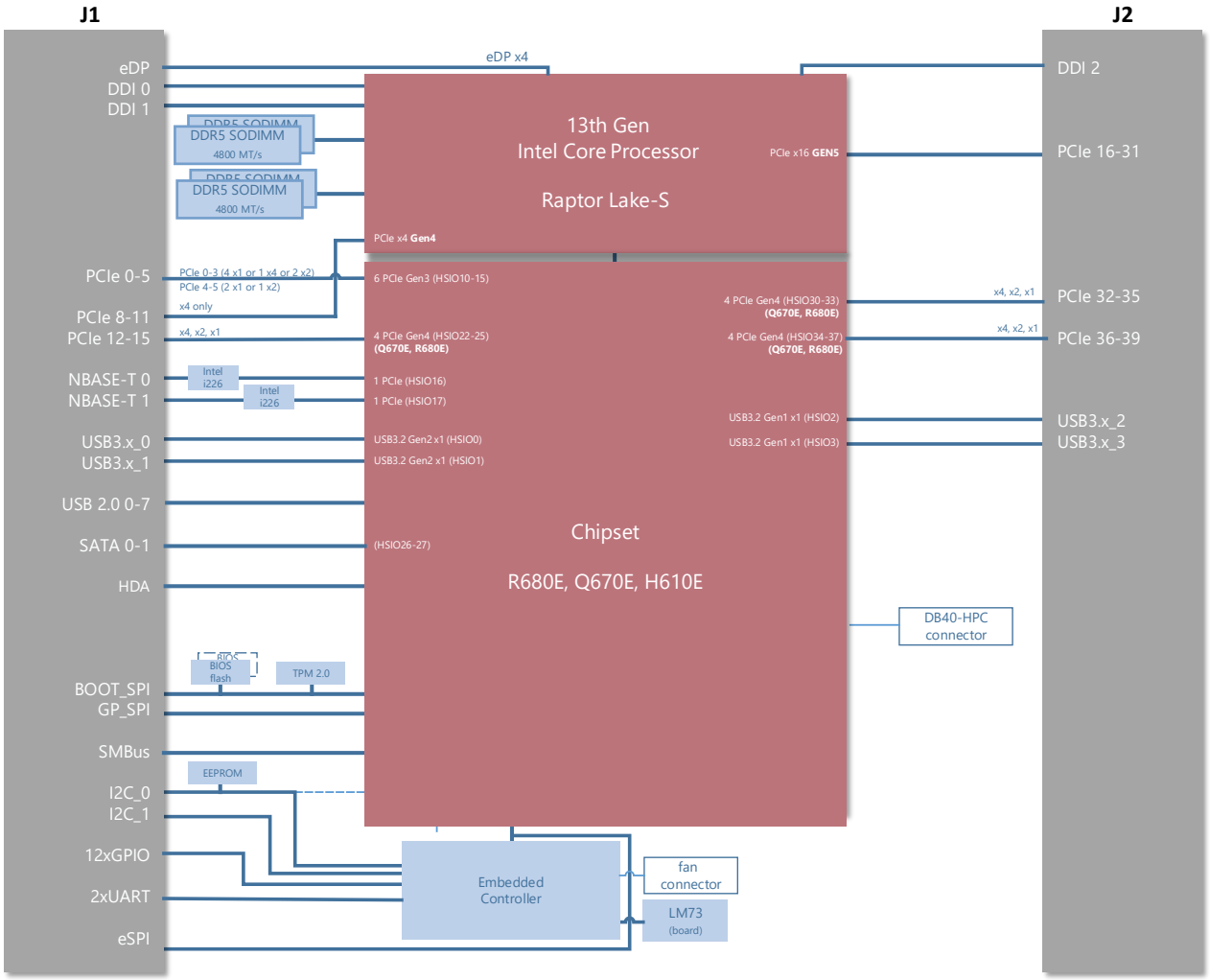
Ordering Information

Module	
COM-HPC-cRLS-i9-13900E	Client Type COM-HPC Size C module with 13th Gen Intel i9-13900E processor with R680E chipset, 4 SO-DIMM
COM-HPC-cRLS-i7-13700E	Client Type COM-HPC Size C module with 13th Gen Intel i7-13700E processor with R670E chipset, 4 SO-DIMM

Note: For processor SKUs not listed, please contact your ADLINK representative for availability.

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Block diagram



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