

EMBEDDED SMARC 2.1



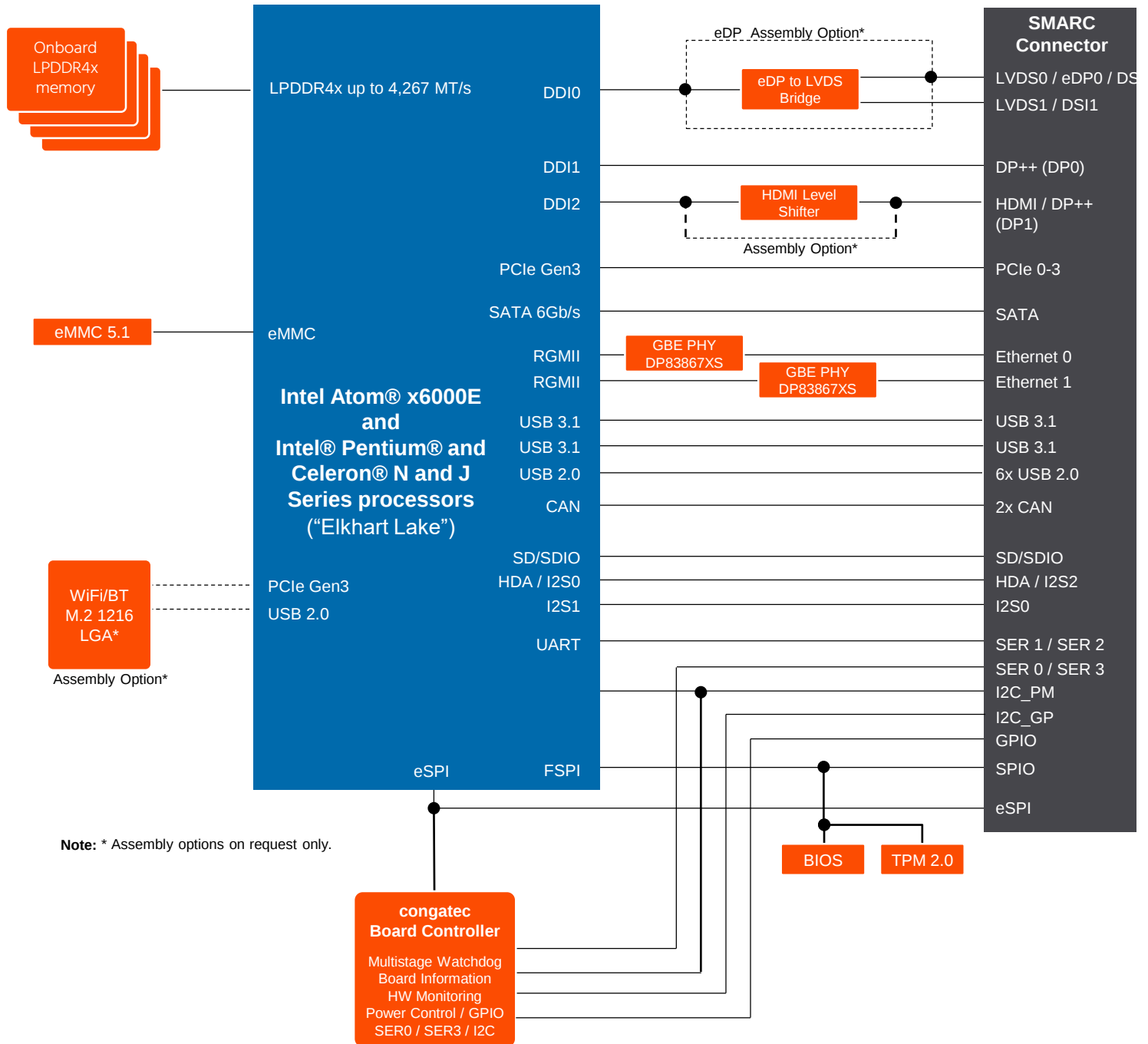
conga-SA7



- SMARC 2.1 module based on Intel® Atom® x6000E Series and Intel® Pentium® and Celeron® J Series processors (code-named Elkhart Lake)
- High performance Intel® UHD Graphics (Gen11)
- Options for Industrial Temperature Range -40°C to 85°C
- Time Sensitive Networking and Time Coordinated Computing for improved Realtime Capability
- Up to 4.267 MT/s Memory Support with Inband ECC

