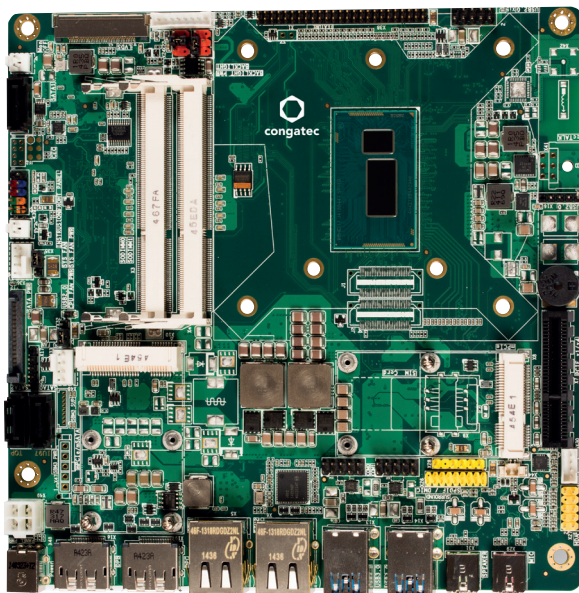


INDUSTRIAL THIN MINI-ITX

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 I ² C 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, straight/straight | 48000029 | SATA III cable with 30cm length, shielded, end connectors straight/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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