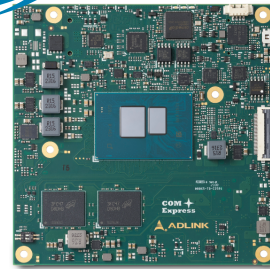


cExpress-ALN/ASL

COM Express COM.0 R3.1 Type 6
 Compact size Module based on Intel®
 Alder Lake-N / Amston Lake platform

Preliminary



Features

- Up to 8-core Intel Atom processor, boosting up to 3.8GHz
- Gen12 LP GFX, max. 3x 4K60 (DDI/eDP, opt. legacy VGA)
- Up to 16GB LPDDR5 max. 4800MT/s, in-band ECC
- On-board memory for enhanced shock resistance
- Up to 2.5GbE with Intel TCC and TSN support
- Up to 8x PCIe Gen3 x1 lanes
- USB 3.2 with 10Gbps and USB-C support

Specifications

Core System	SoC	7th Gen Intel® Atom®, N200, and Core™ i3-N305 processors (formerly Alder Lake-N)				
		Processor	Cores	Cache	TDP	Graphics
		Atom x7425E	4-core	6MB	12W	UHD 24EUs
		Atom x7213E	2-core	6MB	10W	UHD 16EUs
		Atom x7211E	2-core	6MB	6W	UHD 16EUs
		Core i3-N305	8-core	6MB	15W	UHD 32EUs
		N Processor N200	4-core	6MB	6W	UHD 32EUs
		7th Gen Intel® Atom® x7000RE & x7000C processors (formerly Amston Lake)				
		Atom x7211RE	2-core	6MB	6W	UHD 16EUs
		Atom x7213RE	2-core	6MB	9W	UHD 16EUs
		Atom x7433RE	4-core	6MB	9W	UHD 32EUs
		Atom x7835RE	8-core	6MB	12W	UHD 32EUs
		Note: For certain processor or memory capacity SKUs not listed, please contact our ADLINK representative.				
		Supports: Intel VT (including VT-x, VT-d, VT-x with Extended Page Tables), Intel HT Technology, Intel SSE4.2, Intel 64 Architecture, Intel Turbo Boost Technology 2.0, Intel AVX512-VNNI, Intel TXT, Execute Disable Bit, Intel Data Protection Technology with Intel Secure Key, Intel AES-NI				
		Note: Availability of features may vary between processor SKUs.				
	Memory	Up to 16GB LPDDR5 in-band ECC memory, max. 4800MT/s				
	Embedded BIOS	AMI Aptio V				
	Cache	See above				
	Expansion Buses	8 PCIe x1 Gen3 lanes (some PCIe configurations are optional, see block diagram below)				
	SEMA Board Controller	Supports: Voltage/current monitoring, power sequence debug support, AT/ATX mode control, logistics and forensic information, genral purpose I ² C, UART, GPIO, watchdog timer, fan control				
	Debug Headers	30-pin multipurpose flat cable connector for use with DB30-x86 debug module providing BIOS POST code LED, SEMA Board Controller access, SPI BIOS flashing, power testpoints, debug LEDs				
	Management Bus	I2C, SMBus				

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.

