INDUSTRIAL PICO-ITX
conga-PA5

- 5th Generation Intel Atom®, Intel® Celeron® and Intel® Pentium® Processors
- Low Power CPUs 6 to 12 Watt TDP
- Enhanced Intel HD Graphics Generation 9
- Compact design for size-sensitive devices in harsh environments
- Long life components for 24/7 embedded use
- Two Intel® i210/211 Ethernet controllers allowing for enhanced industrial communication
- Extended Temperature variants
- On board TPM for enhanced security

Formfactor
pico-ITX Singleboard Computer | 100x72 mm

CPU
- Intel® Atom™ x7-E3950 2.00 GHz (Burst) | 1.6 GHz Clock | Quad Core | L2 cache 2MB | 12W TDP
- Intel® Atom™ x5-E3940 1.80 GHz (Burst) | 1.6 GHz Clock | Quad Core | L2 cache 2MB | 9.5W TDP
- Intel® Pentium® x5-E3930 1.80 GHz (Burst) | 1.3 GHz Clock | Dual Core | L2 cache 1MB | 6.5W TDP
- Intel® Celeron® N4200 2.50 GHz (Burst) | 1.1 GHz Clock | Quad Core | L2 cache 2MB | 6W TDP
- Intel® Celeron® N3350 2.40 GHz (Burst) | 1.1 GHz Clock | Dual Core | L2 cache 1MB | 6W TDP

DRAM Memory
- up to 4 Channels onboard LPDDR4 (V1.1) with up to 2400 MT/s | max. 8 GB

Chipset
- Integrated in SoC

Ethernet
- 2x LAN Gbit / 100 Mbit / 10 Mbit | Intel Gigabit Ethernet i211 controller (i210 for industrial temperature)

Sound
- High Definition Audio Interface | Cirrus Logic CS4207

Graphics
- Intel® Gen 9 HD Graphics with support for DirectX12 | OpenGL 4.3 | OpenCL 2.0 | OpenGLES 3.x | MPEG2 full HW acceleration with H.265/HEVC decoding and H.264 encoding | VP9 | PAWP 3.x | HDCP 1.4 | MVC and 2x independent display support in 4K (3840 x 2160 pix) @30 Hz or WQXGA (2560 x 1600 pix) @60 Hz

Graphic Interfaces
- 2x 18/24-bit Single/Dual Channel LVDS Interface (via eDP to LVDS converter PTN3460) | 1x DisplayPort DP++ | up to 4096x2160 @60Hz with eDP

Internal Connectors
- 1x miniPCIe or mSATA full size | 1x SATA (6G) (with auxiliary +5V power connector for 2.5" HDD)
- 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)
- 2x COM (RS232 / RS485 / RS422) | 1x Fan Connector | 3x Feature Connector | micro SD Card | MIPI-CSI 2.0

External Connectors (Frontpanel)
- 1x DisplayPort DP++ | 2x LAN RJ45 | 1x USB 3.0 Type C (with PD and DP++) | 2x USB 3.0 | 1x DC-In (optional for industrial variants)

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 | HDD Password

Security
- Integrated Intel® PTT (TPM 2.0). Infineon SLB9670 (SPI TPM 2.0)

Power Specification
- Power Supply 12V | RTC battery

Operating Systems
- Microsoft® Windows 10 | Microsoft® Windows 10 IoT Enterprise | Microsoft® Windows 10 IoT Core | Linux | Android

Operating Temperature:
- Operating: Commercial: 0 .. +60°C | Storage: Commercial: -40 .. +70°C
- Industrial: -40 + 85°C

Humidity Operating:
- Operating: 10 - 90% r. H. | Storage: 5 - 95% r.H.

Size
- 100 x 72 mm (3.9" x 2.8")

www.congatec.com
### Order Information

**Article** | **PN** | **Description**
--- | --- | ---
conga-PA5/E3950-8G | 048100 | pico-ITX board based on Intel® Atom™ x7-E3950 quad core processor with 2.00 GHz, 2MB cache and 8 GB 2400 MT/s onboard memory.
conga-PA5/E3940-4G | 048101 | pico-ITX board based on Intel® Atom™ x5-E3940 quad core processor with 1.80 GHz, 2MB cache and 4 GB 2133 MT/s onboard memory.
conga-PA5/E3930-4G | 048102 | pico-ITX board based on Intel® Atom™ x5-E3930 dual core processor with 1.80 GHz, 1MB cache and 4 GB 2133 MT/s onboard memory.
conga-PA5/i/E3950-8G | 048110 | pico-ITX board based on Intel® Atom™ x7-E3950 quad core processor with 2.00 GHz, 2MB cache and 8 GB 2400 MT/s onboard memory. Extended temperature version -40°C to 85°C.
conga-PA5/i/E3940-4G | 048111 | pico-ITX board based on Intel® Atom™ x5-E3940 quad core processor with 1.80 GHz, 2MB cache and 4 GB 2133 MT/s onboard memory. Extended temperature version -40°C to 85°C.
conga-PA5/i/E3930-4G | 048112 | pico-ITX board based on Intel® Atom™ x5-E3930 dual core processor with 1.80 GHz, 1MB cache and 4 GB 2133 MT/s onboard memory. Extended temperature version -40°C to 85°C.
conga-PA5/N4200-8G | 048120 | pico-ITX board based on Intel® Pentium® N4200 quad core processor with 2.30 GHz, 1MB cache and 4 GB 2400 MT/s onboard memory.
conga-PA5/N4200-4G | 048123 | Pico-ITX board based on Intel® Pentium® N4200 quad core processor with 1.5/2.5 GHz and 4GB 2400MT/s LPDDR4 onboard memory.
conga-PA5/N3350-4G | 048121 | pico-ITX board based on Intel® Celeron™ N3350 dual core processor with 2.40 GHz, 1MB cache and 4 GB 2400 MT/s onboard memory.

**Accessories** | **PN** | **Description**
--- | --- | ---
conga-PA5/HSP-T | 048150 | Heatspreader for Pico ITX board conga-PA5 (for boards with standard -non lidded- CPUs)
conga-PA5/i/HSP-T | 048151 | Heatspreader for Pico ITX board conga-PA5 (for boards with lidded CPUs -with integrated heat spreader)
conga-PA5/CSP-T | 048152 | Passive Cooling for Pico ITX board conga-PA5 (for boards with standard (non lidded) CPUs)
conga-PA5/i/CSP-T | 048153 | Passive Cooling for Pico ITX board conga-PA5 (for boards with lidded CPUs -with integrated heat spreader)
Lithium Coin Battery | 46500015 | Coin type Lithium battery for high temperature | Includes wires and connector, 3M VHB tape, battery is covered by PVC heat shrink tube | nominal capacity: 255 mAh | temperature range: -40 to +85°C

This Datasheet should be read in conjunction with "Errata sheet - congatec xA5 designs", available in the document section of congatec's webportal.