INDUSTRIAL THIN MINI-ITX
conga-IA3

- 3rd Generation Intel® Atom™ / Celeron® Processor
- Burst Technology
- Low Power 5 to 10 Watt TDP
- Enhanced Intel HD Graphics Generation 7
- Long life components for 24/7 embedded use

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

CPU
Intel® Atom™ E3845 1.91 GHz Quad Core 2 MB L2 Cache 10W TDP
Intel® Atom™ E3826 1.46 GHz Dual Core 1 MB L2 Cache 7W TDP
Intel® Celeron® J1900 2.42 GHz Quad Core 2 MB L2 Cache 10W TDP
Intel® Celeron® N2930 2.00 GHz Quad Core 2 MB L2 Cache 7.5W TDP

DRAM Memory
2x SODIMM sockets (dual channel DDR3L up to 1333 MT/s) to support a max. memory size of 8GB

Ethernet
Dual LAN Gbit / 100 Mbit / 10 Mbit; 2x Intel Gigabit Ethernet i210 controller (with AMT support)

Sound
High Definition Audio Interface | Realtek ALC 888S

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 1x DisplayPort DP++

Internal Connectors
1x PCI Express x1 Slot shared with mSATA/mPCIe | 1x mPCIe Full Size shared with mSATA | 1x mPCIe Half Size | 2x SATA (3G) | 1x mSATA (shared with SATA) | 1x SATA Power | 2x USB 3.0/2.0 | 2x USB 2.0 Header | 1x USB 2.0 internally | 1x LVDS (2x24 bit) | 1x Embedded DisplayPort (x4)
1x Backlight (Power | control) | 1x Front Panel HD Audio | 2x Serial Port COM1 (opt. as ccTALK) | 1x Feature connector - congatec custom (8 Bit General Purpose I/O) | 1x Frontpanel (Power Switch, LEDs, Reset) | 1x FAN CPU | 1x FAN System | 1x internal power header (12-19V)
1x opt. battery header signal + power (SBM3)

External Connectors
(Frontpanel)
1x DisplayPort DP++ | 1x VGA | 3.5mm audio jack (stereo out and mono in) | 2x LAN RJ45 | 2x USB 3.0/2.0 | 2x USB 2.0 | 1x DC-In (external input)

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-master | Power Loss Control

Embedded BIOS
AMI Aptio® 2.X (UEFI) BIOS | SM-BIOS | BIOS Update | Logo Boot | Quiet Boot | HDO Password

Security
The conga-IA3 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 SS | Power Supply 12V - 24V | 2 x FAN (CPU, system) monitored & controlled

Operating Systems
Microsoft® Windows 10 | Microsoft® Windows 10 IoT Enterprise | Microsoft® Windows 10 IoT Core | Microsoft® Windows 8
Microsoft® Windows 7 | Linux | Microsoft® Windows® 7/8 embedded Standard | Android | Yocto | MoonIsland / WindRiver IDP

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-IA3 | Connectors**

- Backlight
- 2x24 LVDS (Top Side)
- eDP (Bottom Side)
- Monitor OFF
- opt. SIM Card Slot
- 2x USB 3.0
- Mini PCIe/mSATA
- Front Panel
- Intrusion Header
- CPU Fan Control
- CPU Fan Power Control
- SYS FAN Control Power
- SATA Power
- SYS FAN Control
- 2x SATA
- opt. SBM3 Battery Support Signal
- opt. SBM3 Battery Support Power
- Internal Power
- Feature Connector
- 2x USB 2.0
- Panel Power Selector
- optional ccTalk
- Backlight Power Selector
- SODIMM DDR3L
- Buzzer
- PCIe (x1 or x4)
- SPDIF/DMIC
- MiniPCI Express
- Front Panel HD Audio
- Internal Speaker
- COM 1
- COM 0
- DC-In
- 4x USB 2.0 / 3.0
- 2x LAN
- VGA
- DP++
- Audio
- CMOS

**conga-IA3 | Block diagram**

![Block diagram of conga-IA3](image-url)

*The mSATA/mPCIe connector supports both mPCIe and mSATA devices. The devices are detected automatically.*

*Located at the bottom side.*

*Optional feature.*
conga-IA3 | Order Information

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<th>Description</th>
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<td>conga-IA3/E3845</td>
<td>052300</td>
<td>Thin Mini-ITX board based on Intel® Atom™ E3845 quad core processor with 1.91GHz, 2MB L2 cache and 1333MT/s dual channel DDR3L SODIMM memory interface.</td>
</tr>
<tr>
<td>conga-IA3/E3826</td>
<td>052301</td>
<td>Thin Mini-ITX board based on Intel® Atom™ E3826 dual core processor with 1.46GHz, 1MB L2 cache and 1066MT/s dual channel DDR3L SODIMM memory interface.</td>
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<tr>
<td>conga-IA3/J1900</td>
<td>052310</td>
<td>Thin Mini-ITX board based on Intel® Celeron® J1900 quad core processor with 2.00GHz, 2MB L2 cache and 1333MT/s dual channel DDR3L SODIMM memory interface.</td>
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<tr>
<td>conga-IA3/N2930</td>
<td>052311</td>
<td>Thin Mini-ITX board based on Intel® Celeron® N2930 quad core processor with 1.83GHz up to 2.00GHz, 2MB L2 cache and 1333MT/s dual channel DDR3L SODIMM memory interface. Thermal Design Power 7.5W.</td>
</tr>
<tr>
<td>conga-IA3/E3845 KIT</td>
<td>052320</td>
<td>Thin Mini-ITX single kit box based on Intel® Atom™ E3845 quad core processor with 1.91GHz, 2MB L2 cache and 1333MT/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.</td>
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<tr>
<td>conga-IA3/E3826 KIT</td>
<td>052321</td>
<td>Thin Mini-ITX single kit box based on Intel® Atom™ E3826 dual core processor with 1.46GHz, 1MB L2 cache and 1066MT/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.</td>
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<tr>
<td>conga-IA3/J1900 KIT</td>
<td>052320</td>
<td>Thin Mini-ITX single kit box based on Intel® Celeron® J1900 quad core processor with 2.00GHz, 2MB L2 cache and 1333MT/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.</td>
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<tr>
<td>conga-IA3/N2930 KIT</td>
<td>052331</td>
<td>Thin Mini-ITX single kit box based on Intel® Celeron® N2930 quad core processor with 1.83GHz up to 2.00GHz, 2MB L2 cache and 1333MT/s dual channel DDR3L SODIMM memory interface. Thermal Design Power 7.5W. The single package kit includes IO shield, one SATA drive cable, one SATA power cable and a quick-start guide.</td>
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Accessories

