## INDUSTRIAL PICO-ITX
### conga-PA3

- Compact and complete for small Industry 4.0
- 3rd Generation Intel® Atom™ / Celeron® Processor
- Low Power 5 to 10 Watt TDP
- Enhanced Intel HD Graphics Generation 7
- Long life components for 24/7 embedded use
- Smallest SBC computing and connecting device
- Extended Temperature

---

### Formfactor
- pico-ITX Singleboard Computer | 100x72 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
- Other Variants by request

### DRAM Memory
- Single Channel up to 4GB onboard DDR3L with 1333 MHz

### Chipset
- Integrated in SoC

### Ethernet
- LAN Gbit / 100 Mbit / 10 Mbit | Intel Gigabit Ethernet i211 controller (i210 for industrial temperature)

### Sound
- High Definition Audio Interface* | Realtek ALC 8888-VD | 7.1-channel

### Graphics
- Next Generation Intel® HD Graphics

### Graphic Interfaces
- 1x 24-bit Dual Channel LVDS Interface (via eDP to LVDS converter P03460) | 1x DisplayPort DP++ | resolution up to 1920x1200 with 60Hz

### Internal Connectors
- 1x mPCIe Half Size | 1x mPCIe Half Size shared with mSATA | 1x SATA (3G) (no SATA power) | 2x USB 2.0
- 1x LVDS* 2x24bit | 1x Backlight power connector | 1x Line Out | 1x Mic In | 1x S/PDIF Out | 1x Power In (+12V)
- 1x COM (RS-232) | 1x Fan Connector | 1x Feature Connector | micro SD Card | MIPI-CSI 2.0

### External Connectors
- 1x DisplayPort DP++ | 1x LAN RJ45 | 2x USB 3.0 | 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
- I²C 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 | HDD Password

### Power Specification
- Power Supply 12V | 1 x FAN | RTC battery*

### 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

### Operating Temperature:
- Commercial: 0 .. +60°C
- Industrial: -40° + 85°C

### Humidity Operating:
- Operating: 10 .. 90% r. H. non cond.

### Size
- 100 x 72 mm (3.9” x 2.8”)

* see User-Manual for detailed informations
conga-PA3 | Connectors

- I2C
- MIPI-CSI 2.0
- GPIO
- USB
- Audio
- micro SD Card
- mPCIe / mSATA (half size)
- Buttons, LEDs
- SATA
- RTC battery
- Power input

---

conga-PA3 | Block diagram

---

**Intel Bay Trail SoC**

- Dual-Core 22nm Tri-gate Single/Dual Quad Core
- 2MB L2 Cache Shared By 2 Cores
- 64 Architecture
- SSE4.2
- AES-NI
- Thermal Mgmt.
- Virtualization (VT-x)
- 3D
- Multimedia Features
  - DisplayPort 1.2
  - Single Channel Low Power
  - HDMI 1.4 (3D, 4k)
  - embedded DP
  - Display Interfaces
  - Integrated I/O
  - SATA
  - High Definition Audio
  - USB 2.0
  - LPC Bus
  - PCIe
  - I/O Interfaces
  - GPIOs
  - USB 3.0 (I2C/Watchdog)
  - Buttons/LEDs
  - 3-wire
  - CPU FAN
  - Backlight

---

**Feature Connectors**

- Power IN (2-Pin Connector)
- +3.3V Battery
- SPDIF Out
- MIC
- Line Out
- +3.3V Battery
- Power IN
- DC Power Jack

---

**SoC TRANSACTION ROUTER**

- Memory Controller
- Single Channel
- Low Power
- Display Interfaces
- Integrated I/O
- SATA
- High Definition Audio
- USB 2.0
- LPC Bus
- PCIe
- I/O Interfaces
- GPIOs
- USB 3.0 (I2C/Watchdog)
- Buttons/LEDs
- 3-wire
- CPU FAN
- Backlight

---

**congates Board Controller**

- Micro SD Card
- SDIO
- SPI Flash
- RS232 Transceiver
- Serial Port

---

**LPC Bus**

- USB0
- USB3
- 2x USB3.0
- 2x USB 2.0
- PCIe
- Sata0
- Sata1
- PCIe0
- PCIe1

---

**OCL 1.2**

- MPEG-2
- OpenCL 1.2
- H.264
- OpenGL 3.0
- WMV9
- OpenGLES 2.0
- MJPEG
- DirectX 11

