

EMBEDDED SMARC 2.1

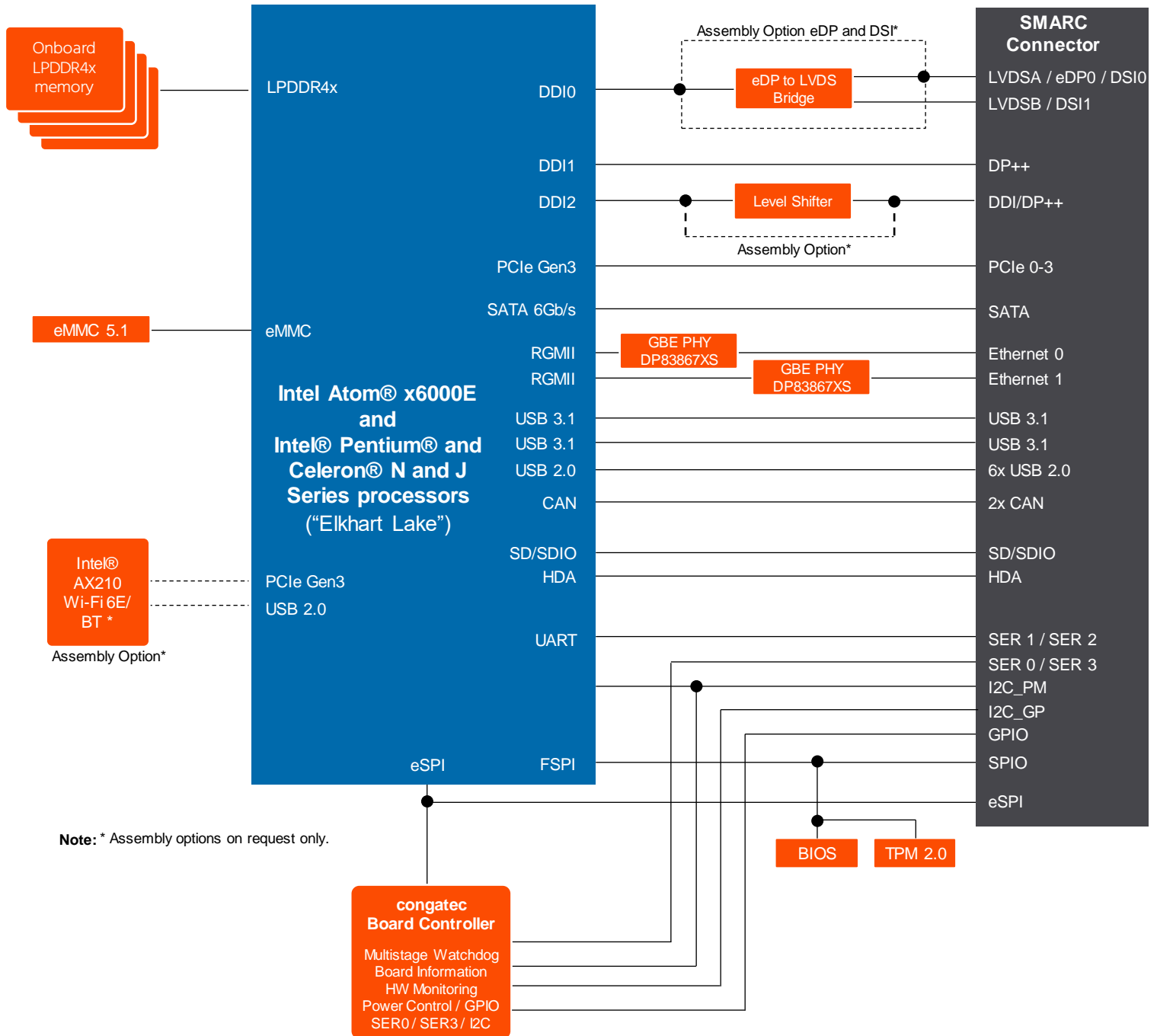
conga-SA7



- SMARC 2.1 module based on Intel Atom® x6000E Series and Intel® Pentium® and Celeron® J and N Series processors
- High performance Intel® UHD Graphics for 10th Gen Intel® Processors
- LPDDR4x with up to 4.267 MT/s Memory Support
- Options for Intel® AX210 Wi-Fi 6E/BT
- Options for Industrial Temperature Range -40°C to 85°C

