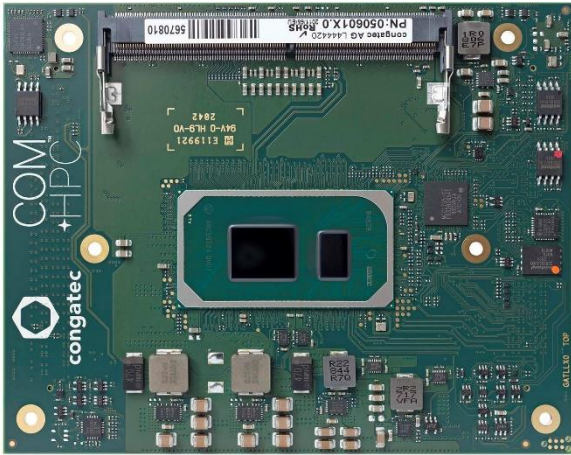


# 11<sup>TH</sup> GEN INTEL® CORE™ PROCESSORS

## conga-HPC/cTLU



- Embedded/Industrial use condition
- Extended temperature options available
- PCI Express Gen 4
- Integrated high performance Xe (Gen 12) graphics with 96 EU
- AI/DL Instruction Sets including VNNI

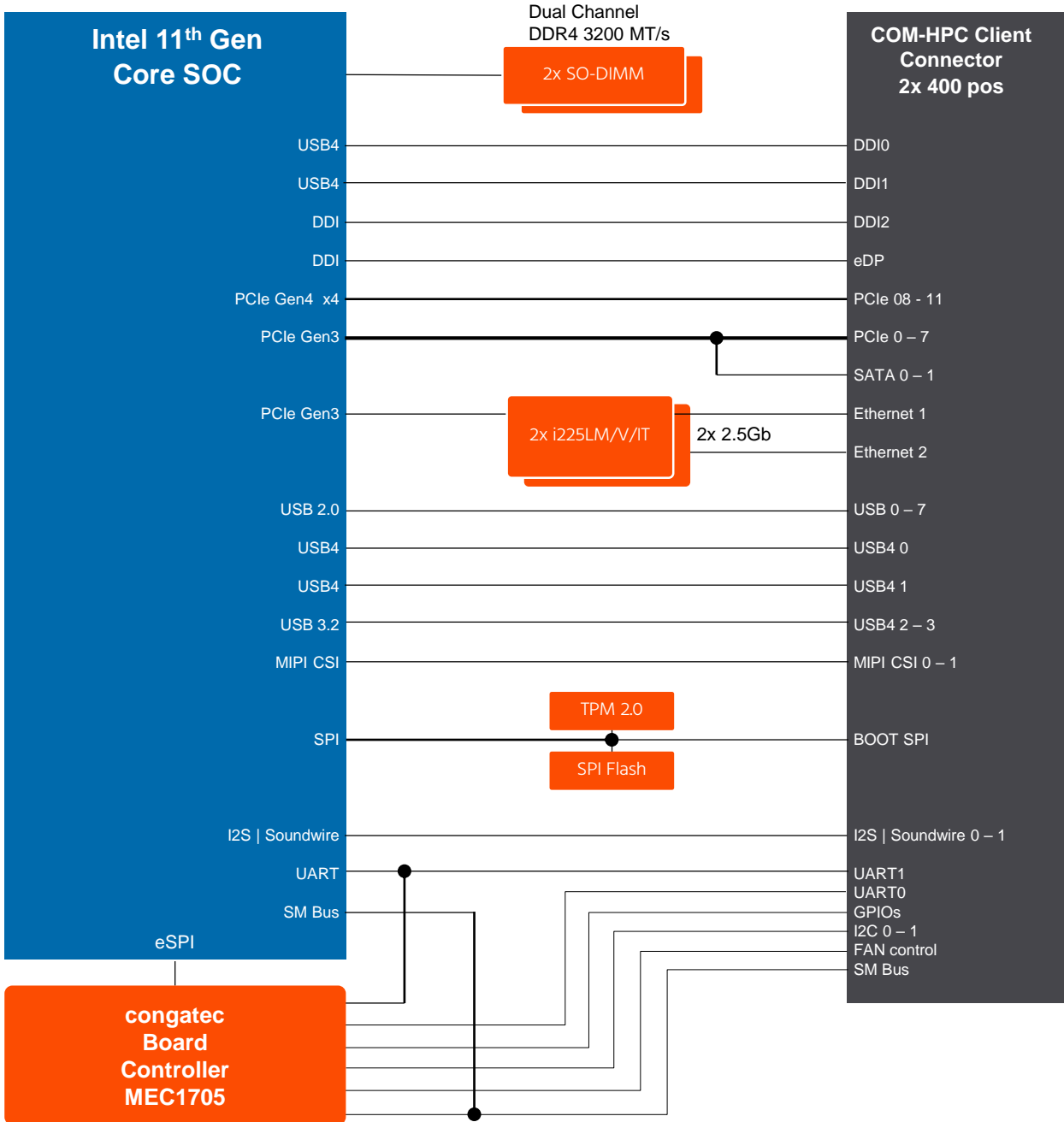
COM+HPC®

### Form Factor

COM-HPC, Size A (95 x 120 mm), Client Connector Pinout

CPU	Processor	Cores/Threads	Base Frequency/max. Turbo	TDP	Graphics	Intel Use Condition
	Core™ i7-1185G7E	4C/8T	1.80 GHz / 4.40 GHz	12-28W	96EU	Embedded Broad Market
	Core™ i5-1145G7E	4C/8T	1.50 GHz / 4.40 GHz	12-28W	80EU	Embedded Broad Market
	Core™ i3-1115G4E	2C/4T	2.20 GHz / 3.90 GHz	12-28W	48EU	Embedded Broad Market
	Celeron 6305E	2C/2T	1.80 GHz / --	15W	48EU	Embedded Broad Market
	Core™ i7-1185GRE	4C/8T	1.80 GHz / 4.40 GHz	12-28W	96EU	Industrial
	Core™ i5-1145GRE	4C/8T	1.50 GHz / 4.10 GHz	12-28W	80EU	Industrial
	Core™ i3-1115GRE	2C/4T	2.20 GHz / 3.90 GHz	12-28W	48EU	Industrial
DRAM	Up to 2 SO-DIMM sockets for DDR4 memory modules up to 32 GByte each (64 GByte total) with 3200 MT/s					
Graphics	Integrated Xe (Gen 12) graphics engine with up to 96 EU (Execution Units)   Supporting 4 independent display units (4x 4k/2x 8K)   Enhanced media (AV1/12b) with up to 2 Vdbox   Next Gen IPU6 with DPHY2.1   HDMI 2.0/2.1   DP 1.4					
Display	3x DP/HDMI/DP++   1x eDP					
Ethernet	2x 2.5 GbE TSN Ethernet via Intel® i225					
I/O Interfaces	4x PCIe Gen4   8x PCIe Gen3 2x USB 4.0   2x USB 3.2   8x USB 2.0 2x SATA III (6Gb/s)   SPI   2x UART   12x GPIO   2x MIPI-CSI					
Audio	1x I2S   2x SoundWire					
congatec Board controller	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					
Embedded BIOS Feature	AMI Aptio® UEFI firmware   32 Mbyte serial SPI with congatec Embedded BIOS feature   OEM Logo   OEM CMOS Defaults   LCD Control   Display Auto Detection   Backlight Control   Flash Update					
Security	Trusted Platform Module (TPM 2.0)					
Power Management	ACPI 5.0 with battery support					
Operating Systems	Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Microsoft® Windows IoT 10 Core   Linux   Android   Yocto   RTS Hypervisor					
Temperature Range	Commercial:	Operating Temperature: 0 to +60°C		Storage Temperature: -20 to +80°C		
	Industrial:	Operating Temperature: -40 to +85°C		Storage Temperature: -40 to +85°C		
Humidity	Operating:	10 to 90% r. H. non cond.				
	Storage:	5 to 95% r. H. non cond.				
Size	95 x 120 mm <sup>2</sup>					

# conga-HPC/cTLU | Block Diagram



# conga-HPC/cTLU | Order Information

Article	PN	Description
conga-HPC/cTLU-i7-1185G7E	050600	COM-HPC Size A module based on Intel® Core™ i7-1185G7E 4-core processor with 1.8GHz up to 4.4GHz turbo boost, 12MB cache, Intel® Iris® Xe Graphics with 96EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Commercial temperature range.
