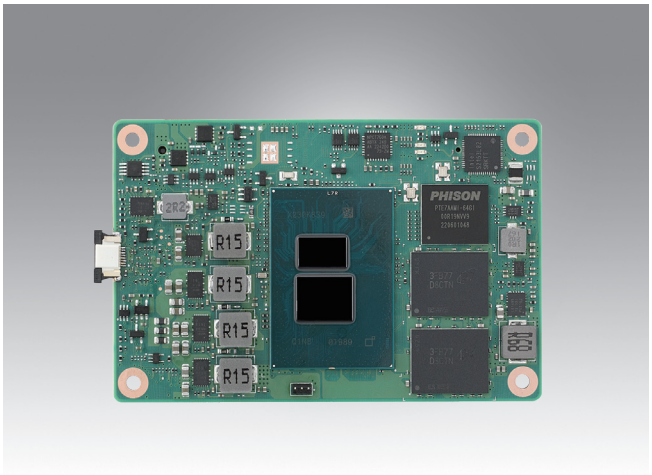
SOM-7533/R

Intel® Core-i®/Pentium®/Celeron® and Atom® x7000 Series Processors (Code Name: Alder Lake-N/Amston Lake) COM Express® Mini Type10



Features

- COM Express® R3.1 Mini Module Type 10 Pinout
- Intel® Core-i®/Pentium®/Celeron® and Atom® x7000 Series Processors
- Single-CH LPDDR5 4800MT/s up to 16GB, support IBECC
- 2.5GbE support TSN
- Multiple I/O expansion: PCIe gen3, USB3.2 Gen2, SATA3.0
- On board eMMC up to 64GB (Optional)
- Supports iManager, Embedded Software APIs and Wise-DeviceOn