Specifications

Video	GPU Feature Support	DX12.1, OpenGL4.6, Open GL 4.6, H.265 (HEVC) 8-bit codec, OneAPI	
	Digital Display Interface	3x DDI (DP 1.4/HDMI 2.0b)	
	LVDS	1x LVSD (or eDP1.4b)	
	VGA	DP-to-VGA max. 1920x1200@60Hz (build option, in place of DDI2)	
Audio	Chipset	Integrated on SoC	
	Codec	On carrier Express-BASE6 (ALC886 standard support)	
Ethernet	Intel® MAC/PHY Interface	Intel® Ethernet Connection I226 series (I226-IT/V supports TSN by build option) 2.5GbE and 1000/100/10 Mbit/s Ethernet connection GbE0_SDP if TSN support enabled (TBC)	
	Multi I/O and Storage	USB 4x USB 3.2 Gen2 (default 2 ports can use hub chip to support 4 ports, BOM option) 2x SATA 6Gb/s (SATA 0-1)	
Multi I/O and Storage	USB-C	1x TCSS (DDI and USB support via USB-C and BIOS setting. Default support DDI)	
	eMMC (optional)	eMMC 5.1	
	Embedded Features	EAPI/SEMA, Backup BIOS, Debug/JTAG	
	Super I/O	Supported on carrier if needed (standard support W83627DHG-P, other Super I/O supported by project basis)	
TPM	Chipset	Infineon	
	Type	TPM 2.0 (SPI based)	
Power	Standard Input Management	ATX: 5-20V±5% / 5Vsb ±5%; or AT: 5-20V±5%	
	Power States	ACPI 5.0 compliant, Smart Battery support (TBC)	
	ECO Mode	C1-C6, S0, S1, S3, S4, S5, S5 ECO mode (Wake on USB S3/S4, WOL S3/S4/S5) (TBC)	
	ECO Mode	Supports deep S5 mode for power saving	
Mechanical and Environmental	Form Factor	PICMG COM.0: Rev 3.1 Type 6	
	Dimension	Compact size: 95 mm x 95 mm	
	Operating Temperature	Standard	0°C to 60°C
		Extreme Rugged	-40°C to 85°C (Amston Lake, standard 12V input only, TBC)
	Humidity	Operating	5-90% RH operating, non-condensing
		Storage	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 64-bit IoT Enterprise LTSC 2021, Ubuntu (LTS-Kernel 2021), Yocto (LTS-Kernel 2021)	

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Ordering Information

Module

cExpress-ALN-x7425E-16G	Compact size COM Express Type 6 with Intel Alder Lake-N Atom x7425E(4C), 16GB LPDDR5
cExpress-ALN-x7213E-4G	Compact size COM Express Type 6 with Intel Alder Lake-N Atom x7213E(2C), 4GB LPDDR5
cExpress-ALN-x7211E-8G	Compact size COM Express Type 6 with Intel Alder Lake-N Atom x7211E(4C), 8GB LPDDR5
cExpress-ALN-i3-N305-8G	Compact size COM Express Type 6 with Intel Alder Lake-N i3-N305(8C), 8GB LPDDR5
cExpress-ALN-N200-8G	Compact size COM Express Type 6 with Intel Alder Lake-N N200 Processor(4C), 8GB LPDDR5
cExpress-ASL -x7211RE-8G	Compact size COM Express Type 6 with Intel Amston Lake x7211RE Processor(2C), 8GB LPDDR5
cExpress-ASL -x7213RE-4G	Compact size COM Express Type 6 with Intel Amston Lake x7213RE Processor(2C), 4GB LPDDR5
cExpress-ASL-x7433RE-8G	Compact size COM Express Type 6 with Intel Amston Lake x7433RE Processor(4C), 8GB LPDDR5
cExpress-ASL-x7835RE-16G	Compact size COM Express Type 6 with Intel Amston Lake x7835RE Processor(8C), 16GB LPDDR5

Note: For certain processor or memory capacity SKUs not listed, please contact our ADLINK representative.

Accessories

Heat Spreaders

HTS-cALN-B	Heatspreader for cExpress-ALN with threaded standoffs for bottom mounting
HTS-cALN-BT	Heatspreader for cExpress-ALN with through-hole standoffs for top mounting

