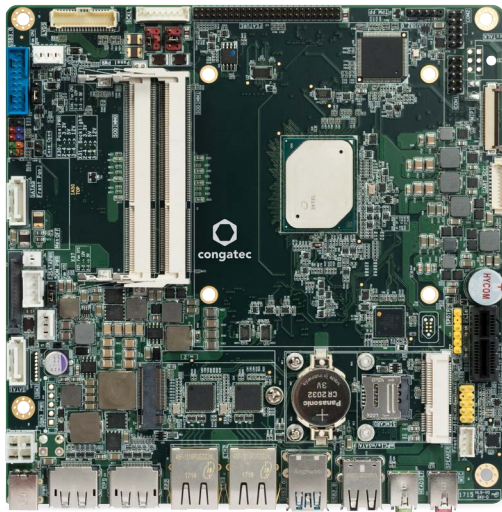


INDUSTRIAL THIN MINI-ITX

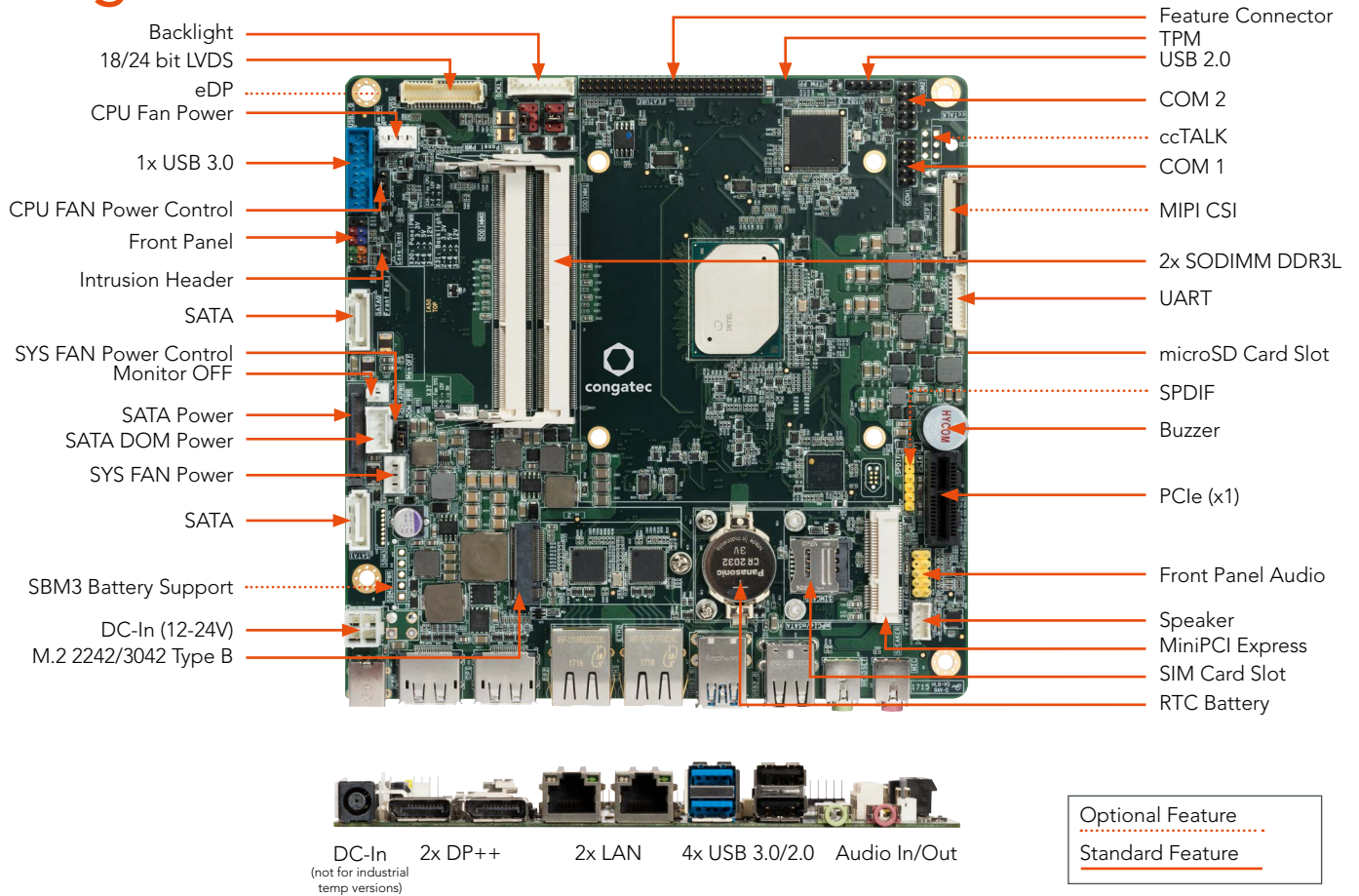
conga-IA5



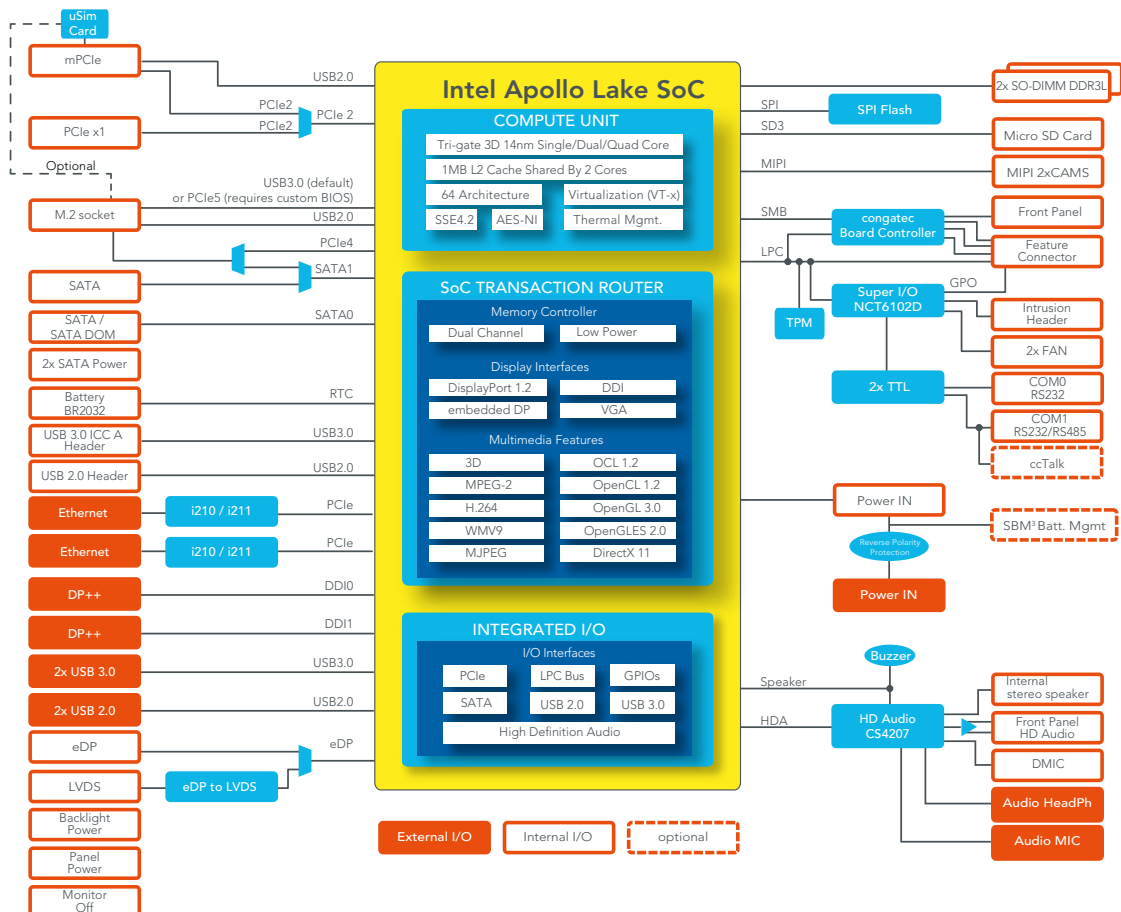
- Industrial Intel® Atom™ E3900 processor series
- Intel® Pentium® and Celeron® processors
- Low Power CPUs 6 to 12 Watt TDP
- Enhanced Intel® HD Graphics generation 9
- Long life components for 24/7 embedded use
- Extended temperature variants
- On board TPM for enhanced security

