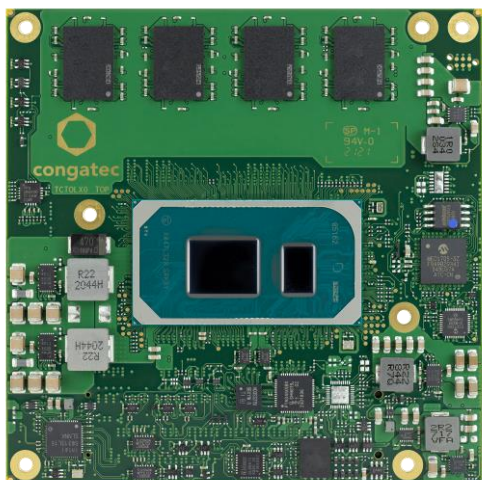# 11ᵀᴴ GEN INTEL® CORE™ PROCESSORS
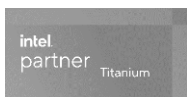
conga-TC570r

COM Express®

- Embedded/Industrial use condition
- Extended temperature options available
- PCI Express Gen 4
- Up to 32 GByte dual channel LPDDR4X soldered down memory with 4266 MT/s IBECC
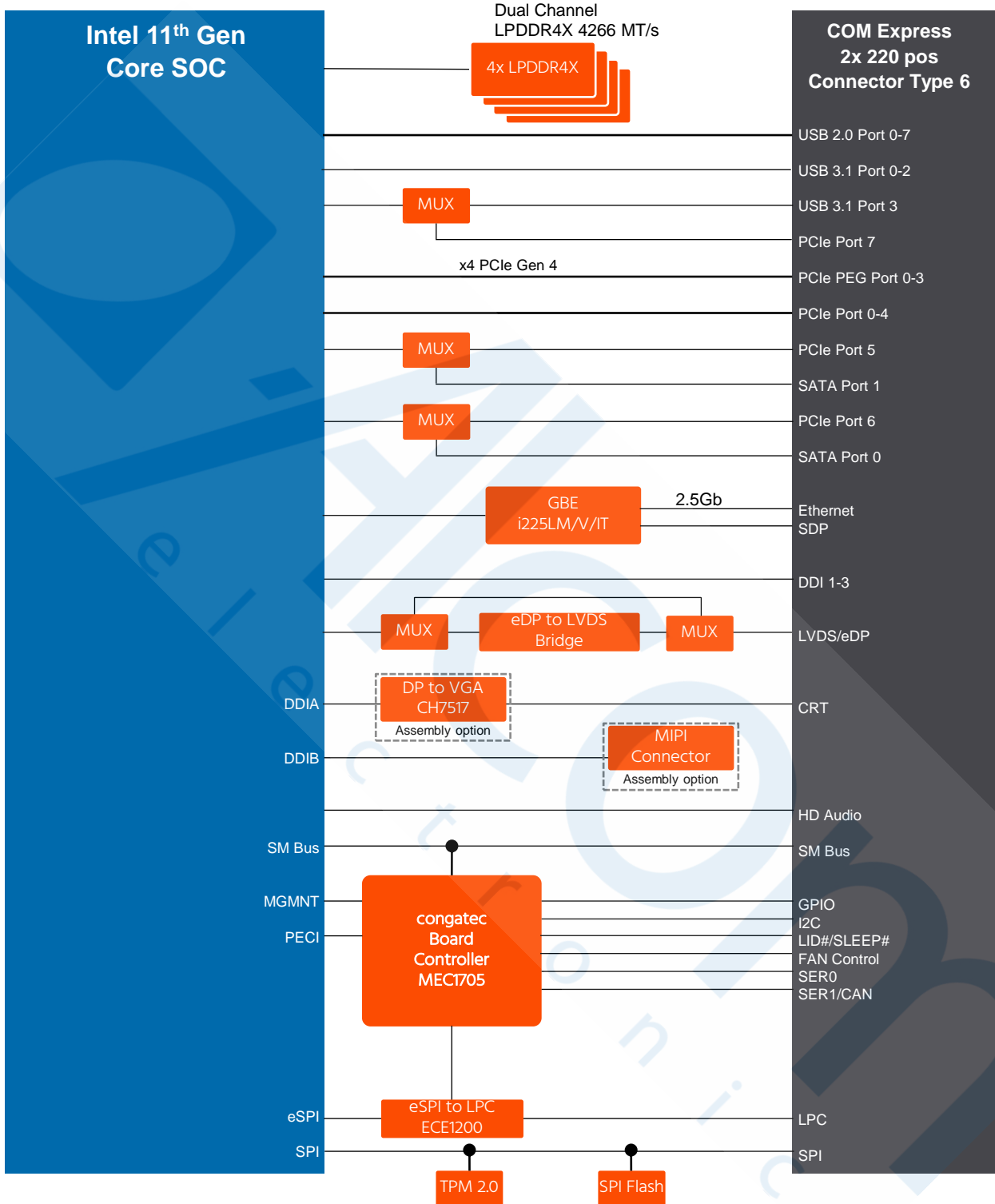- AI/DL Instruction Sets including VNNI