Form Factor	SMARC Specification 2.1 82x50 mm					
CPU	Processor	TDP	Cores/Threads	Base Frequency/max. Turbo	Gfx Gen.11	Intel Use Condition
	J6413	10W	4 / 4	1.8 GHz / 3.0 GHz	16 EU	PC Client
	J6425	10W	4 / 4	1.8 GHz / 3.0 GHz	32 EU	PC Client
	x6211E	6W	2 / 2	1.2 GHz / 3.0 GHz	16 EU	Embedded
	x6413E	9W	4 / 4	1.5 GHz / 3.0 GHz	16 EU	Embedded
	x6425E	12W	4 / 4	1.8 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 onboard LPDDR4x up to 4.267 MT/s					
Ethernet	2x Intel® GbE with TSN support and Out-Of-Band Management 2x real-time trigger					
I/O Interfaces	2x USB 3.1 Gen2 (1x OTG) 6x USB 2.0 (1x OTG) 1x SATA III 1x SDIO up to 4x PCIe Gen3 2x I²C Bus 1x SPI 1x eSPI 4x UART GPIO 2x CAN 1x I2S onboard M.2 1216 WiFi/BT module (optional)					
Mass Storage	eMMC 5.1 onboard flash up to 64GB (optional up to 128GB)					
Sound	Intel® LPE Audio via I2S					
Graphics	Intel® UHD Graphics (Gen11)					
LVDS	Dual channel LVDS transmitter support for flat panels with 2x24 bit data mapping up to a resolution of 1920x1200 @60Hz shared with eDP or 1x MIPI-DSI x4 (option)					
Digital Display Interface	DisplayPort 1.2 up to 4096x2160px and HDMI 1.4b up to 3840x2160px					
congatec Board controller	Multistage watchdog non-volatile user data storage manufacturing and board Information board statistics fast mode and multi-master I²C 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 10 Microsoft® Windows 10 IoT Enterprise Microsoft® Windows IoT 10 Core Linux Android Yocto RTS Hypervisor					
Power Consumption	tbd. see manual for full details					
Temperature Range	Commercial:	Operating Temperature: 0 to +60°C		Storage Temperature: -20 to +80°C		
	Industrial:	Operating Temperature: -40 to +85°C		Storage Temperature: -40 to +85°C		
Humidity	Operating:	10 to 90% r. H. non cond.				
	Storage:	5 to 95% r. H. non cond.				
Size	82 x 50 mm (approx. 3,23" x 1,97")					

conga-SA7 | Block Diagram



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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 1.8GHz core frequency up to 3.0GHz, 1.5MB cache, 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, 1.5MB cache, 8GB 4267MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash.
conga-SA7/x6211E-8G eMMC32	050102	SMARC 2.1 module with Intel® Atom® x6211E dual core processor with 1.2GHz core frequency up to 3.0GHz, 1.5MB cache, 8GB 4267MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 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, 1.5MB cache, 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, 1.5MB cache, 4GB 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-x6212RE-4G eMMC32	050112	SMARC 2.1 module with Intel® Atom® x6212RE dual core processor with 1.2GHz core frequency, 1.5MB cache, 4GB 4267MT/s LPDDR4x onboard memory and 32GB eMMC 5.1 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-SA7/J6425-16G eMMC64	050120	SMARC 2.1 module with Intel® Pentium® J6425 quad core processor with 1.8GHz core frequency up to 3.0GHz, 1.5MB cache, 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, 1.5MB cache, 8GB 4267 MT/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 processors. 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 processors. 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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