| | | | | | | |
|----------------------------------|--|-------------------------------------|---------------|-----------------------------------|--------------|----------|
| Formfactor | Industrial Thin-Mini-ITX 170 x 170 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 | 9.5W 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 |
| DRAM Memory | 2x SO-DIMM sockets (dual channel DDR3L up to 1866 MT/s) to support a max. memory size of 8GB | | | | | |
| Ethernet | 2x Intel® I211 Gigabit Ethernet controller (commercial) 2x Intel® I210 Gigabit Ethernet controller (Industrial) | | | | | |
| Sound | High Definition Audio Interface with Cirrus CS4207 | | | | | |
| Graphics | Intel® Gen 9 HD Graphics with support for DirectX12 OpenGL 4.3 OpenCL 2.0 OpenGLES 3.x MPEG2 full HW acceleration with H.265/HEVC decoding and H.264 encoding VP9 PAVP 3.x HDCP 1.4 MVC and 2x independent display support in 4K (3840 x 2160 px) @30 Hz or WQXGA (2560 x 1600 px) @60 Hz | | | | | |
| Graphic Interfaces | 18/24-bit Dual Channel LVDS Interface or eDP 1.3 and 2x DisplayPort 1.2 | | | | | |
| Internal Connectors | 1x PCIe x1 Slot shared with mPCIe 1x mPCIe Half Size shared with PCIe slot 1x M.2 2242/3042 Type B 2x SATA (one shared with M2) 1x SATA Power connector (header) 1x SATA Power 1x USB 3.0/2.0 Header 1x USB 3.0 (on M.2 slot) 1x USB 2.0 (on miniPCIe slot) 1x Micro SD Card 1x SIM Card slot 18/24 bit LVDS or 1x eDP 1.3 1x Backlight (power & control) 1x Front Panel HD Audio 2x Serial Port COM1 (opt. as ccTALK) 1x Frontpanel (Power Switch, LEDs, Reset) 1x FAN CPU 1x FAN System 1x internal power header (12-24V) 1x opt. battery header signal + power (SBM3) | | | | | |
| Feature Connector | congatec custom (8 Bit General Purpose I/O) SPI(for external BIOS) SMB LPC ACPI S3/S4 | | | | | |
| External Connectors (Frontpanel) | 2x DisplayPort DP++ 1x LVDS 2x24 bit/shared with eDP 1.3 3.5mm Audio In and 3.5mm Line Out 2x LAN RJ45 2x USB 3.0 2x USB 2.0 1x DC-In (12-24V, only for commercial variants) | | | | | |
| congatec embedded Controller | Multi-Stage Watchdog non-volatile User Data Storage Manufacturing and Board Information Board Statistics BIOS Setup Data Backup I ² C bus (fast mode 400 kHz multi-master) Power Loss Control | | | | | |
| Embedded BIOS | AMI Aptio® 2.X (UEFI) SM-BIOS BIOS Update Logo Boot Quiet Boot HDD Password | | | | | |
| Security | Discrete "Trusted Platform Module" (TPM 2.0) on board | | | | | |
| Power Specification | Power Management ACPI S3/S4/DeepSx Wake on time from S5 Power Supply 12V - 24V 2x FAN (CPU, system) monitored & controlled | | | | | |
| Operating Systems | Microsoft® Windows 10 Microsoft® Windows 10 IoT Linux Yocto | | | | | |
| Power Consumption | See manual for full details | | | | | |
| Temperature | Commercial Variants: | Operating Temperature: 0 to +60°C | | Storage Temperature: -20 to +70°C | | |
| | Industrial Variants: | 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 | 170 x 170 mm (~6.7 x 6.7") | | | | | |

conga-IA5 | Connectors



conga-IA5 | Block diagram



conga-IA5 | Order Information

| conga-IA5 SBC | PN | Description |
|-------------------|--------|---|
| conga-IA5/E3950 | 052801 | Thin Mini-ITX board based on Intel® Atom™ x7-E3950 quad core processor with 1.6/2.0 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface |
| conga-IA5/i-E3950 | 052811 | Thin Mini-ITX board based on Intel® Atom™ x7-E3950 quad core processor with 1.6/2.0 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface. Extended temperature version -40°C to 85°C |
| conga-IA5/E3940 | 052802 | Thin Mini-ITX board based on Intel® Atom™ x5-E3940 quad core processor with 1.6/1.8 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface |
| conga-IA5/i-E3940 | 052812 | Thin Mini-ITX board based on Intel® Atom™ x5-E3940 quad core processor with 1.6/1.8 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface. Extended temperature version -40°C to 85°C |
| conga-IA5/E3930 | 052803 | Thin Mini-ITX board based on Intel® Atom™ x5-E3930 dual core processor with 1.3/1.8 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface |
| conga-IA5/i-E3930 | 052813 | Thin Mini-ITX board based on Intel® Atom™ x5-E3930 dual core processor with 1.3/1.8 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface. Extended temperature version -40°C to 85°C |
| conga-IA5/N4200 | 052820 | Thin Mini-ITX board based on Intel® Pentium® N4200 quad core processor with 1.5/2.5 GHz, 1866 MT/s dual channel DDR3L SODIMM memory interface |
| conga-IA5/N3350 | 052821 | Thin Mini-ITX board based on Intel® Celeron® N3350 dual core processor with 1.1/2.4 GHz, 1600 MT/s dual channel DDR3L SODIMM memory interface |