Form Factor	SMARC Specification 2.1					
CPU	Processor	TDP	Cores / Threads	Base Frequency / max. Turbo	Gfx EUs	Intel Use Condition
	J6413	10W	4 / 4	1.8 GHz / 3.0 GHz	16 EU	PC/Client
	J6426	10W	4 / 4	2.0 GHz / 3.0 GHz	32 EU	PC/Client
	x6211E	6W	2 / 2	1.3 GHz / 3.0 GHz	16 EU	Embedded
	x6413E	9W	4 / 4	1.5 GHz / 3.0 GHz	16 EU	Embedded
	x6425E	12W	4 / 4	2.0 GHz / 3.0 GHz	32 EU	Embedded
	x6212RE	6W	2 / 2	1.2 GHz / ---	16 EU	Industrial
	x6414RE	9W	4 / 4	1.5 GHz / ---	16 EU	Industrial
	x6425RE	12W	4 / 4	1.9 GHz / ---	32 EU	Industrial
DRAM	max. 16GB (optional up to 32 GB) onboard LPDDR4x up to 4.267 MT/s					
Ethernet	2x GbE with TSN support 2x real-time trigger					
I/O Interfaces	2x USB 3.1 Gen2 6x USB 2.0 SATA III 1x SDIO up to 4x PCIe Gen3 2x I ² C Bus SPI eSPI 4x UART GPIO 2x CAN onboard Intel® AX210 Wi-Fi 6E/BT (optional)					
Mass Storage	eMMC 5.1 onboard flash up to 64GB (optional up to 128GB)					
Audio	Intel® High Definition Audio					
Graphics	High performance Intel® UHD Graphics for 10th Gen Intel® Processors					
LVDS	Dual channel LVDS transmitter (support for flat panels with 2x24 bit data mapping up to a resolution of 1920x1200 @60Hz) shared with eDP (option) or MIPI-DSI x4 (option)					
Digital Display Interface	2x DDI up to 4096x2160 @60Hz					
congatec Board controller	Multistage watchdog non-volatile user data storage manufacturing and board Information board statistics fast mode and multi-master I ² C bus power loss control					
Embedded BIOS Feature	AMI Aptio® UEFI firmware 32 Mbyte serial SPI with congatec Embedded BIOS feature OEM Logo OEM CMOS Defaults LCD Control Display Auto Detection Backlight Control Flash Update					
Power Management	ACPI 5.0 compliant Smart Battery Management					
Operating Systems	Microsoft® Windows 11 IoT Enterprise Microsoft® Windows 10 Microsoft® Windows 10 IoT Enterprise Linux Yocto					
Hypervisor	RTS Real-Time Hypervisor					
Power Consumption	See manual for full details					
Temperature	Commercial variants:	Operation 0° to +60°C		Storage -20 to +80°C		
	Industrial variants:	Operation -40° to +85°C		Storage -40 to +85°C		
Humidity	Operation:	10% to 90% r. H. non cond.				
	Storage:	5% to 95% r. H. non cond.				
Size	82 x 50 mm					

conga-SA7 | Block Diagram



conga-SA7 | Order Information

Article	PN	Description
conga-SA7/x6425E-16G eMMC64	050100	SMARC 2.1 module with Intel Atom® x6425E quad core processor with 2.0GHz core frequency up to 3.0GHz, 16GB 3200MT/s LPDDR4x onboard memory and 64GB eMMC 5.1 onboard flash.
conga-SA7/x6413E-8G eMMC32	050101	SMARC 2.1 module with Intel Atom® x6413E quad core processor with 1.5GHz core frequency up to 3.0GHz, 8GB 3.200MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash.
conga-SA7/x6211E-4G eMMC32	050102	SMARC 2.1 module with Intel Atom® x6211E dual core processor with 1.3GHz core frequency up to 3.0GHz, 4GB 3.200MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash.
conga-SA7/x6425E-8G eMMC32	050103	SMARC 2.1 module with Intel® Atom® x6425E quad core processor with 2.0GHz core frequency up to 3.0GHz, 15MB cache, 8GB 3733MT/s LPDDR4x onboard memory and 32GB eMMC onboard flash.
conga-SA7/x6425E-4G eMMC32	050104	SMARC 2.1 module with Intel® Atom® x6425E quad core processor with 2.0GHz core frequency up to 3.0GHz, 15MB cache, 4GB 3733MT/s LPDDR4x onboard memory and 32GB eMMC onboard flash.
conga-SA7/i-x6425RE-8G eMMC32	050110	SMARC 2.1 module with Intel Atom® x6425RE quad core processor with 1.9GHz core frequency, 8GB 4267MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/i-x6414RE-4G eMMC32	050111	SMARC 2.1 module with Intel Atom® x6414RE quad core processor with 1.5GHz core frequency, 4GB 3.200MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/i-x6212RE-4G eMMC32	050112	SMARC 2.1 module with Intel Atom® x6212RE dual core processor with 1.2GHz core frequency, 4GB 3.200MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/i-x6425RE-4G eMMC32	050113	SMARC 2.1 module with Intel® Atom® x6425RE quad core processor with 1.9GHz core frequency, 15MB cache, 4GB 3200MT/s LPDDR4x onboard memory and 32GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/i-x6425RE-8G eMMC32 AX210	050114	SMARC 2.1 module with Intel Atom® x6425RE quad core processor with 1.9GHz core frequency, 8GB 4267MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash. Intel® AX210 Wi-Fi 6E/BT. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/J6426-16G eMMC64	050120	SMARC 2.1 module with Intel® Pentium® J6426 quad core processor with 2.0GHz core frequency up to 3.0GHz, 16GB 3200MT/s LPDDR4x onboard memory and 64GB eMMC 5.1 onboard flash.
conga-SA7/J6413-8G eMMC32	050121	SMARC 2.1 module with Intel® Celeron® J6413 quad core processor with 1.8GHz core frequency up to 3.0GHz, 8GB 3.733MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash.
conga-SA7/i-CSP-B	050150	Passive cooling solution for SMARC 2.1 module conga-SA7 with lidded Intel Atom® x6000E processor series. All standoffs are with 2.7mm bore hole.
conga-SA7/i-HSP-B	050151	Standard heatspreader for SMARC 2.1 module conga-SA7 with lidded Intel Atom® x6000E processor series. All standoffs are with 2.7mm bore hole.
conga-SA7/HSP-B	050152	Standard heatspreader for SMARC 2.1 module conga-SA7 with open-die Intel® Pentium® and Celeron® J and N processors. All standoffs are with 2.7mm bore hole.
conga-SA7/CSP-B	050153	Passive cooling solution for SMARC 2.1 module conga-SA7 with open-die Intel® Pentium® and Celeron® J and N processors. All standoffs are with 2.7mm bore hole.

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