

## COM-HPC Client Size C module based on the 12th and 13th Gen Intel® Core™ S processors

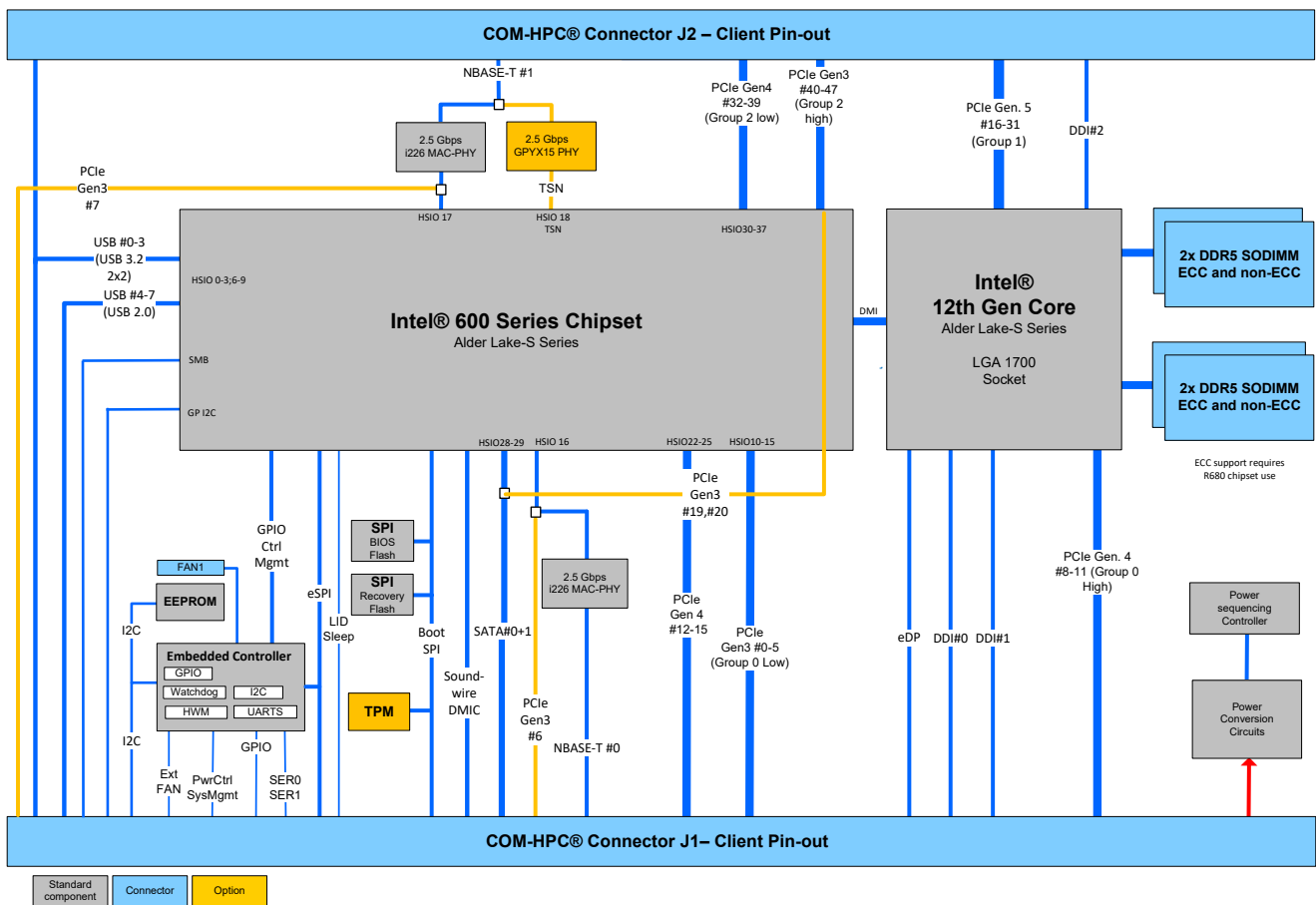
- ▶ Up to 16 cores (TDP range: 35 W-65 W) & 24 threads
- ▶ Memory: Max 128 GByte DDR5 via 4x SODIMMs, ECC and non-ECC
- ▶ 16x PCIe Gen 5.0 lanes (for high performance CPUs) + 8x PCIe Gen 4.0 lanes + 6x PCIe Gen 3.0 lanes
- ▶ 3x DDI + 1x eDP