| conga-IA5 Accessories | PN | Description |
|------------------------------------|----------|---|
| Cooling Solution | | |
| conga-IA5/CSP | 052830 | Passive cooling solution suitable for Mini-ITX conga-IA5 [for versions with Celeron or Pentium CPU] |
| conga-IA5/i-CSP | 052831 | Passive Cooling Solution for Mini-ITX conga-IA5 [for versions with E39xx CPU] |
| conga-IC87/Retention Frame | 052254 | Retention frame for standard cooling suitable for conga-IC87/97/170/IA5 |
| I/O Shields | | |
| conga-IA4/IO Shield - Standard | 052651 | IO shield for conga-IA4/IA5 with Standard Mini-ITX height |
| conga-IA4/IO Shield - Thin | 052652 | IO shield for conga-IA4/IA5 with Thin Mini-ITX height |
| Memories | | |
| DDR3L-SODIMM-1866 (2GB) | 068730 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 2GB RAM |
| DDR3L-SODIMM-1866 (4GB) | 068731 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 4GB RAM |
| DDR3L-SODIMM-1866 (8GB) | 068732 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 8GB RAM |
| DDR3L-SODIMM-1866 (2GB) / i-temp | 068733 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 2GB RAM supporting extended operating temperature range of -40°C to +85°C |
| DDR3L-SODIMM-1866 (4GB) / i-temp | 068734 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 4GB RAM supporting extended operating temperature range of -40°C to +85°C |
| DDR3L-SODIMM-1866 (8GB) / i-temp | 068735 | DDR3L SODIMM, 1.35V & 1.5V memory module with 1866 MT/s and 8GB RAM supporting extended operating temperature range of -40°C to +85°C |
| Cables & Adapters | | |
| conga-Thin mITX/eDP to DP Adapter | 052231 | eDP to standard DisplayPort evaluation adapter for congatec Thin Mini-ITX boards |
| Cab-ThinMini-ITX-SATA-Power | 14000120 | SATA Power Cable, 15pin female 3x, 6pin female 1x, length 500 mm |
| Cab-ThinMini-ITX-UART | 14000121 | UART cable, 2x5pin, 2.54mm female header, D-Sub 9P male, length 200mm |
| Cab-ThinMini-ITX-USB20-Single | 14000122 | USB2.0 cable - single, 1x5pin, 2.54mm female header, USB A female w/molding, length 200mm |
| Cab-ThinMini-ITX-LVDS-OE | 14000125 | eDP cable for conga-IA5, with open end, 40pin, length 250mm |
| Cab-ThinMini-ITX-BKLT | 14000127 | Backlight cable for Thin Mini-ITX, 8pin, with open end, length 300mm |
| Cab-ThinMini-ITX-SATA-Power | 14000136 | SATA Power Cable, 15pin female 2x, length 300mm |
| SATA III Cable Straight/Straight | 48000029 | SATA III cable with data transfer rate of up to 6 Gbps, connector: straight / straight, length 300mm |
| SATA III Cable Down/Straight | 48000030 | SATA III cable with data transfer rate of up to 6 Gbps, connector: down / straight, length 300mm |
| Power Supplies | | |
| Power Supply Unit 65W, 19V / 3.42A | 10000145 | PSU, 65W, 19V / 3.42A, plug 7.4x5.1mm / 12.5mm length |
| Power Supply Unit 90W, 19V / 4.74A | 10000146 | PSU, 90W, 19V / 4.74A, plug 7.4x5.1 / 12.5mm length |

This Datasheet should be read in conjunction with "[Errata sheet - congatec xA5 designs](#)", available in the document section of congatec's webportal.

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