Software APIs: Watchdog, I²C, SMBus, H/W Monitor, GPIO, Brightness

Windows Embedded iManager WISE-DeviceOn CE FC

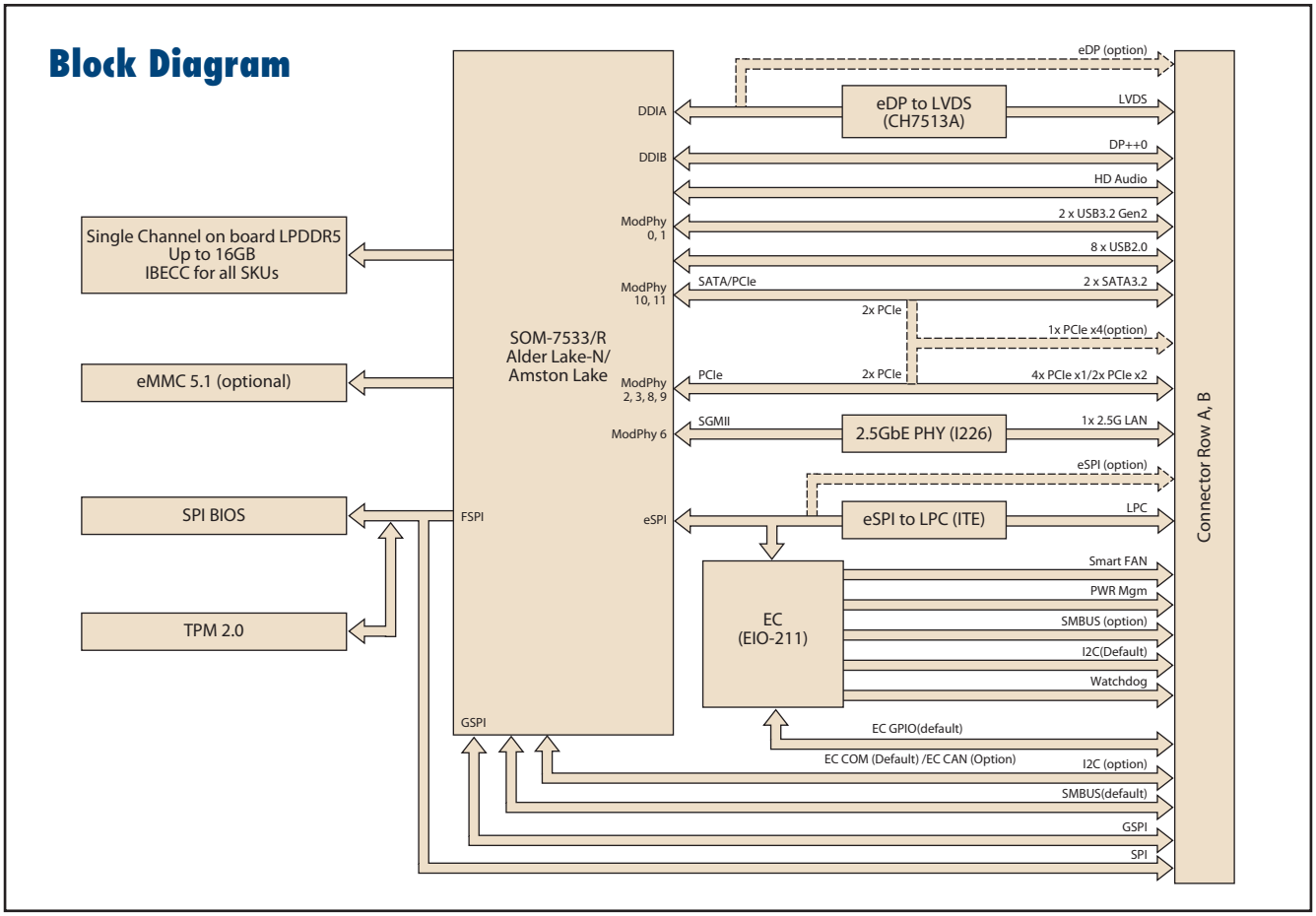
Specifications

Form Factor	Form Factor	COM Express Mini							
	Pin-out Type	COM Express R3.1 Type 10 compatible							
Processor System	CPU	N50	N97	N200	i3-N305	x7425E	x7835RE	x7433RE	x7211RE
	Base Frequency	1.0 GHz	2.0 GHz	1.0 GHz	1.0/1.8 GHz	1.5 GHz	1.3 GHz	1.5 GHz	1.0 GHz
	Max Single Core Turbo Frequency	3.4 GHz	3.6 GHz	3.7 GHz	3.8 GHz	3.4 GHz	3.6 GHz	3.4 GHz	3.2 GHz
	Cores	2	4	4	8	4	8	4	2
	LLC	6 MB	6 MB	6 MB	6 MB	6 MB	6 MB	6 MB	6 MB
	CPU TDP	6W	12W	6W	9/15W	12W	12W	9W	6W
	IBECC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	BIOS	AMI UEFI 256Mbit							
Memory	Technology	LPDDR5							
	Speed	4800 MT/s							
	Max. Capacity	Up to 16GB							
	Channel/Socket	Single Channel / Memory down							
	ECC Support	IBECC Supported by all CPU SKUs							
Graphics	Controller	Intel® UHD Graphics							
	EU	16	24	32	32	24	32	32	16
	Base. Frequency	600 MHz	850 MHz	450 MHz	1.0 GHz	800 MHz	800 MHz	600 MHz	400 MHz
	Max. Frequency	750 MHz	1.2 GHz	750 MHz	1.25 GHz	1.0 GHz	1 GHz	800 MHz	800 MHz
	3D/HW Acceleration	Open GL 4.6, DirectX 12.1 Vulkan 1.2 (Windows) Mesa 3D, Open GL 4.6, Vulkan 1.2 (Linux)							
Display	LCD (LVDS/eDP)	1port LVDS single channel: 1366 x 768 @60Hz/eDP 1920 x 1080 @60Hz (Up to eDP 4096 x 2304 by specific SKU)							
	DDI (HDMI/DisplayPort)	1 DDI Port Support Configurable HDMI/DisplayPort -HDMI 2.0b: 4096 x 2034 @ 60Hz -DisplayPort 1.4: 4096 x 2034 @ 60Hz							
	Multiple Display	Double Simultaneous Independent Display							
Expansion	PCI Express x1 (Gen3)	4 PCIe x1 by default, 2 PCIe x2 by option; Support Configurable 1 PCIe x4 by SATA option							
	Audio Interface	HD Audio							
	LPC	Yes							
Serial Bus	SMBus	Yes							
	I2C Bus	Yes							
Ethernet	Gigabit	Intel I226 controller ; Speed: 10M / 100M / 1000M / 2.5G speeds, Support TSN by specific SKU							
I/O	SATA3.0	2 Port (6 Gbps)							
	USB3.2 (Gen2)	2 Ports (10 Gbps)							
	USB2.0	8 Ports (480 Mbps)							
	SPI Bus	Yes. For BIOS EEPROM							
	GPIO	8-bit							
	Onboard Storage	eMMC up to 64GB (Optional)							
	Watchdog	65536 level, 0 ~ 65535 sec							
	COM Port	2 Ports (2-Wire)							
	TPM	TPM2.0							
	CAN Bus	1 Port							
Power	Type	ATX: Vin, VSB; AT: Vin							
	Supply Voltage	Vin: 4.75V ~ 20V; VSB: 4.75V ~ 5.25V; RTC Battery: 2.0V ~ 3.3V							
	Power Consumption	Turbo Max:40.69W @12V(x7835RE with 16GB LPDDR5) Idle:4.81W @12V(x7835RE with 16GB LPDDR5) * Only for reference and will depend on custom software loading. For more details please refer to the user manual.							
Environment	Operating Temperature	Operating Standard: 0 ~ 60 °C (32 ~ 140 °F), Extend: -40 ~ 85 °C (-40 ~ 185 °F) with 0.7m/s air flow. Storage: -40 ~ 85 °C (-40 ~ 185 °F)							
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)							
	Humidity	Operating: 40 °C@95% relative humidity, non-condensing Storage: 60 °C@95%relative humidity, non-condensing							
	Vibration Resistance	3.5 Grms							
Mechanical	Dimensions	84 mm x 55 m							

