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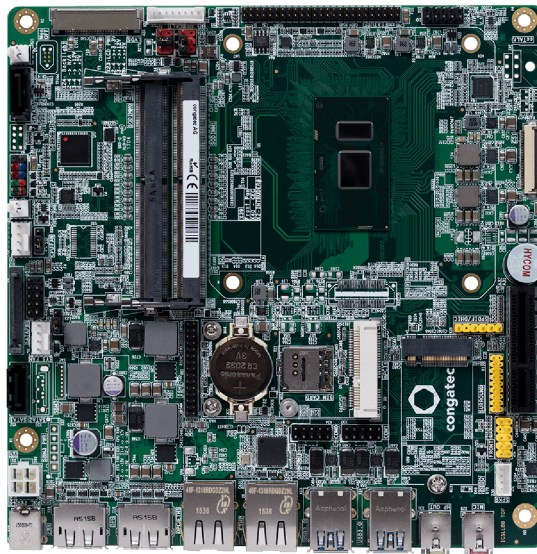


Datasheet

Congatec

conga-IC175

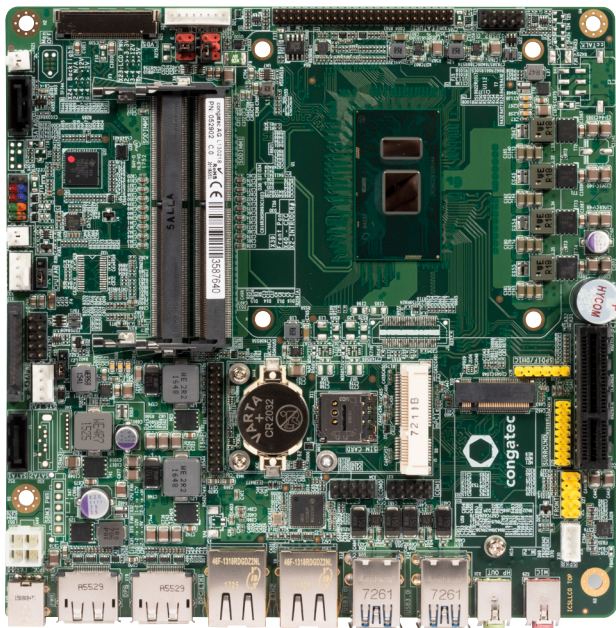
Mini-ITX Embedded Motherboard
with 7. Gen. Intel® Core and Celeron U Processors



