RPP968

FC CE RoHS UK CA

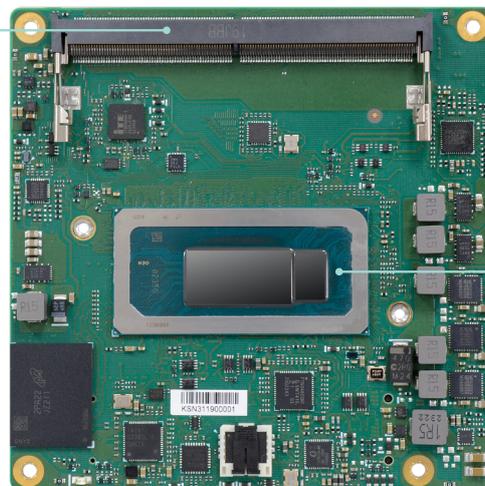intel | IoT Solutions Alliance

DDR5 SODIMM

Front View

DDR5 SODIMM

13th Gen Intel® Processor

Bottom View

KEY FEATURES

DDR5
Dual Channel DDR5 5200MHz SODIMM up to 64GB

4K High Resolution
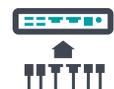Supports 4K / 2K resolution

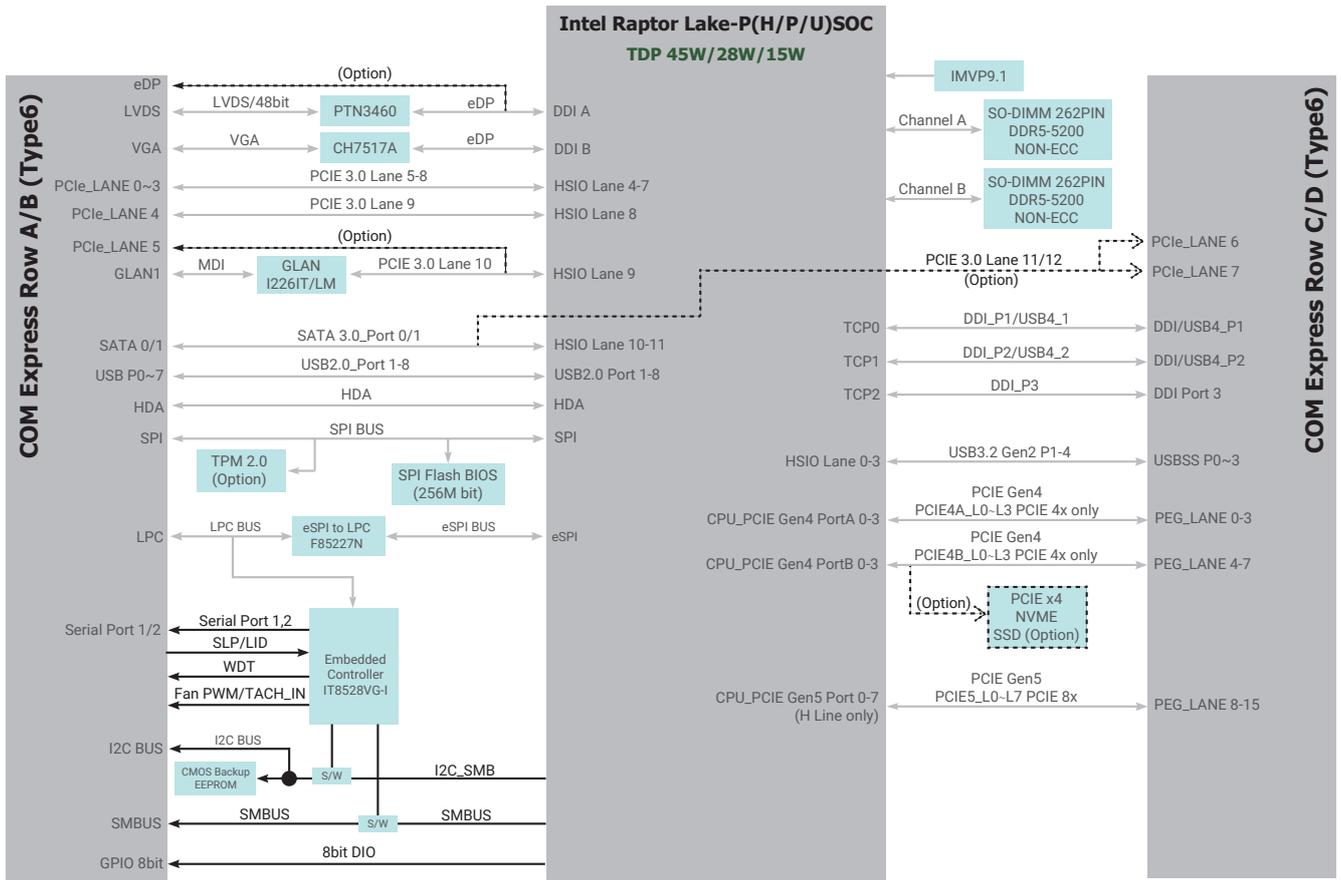### Multiple Displays
1 VGA, 1 LVDS/eDP, 3 DDI