conga-HPC/cTLU-i5-1145G7E	050601	COM-HPC Size A module based on Intel® Core™ i5-1145G7E 4-core processor with 1.5GHz up to 4.1GHz turbo boost, 8MB cache, Intel® Iris® Xe Graphics with 80EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Commercial temperature range.
conga-HPC/cTLU-i3-1115G4E	050602	COM-HPC Size A module based on Intel® Core™ i3-1115G4E 2-core processor with 2.2GHz up to 3.9GHz turbo boost, 6MB cache, Intel® Iris® Xe Graphics with 48EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Commercial temperature range.
conga-HPC/cTLU-6305E	050603	COM-HPC Size A module based on Intel® Celeron® 6305E 2-core processor with 1.8GHz, 4MB cache, Intel® Iris® Xe Graphics with 48EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Commercial temperature range.
conga-HPC/cTLU-i7-1185GRE	050610	COM-HPC Size A module based on Intel® Core™ i7-1185GRE 4-core processor with 1.8GHz up to 4.4GHz turbo boost, 12MB cache, Intel® Iris® Xe Graphics with 96EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Industrial temperature range.
conga-HPC/cTLU-i5-1145GRE	050611	COM-HPC Size A module based on Intel® Core™ i5-1145GRE 4-core processor with 1.5GHz up to 4.1GHz turbo boost, 8MB cache, Intel® Iris® Xe Graphics with 80EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Industrial temperature range.
conga-HPC/cTLU-i3-1115GRE	050612	COM-HPC Size A module based on Intel® Core™ i3-1115GRE 2-core processor with 2.2GHz up to 3.9GHz turbo boost, 6MB cache, Intel® Iris® Xe Graphics with 48EU and dual channel DDR4 3200 MT/s memory interface (Intel Tiger Lake-UP3). Industrial temperature range.
conga-HPC/cTLU-CSA-VC-B	050650	Standard active cooling solution for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 29mm height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-HPC/cTLU-CSA-VC-T	050651	Standard active cooling solution for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 29mm height and integrated 12V fan. All standoffs are M2.5mm thread.
conga-HPC/cTLU-CSP-VC-B	050652	Standard passive cooling solution for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 28mm height. All standoffs are with 2.7mm bore hole.
conga-HPC/cTLU-CSP-VC-T	050653	Standard passive cooling solution for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 28mm height. All standoffs are with M2.5mm thread.
conga-HPC/cTLU-HSP-VC-B	050654	Standard heatspreader for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 13mm height. All standoffs are with 2.7mm bore hole.
conga-HPC/cTLU-HSP-VC-T	050655	Standard heatspreader solution for high performance COM-HPC module conga-HPC/cTLU with integrated vapor chamber, 13mm height. All standoffs are with M2.5mm thread.
conga-HPC/EVAL-Client	065600	Evaluation Carrier Board for COM-HPC Client type Modules.