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INDUSTRIAL THIN MINI-ITX

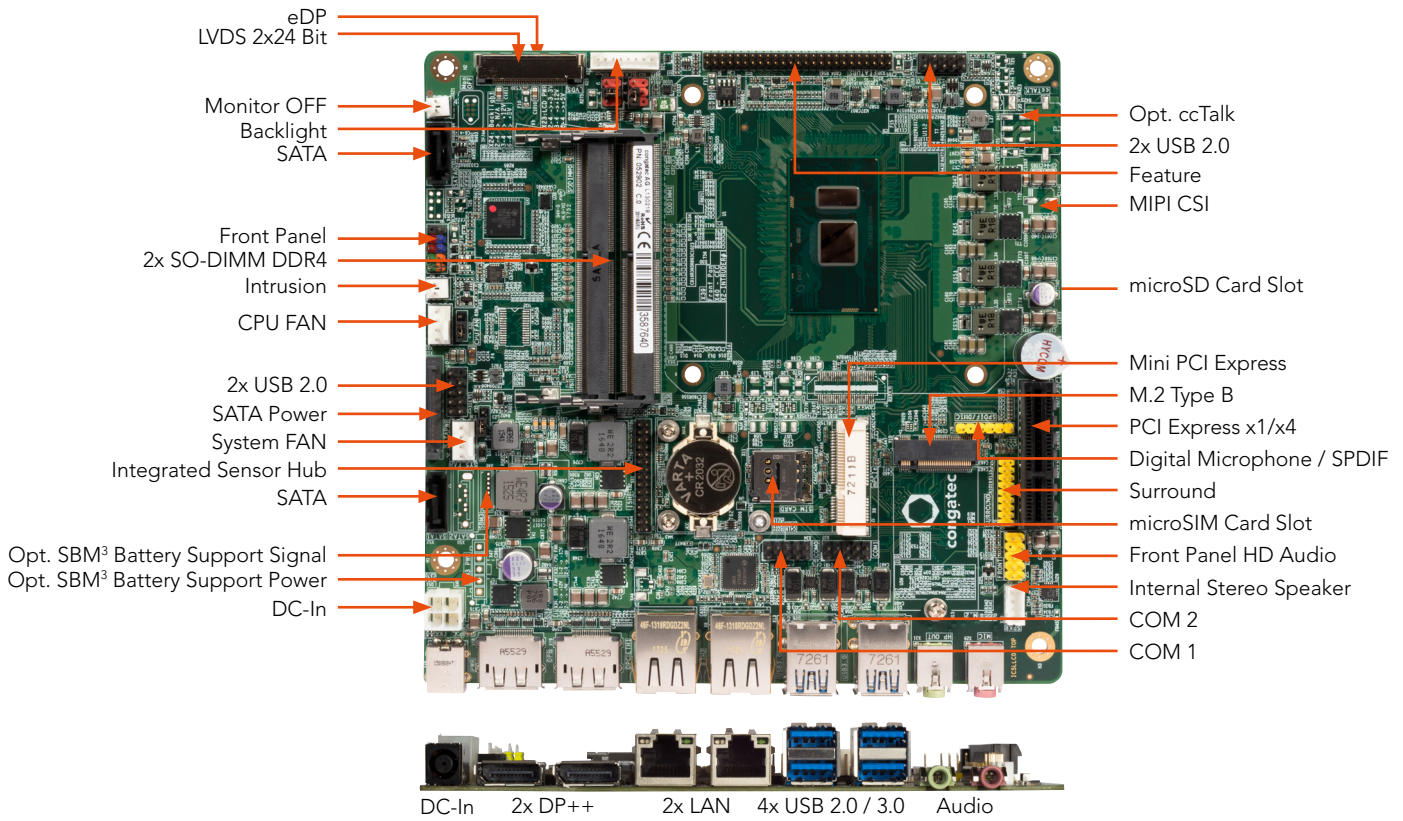
conga-IC175



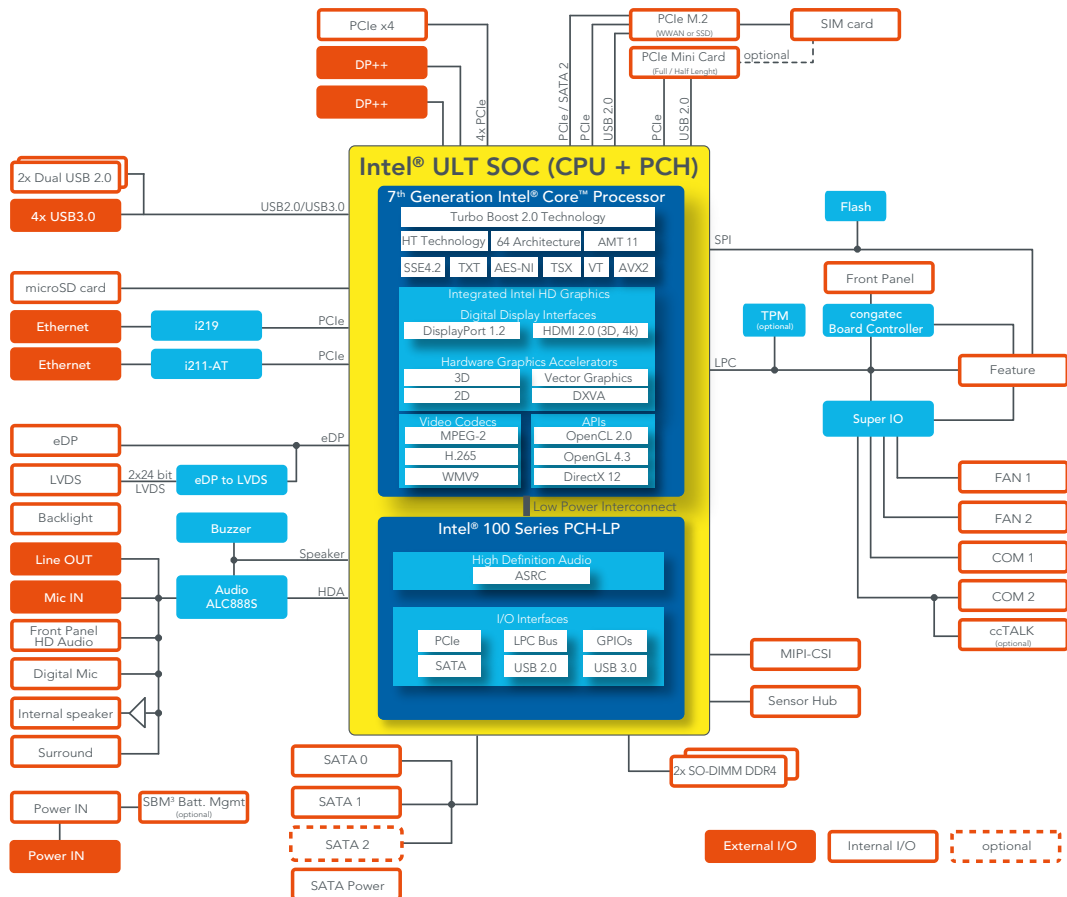
- Highest Performance Thin Mini-ITX board
- 7th Generation Intel® Core™ Mobile SOC U-Processors
- Improved Graphics Performance with HD600 Series
- Ready for Intel® Optane™ memory technology on M.2
- Wide Range Power Input 12-24 Volt
- congatec embedded Board Controller Features

