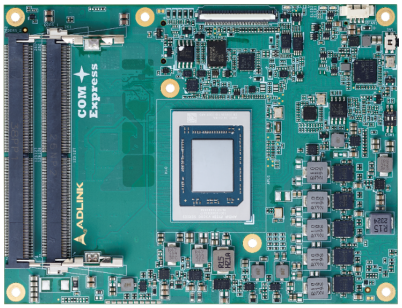
ADLINK
LEADING EDGE COMPUTING

Express-VR7

COM Express Basic Size Type 7 Module with AMD Embedded Ryzen V3000



Features

- 8 Cores at 15W, 45W — Best Performance per Watt in its class
- Up to 64GB DDR5 SO-DIMM, 4800 MT/s ECC
- 2x 10G Ethernet and 1x 2.5G Ethernet
- 14x PCIe Gen4 lanes
- Extreme Rugged operating temperature: -40°C to 85°C (build option, selected SKU)

Specifications

Core System	CPU	AMD Embedded Ryzen V3000 Processor • V3C48 3.3/3.8GHz 8 Cores / 16 Threads 45W • V3C44 3.5/3.8GHz 4 Cores / 8 Threads 45W • V3C18I 1.9/3.8GHz 8 Cores / 16 Threads 15W • V3C16 2.0/3.8GHz 6 Cores /12Threads 15W • V3C14 2.3/3.8GHz 4 Cores / 8 Threads 15W Note: Availability of features may vary between processor SKUs. Note: V3C18I could be used for extreme temperature (TBC)
	Memory	Dual channel up to 4800 MT/s ECC/non-ECC DDR5 memory up to 64GB (2x 32GB) in two SODIMM sockets Two SO-DIMM on top side
	Embedded BIOS	AMI UEFI with CMOS backup in 32 or 16MB (TBC) SPI BIOS (dual BIOS by build option)
	Cache	TBC
	Expansion Busses	All Gen4 speed • 8 PCI Express Gen4: Lanes 16-23 (configurable to one x8, two x4, two controller) • 4 PCI Express Gen4: Lanes 0-3 (configurable to four x1, two x2, one x4, four controller) • 2 PCI Express Gen4: Lanes 4-5 (configurable to one x1, one x2, one controller) • LPC bus (through an ESPI to LPC bridge IC), SMBus (system) , I^2C (user), GP_SPU (user, project basis)
	SEMA Board Controller	Supports : Voltage/current monitoring, power sequence debug support, AT/ATX mode control, logistics and forensic information, flat panel control, general purpose I^2C, 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, EC access, SPI BIOS flashing, power testpoints, debug LEDs

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Specifications

10G Ethernet	Intel® MAC/Controller	AMD 10G Ethernet controller integrated in CPU
	Interface	2x 10GBASE-KR and its sideband signals Note: SGMII and additional 1x MDIO/MDC supported by project basis
Ethernet	Intel® MAC/Controller	Intel Ethernet controller i226 series
	Interface	2.5GbE and 1000/100/10 Mbit/s Ethernet connection
Multi I/O and Storage	USB	4x USB 3.x/2.0/1.1 (USB 0,1,2,3)
	SATA	2x SATA 6Gb/s (SATA 0,1)
	Serial	2x UART ports with console redirection
	GPIO/SD	4x GPO and 4x GPI (GPI with interrupt TBC)
Module Management Controller	Supports: IPMB (in conjunction with carrier BMC for remote management Controller applications) by build option (TBC)	
Super I/O	Supported on carrier if needed (standard support for W83627DHG-P, other Super I/O supported by project basis)	
TPM	Chipset	Infineon
	Type	TPM 2.0 (SPI based)
Power	Standard Input	ATX: 12V±5% / 5Vsb ±5%; or AT: 12V±5%
	Management	ACPI 5.0 compliant
	Power States	C1-C6, S0, S1, S3, S4, S5 , S5 ECO mode (Wake on USB S3/S4, WOL S3/S4/S5)
Mechanical and Environmental	Form Factor	PICMG COM.0: Rev 3.1 Type 7
	Dimension	Basic size: 125 mm x 95 mm
	Operating Temperature	Standard: 0°C to 60°C (Storage: -20°C to 80°C) Extreme Rugged: -45°C to 85°C (build option, selected SKUs) (Storage: -40°C to 85°C) (TBC)
	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
	HALT	Thermal Stress, Vibration Stress, Thermal Shock and Combined Test
Operating Systems	Standard Support	Yocto Linux, Ubuntu 20.04.3 LTS (TBC)
	Extended Support (BSP)	Yocto project based Linux

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Ordering Information

Module	
Express-VR7-V3C18I	Basic COM Express Type 7 module with AMD Embedded Ryzen V3C18I, 8-core at 15W