Multiple Expansion
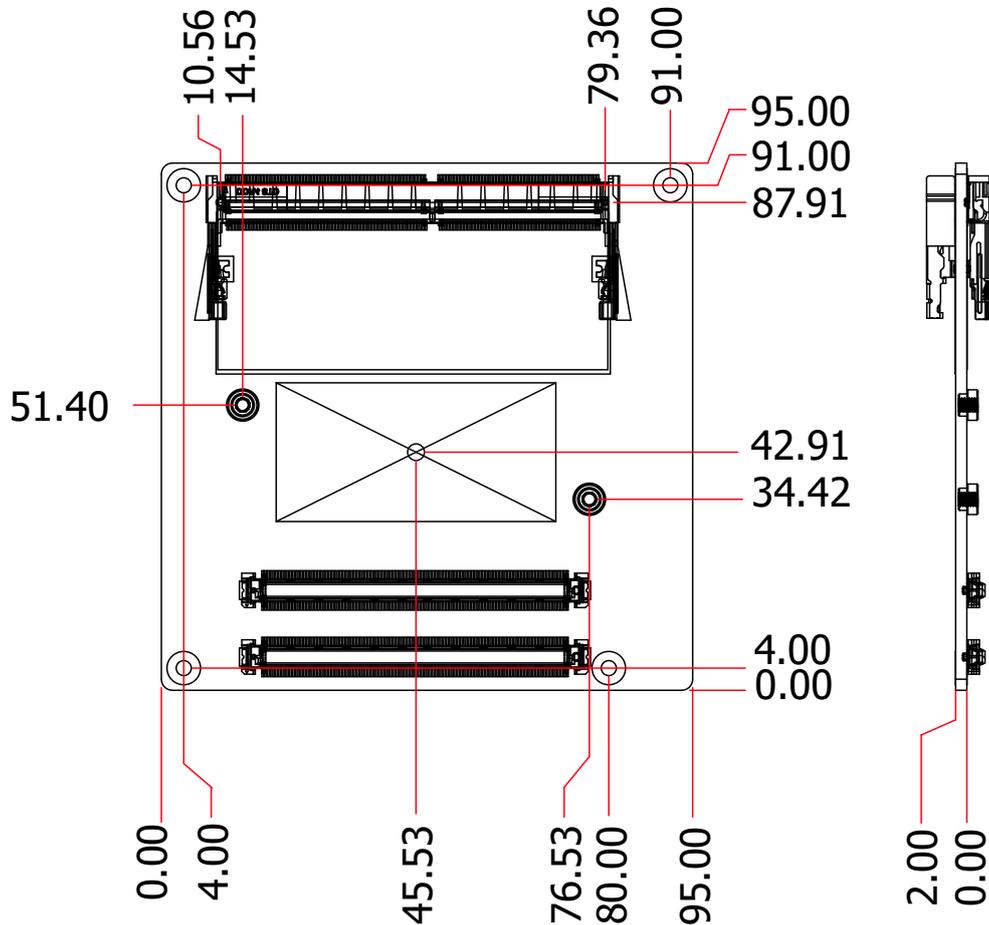2 PCIe x4 (Gen4 PCH), 5 PCIe x1 (Gen3), 1 I2C, 1 SMBus