Formfactor	Industrial Thin Mini-ITX 170 x 170 x 20 mm ³						
CPU	Intel® Core™ i7-7600U	2.8 GHz Dual Core	Turbo Boost 3.9 GHz	4 MB Cache	15W TDP	7.5W cTDP	Intel® HD Graphics 620
	Intel® Core™ i5-7300U	2.6 GHz Dual Core	Turbo Boost 3.5 GHz	3 MB Cache	15W TDP	7.5W cTDP	Intel® HD Graphics 620
	Intel® Core™ i3-7100U	2.4 GHz Dual Core		3 MB Cache	15W TDP	7.5W cTDP	Intel® HD Graphics 620
	Intel® Celeron® 3965U	2.2 GHz Dual Core		2 MB Cache	15W TDP	10W cTDP	Intel® HD Graphics 610
	Intel® Turbo Boost Technology Intel® Hyper-Threading Technology (HT) Intel® Advanced Vector Extensions 2.0 (AVX2) Intel® Advanced Encryption Standard New Instructions (AES-NI) Integrated dual channel memory controller up to 34.1 GByte/sec. memory bandwidth Integrated Intel® HD Graphics 600 series with dynamic frequency up to 1.15 GHz Intel® Clear Video HD Technology Intel® Virtualization Technology (VT) Intel® Trusted Execution Technology (TXT) Intel® Streaming SIMD Extensions 4.2 (SSE4.2) PCLMULQDQ Instruction Intel® Secure Key Intel® Transactional Synchronization Extensions (TSX)						
DRAM Memory	Support for 2x SO DIMM Socket (dual channel DDR4 up to 2133 MT/s) max. 2x 16 GByte						
Ethernet	Dual LAN Gbit / 100 Mbit / 10 Mbit; 1x Intel Gigabit Ethernet PHY i219LM (with AMT support); 1x Intel Gigabit Ethernet Controller i211 (i210 optional)						
Sound	High Definition Audio Interface Realtek ALC 888S 7.1-channel						
Graphics	Next gen Intel® HD Graphics with OpenCL 2.0 OpenGL 4.X and DirectX12 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						
Graphic Interfaces	1x 24-bit Dual Channel LVDS Interface or eDP (x4) and 2x DisplayPort (DP++)						
Internal Connectors	1x PCIe x4 slot (gen.3) 1x full/half-size Mini PCIe slot M.2 key B 2242/3042 connector (2x PCIe lanes for Intel® Optane™ key) 3x SATA (6G), one shared with M.2 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 MIC or S/PDIF 1x internal stereo speaker 2x serial port (COM2 opt. as ccTALK) 1x feature connector (8 Bit general purpose I/O) connector for Integrated Sensor Hub 1x front panel (power switch, LEDs, reset) 1x intrusion (case open) 1x fan CPU 1x fan system 1x internal power header (12-24 V) 1x CEC 1x microSIM card slot 1x microSD card slot 1x opt. battery header signal + power (SBM3) 1x I ² C Bus						
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 (Rearpanel)	2x DisplayPort DP++ Audio In Line Out 2x LAN RJ45 4x USB 3.0/2.0 1x DC-In (12-24 V)						
Embedded BIOS	AMI Aptio® 2.X (UEFI) BIOS; SM-BIOS BIOS Update Logo Boot Quiet Boot HDD Password						
Security	Discrete "Trusted Platform Module" (TPM 2.0) on board						
Power Specification	Power Management ACPI S3/S4/DeepSx Wake on time from S5 Power Supply 12-24 V 2 x fan (CPU / system) monitored & controlled						
Operating Systems	Microsoft® Windows 10 (64bit only) Microsoft® Windows 10 IoT Enterprise (64bit only) Linux						
Power Consumption	See manual for full details						
Temperature	Operating Temperature: 0 to +60°C			Storage Temperature: -20 to +70°C			
Humidity	Operating: 10 to 90% r. H. non cond.			Storage: 5 to 95% r. H. non cond.			
Size	170 x 170 x 20 mm ³						