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

Accessories

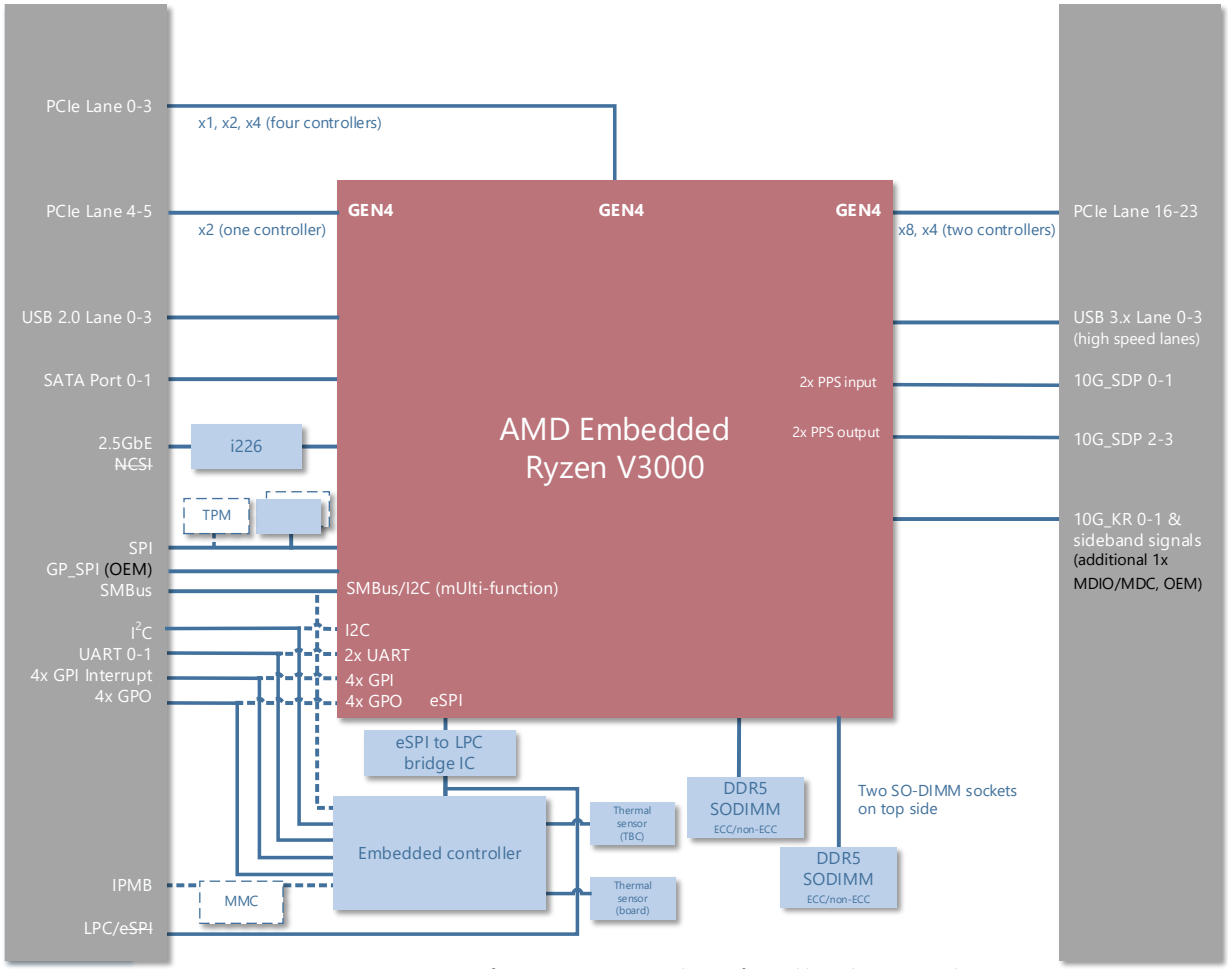
Heat Spreaders	
HTS-VR7-B	Heatspreader for Express-VR7 with threaded standoffs for bottom mounting
HTS-VR7-BT	Heatspreader for Express-VR7 with through hole standoffs for top mounting
Passive Heatsinks	
THS-VR7-B	Low profile heatsink for Express-VR7 with threaded standoffs for bottom mounting
THS-VR7-BT	Low profile heatsink for Express-VR7 with through hole standoffs for top mounting
THSH-VR7-B	High profile heatsink for Express-VR7 with threaded standoffs for bottom mounting
Active Heatsinks	
THSF-VR7-B	High profile heatsink with Fan for Express-VR7 with threaded standoffs for bottom mounting

Starter Kit

VR7 COM Express Type 7 Starter Kit	TBC

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Block diagram



I2C, SMBus, UART, GPIO source from EC or CPU. It can be configured based on project basis

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