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<td>052355</td>
<td>Retention frame for standard cooling for conga-IA3</td>
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<tr>
<td>conga-IA3/OI Shield - Standard</td>
<td>052356</td>
<td>IO shield for conga-IA3 with Standard Mini-ITX height</td>
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<tr>
<td>conga-IA3/OI Shield - Thin</td>
<td>052357</td>
<td>IO shield for conga-IA3 with Thin Mini-ITX height</td>
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<tr>
<td>conga-IA3/CSP</td>
<td>052351</td>
<td>Passive cooling solution for conga-IA3 with Thin Mini-ITX height</td>
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<td>cab-ThinMini-ITX-SATA-Power</td>
<td>1400120</td>
<td>SATA power cable for congatec Thin Mini-ITX family. One end 15 pin SATA connector to 3x15 pin SATA connector</td>
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<tr>
<td>cab-ThinMini-ITX-UART</td>
<td>1400121</td>
<td>UART cable with 9pin DSUB connector for congatec Thin Mini-ITX family</td>
</tr>
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<td>cab-ThinMini-ITX-USB20-Single</td>
<td>1400122</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>1400123</td>
<td>Dual USB 2.0 cable for congatec Thin Mini-ITX family</td>
</tr>
<tr>
<td>cab-ThinMini-ITX-USB30-Single</td>
<td>1400124</td>
<td>Single USB 3.0 cable for congatec Thin Mini-ITX family</td>
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<tr>
<td>cab-ThinMini-ITX-USB30-Twin</td>
<td>1400125</td>
<td>Dual USB 3.0 cable for congatec Thin Mini-ITX family</td>
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<tr>
<td>cab-ThinMini-ITX-BKLT</td>
<td>1400126</td>
<td>Backlight cable for congatec Thin Mini-ITX family</td>
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<tr>
<td>cab-ThinMini-ITX-LVDS-IE</td>
<td>1400127</td>
<td>LVDS cable with open end for congatec Thin Mini-ITX family. Can be used also for eDP with open end</td>
</tr>
<tr>
<td>cab-ThinMini-ITX-eDP 1-1</td>
<td>1400128</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-DP to HDMI Passive</td>
<td>1400129</td>
<td>Passive DisplayPort to HDMI cable</td>
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<td>Dual USB 3.0 Slot Bracket</td>
<td>1400130</td>
<td>Dual USB 3.0 Slot Bracket for 19pin USB 3.0 motherboard header, 40cm length, blue color</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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<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/eDP to HDMI Adapter</td>
<td>052232</td>
<td>eDP to standard HDMI evaluation adapter for congatec Thin Mini-ITX boards</td>
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<tr>
<td>conga-Thin MITX/LVDS Adapter</td>
<td>052233</td>
<td>LVDS pin header evaluation adapter for congatec Thin Mini-ITX board</td>
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<tr>
<td>NB Power Supply; 65W, <a href="mailto:19V@3.42A">19V@3.42A</a>, FSP065-REBN2, Plug 7.4x5.1x12.5mm</td>
<td>10000145</td>
<td>NB Power Supply; 65W, <a href="mailto:19V@3.42A">19V@3.42A</a>, FSP065-REBN2, Plug 7.4x5.1x12.5mm</td>
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<td>NB Power Supply; 90W, <a href="mailto:19V@4.74A">19V@4.74A</a>, FSP090-DIEBN2, Plug 7.4x5.1x12.5mm</td>
<td>10000146</td>
<td>NB Power Supply; 90W, <a href="mailto:19V@4.74A">19V@4.74A</a>, FSP090-DIEBN2, Plug 7.4x5.1x12.5mm</td>
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<tr>
<td>2.5&quot; SSD, 128GB SATA III, Samsung</td>
<td>10000136</td>
<td>2.5&quot; SSD, 128GB Serial ATA interface of 6.0Gbps, NAND, Samsung PM851 Series, 0°C-70°C</td>
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<td>2.5&quot; SSD, 256GB SATA III, Samsung</td>
<td>10000137</td>
<td>2.5&quot; SSD, 256GB Serial ATA interface of 6.0Gbps, NAND, Samsung PM851 Series, 0°C-70°C</td>
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<td>2.5&quot; SSD, 60GB SATA III, Toshiba</td>
<td>10000138</td>
<td>2.5&quot; SSD, 60GB Serial ATA interface of 6.0Gbps, cMLC, Toshiba, 0°C-70°C</td>
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<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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<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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<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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