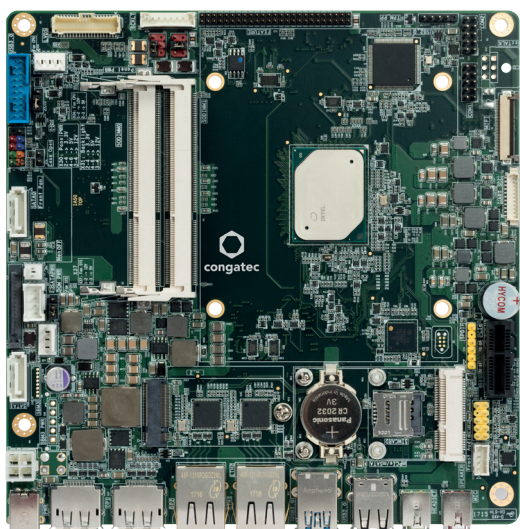


INDUSTRIAL THIN MINI-ITX

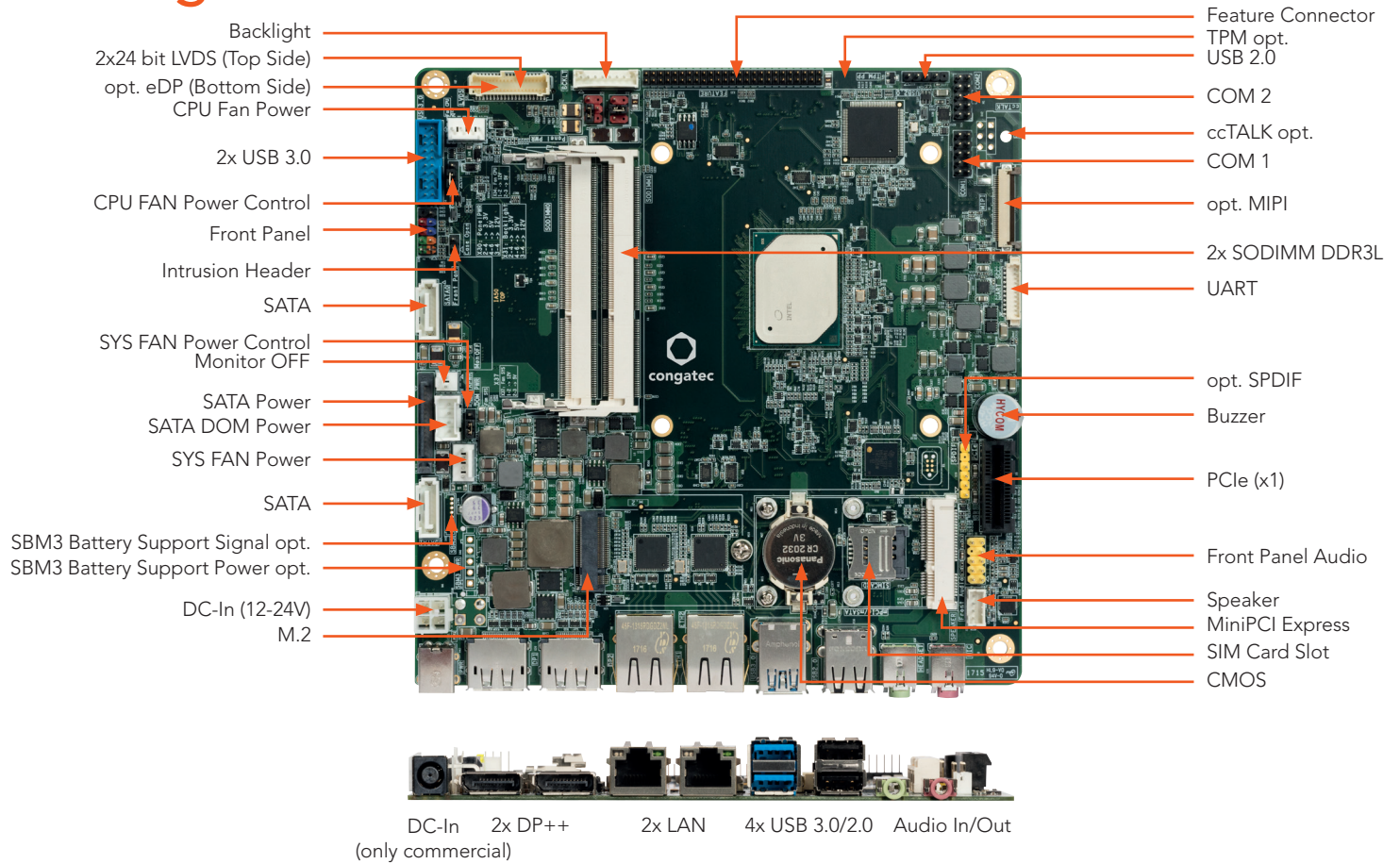
conga-IA5



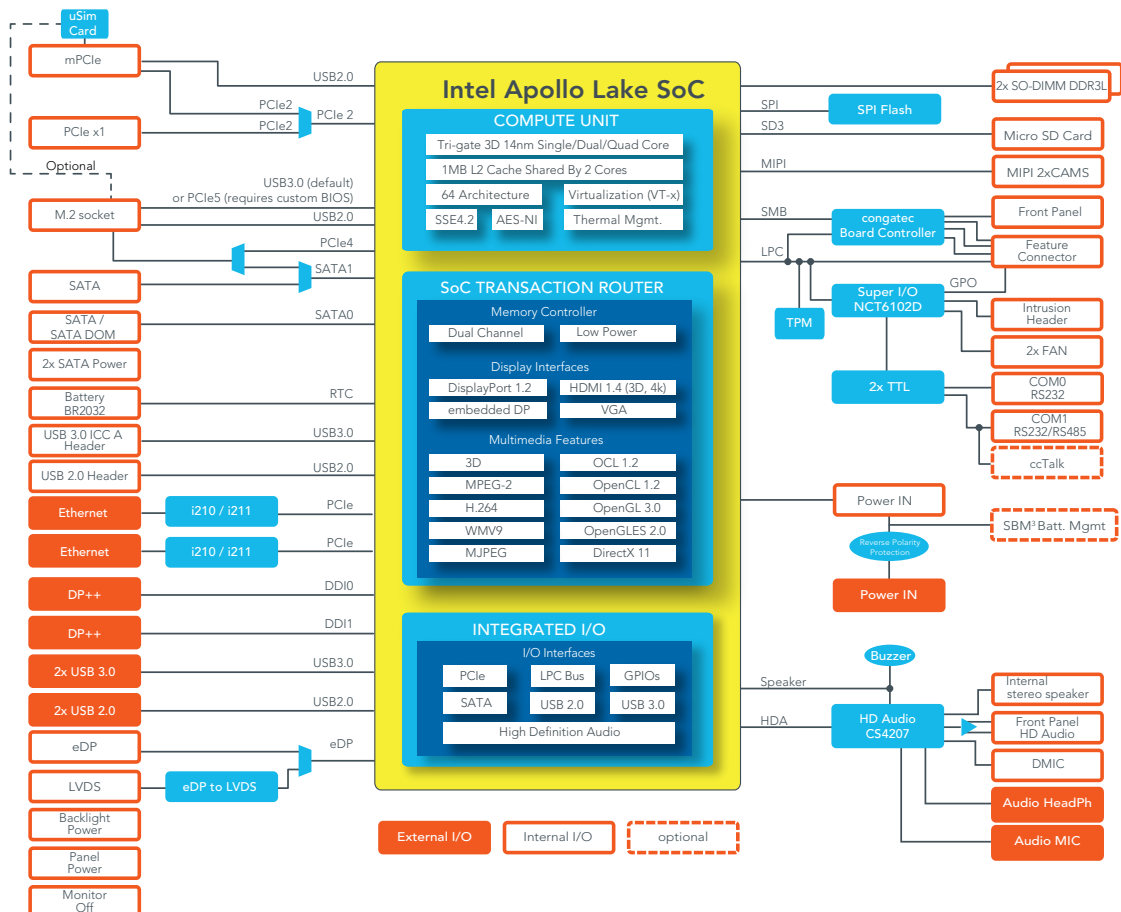
- Industrial Intel® Atom™ E3900 processor series
- Intel® Pentium® and Celeron® processors
- Low Power CPUs 6 to 12 Watt TDP
- Enhanced Intel® HD Graphics Generation 9
- Long life components for 24/7 embedded use
- Extended Temperature variants

Formfactor	Industrial Thin-Mini-ITX 170 x 170 mm					
CPU	Intel® Atom™ E3950	2.00 GHz (Burst)	1.6 GHz Clock	Quad Core	cache 2MB	12W TDP
	Intel® Atom™ E3940	1.80 GHz (Burst)	1.6 GHz Clock	Quad Core	cache 2MB	9.5W TDP
	Intel® Atom™ E3930	1.80 GHz (Burst)	1.3 GHz Clock	Dual Core	cache 2MB	6W TDP
	Intel® Pentium® N4200	2.50 GHz (Burst)	1.1 GHz Clock	Quad Core	cache 2MB	6W TDP
	Intel® Celeron® N3350	2.40 GHz (Burst)	1.1 GHz Clock	Dual Core	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	2x 24-bit Dual Channel LVDS Interface or opt. 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 M2 (Supported card sizes: 2242 and 3042) 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 1x Embedded DisplayPort 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	The conga-IA5 can be optionally equipped with a discrete "Trusted Platform Module" (TPM 1.2/2.0). It is capable of calculating efficient hash and RSA algorithms with key lengths up to 2,048 bits and includes a real random number generator. Security sensitive applications such as gaming and e-commerce will benefit also with improved authentication integrity and confidence levels					
Power Specification	Power Management ACPI S3/S4/DeepSx Wake on time from S5 Power Supply 12V - 24V 2 x FAN (CPU, system) monitored & controlled					
Operating Systems	Microsoft® Windows 10 Microsoft® Windows 10 IoT Linux Yocto					
Power Consumption	Typ. application: tbd. see manual for full details					
Temperature:	Commercial :	Operating: 0 to +60°C	Storage: -20 to +80°C			
	Industrial:	Operating: -40 to +85°C	Storage: -40 to +85°C			
Humidity Operating:	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

Article	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/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/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-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/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

Accessories	PN	Description
Cooling Solution		
conga-IA5/CSP	052830	Passive cooling solution suitable for Mini-ITX conga IA5 [version for modules with standard (non lidded) CP]
conga-IA5/i-CSP	052831	Passive Cooling Solution for Mini-ITX conga-IA5. [For modules with IHS CPU]
conga-IC87/Retention Frame	052254	Retention frame for standard cooling suitable for 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 8GB 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.

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