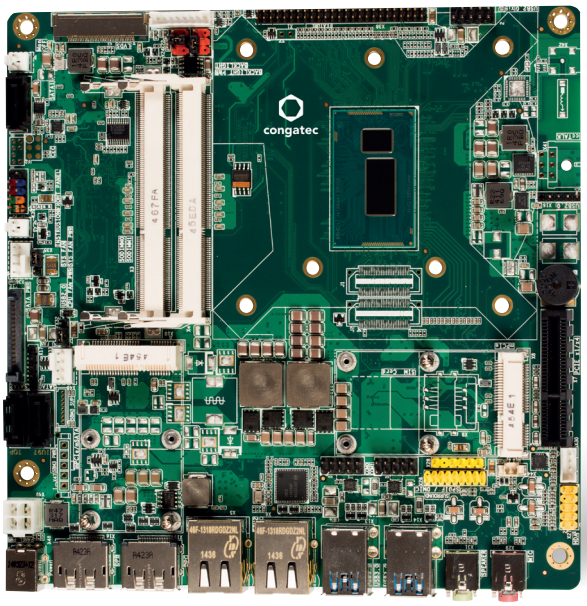
INDUSTRIAL THIN MINI-ITX

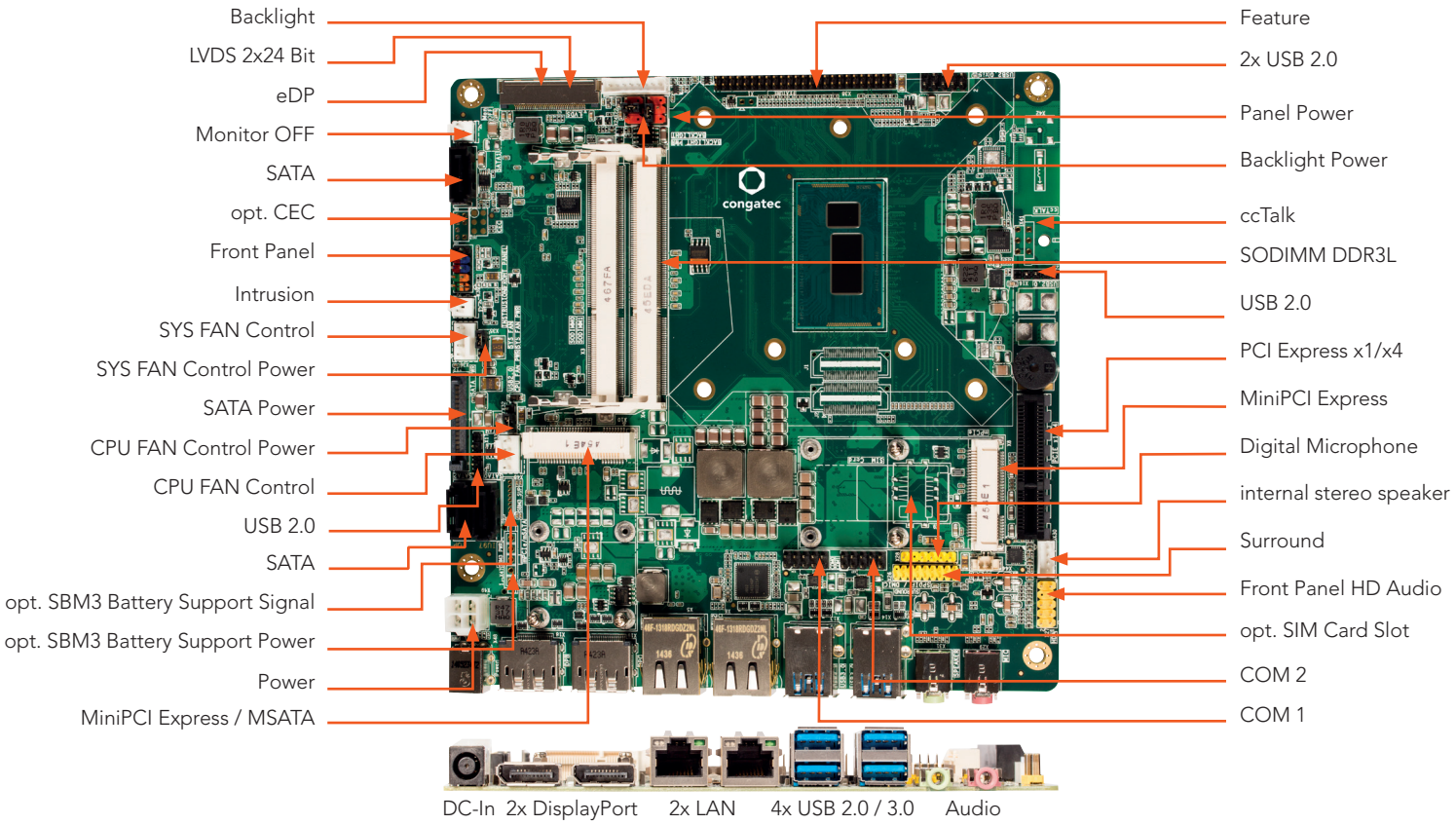
conga-IC87



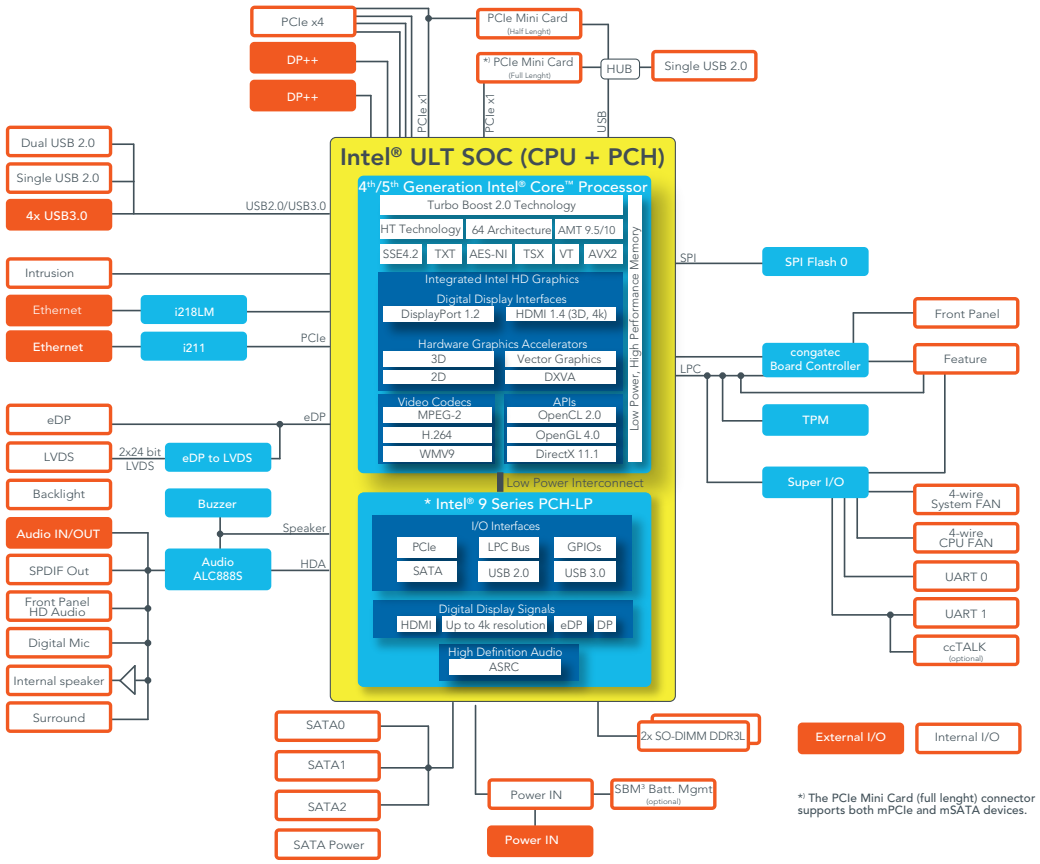
- Highest Performance Thin Mini-ITX board
- 4th Generation Intel® Core™ Mobile SOC U-Processors
- Wide Range Power Input 12-24 Volt
- congatec embedded Board Controller Features