RICH I/O
1 Intel 2.5GbE, 4 USB 3.2, 8 USB 2.0, 2 SATA 3.0

DFI | Desire For Innovation

BLOCK DIAGRAM

Intel Raptor Lake-P(H/P/U)SOC
TDP 45W/28W/15W

COM Express Row A/B (Type6)

eDP	(Option)		
LVDS	LVDS/48bit	PTN3460	eDP	DDI A
VGA	VGA	CH7517A	eDP	DDI B
PCIe_LANE 0~3	PCIE 3.0 Lane 5-8		HSIO Lane 4-7
PCIe_LANE 4	PCIE 3.0 Lane 9		HSIO Lane 8
PCIe_LANE 5	(Option)		
GLAN1	MDI	GLAN I226IT/LM	PCIE 3.0 Lane 10	HSIO Lane 9
SATA 0/1	SATA 3.0_Port 0/1		HSIO Lane 10-11
USB P0~7	USB2.0_Port 1-8		USB2.0 Port 1-8
HDA	HDA		HDA
SPI	SPI BUS		SPI

TPM 2.0 (Option)

SPI Flash BIOS (256M bit)

| LPC | LPC BUS | eSPI to LPC F85227N | eSPI BUS | eSPI |

Serial Port 1/2 — Serial Port 1,2 / SLP/LID / WDT / Fan PWM/TACH_IN

Embedded Controller IT8528VG-I

| I2C BUS | I2C BUS | | |
CMOS Backup EEPROM — S/W — I2C_SMB
| SMBUS | SMBUS | S/W | SMBUS |
| GPIO 8bit | 8bit DIO | | |

COM Express Row C/D (Type6)

IMVP9.1

| Channel A | SO-DIMM 262PIN DDR5-5200 NON-ECC |
| Channel B | SO-DIMM 262PIN DDR5-5200 NON-ECC |

| | PCIE 3.0 Lane 11/12 (Option) | PCIe_LANE 6 |
| | | PCIe_LANE 7 |

TCP0	DDI_P1/USB4_1	DDI/USB4_P1
TCP1	DDI_P2/USB4_2	DDI/USB4_P2
TCP2	DDI_P3	DDI Port 3

HSIO Lane 0-3	USB3.2 Gen2 P1-4	USBSS P0~3
CPU_PCIE Gen4 PortA 0-3	PCIE Gen4 PCIE4A_L0-L3 PCIE 4x only	PEG_LANE 0-3
CPU_PCIE Gen4 PortB 0-3	PCIE Gen4 PCIE4B_L0-L3 PCIE 4x only	PEG_LANE 4-7
	(Option)	PCIE x4 NVME SSD (Option)
CPU_PCIE Gen5 Port 0-7 (H Line only)	PCIE Gen5 PCIE5_L0-L7 PCIE 8x	PEG_LANE 8-15