Form Factor	COM Express® Compact, (95 x 95 mm)	Type 6 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 32 GByte LPDDR4X 4266MT/s SDRAM	memory down	dual channel IBECC				
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	DP 1.4					
Display	3x DP/DP++	1x eDP					
Ethernet	1x 2.5 GbE TSN Ethernet via Intel® i225					
I/O Interfaces	8x PCIe Gen3	PEG support x4 (PCIe Gen4) 4x USB 3.1 Gen 2	8x USB 2.0 2x SATA III (6Gb/s)	SPI	2x UART	8x GPIO					
Audio	HDA interface					
congatec Board controller	Multi Stage Watchdog	non-volatile User Data Storage	Manufacturing and Board Information	Board Statistics I²C 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 95 mm²					

Block diagram of the conga-TC570r

Intel 11th Gen Core SOC

Dual Channel
LPDDR4X 4266 MT/s

4x LPDDR4X

COM Express
2x 220 pos
Connector Type 6

USB 2.0 Port 0-7

USB 3.1 Port 0-2

MUX — USB 3.1 Port 3

PCIe Port 7

x4 PCIe Gen 4

PCIe PEG Port 0-3

PCIe Port 0-4

MUX — PCIe Port 5

SATA Port 1

MUX — PCIe Port 6

SATA Port 0

GBE i225LM/V/IT — 2.5Gb — Ethernet / SDP

DDI 1-3

MUX — eDP to LVDS Bridge — MUX — LVDS/eDP

DDIA — DP to VGA CH7517 (Assembly option) — CRT

DDIB — MIPI Connector (Assembly option)

HD Audio

SM Bus — SM Bus

MGMNT / PECI — congatec Board Controller MEC1705 — GPIO / I2C / LID#/SLEEP# / FAN Control / SER0 / SER1/CAN

eSPI — eSPI to LPC ECE1200 — LPC

SPI — SPI

TPM 2.0

SPI Flash

Article	PN	Description
conga-TC570r/i7-1185GRE-32G	050330	COM Express Type 6 Compact 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 32 GByte dual channel LPDDR4X 4266 MT/s memory down (Intel Tiger Lake). Industrial temperature range.
conga-TC570r/i5-1145GRE-16G	050331	COM Express Type 6 Compact 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 16GByte dual channel LPDDR4X 4266 MT/s memory down (Intel Tiger Lake). Industrial temperature range.
conga-TC570r/i3-1115GRE-8G	050332	COM Express Type 6 Compact module based on Intel® Core™ i3-1115G4E 2-core processor with 2.2GHz up to 3.9GHz turbo boost, 6MB cache, Intel® UHD Graphics with 48EU and 8 GByte dual channel LPDDR4X 4266 MT/s memory down (Intel Tiger Lake). Industrial temperature range.
conga-TC570r/6305E-4G	050320	COM Express Type 6 Compact module based on Intel® Celeron® 6305E 2-core processor with 1.8GHz, 4MB cache, Intel® UHD Graphics with 48EU and 4 GByte dual channel LPDDR4X 4266 MT/s memory down (Intel Tiger Lake). Commercial temperature range.
conga-TC570/CSA-HP-B	050350	Standard active cooling solution for high performance COM Express module conga-TC570 with integrated heat pipes, 25.5mm overall heat sink height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-TC570/CSA-HP-T	050351	Standard active cooling solution for high performance COM Express module conga-TC570 with integrated heat pipes, 25.5mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm thread.
conga-TC570/CSP-HP-B	050352	Standard passive cooling solution for high performance COM Express module conga-TC570 with integrated heat pipes, 24.3mm overall heat sink height. All standoffs are with 2.7mm bore hole.
conga-TC570/CSP-HP-T	050353	Standard passive cooling solution for high performance COM Express module conga-TC570 with integrated heat pipes, 24.3mm overall heat sink height. All standoffs are M2.5mm thread.
conga-TC570/HSP-HP-B	050354	Standard heatspreader for high performance COM Express module conga-TC570 with integrated heat pipes, 11mm overall heat sink height. All standoffs are with 2.7mm bore hole.
conga-TC570/HSP-HP-T	050355	Standard heatspreader for high performance COM Express module conga-TC570 with integrated heat pipes, 11mm overall heat sink height. All standoffs are M2.5mm thread.
conga-TEVAL/COMe 3.0	65810	Evaluation Carrier Board for COM Express Type 6 modules.

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