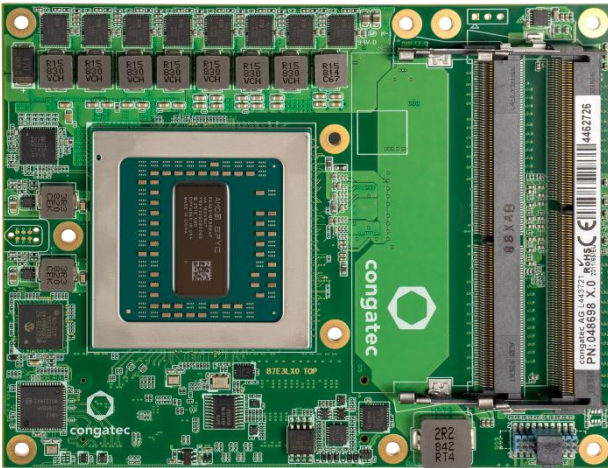


# SERVER-CLASS EMBEDDED PERFORMANCE

## conga-B7E3



- COM Express Type 7
- AMD EPYC™ Embedded 3000 Series up to 16 Cores, 32MB Cache and 30..100W TDP
- 4x 10 Gigabit Ethernet KR Interface
- Up to 32 PCI Express generation 3 lanes
- Industrial grade variant
- Optional Onboard NVMe SSD up to 1 TB capacity

