INDUSTRIAL THIN MINI-ITX

conga-lC97

- Highest Performance Thin Mini-ITX board
- 5th Generation Intel® Core™ Mobile SOC U-Processors
- Improved Graphics Performance up to GT3 HD6000
- Wide Range Power Input 12-24 Volt
- congatec embedded Board Controller Features

Formfactor
Industrial Thin-Mini-ITX | 170 x 170 mm

CPU
- Intel® Core™ i7-5650U 2.2 GHz Dual Core
- Intel® Core™ i5-5350U 1.8 GHz Dual Core
- Intel® Core™ i3-5010U 2.1 GHz Dual Core
- Intel® Celeron® 3765U 1.9 GHz Dual Core

- Intel® Turbo Boost Technology
- Intel® Hyper-Threading Technology
- Intel® Advanced Vector Extensions 2.0
- Intel® Advanced Encryption Standard New Instructions
- Intel® AES- NI
- Integrated dual channel memory controller
- up to 25.6 GByte/sec.
- memory bandwidth
- Intel® HD Graphics 6000 series with dynamic frequency up to 1.1 GHz
- Intel® Clear Video HD Technology
- Intel® Virtualization Technology
- Intel® Trusted Execution Technology
- Intel® Streaming SIMD Extensions 4.2
- PCLMULQDQ Instruction
- Intel® Secure Key
- Intel® Transactional Synchronization Extensions

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

Graphics
Next Generation Intel® HD Graphics with OpenCL 2.0 | OpenGL 4.X and DirectX 11.1 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, 60G) | 1x SATA Power | 4x USB 2.0 | 1x 60D (x24 bit) | 1x Embedded DisplayPort (x4) | 1x Backlight (Power | control) | 1x Monitor OFF | 1x Surround | 1x Front Panel HD Audio | 1x Digital Microphone (SPDF) | 1x Internal stereo speaker | 1x Serial Port COM1 | opt. as xTalk | 1x Serial Port COM2 | 1x Feature connector - congatec custom (9 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 (12-24V) | 1x opt. battery header signal + power (SIBM3) | 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 | PC bus (fast mode) | 400 kHz | multi-mastered | 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-lC97 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 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-IC97 | Connectors

- Backlight
- LVDS 2x24 Bit
- eDP
- Monitor OFF
- SATA
- opt. CEC
- Front Panel
- Intrusion
- SYS FAN Control
- SYS FAN Control Power
- SATA Power
- CPU FAN Control Power
- CPU FAN Control
- USB 2.0
- SATA
- opt. SBM3 Battery Support Signal
- opt. SBM3 Battery Support Power
- Power
- MiniPCI Express / MSATA

- Feature
- 2x USB 2.0
- Panel Power
- Backlight Power
- ccTalk
- SODIMM DDR3L
- USB 2.0
- PCI Express x1/x4
- MiniPCI Express
- Digital Microphone
- internal stereo speaker
- Surround
- Front Panel HD Audio
- opt. SIM Card Slot
- COM 2
- COM 1

Converged I/O (Units)
- DC-In
- 2x DisplayPort
- 2x LAN
- 4x USB 2.0 / 3.0
- Audio

conga-IC97 | Block diagram
## Order Information

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<td>conga-IC97/i7-5650U</td>
<td>052501</td>
<td>Thin Mini-ITX board based on 5th Gen Intel® Core™ i7-5650U dual core processor with 2.2GHz, 4MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface</td>
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<tr>
<td>conga-IC97/i5-5350U</td>
<td>052502</td>
<td>Thin Mini-ITX board based on 5th Gen Intel® Core™ i5-5350U dual core processor with 1.8GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface</td>
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<td>conga-IC97/i3-5010U</td>
<td>052503</td>
<td>Thin Mini-ITX board based on 5th Gen Intel® Core™ i3-5010U dual core processor with 2.1GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface</td>
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<tr>
<td>conga-IC97/3765U</td>
<td>052504</td>
<td>Thin Mini-ITX board based on Intel® Celeron® 3765U dual core processor with 1.9GHz, 2MB L2 cache and 1600MT/s dual channel DDR3L SODIMM memory interface.</td>
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### Accessories