Formfactor	Industrial Thin-Mini-ITX | 170 x 170 mm
CPU	Intel® Core™ i7-4650U 1.7 GHz Dual Core Turbo Boost 3.3 GHz 4 MB Cache TDP 15W Intel® Core™ i5-4300U 1.9 GHz Dual Core Turbo Boost 2.9 GHz 3 MB Cache TDP 15W Intel® Core™ i3-4010U 1.7 GHz Dual Core 3 MB Cache TDP 15W Intel® Celeron® 2980U 1.6 GHz Dual Core 3 MB Cache TDP 15W Intel® Turbo Boost Technology | Intel® Hyper-Threading Technology (Intel® HT Technology) | Intel® Advanced Vector Extensions 2.0 (Intel® AVX2), Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) | Integrated dual channel memory controller | up to 25.6 GByte/sec. memory bandwidth | Integrated Intel® HD Graphics 5000 series with dynamic frequency up to 1.1 GHz | Intel® Clear Video HD Technology Intel® Virtualization Technology (Intel® VT) | Intel® Trusted Execution Technology (Intel® TXT) | Intel® Streaming SIMD Extensions 4.2 (Intel® SSE4.2) PCLMULQDQ Instruction | Intel® Secure Key | Intel® Transactional Synchronization Extensions (Intel® TSX)
DRAM Memory	Support for 2x SO DIMM Socket (dual channel DDR3L up to 1600 MT/s) | max. 16GB
Ethernet	Dual LAN Gbit / 100 Mbit / 10 Mbit; 1x Intel Gigabit Ethernet PHY i218LM (with AMT support); 1x Intel Gigabit Ethernet Controller i210/i211
Sound	High Definition Audio Interface | Realtek ALC 888S | 7.1-channel
Graphics	Next Generation Intel® HD Graphics with OpenCL 1.2 | OpenGL 4.0 and DirectX11.1 support; up to three independent displays: HDMI 1.4 | DVI, DisplayPort 1.2; High performance hardware MPEG-2 decoding | WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 MBit/s
Graphic Interfaces	1x 24-bit Dual Channel LVDS Interface or eDP (x4) and 2x DisplayPort
Internal Connectors	1x PCIe x4 Slot (Gen.2) | 1x Full/Half-size Mini PCIe Slot shared with PCIe x1 slot | 1x Full/Half-size Mini PCIe Slot (shared with mSATA) | 3x SATA (6G) | 1x mSATA (SATA-III; 600) | 1x SATA Power | 4x USB 2.0 | 1x LVDS (2x24 bit) | 1x Embedded DisplayPort (x4) | 1x Backlight (Power | control) | 1x Monitor OFF | 1x Surround | 1x Front Panel HD Audio | 1x Digital Microphone (SPDIF) | 1x Internal stereo speaker 1x Serial Port COM1 (opt. as ccTALK) | 1x Serial Port COM2 | 1x Feature connector - congatec custom (8 Bit General Purpose I/O) | 1x Frontpanel (Power Switch, LEDs, Reset) | 1x Intrusion (Case Open) | 1x FAN CPU | 1x FAN System | 1x internal power header (12-19V) | 1x opt. battery header signal + power (SBM3) | 1x opt. CEC | 1x opt. SIM Card Slot
congatec embedded Controller	Multi-Stage Watchdog | non-volatile User Data Storage | Manufacturing and Board Information | Board Statistics | BIOS Setup Data Backup I²C bus (fast mode | 400 kHz | multi-master) | Power Loss Control
External Connectors (Frontpanel)	2x DisplayPort dp++ | Audio In | Line Out | 2x LAN RJ45 | 4x USB 3.0/2.0 | 1x PCIe x4 (via extension card) | 1x DC-In (external input)
Embedded BIOS	AMI Aptio® 2.X (UEFI) BIOS; SM-BIOS | BIOS Update | Logo Boot | Quiet Boot | HDD Password
Security	The conga-IC87 can be optionally equipped with a discrete "Trusted Platform Module" (TPM 1.2). 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 8 | Microsoft® Windows 7 | Linux | Microsoft® Windows® 7/8 embedded Standard
Power Consumption	Typ. application: tbd. | see manual for full details
Temperature:	Operating: 0 .. +60°C
Humidity Operating:	Operating: 10 - 90% r. H. non cond.
Size	170 x 170 mm (6.7" x 6.7")