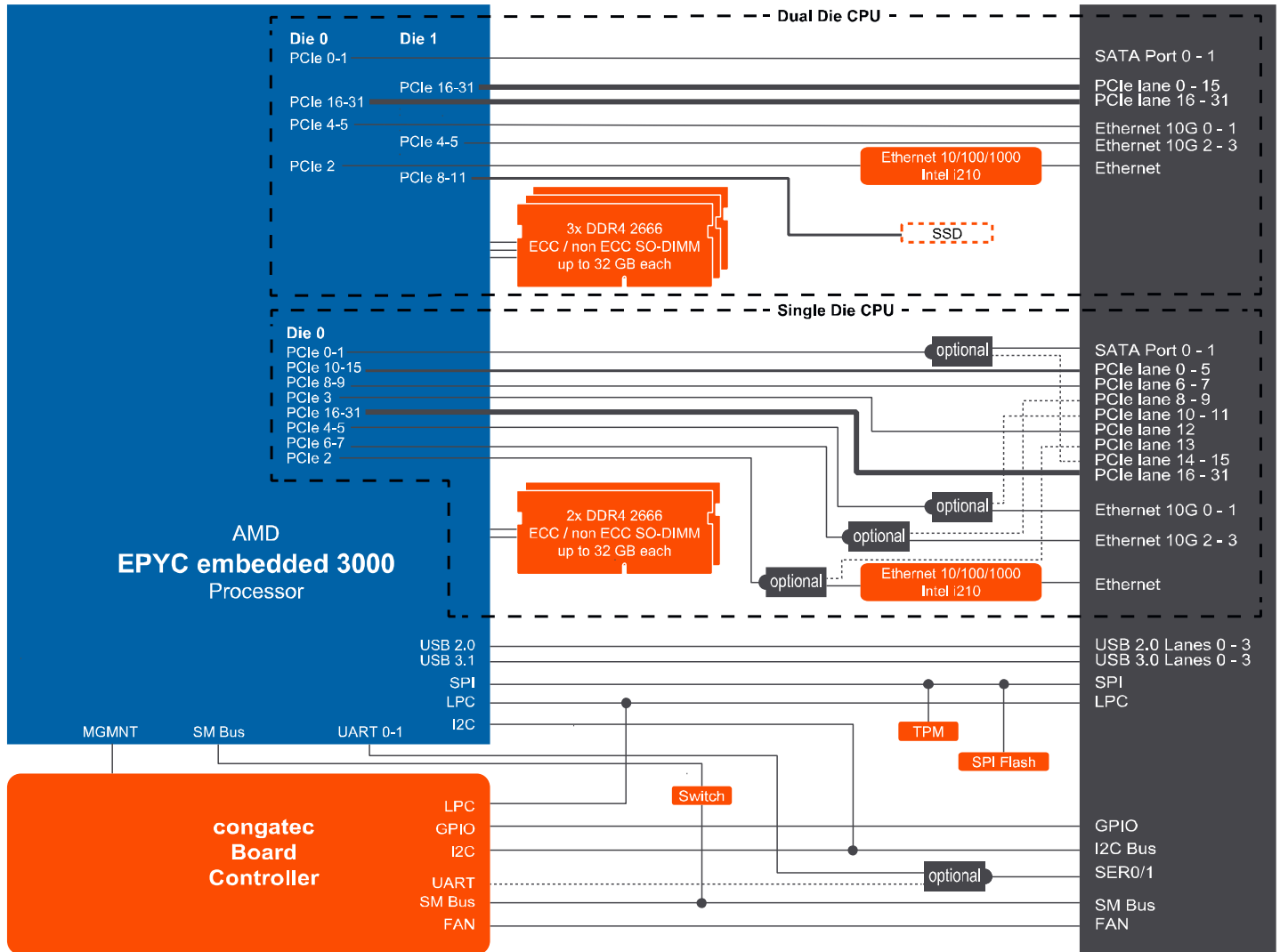


<b>Formfactor</b>	COM Express® Rev. 3.0, Basic Formfactor (95 x 125 mm), Type 7 Connector Pinout																																															
<b>CPU</b>	<p><b>Commercial Versions</b></p> <table border="1"> <tr> <td>AMD EPYC Embedded 3000 Model 3451</td> <td>16 Cores / 32 Threads</td> <td>Dual Die</td> <td>2.1 / 3.0 GHz</td> <td>32 MB cache</td> <td>100W TDP</td> </tr> <tr> <td>AMD EPYC Embedded 3000 Model 3351</td> <td>12 Cores / 24 Threads</td> <td>Dual Die</td> <td>1.9 / 3.0 GHz</td> <td>32 MB cache</td> <td>80W TDP</td> </tr> <tr> <td>AMD EPYC Embedded 3000 Model 3251</td> <td>8 Cores / 16 Threads</td> <td>Single Die</td> <td>2.5 / 3.1 GHz</td> <td>16 MB cache</td> <td>55W TDP</td> </tr> <tr> <td>AMD EPYC Embedded 3000 Model 3201</td> <td>8 Cores / 8 Threads</td> <td>Single Die</td> <td>1.5 / 3.1 GHz</td> <td>16 MB cache</td> <td>30W TDP</td> </tr> <tr> <td>AMD EPYC Embedded 3000 Model 3151</td> <td>4 Cores / 8 Threads</td> <td>Single Die</td> <td>2.7 / 2.9 GHz</td> <td>16 MB cache</td> <td>45W TDP</td> </tr> <tr> <td>AMD EPYC Embedded 3000 Model 3101</td> <td>4 Cores / 4 Threads</td> <td>Single Die</td> <td>2.1 / 2.9 GHz</td> <td>8 MB cache</td> <td>35W TDP</td> </tr> </table> <p><b>Industrial Versions</b></p> <table border="1"> <tr> <td>AMD EPYC Embedded 3000 Model 3255</td> <td>8 Cores / 16 Threads</td> <td>Single Die</td> <td>2.5 / 3.1 GHz</td> <td>32 MB cache</td> <td>55W TDP</td> </tr> </table>						AMD EPYC Embedded 3000 Model 3451	16 Cores / 32 Threads	Dual Die	2.1 / 3.0 GHz	32 MB cache	100W TDP	AMD EPYC Embedded 3000 Model 3351	12 Cores / 24 Threads	Dual Die	1.9 / 3.0 GHz	32 MB cache	80W TDP	AMD EPYC Embedded 3000 Model 3251	8 Cores / 16 Threads	Single Die	2.5 / 3.1 GHz	16 MB cache	55W TDP	AMD EPYC Embedded 3000 Model 3201	8 Cores / 8 Threads	Single Die	1.5 / 3.1 GHz	16 MB cache	30W TDP	AMD EPYC Embedded 3000 Model 3151	4 Cores / 8 Threads	Single Die	2.7 / 2.9 GHz	16 MB cache	45W TDP	AMD EPYC Embedded 3000 Model 3101	4 Cores / 4 Threads	Single Die	2.1 / 2.9 GHz	8 MB cache	35W TDP	AMD EPYC Embedded 3000 Model 3255	8 Cores / 16 Threads	Single Die	2.5 / 3.1 GHz	32 MB cache	55W TDP
AMD EPYC Embedded 3000 Model 3451	16 Cores / 32 Threads	Dual Die	2.1 / 3.0 GHz	32 MB cache	100W TDP																																											
AMD EPYC Embedded 3000 Model 3351	12 Cores / 24 Threads	Dual Die	1.9 / 3.0 GHz	32 MB cache	80W TDP																																											
AMD EPYC Embedded 3000 Model 3251	8 Cores / 16 Threads	Single Die	2.5 / 3.1 GHz	16 MB cache	55W TDP																																											
AMD EPYC Embedded 3000 Model 3201	8 Cores / 8 Threads	Single Die	1.5 / 3.1 GHz	16 MB cache	30W TDP																																											
AMD EPYC Embedded 3000 Model 3151	4 Cores / 8 Threads	Single Die	2.7 / 2.9 GHz	16 MB cache	45W TDP																																											
AMD EPYC Embedded 3000 Model 3101	4 Cores / 4 Threads	Single Die	2.1 / 2.9 GHz	8 MB cache	35W TDP																																											
AMD EPYC Embedded 3000 Model 3255	8 Cores / 16 Threads	Single Die	2.5 / 3.1 GHz	32 MB cache	55W TDP																																											
<b>DRAM</b>	Up to 3 SO-DIMM sockets for DDR4 memory modules up to 32 GByte each (96 GByte total) with 2666 MT/s ECC and non-ECC supported																																															
<b>Chipset</b>	Integrated in SoC																																															
<b>Ethernet</b>	4x 10GbE with KR interface support 1x Gigabit Ethernet																																															
<b>I/O Interfaces</b>	32x PCI Express™ Gen 3.0 lanes max.   4x USB 3.1 Gen 1   4x USB 2.0   2x SATA III (6Gb/s)   LPC   SPI   2x UART   SMBus																																															
<b>Storage</b>	Up to 1TByte onboard NVMe storage																																															
<b>congatec Board Controller</b>	Multi Stage Watchdog   non-volatile User Data Storage   Manufacturing and Board Information   Board Statistics I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master)   Power Loss Control   Hardware Health Monitoring   POST Code redirection																																															
<b>Embedded BIOS Features</b>	OEM Customization   Flash Update   based on AMI Aptio UEFI																																															
<b>Security</b>	Trusted Platform Module (TPM 2.0), Secure Root of Trust, Secure Memory Encryption, Secure Encrypted Virtualization																																															
<b>Power Management</b>	ACPI 5.0 with battery support Operating Systems																																															
<b>Operating Systems</b>	Windows 10 (64 Bit)   Windows Server 2016 (64 Bit)   Linux (Ubuntu 18.04, Ubuntu 19.04, Fedora 30) 64 Bit																																															
<b>Power Consumption</b>	See user's guide for full details																																															
<b>Temperature</b>	Industrial: Operating: -40 to +85°C		Storage: -40 to +85°C		Commercial: Operating: 0 to +60°C Storage: -40 to +85°C																																											
<b>Extended Temperature</b>	Screening service on request:		-25 to +80°C (burn-in & cold-soak)		-40 to +85°C (burn-in & cold-soak)																																											
<b>Humidity</b>	Operating: 10 - 90% r. H. non cond.		Storage: 5 - 95% r. H. non cond.																																													
<b>Size</b>	95 x 125 mm (3.74" x 4.92")																																															

