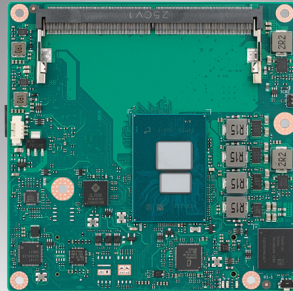


SOM-6833/R

Intel® Core-i®/Pentium®/Celeron® and
Atom® x7000 Series Processors
(Code Name: Alder Lake-N/Amston Lake)
COM Express® Compact Type6

NEW



Features

- COM Express® R3.1 Compact Module Type 6 Pinout
- Intel® Core-i®/Pentium®/Celeron® and Atom® x7000 Series Processors
- Single-CH DDR5 4800MT/s up to 16GB, support IB ECC
- PCIe gen3, USB3.2 Gen2, SATA3.0, 2.5GbE support TSN
- On board eMMC (Option)
- Supports iManager, Embedded Software APIs and Wise-DeviceOn

Software APIs:



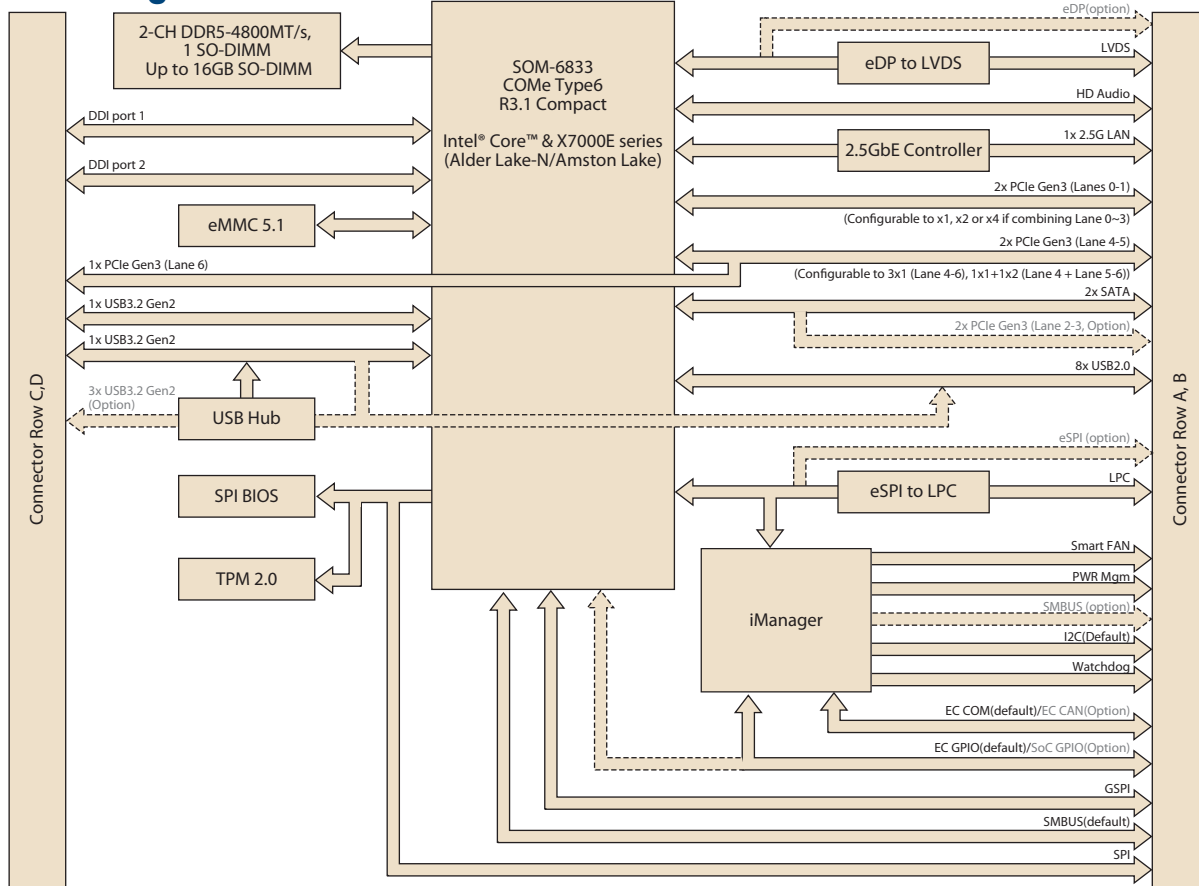
Windows Embedded

iManager WISE-DeviceOn C E FC

Specifications

Form Factor	Form Factor	COM Express Compact							
	Pin-out Type	COM Express R3.1 Type 6 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	9W	9/15W	12W	12W	9W	6W
	IB ECC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	BIOS	AMI UEFI 256Mbit							
Memory	Technology	DDR5							
	Speed	4800 MT/s							
	Max. Capacity	Up to 16GB							
	Channel/Socket	Single Channel / 1 x 262P SODIMM							
Graphics	ECC Support	IB ECC							
	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)	LVDS dual channel: 1920 x 1200@60Hz/eDP 1920 x 1080 @60Hz (Up to eDP 4096 x 2304 by CPU N97 SKU)							
	DDI (HDMI/DisplayPort)	2 DDI ports support configurable HDMI/DisplayPort -HDMI 2.0b: 4096 x 2160 @ 60Hz -DisplayPort 1.4: 4096 x 2160 @ 60Hz							
	Multiple Display	Triple Simultaneous Independent Display							
Expansion	PCI Express x1 (Gen3)	5 PCIe x1 by default, Up to 7 PCIe x1 with 2 SATA option co-lay							
Serial Bus	eSPI/LPC	Default LPC, Option eSPI							
	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)	Default 2 Ports (10 Gbps), Option to 4 Ports by USB Hub							
	USB2.0	8 Ports (480 Mbps)							
	Audio	HD Audio							
	SPI Bus	Yes. For BIOS EEPROM							
	GPIO	8-bit							
	Onboard Storage	eMMC5.1 (Option)							
	Watchdog	65536 level, 0 ~ 65535 sec							
	COM Port	2 Ports (2-Wire)							
	TPM	TPM2.0							
	CAN Bus	1 Ports (Option with COM Port)							
Power	Type	ATX: Vin, VSB; AT: Vin							
	Supply Voltage	Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25V; RTC Battery: 2.0V ~ 3.3V							
	Power Consumption (Max.)	TBD							