<b>COMPLIANCE</b>	COM HPC® Size C Client
<b>DIMENSIONS</b>	160 x 120 mm
<b>CPU (SoC)</b>	Intel® Core™ "Alder Lake S" Processor Series For details see table "CPU variants" given below
<b>CHIPSET</b>	See table
<b>MAIN MEMORY</b>	2x DDR5 SODIMM for up to 64 GByte ECC / non ECC on request: 4x DDR5 SODIMM for up to 128 GByte ECC / non ECC
<b>ETHERNET CONTROLLER</b>	2x Intel® I226 or 1x Intel® I226, 1x integrated MAC with GPHY215
<b>ETHERNET</b>	2x 2.5 Gb Ethernet
<b>STORAGE</b>	2x SATA 6Gb/s
<b>FLASH ONBOARD</b>	-
<b>PCI EXPRESS®</b>	16x PCIe Gen 5.0 lanes (for high performance CPUs) + 8x PCIe Gen 4.0 lanes + 6x PCIe Gen 3.0 lanes
<b>USB</b>	4x (2x) USB 3.2
<b>SERIAL</b>	2x serial interface (RX/TX/CTS/RTS)
<b>OTHER FEATURES</b>	SPI, SMB, Fast I <sup>2</sup> C, Staged Watchdog, RTC
<b>SPECIAL FEATURES</b>	TPM 2.0
<b>FEATURES ON REQUEST</b>	additional 3rd and 4th SODIMM socket
<b>POWER MANAGEMENT</b>	ACPI 6.0
<b>POWER SUPPLY</b>	12 V ATX and/or Single Supply Power
<b>BIOS</b>	AMI UEFI
<b>OPERATING SYSTEM</b>	Linux, Windows 11
<b>TEMPERATURE</b>	Commercial temperature:       0 °C to +60 °C operating -30 °C to +85 °C non-operating
<b>HUMIDITY</b>	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)

ARTICLE	PART NO.	DESCRIPTION
i9-12900 ALDER LAKE-S	HCC01-1290-i9-0	i9-12900 Alder Lake -S LGA 1700 2.4 GHz 8+8 65 W PC Client
i7-12700 ALDER LAKE-S	HCC01-1270-i7-0	i7-12700 Alder Lake -S LGA 1700 2.1 GHz 8+4 65 W PC Client
i5-12600 ALDER LAKE-S	HCC01-1260-i5-0	i5-12600 Alder Lake -S LGA 1700 3.3 GHz 6+0 65 W PC Client
i3-12100 ALDER LAKE-S	HCC01-1210-i3-0	i3-12100 Alder Lake -S LGA 1700 3.3 GHz 4+0 65 W PC Client
G7400E ALDER LAKE-S	HCC01-G740-PG-E	G7400E Alder Lake -S LGA 1700 3.6 GHz 2+0 46 W PC Client
G7400TE ALDER LAKE-S	HCC01-G740-PG-T	G7400TE Alder Lake -S LGA 1700 3.0 GHz 2+0 35 W PC Client Low Power
G6900E ALDER LAKE-S	HCC01-G690-CE-E	G6900E Alder Lake -S LGA 1700 3.0 GHz 2+0 65 W PC Client
G6900TE ALDER LAKE-S	HCC01-G690-CE-T	G6900TE Alder Lake -S LGA 1700 2.4 GHz 2+0 25 W PC Client Low Power
i9-12900E ALDER LAKE-S	HCC02-1290-i9-E	i9-12900E Alder Lake -S LGA 1700 2.3 GHz 8+8 65 W Embedded
i9-12900TE ALDER LAKE-S	HCC02-1290-i9-T	i9-12900E Alder Lake -S LGA 1700 2.3 GHz 8+8 35 W Embedded Low Power
i7-12700E ALDER LAKE-S	HCC02-1270-i7-E	i7-12700E Alder Lake -S LGA 1700 2.1 GHz 8+4 65 W Embedded
i7-12700TE ALDER LAKE-S	HCC02-1270-i7-T	i7-12700TE Alder Lake -S LGA 1700 1.4 GHz 8+4 35 W Embedded Low Power
i5-12500E ALDER LAKE-S	HCC02-1250-i5-E	i5-12500E Alder Lake -S LGA 1700 2.9 GHz 6+0 65 W Embedded
i5-12500TE ALDER LAKE-S	HCC02-1250-i5-T	i5-12500TE Alder Lake -S LGA 1700 2.5 GHz 6+0 35 W Embedded Low Power
i3-12100E ALDER LAKE-S	HCC02-1210-i3-E	i3-12100E Alder Lake -S LGA 1700 3.2 GHz 4+0 65 W Embedded
i3-12100TE ALDER LAKE-S	HCC02-1210-i3-T	i3-12100TE Alder Lake -S LGA 1700 2.1 GHz 6+0 35 W Embedded Low Power