# conga-B7E3 | Block diagram

conga-B7E3

COM Express Rev. 3.0, Basic Size, Type 7 Pinout



## conga-B7E3 | Order Information – COM Express® Module

Article	PN	Description
conga-B7E3/3451	048600	COM Express Type 7 Basic module based on AMD embedded EPYC 3451 16-core processor (dual die) with 2.15GHz up to 3.0 GHz turbo boost, 32MB L3 cache and quad channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/3351	048602	COM Express Type 7 Basic module based on AMD embedded EPYC 3351 12-core processor (dual die) with 1.9GHz up to 3.0 GHz turbo boost, 32MB L3 cache and quad channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/i-3255	048604	COM Express Type 7 Basic module based on AMD embedded EPYC 3255 8-core processor (single die) with 2.5GHz up to 3.1 GHz turbo boost, 16MB L3 cache and dual channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/3251	048605	COM Express Type 7 Basic module based on AMD embedded EPYC 3251 8-core processor (single die) with 2.5GHz up to 3.1 GHz turbo boost, 16MB L3 cache and dual channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/3201	048606	COM Express Type 7 Basic module based on AMD embedded EPYC 3201 8-core processor (single die) with 1.5GHz up to 3.1 GHz turbo boost, 16MB L3 cache and dual channel DDR4 2133 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/3151	048607	COM Express Type 7 Basic module based on AMD embedded EPYC 3151 4-core processor (single die) with 2.7GHz up to 2.9 GHz turbo boost, 16MB L3 cache and dual channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).
conga-B7E3/3101	048608	COM Express Type 7 Basic module based on AMD embedded EPYC 3101 4-core processor (single die) with 2.1GHz up to 2.9 GHz turbo boost, 16MB L3 cache and dual channel DDR4 2666 MT/s memory interface (formerly Snowy Owl).