Passive Heatsinks

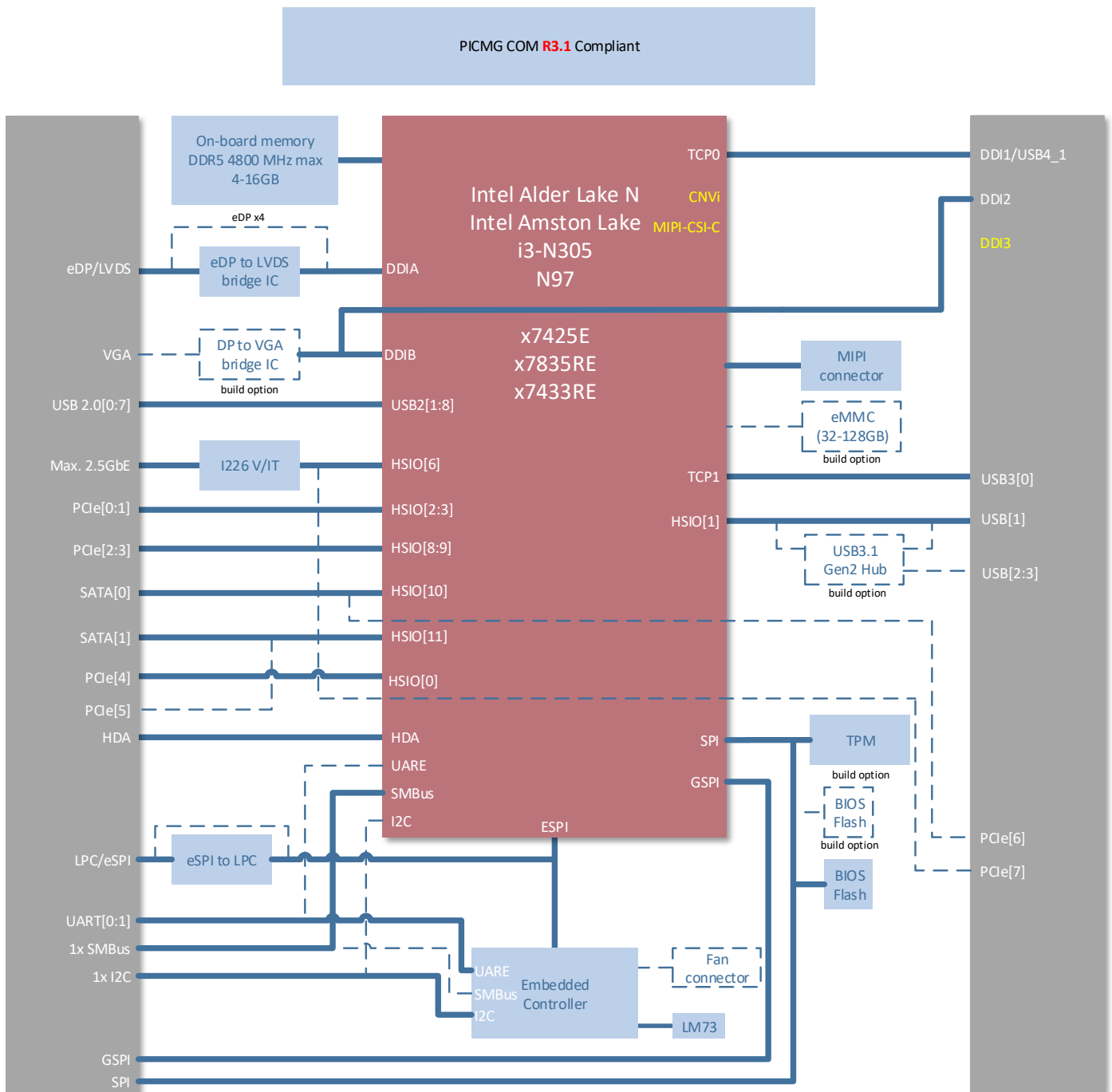
THS-cALN-B	Low-profile Heatsink for cExpress-ALN with threaded standoffs for bottom mounting
THS-cALN-BT	Low-profile Heatsink for cExpress-ALN with through-hole standoffs for top mounting
THSH-cALN-B	High-profile Heatsink for cExpress-ALN with threaded standoffs for bottom mounting

Active Heatsinks

THSF-cALN-B	High-profile Heatsink with Fan for cExpress-ALN with threaded standoffs for bottom mounting
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Block diagram



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