# 13th Generation CPUs available at Kontron

ARTICLE	PART NO.	DESCRIPTION
I9-13900 Raptor Lake-S	HCC01-1390-i9-0	I9-13900 Raptor Lake-S LGA 1700 2GHz 8+16 65W PC Client
I7-13700 Raptor Lake-S	HCC01-1370-i7-0	I7-13700 Raptor Lake-S LGA 1700 2.1GHz 8+8 65W PC Client
I5-13500 Raptor Lake-S	HCC01-1350-i5-0	I5-13500 Raptor Lake-S LGA 1700 2.5GHz 6+8 65W PC Client
I3-13100 Raptor Lake-S	HCC01-1310-i3-0	I3-13100 Raptor Lake-S LGA 1700 3.4GHz 4+0 60W PC Client
I9-13900E RAPTOR LAKE-S	HCC02-1390-i9-E	I9-13900E Raptor Lake-S LGA 1700 1.8GHz 8+16 65W Embedded
I9-13900TE RAPTOR LAKE-S	HCC02-1390-i9-T	I9-13900TE Raptor Lake-S LGA 1700 1.0GHz 8+16 35W Embedded Low Power
I7-13700E RAPTOR LAKE-S	HCC02-1370-i7-E	I7-13700E Raptor Lake-S LGA 1700 1.9GH 8+8 65W Embedded
I7-13700TE RAPTOR LAKE-S	HCC02-1370-i7-T	I7-13700TE Raptor Lake-S LGA 1700 1.1GHz 8+8 35W Embedded Low Power
I5-13500E Raptor Lake-S	HCC02-1350-i5-E	I5-13500E Raptor Lake-S LGA 1700 1.4GHz 6+8 65W Embedded
I5-13500TE Raptor Lake-S	HCC02-1350-i5-T	I5-13500TE Raptor Lake-S LGA 1700 1.3GHz 6+8 35W Embedded Low Power
I3-13100E Raptor Lake-S	HCC02-1310-i3-E	I3-13100E Raptor Lake-S LGA 1700 3.3GHz 4+0 60W Embedded
I3-13100TE Raptor Lake-S	HCC02-1310-i3-T	I3-13100TE Raptor Lake-S LGA 1700 2.4GHz 4+0 35W Embedded Low Power



## Variants

PART NO.	ARTICLE	LAN	OP. TEMPERATURE	USE CASE
HCC01-0000-80-0	COMh-ccAS W680	2x I226	0 °C - +60 °C	PC Client
HCC01-0000-70-0	COMh-ccAS Q670	2x I226	0 °C - +60 °C	PC Client
HCC01-0000-10-0	COMh-ccAS H610	2x I226	0 °C - +60 °C	PC Client
HCC02-0000-8E-0	COMh-ccAS R680E	1x I226; 1x GPY215	0 °C - +60 °C	Embedded
HCC02-0000-7E-0	COMh-ccAS Q670E	2x I226	0 °C - +60 °C	Embedded
HCC02-0000-1E-0	COMh-ccAS H610E	2x I226	0 °C - +60 °C	Embedded

Please contact tech support for custom UEFI firmware

## Carrier

ARTICLE	PART NO.	DESCRIPTION
COM-HPC CLIENT CARRIER 10MM	HCT01-0000-10-0	COM-HPC Client Carrier with 10mm Connector Height

ARTICLE	PART NO.	DESCRIPTION
COMh-ccAS HEAT SPREADER THREADED	HCC0A-0000-99-0	Standard COM-HPC Heat Spreader for COMh-ccAS with threads
COMh-ccAS HEAT SPREADER THROUGH HOLE	HCC0A-0000-99-1	Standard COM-HPC Heat Spreader for COMh-ccAS through hole
COMh-ccAS X-BRACKET	HCC0A-0000-99-2	X-Shape Bracket for Standard Motherboard Cooler
COMh-ccAS PCH COOLER	HCC0A-0000-99-3	PCH Cooler for COMh-ccAS
COMh-ccAS COOLING KIT 65W	HCC0A-0000-99-4	Motherboard CPU Cooler + X-Bracket + PCH Cooler
COMH-CCAS COOLER MOUNTING JACKET	HCC0A-0000-99-5	Needs to be used instead of X-Bracket, when 4th memory module is in use

## Memory

PART NO.	MIN. SPEC.	SIZE	ECC/NON-ECC	OP. TEMPERATURE
97040-0848-CCAS	DDR5-4800	8 GByte	No ECC	0 °C to +60 °C
97040-1648-CCAS	DDR5-4800	16 GByte	No ECC	0 °C to +60 °C
97040-3248-CCAS	DDR5-4800	32 GByte	No ECC	0 °C to +60 °C
97050-0848-CCAS	DDR5-4800	8 GByte	ECC	0 °C to +60 °C
97050-1648-CCAS	DDR5-4800	16 GByte	ECC	0 °C to +60 °C
97050-3248-CCAS	DDR5-4800	32 GByte	ECC	0 °C to +60 °C

## Global Headquarters

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