## conga-B7E3 | Order Information – Accessory

Article	PN	Description
conga-B7E3/CSA-HP-B	048650	Standard active cooling solution for high performance COM Express Type 7 module conga-B7E3 with 4x heat pipes, 14mm fins, 27.4mm overall cooler height and integrated 12V PWN control fan. All stand-offs are with diameter 2.7mm bore hole. Suitable for all single die variants.
conga-B7E3/CSA-HP-T	048651	Standard active cooling solution for high performance COM Express Type 7 module conga-B7E3 with 4x heat pipes, 14mm fins, 27.4mm overall cooler height and integrated 12V PWN control fan. All stand-offs are with M2.5x0.45 threaded hole. Suitable for all single die variants.
conga-B7E3/HSP-HP-B	048652	Standard heat spreader for high performance COM Express Type 7 module conga-B7E3 with integrated heat pipes. All stand-offs are bore hole. Suitable for all single die variants.
conga-B7E3/HSP-HP-T	048653	Standard heat spreader for high performance COM Express Type 7 module conga-B7E3 with integrated heat pipes. All stand-offs are M2.5 threaded. Suitable for all single die variants.
conga-B7E3/SP4-HSP-HP-B	048656	Standard heat spreader for high performance COM Express Type 7 module conga-B7E3 with integrated heat pipes. All stand-offs are bore hole. Suitable for all dual die variants.
conga-B7E3/SP4-HSP-HP-T	048657	Standard heat spreader for high performance COM Express Type 7 module conga-B7E3 with integrated heat pipes. All stand-offs are M2.5 threaded. Suitable for all dual die variants.
conga-B7E3/HPA	048660	Heat pipe Adapter for conga-B7E3 COM Express Type 7 module. This adapter can be used in combination with standard 8 mm heat pipes to optimize heat distribution. Suitable for all single die variants.
conga-B7E3/HPA SP4	048662	Heat pipe Adapter for conga-B7E3 COM Express Type 7 module. This adapter can be used in combination with standard 8 mm heat pipes to optimize heat distribution. Suitable for all dual die variants.
DDR4-SODIMM-2666 (4GB)	067780	DDR4 SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 (8GB)	067781	DDR4 SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 (16GB)	067782	DDR4 SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 (32GB)	068806	DDR4 SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2666 ECC (4GB)	067783	DDR4 ECC SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 ECC (8GB)	067784	DDR4 ECC SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 ECC (16GB)	067785	DDR4 ECC SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 ECC (32GB)	068805	DDR4 ECC SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2666 (4GB) / i-temp	068819	Industrial DDR4 SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 (8GB) / i-temp	068820	Industrial DDR4 SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 (16GB) / i-temp	068821	Industrial DDR4 SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 (32GB) / i-temp	068807	Industrial DDR4 SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2666 ECC (4GB) / i-temp	068822	Industrial DDR4 ECC SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 ECC (8GB) / i-temp	068823	Industrial DDR4 ECC SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 ECC (16GB) / i-temp	068824	Industrial DDR4 ECC SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 ECC (32GB) / i-temp	068808	Industrial DDR4 ECC SODIMM memory module with 2666 MT/s and 32GB RAM
conga-X7EVAL	065420	Evaluation Carrier Board for COM Express Type 7 modules with up to four 10GbE SFP+ fiber/copper ports implemented via Intel Cortina 10GbE Phy's. The carrier features an Aspeed AST2500 Board Management Controller (BMC).

© 2020 congatec AG. All rights reserved.

All data is for information purposes only. Although all the information contained within this document is carefully checked, no guarantee of correctness is implied or expressed. Product names, logos, brands, and other trademarks featured or referred are the property of their respective trademark holders. These trademark holders are not affiliated with congatec AG. Rev. September 11, 2020 BAN