---

**INTEGRATED I/O**

- SPI
- I2C
- LPC Bus
- SDIO
- SPI Flash
- Micro SD Card
- MIPI-CSI
- MIPI-CSI 2.0
- UART
- SPI
- SDIO
- COM Port
- GPIOs
- LCD
- LVDS
- HDMI

---

**Notes:**

- The mSATA/mPCIe connector supports both mPCIe and mSATA devices. The devices are detected automatically.
- Industrial variants are equipped with Intel UCI controller.
- Revision B.x and later are equipped with a multiprotocol transceiver.
### conga-PA3 | Order Information

<table>
<thead>
<tr>
<th>Article</th>
<th>PN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>conga-PA3/E3845-4G</td>
<td>047700</td>
<td>pico-ITX board based on Intel® Atom™ E3845 quad core processor with 1.91GHz, 2MB L2 cache and 4GB 1333MT/s onboard memory.</td>
</tr>
<tr>
<td>conga-PA3/E3826-2G</td>
<td>047701</td>
<td>pico-ITX board based on Intel® Atom™ E3826 dual core processor with 1.46GHz, 1MB L2 cache and 2GB 1066MT/s onboard memory.</td>
</tr>
<tr>
<td>conga-PA3/i-E3845-4G</td>
<td>047720</td>
<td>pico-ITX board based on Intel® Atom™ E3845 quad core processor with 1.91GHz, 2MB L2 cache and 4GB 1333MT/s onboard memory. Extended temperature version -40°C to 85°C without audio functionality.</td>
</tr>
<tr>
<td>conga-PA3/i-E3826-2G</td>
<td>047721</td>
<td>pico-ITX board based on Intel® Atom™ E3826 dual core processor with 1.46GHz, 1MB L2 cache and 2GB 1066MT/s onboard memory. Extended temperature version -40°C to 85°C without audio functionality.</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Article</th>
<th>PN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>conga-PA3/HSP</td>
<td>047750</td>
<td>Heatspreader solution conga-PA3. All standoffs are with 2.7 bore hole.</td>
</tr>
<tr>
<td>conga-PA3/CSP</td>
<td>047753</td>
<td>Passive cooling solution for conga-PA3. Includes conga-PA3/HSP heatspreader and heat sink with 12mm fins. All standoffs are with 2.7mm bore hole.</td>
</tr>
<tr>
<td>17&quot; LVDS Panel G170EG01 V1</td>
<td>10000132</td>
<td>1280 x 1024 px</td>
</tr>
<tr>
<td>kab-LCD-Backlight-PA3</td>
<td>14000130</td>
<td>Backlight Cable from PA3 baseboard to LCD panel (+12V LCD) with harddrive Molex outbound connection for +12V/+5V volt devices.</td>
</tr>
<tr>
<td>PA3 - LVDS data cable</td>
<td>14000167</td>
<td>LVDS data cable only conga-PA3.</td>
</tr>
<tr>
<td>Lithium Coin Battery</td>
<td>46500015</td>
<td>Coin type Lithium battery for high temperature</td>
</tr>
</tbody>
</table>

### Cables

<table>
<thead>
<tr>
<th>Article</th>
<th>PN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>conga-PA3 Cable Kit</td>
<td>14000162</td>
<td>Cable Kit for conga-PA3 containing cab-Pico-ITX-USB2.0-Twin</td>
</tr>
<tr>
<td>cab-Pico-ITX-RS422</td>
<td>14000153</td>
<td>RS422 cable adapter for Pico-ITX, DSUB9 Male, 15 cm</td>
</tr>
<tr>
<td>cab-Pico-ITX-RS485</td>
<td>14000154</td>
<td>RS485 cable adapter for Pico-ITX, DSUB9 Male, 15 cm</td>
</tr>
<tr>
<td>cab-Pico-ITX-LVDS</td>
<td>14000167</td>
<td>LVDS data cable for Pico-ITX to connect LCD panel AUO G170EG01 V1 (Item# 10000132, Item name 17&quot; LVDS Panel G170EG01 V1)</td>
</tr>
<tr>
<td>cab-Pico-ITX-Power</td>
<td>14000172</td>
<td>Internal power cable for industrial versions of Pico-ITX, 15 cm</td>
</tr>
<tr>
<td>cab-Pico-ITX-Backlight</td>
<td>14000130</td>
<td>Backlight power cable for Pico-ITX to connect LCD panel AUO G170EG01 V1 (Item# 10000132, Item name 17&quot; LVDS Panel G170EG01 V1)</td>
</tr>
</tbody>
</table>