

EMBEDDED SMARC 2.0

conga-SA5

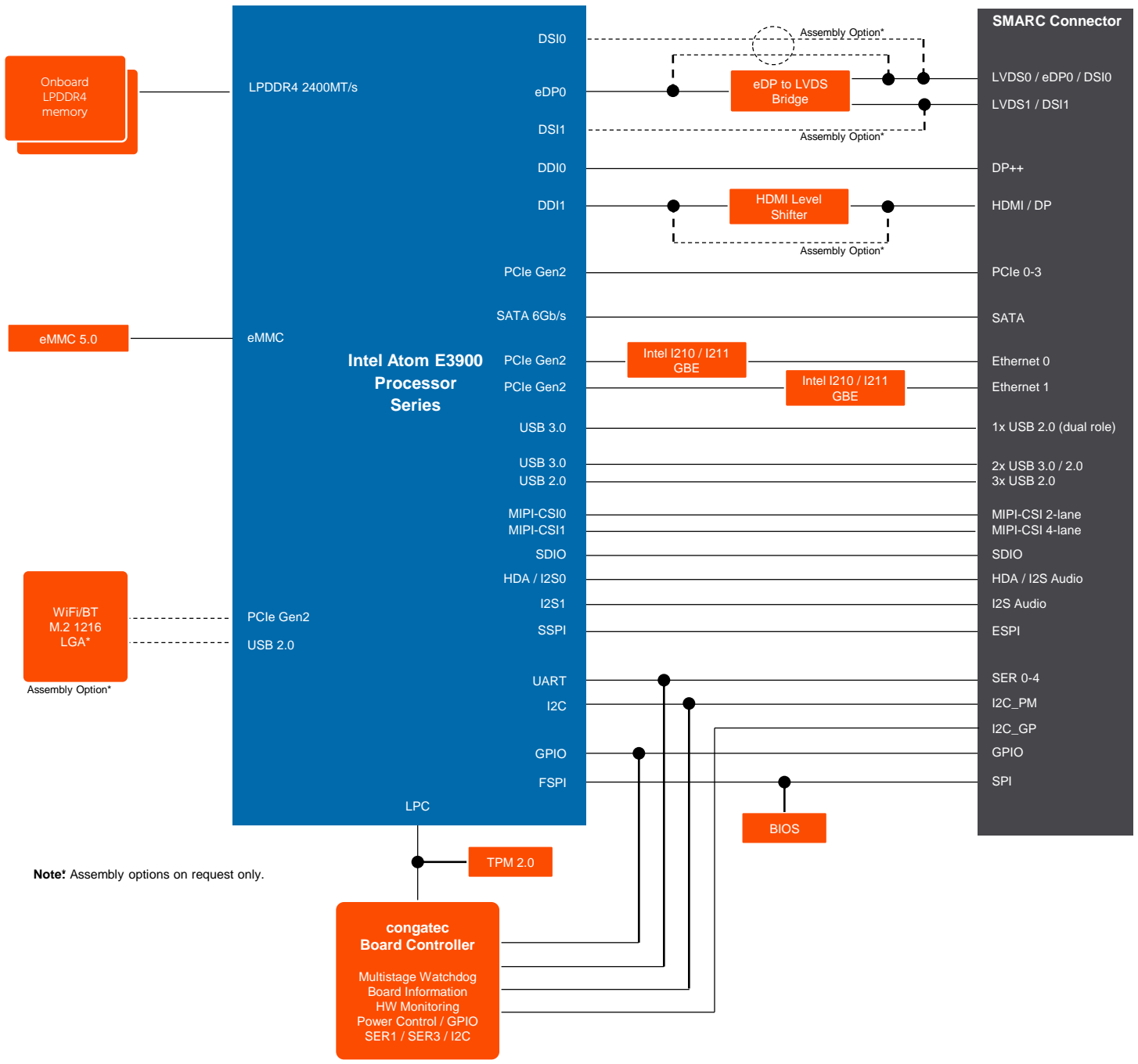


- Low power Intel® Atom™ E3900 Series, Celeron® and Pentium® N-Series processors
- High performance Intel® HD Graphics 500
- Industrial Temperature Range -40°C to 85°C
- Time Coordinated Computing
- Enhanced Security Execution



| | | | | | |
|------------------------------------|---|-------------------------------------|-----------------------------------|--------------|----------|
| Form Factor | SMARC Specification 2.0 82x50 mm | | | | |
| CPU | Intel® Atom® x7-E3950 | 2.00 GHz (Burst) 1.6 GHz Clock | Quad Core | L2 cache 2MB | 12W TDP |
| | Intel® Atom® x5-E3940 | 1.80 GHz (Burst) 1.6 GHz Clock | Quad Core | L2 cache 2MB | 9W TDP |
| | Intel® Atom® x5-E3930 | 1.80 GHz (Burst) 1.3 GHz Clock | Dual Core | L2 cache 2MB | 6.5W TDP |
| | Intel® Pentium® N4200 | 2.50 GHz (Burst) 1.1 GHz Clock | Quad Core | L2 cache 2MB | 6W TDP |
| | Intel® Celeron® N3350 | 2.40 GHz (Burst) 1.1 GHz Clock | Dual Core | L2 cache 2MB | 6W TDP |
| | Intel® Celeron® J3455 | 2.30 GHz (Burst) 1.5 GHz Clock | Quad Core | L2 cache 2MB | 10W TDP |
| DRAM | up to 8GB onboard LPDDR4 with 2400MT/s | | | | |
| Ethernet | 2x Intel® I210 (Industrial) / I211 (Commercial) Gigabit Ethernet Controller with SDP support 2x real-time trigger | | | | |
| I/O Interfaces | 2x USB 3.0 4x USB 2.0 1x SATA3 1x SDIO up to 4x PCIe Gen2 2x I ² C Bus 2x SPI 4x UART optional onboard M.2 1216 WiFi/BT module | | | | |
| Mass Storage | eMMC 5.0 onboard flash up to 128 GByte | | | | |
| Sound | Intel® High Definition Audio Integrated Audio DSP with Intel® Smart Sound Technology | | | | |
| Graphics | Intel® HD Graphics 500 with support for 4k Ultra HD displays DirectX 12 OpenGL 4.4 OpenCL 2.0 OpenGL ES 3.0 HDCP 1.4 (wired), HDCP 2.0 (wireless) Video decode hardware acceleration including support for 4kp60 HEVC (H.265), H.264, MVC, VP8, VP9, VC-1, WMV9, JPEG/MJPEG Video encode hardware acceleration including support for 4kp30 HEVC (H.265), H.264, MVC, VP8, JPEG/MJPEG. | | | | |
| 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 2x MIPI-DSI x4 (option) | | | | |
| DisplayPort Interface (DDI) | DisplayPort 1.2 up to 4096x2160px or HDMI 1.4b up to 3840x2160px | | | | |
| MIPI-CSI | 1x MIPI-CSI x4 and 1x MIPI-CSI x2 | | | | |
| 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 8 MByte serial SPI with congatec Embedded BIOS features 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 Yocto | | | | |
| Power Consumption | Typ. application: 8-12W 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 (3,23" x 1,97") | | | | |