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<td>conga-IC87/CSA</td>
<td>052252</td>
<td>Active cooling solution for conga-IC97 and with 12V fan and Thin Mini-ITX height</td>
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<tr>
<td>conga-IC87/Retention Frame</td>
<td>0522245</td>
<td>Retention frame for standard cooling (PN: 052252) for conga-IC97</td>
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<tr>
<td>conga-IC87/OI Shield-Standard</td>
<td>052256</td>
<td>IO shield for conga-IC97 with Standard Mini-ITX height</td>
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<tr>
<td>conga-IC87/OI Shield - Thin</td>
<td>052257</td>
<td>IO shield for conga-IC97 with Thin Mini-ITX height</td>
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<tr>
<td>DDR3L-SODIMM-1600 (2GB)</td>
<td>068755</td>
<td>DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 2GB RAM</td>
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<tr>
<td>DDR3L-SODIMM-1600 (4GB)</td>
<td>068756</td>
<td>DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 4GB RAM</td>
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<tr>
<td>DDR3L-SODIMM-1600 (8GB)</td>
<td>068757</td>
<td>DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 8GB RAM</td>
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<td>conga-Thin MITX/eDP to DP Adapter</td>
<td>052231</td>
<td>eDP to standard DisplayPort evaluation adapter for congatec Thin Mini-ITX boards</td>
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<tr>
<td>conga-Thin MITX/LVDS Adapter</td>
<td>052232</td>
<td>LVDS pin header evaluation adapter for congatec Thin Mini-ITX boards</td>
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<tr>
<td>PS65</td>
<td>10000145</td>
<td>65 Watt power supply, 19V, 3.42 A, plug 7.4x5.1x12.5mm</td>
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<tr>
<td>PS90</td>
<td>10000146</td>
<td>90 Watt power supply, 19V, 4.74 A, plug 7.4x5.1x12.5mm</td>
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<td>cab-ThinMini-ITX-UART</td>
<td>14000012</td>
<td>UART cable with 9pin DSUB connector for congatec Thin Mini-ITX family</td>
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<td>cab-ThinMini-ITX-eDP 1-1</td>
<td>140000129</td>
<td>eDP 1:1 cable for congatec Thin Mini-ITX family. Both sides are with 40pin ACES eDP connector plug</td>
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<td>cab-ThinMini-ITX-LVDS-OE</td>
<td>140000125</td>
<td>LVDS cable with open end for congatec Thin Mini-ITX family. Can be used also for eDP with open end</td>
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<td>cab-ThinMini-ITX-BKLT</td>
<td>140000127</td>
<td>Backlight cable for congatec Thin Mini-ITX family</td>
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<tr>
<td>cab-DP to HDMI Passive</td>
<td>140000128</td>
<td>Passive DisplayPort to HDMI cable</td>
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<tr>
<td>cab-ThinMini-ITX-USB20-Single</td>
<td>140000122</td>
<td>Single USB 2.0 cable for congatec Thin Mini-ITX family</td>
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<tr>
<td>cab-ThinMini-ITX-USB20-Twin</td>
<td>140000123</td>
<td>Dual USB 2.0 cable for congatec Thin Mini-ITX family</td>
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<td>SATA III cable 30cm, straight/straight</td>
<td>48000029</td>
<td>SATA III cable with 30cm length, shielded, end connectors straight/straight</td>
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<tr>
<td>SATA III cable 30cm, down/straight</td>
<td>48000030</td>
<td>SATA III cable with 30cm length, shielded, end connectors down/straight</td>
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<tr>
<td>cab-ThinMini-ITX-SATA-Power</td>
<td>14000120</td>
<td>SATA power cable for congatec Thin Mini-ITX family. One end 15 pin SATA connector to to 3x15 pin SATA connector</td>
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<td>LEY10 Mini PCIe</td>
<td>3G / LTE Mini PCI Express card</td>
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<tr>
<td>HEY10 Mini PCIe</td>
<td>3G / UMTS / HSPA+ Mini PCI Express card</td>
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<tr>
<td>SSD 256</td>
<td>256 GByte Intel® SSD Pro 2500 Series (16m, MLC)</td>
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<tr>
<td>SSD 128</td>
<td>128 GByte Intel® SSD Pro 2500 Series (16m, MLC)</td>
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