conga-IC87 | Connectors



conga-IC87 | Block diagram



conga-IC87 | Order Information

Article	PN	Description
conga-IC87/i7-4650U	052201	Thin Mini-ITX board based on 4th Gen Intel® Core™ i7-4650U dual core processor with 1.7GHz, 4MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface
conga-IC87/i5-4300U	052202	Thin Mini-ITX board based on 4th Gen Intel® Core™ i5-4300U dual core processor with 1.9GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface
conga-IC87/i3-4010U	052203	Thin Mini-ITX board based on 4th Gen Intel® Core™ i3-4010U dual core processor with 1.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface
conga-IC87/2980U	052204	Thin Mini-ITX board based on Intel® Celeron® 2980U dual core processor with 1.6GHz, 2MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface
conga-IC87/i7-4650U KIT	052211	Thin Mini-ITX single kit box based on 4th Gen Intel® Core™ i7-4650U dual core processor with 1.7GHz, 4MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface. The single package kit includes IO shield, one SATA drive cable, one SATA power cable and a quick-start guide
conga-IC87/i5-4300U KIT	052212	Thin Mini-ITX single kit box based on 4th Gen Intel® Core™ i5-4300U dual core processor with 1.9GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface. The single package kit includes IO shield, one SATA drive cable, one SATA power cable and a quick-start guide
conga-IC87/i3-4010U KIT	052213	Thin Mini-ITX single kit box based on 4th Gen Intel® Core™ i3-4010U dual core processor with 1.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface
conga-IC87/2980U KIT	052214	Thin Mini-ITX single kit box based on Intel® Celeron® 2980U dual core processor with 1.6GHz, 2MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface. The single package kit includes IO shield, one SATA drive cable, one SATA power cable and a quick-start guide

Accessories

conga-IC97/CSA	052252	Active cooling solution for conga-IC87 and with 12V fan and Thin Mini-ITX height
conga-IC87/Retention Frame	052254	Retention frame for standard cooling (PN: 052252) for conga-IC87
conga-IC87/IO Shield-Standard	052256	IO shield for conga-IC87 with Standard Mini-ITX height
conga-IC87/IO Shield - Thin	052257	IO shield for conga-IC87 with Thin Mini-ITX height
DDR3L-SODIMM-1600 (2GB)	068755	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 2GB RAM
DDR3L-SODIMM-1600 (4GB)	068756	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 4GB RAM
DDR3L-SODIMM-1600 (8GB)	068757	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 8GB RAM
conga-Thin MITX/eDP to DP Adapter	052231	eDP to standard DisplayPort evaluation adapter for congatec Thin Mini-ITX boards
conga-Thin MITX/eDP to HDMI Adapter	052232	eDP to standard HDMI evaluation adapter for congatec Thin Mini-ITX boards
conga-Thin MITX/LVDS Adapter	052233	LVDS pin header evaluation adapter for congatec Thin Mini-ITX boards
PS65	10000145	65 Watt power supply, 19V, 3.42 A, plug 7.4x5.1x12.5mm
PS90	10000146	90 Watt power supply, 19V, 4.74 A, plug 7.4x5.1x12.5mm
cab-ThinMini-ITX-UART	14000121	UART cable with 9pin DSUB connector for congatec Thin Mini-ITX family
cab-ThinMini-ITX-eDP 1-1	14000129	eDP 1-1 cable for congatec Thin Mini-ITX family. Both sides are with 40pin ACES eDP connector plug.
cab-ThinMini-ITX-LVDS-OE	14000125	LVDS cable with open end for congatec Thin Mini-ITX family. Can be used also for eDP with open end.
cab-ThinMini-ITX-BKLT	14000127	Backlight cable for congatec Thin Mini-ITX family
cab-DP to HDMI Passive	14000128	Passive DisplayPort to HDMI cable
cab-ThinMini-ITX-USB20-Single	14000122	Single USB 2.0 cable for congatec Thin Mini-ITX family
cab-ThinMini-ITX-USB20-Twin	14000123	Dual USB 2.0 cable for congatec Thin Mini-ITX family
SATA III cable 30cm, straigth/straight	48000029	SATA III cable with 30cm length, shielded, end connectors straigth/straight
SATA III cable 30cm, down/straight	48000030	SATA III cable with 30cm length, shielded, end connectors down/straight
cab-ThinMini-ITX-SATA-Power	14000120	SATA power cable for congatec Thin Mini-ITX family. One end 15 pin SATA connector to to 3x15 pin SATA connector
LE910 Mini PCIe		4G / LTE Mini PCI Express card
HE910 Mini PCIe		3G / UMTS / HSPA+ Mini PCI Express card
SSD 256		256 GByte Intel® SSD Pro 2500 Series (16nm, MLC)
SSD 128		128 GByte Intel® SSD Pro 2500 Series (16nm, MLC)

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