conga-SA5 | Block Diagram



Note: Assembly options on request only.

conga-SA5 | Order Information

| Article | PN | Description |
|-----------------------------------|--------|---|
| conga-SA5/E3950-8G eMMC32 | 050000 | SMARC 2.0 module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 2400MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. |
| conga-SA5/E3940-4G eMMC32 | 050001 | SMARC 2.0 module with Intel® Atom™ x5-E3940 quad core processor with 1.6GHz core frequency up to 1.8GHz, 2MB L2 cache, 4GB 2133MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. |
| conga-SA5/E3930-2G eMMC16 | 050002 | SMARC 2.0 module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz, 2MB L2 cache, 2GB 2133MT/s LPDDR4 onboard memory and 16GB eMMC onboard flash. |
| conga-SA5/E3930-2G eMMC16 1xGBE | 050003 | SMARC 2.0 module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz, 2MB L2 cache, 2GB 2133MT/s LPDDR4 onboard memory and 16GB eMMC onboard flash. Only one GBE. |
| conga-SA5/i-E3950-4G eMMC32 | 050010 | SMARC 2.0 module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 4GB 2400MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. Industrial temperature range -40°C to 85°C. |
| conga-SA5/i-E3940-4G eMMC16 | 050011 | SMARC 2.0 module with Intel® Atom™ x5-E3940 quad core processor with 1.6GHz core frequency up to 1.8GHz, 2MB L2 cache, 4GB 2133MT/s LPDDR4 onboard memory and 16GB eMMC onboard flash. Industrial temperature range -40°C to 85°C. |
| conga-SA5/i-E3930-2G eMMC16 | 050012 | SMARC 2.0 module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz, 2MB L2 cache, 2GB 2133MT/s LPDDR4 onboard memory and 16GB eMMC onboard flash. Industrial temperature range -40°C to 85°C. |
| conga-SA5/i-E3950-8G eMMC32 | 050013 | SMARC 2.0 module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 2400MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. Industrial temperature range -40°C to 85°C. |
| conga-SA5/N3350-4G eMMC32 | 050022 | SMARC 2.0 module with Intel® Celeron™ N3350 dual core processor with 1.1GHz core frequency up to 2.3GHz, 2MB L2 cache, 4GB 2400MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. |
| conga-SA5/N4200-8G eMMC32 | 050023 | SMARC 2.0 module with Intel® Pentium® N4200 quad core processor with 1.1GHz core frequency up to 2.50GHz, 2MB L2 cache, 8GB 2400MT/s LPDDR4 onboard memory and 32GB eMMC onboard flash. |
| conga-SA5/J3455-4G eMMC16 | 050024 | SMARC 2.0 module with Intel® Celeron® J3455 quad core processor with 1.5GHz core frequency up to 2.30GHz, 2MB L2 cache, 4GB 2400MT/s LPDDR4 onboard memory and 16GB eMMC onboard flash. |
| conga-SA5/E3950-8G eMMC32 SPKL-AC | 050031 | SMARC 2.0 module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 2400MT/s LPDDR4 onboard memory, 32GB eMMC onboard flash and onboard Sparklan WNSQ-261ACN(BT) Wifi/BT module. |
| conga-SA5/i-CSP-B | 050051 | Passive cooling solution for SMARC 2.0 module conga-SA5 with lidded Intel Atom processor. All standoffs are with 2.7mm bore hole. |
| conga-SA5/i-HSP-B | 050053 | Standard heatspreader for SMARC 2.0 module conga-SA5 with lidded Intel Atom processor. All standoffs are with 2.7mm bore hole. |
| conga-SA5/CSP-B | 050055 | Passive cooling solution for SMARC 2.0 module conga-SA5 with open silicon Intel Pentium and Celeron processor. All standoffs are with 2.7mm bore hole. |
| conga-SA5/HSP-B | 050057 | Standard heatspreader for SMARC 2.0 module conga-SA5 with open silicon Intel Pentium and Celeron processor. All standoffs are with 2.7mm bore hole. |
| Accessories | | |
| conga-SEVAL | 007010 | Evaluation Carrier Board for SMARC 2.0 modules. |
| conga-SMCI/SMARC-x86 | 020750 | 3.5" carrier board for congatec SMARC 2.1 modules based on x86 architecture. |



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