All product specifications are subject to change without notice.

Last updated: 23-Nov-2026

Block Diagram



Ordering Information

Part No.	CPU	Core	CPU TDP	CPU Base Freq.	Max Single Core Turbo Frequency.	GFX HFM	GFX Burst Mode	RAM	EMMC	TSN	Thermal solution	Operating Temp.
SOM-7533DCCC-S8A1	i3-N305	8	9/15W	1.0/1.8 GHz	3.8 GHz	1.0 GHz	1.25 GHz	16GB	64GB	N/A	Passive	0 – 60°C
SOM-7533CCBC-U0A1	N97	4	12W	2.0 GHz	3.6 GHz	800 MHz	1.2 GHz	8GB	32GB	N/A	Passive	0 – 60°C
SOM-7533DCBC-S0A1	N200	4	6W	1.0 GHz	3.7 GHz	450 MHz	750 MHz	16GB	32GB	N/A	Passive	0 – 60°C
SOM-7533BCAC-S0A1	N50	2	6W	1.0 GHz	3.4 GHz	600 MHz	750 MHz	8GB**	16GB	N/A	Passive	0 – 60°C
SOM-7533CCBC-S5A1	x7425E	4	12W	1.5 GHz	3.4 GHz	800 MHz	1.0 GHz	8GB	32GB	Yes	Passive	0 – 60°C
SOM-7533RDCBX-S3A1	x7835RE	8	12W	1.3 GHz	3.6 GHz	800 MHz	1.0 GHz	16GB	32GB	Yes	Active	-40 – 85°C
SOM-7533RCCBX-S5A1	x7433RE	4	9W	1.5 GHz	3.4 GHz	600 MHz	800 MHz	8GB	32GB	Yes	Active	-40 – 85°C
SOM-7533RBC0X-S0A1	x7211RE	2	6W	1.0 GHz	3.2 GHz	400 MHz	800 MHz	8GB**	N/A	Yes	Active	-40 – 85°C

*Any other SKUs or combination is project based support. Please contact sales for details.
**Due to memory EOL, the memory configuration will be changed from 4GB to 8GB.

Development Board

Part No.	Description
SOM-DB5830-00A3	COMe Devel. Board COMe R3.1 Type6 pin-out (LVDS) 0 ~ 60 °C
SOM-DB5830A-00A3	COMe Devel. Board COMe R3.1 Type6 pin-out (eDP) 0 ~ 60 °C

Packing List

Part No.	Description	Quantity
-	SOM-7533 COM module	1
1970005865T001	Heatspreader	1

Optional Accessories

Part No.	Description
1970005864T001	Semi-Heatsink
1970004886N001	Semi-Cooler (For SOM-7533R series part number)

Embedded OS

OS	Part No.	Description
Win10	20706WX1HS0079	img W10 21HL SOM-7533 64b 21H2 ENU
Win10	20706WX1VS0080	img W10 21VL SOM-7533 64b 21H2 ENU
Win10	20706WX1ES0079	img W10 21EL SOM-7533 64b 21H2 ENU
Win11(EL)	20706WLE1S0031	img W11 24EL SOM-7533R 64b 24H2 ENU
Win11(HL)	20706WLH1S0031	img W11 24HL SOM-7533R 64b 24H2 ENU
Win11(VL)	20706WLV1S0031	img W11 24VL SOM-7533R 64b 24H2 ENU
Win11(EL)	20706WLE1S0042	img W11 24EL SOM-7533 64b 24H2 ENU
Win11(HL)	20706WLH1S0042	img W11 24HL SOM-7533 64b 24H2 ENU
Win11(VL)	20706WLV1S0042	img W11 24VL SOM-7533 64b 24H2 ENU