	Power Consumption (Idle)	TBD							
Environmen	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °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	95 mm x 95 m							

Block Diagram



Ordering Information

P/N	CPU	Core	TDP	Graphics	Base Freq.	Max. Boost Freq.	GFX FHM	EMMC	USB Hub	IBEC	TSN	LVDS/Edp	Thermal solution	Operating Temp.
SOM-6833N8-S8A1	i3-N305	8	9/15W	32EU	1.0GHz /1.8GHz	3.8GHz	1.0GHz	128G	Yes	Yes	No	LVDS	Passive	0 ~ 60 °C
SOM-6833A4-S5A1	Atom X7425E	4	12W	24EU	1.5GHz	3.4GHz	800MHz	64G	Yes	Yes	Yes	LVDS	Passive	0 ~ 60 °C
SOM-6833N4-U0A1	N97	4	12W	24EU	2.0GHz	3.6GHz	850MHz	32G	NA	Yes	No	LVDS	Passive	0 ~ 60 °C
SOM-6833N4-S0A1	N200	4	6W	32EU	1.0GHz	3.7GHz	450MHz	NA	NA	Yes	No	LVDS	Passive	0 ~ 60 °C
SOM-6833N2-S0A1	N50	2	6W	16EU	1.0GHz	3.4GHz	600MHz	NA	NA	Yes	No	Edp	Passive	0 ~ 60 °C
SOM-6833RA78X-S3A1	x7835RE	8	12W	32EU	1.3GHz	3.6GHz	800MHz	32GB	Yes	Yes	Yes	LVDS	Active	-40 ~ 85 °C
SOM-6833RA74X-S5A1	x7433RE	4	9W	32EU	1.5GHz	3.4GHz	600MHz	NA	Yes	Yes	Yes	LVDS	Active	-40 ~ 85 °C
SOM-6833RA72X-S0A1	x7211RE	2	6W	16EU	1.0GHz	3.2GHz	400MHz	NA	NA	Yes	Yes	eDP	Active	-40 ~ 85 °C

Any other SKUs or combination is project based support. Please contact sales for details.

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

Optional Accessories

Part No.	Description
1960048815N001	Semi-Heatsink
1970004870T001	Semi-Cooler (For SOM-6833R series part number)

Embedded OS

OS	Part No.	Description
Win10(EL)	20706WX1ES0099	img W10 21EL SOM-6833 64b 21H2 ENU
Win10(HL)	20706WX1HS0099	img W10 21HL SOM-6833 64b 21H2 ENU
Win10(VL)	20706WX1VS0099	img W10 21VL SOM-6833 64b 21H2 ENU
Ubuntu 22.04	20706U22DS0052	img UbuntuD SOM-6833 64b 22.04 ENU
Ubuntu 22.04	20706U22DS0059	img UbuntuD SOM-6833R 64b 22.04 ENU
Win11(EL)	20706WLE1S0023	img W11 24EL SOM-6833R 64b 24H2 ENU
Win11(HL)	20706WLH1S0023	img W11 24HL SOM-6833R 64b 24H2 ENU
Win11(VL)	20706WLV1S0023	img W11 24VL SOM-6833R 64b 24H2 ENU
Win11(EL)	20706WLE1S0055	img W11 24EL SOM-6833 64b 24H2 ENU
Win11(HL)	20706WLH1S0055	img W11 24HL SOM-6833 64b 24H2 ENU
Win11(VL)	20706WLV1S0055	img W11 24VL SOM-6833 64b 24H2 ENU

Packing List

Part No.	Description	Quantity
-	SOM-6833 COM module	1
1970005894N001	Heatspreader	1