conga-IC175 | Connectors



conga-IC175 | Block diagram



conga-IC175 | Order information

Article	PN	Description
conga-IC175/i7-7600U	052903	Thin Mini-ITX board based on 7 th Gen Intel® Core™ i7-7600U dual core processor 2.8 GHz, 4 MB cache, 2133 MT/s dual channel DDR4 SODIMM memory interface
conga-IC175/i5-7300U	052900	Thin Mini-ITX board based on 7 th Gen Intel® Core™ i5-7300U dual core processor 2.6 GHz, 3 MB cache, 2133 MT/s dual channel DDR4 SODIMM memory interface
conga-IC175/i3-7100U	052901	Thin Mini-ITX board based on 7 th Gen Intel® Core™ i3-7100U dual core processor 2.4 GHz, 3 MB cache, 2133 MT/s dual channel DDR4 SODIMM memory interface
conga-IC175/3965U	052902	Thin Mini-ITX board based on 7 th Gen Intel® Celeron® 3965U dual core processor 2.2 GHz, 2 MB cache, 2133 MT/s dual channel DDR4 SODIMM memory interface

Accessories	PN	Description
conga-IC87/CSA	052252	Active cooling solution for conga-IC87/IC97/IC170/IC175 and with 12V fan and Thin Mini-ITX height
conga-IC87/Retention Frame	052254	Retention frame for standard cooling (PN: 052252) for conga-IC87/IC97/IC170/IC175
conga-IC175 IO Shield Standard Size	052751	IO shield with Standard Mini-ITX height for conga-IC175
conga-IC175 IO Shield Thin Size	052752	IO shield with Thin Mini-ITX height for conga-IC175
DDR4-SODIMM-2400 (4GB)	068790	4 GByte DDR4 SODIMM memory module 2400 MT/s
DDR4-SODIMM-2400 (8GB)	068791	8 GByte DDR4 SODIMM memory module 2400 MT/s
DDR4-SODIMM-2400 (16GB)	068792	16 GByte DDR4 SODIMM memory module 2400 MT/s
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
Power Supply 65Watt	10000145	65 Watt power supply, 19V, 3.42 A, plug 7.4x5.1x12.5mm
Power Supply 90Watt	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



Aluminum cooler with fan protection for optimized air flow
PN 052252



Bottom view with phase change material
PN 052252



Solid retention frame to be mounted at the bottom side of the board
PN 052254

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