MECHANICAL DRAWING

SPECIFICATION

SYSTEM	**Processor**	Intel® Core™ i7-13800HE (6 P-Cores x 2.5 GHz, 8 E-Cores x 1.8 GHz, 24 MB cache, 45W) Intel® Core™ i5-13600HE (4 P-Cores x 2.7 GHz, 8 E-Cores x 1.9 GHz, 18 MB cache, 45W) Intel® Core™ i3-13300HE (4 P-Cores x 2.1 GHz, 4 E-Cores x 1.5 GHz, 12 MB cache, 45W) Intel® Core™ i7-1370PE (6 P-Cores x 1.9 GHz, 8 E-Cores x 1.2 GHz, 24 MB cache, 28W) Intel® Core™ i5-1350PE (4 P-Cores x 1.8 GHz, 8 E-Cores x 1.3 GHz, 12 MB cache, 28W) Intel® Core™ i5-1340PE (4 P-Cores x 1.8 GHz, 8 E-Cores x 1.3 GHz, 12 MB cache, 28W) Intel® Core™ i3-1320PE (4 P-Cores x 1.7 GHz, 4 E-Cores x 1.2 GHz, 12 MB cache, 28W) Intel® Core™ i7-1365UE (2 P-Cores x 1.7 GHz, 8 E-Cores x 1.2 GHz, 12 MB cache, 15W) Intel® Core™ i5-1345UE (2 P-Cores x 1.4 GHz, 8 E-Cores x 1.1 GHz, 12 MB cache, 15W) Intel® Core™ i5-1335UE (2 P-Cores x 1.2 GHz, 8 E-Cores x 0.9 GHz, 12 MB cache, 15W) Intel® Core™ i3-1315UE (2 P-Cores x 1.2 GHz, 4 E-Cores x 0.9 GHz, 10 MB cache, 15W) Intel® Pentium® U300E (1 P-Core x 1.1 GHz, 4 E-Cores x 0.9 GHz, 8 MB cache, 15W)
	Memory	Two 262-Pin SO-DIMM up to 64GB, Dual Channel DDR5 5200MHz
	BIOS	AMI BIOS
GRAPHICS	**Controller**	Intel® Iris® Xe graphics
	Feature	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: WMV9, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 HW Encode: AVC/H264, JPEG, HEVC/H265, VP9
	Display	1 x VGA 1 x LVDS/eDP (eDP available upon request) 3 x DDI
		VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz eDP: resolution up to 4096x2304 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz DP++: resolution up to 4096x2304 @ 60Hz
	Triple Displays	VGA + LVDS + DDI
		DDI + eDP + DDI (available upon request)
EXPANSION	**Interface**	2 x PCIe x4 (Gen4 CPU) 5 x PCIe x1 (Gen3) (8 x PCIex1 available upon request) 1 x I²C 1 x SMBus 1 x SPI 2 x UART (TX/RX)
AUDIO	**Interface**	HD Audio
ETHERNET	**Controller**	1 x Intel® I226 series (10/100/1000Mbps/2.5G), co-lay PCIe x1 (available upon request)
I/O	**USB**	4 x USB 3.2 Gen.2 8 x USB 2.0
	SATA	2 x SATA 3.0 (up to 6Gb/s), co-lay PCIe x1 (available upon request)
	NVMe SSD	1 x 64GB/128GB/256GB/512GB/1024GB on board SSD (available upon request)
	DIO	1 x 8-bit DIO
WATCHDOG TIMER	**Output & Interval**	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	**TPM**	Available Upon Request
POWER	**Type**	8.5~20V, 5VSB, VCC_RTC (ATX mode)
		8.5~12V, VCC_RTC (AT mode)
	Consumption	TBD
OS SUPPORT	**Microsoft**	Windows 10 IoT Enterprise 64-bit
	Linux	Linux
ENVIRONMENT	**Temperature**	Operating: 0 to 60°C, -40 to 85°C / Storage: -40 to 85°C
	Humidity	Operating: 10 to 90% RH / Storage: 10 to 90% RH
	MTBF	TBD
MECHANICAL	**Dimensions**	COM Express® Compact / 95mm (3.74") x 95mm (3.74")
	Compliance	PICMG COM Express® R3.1, Type 6
STANDARDS AND CERTIFICATIONS	**Certification**	CE, FCC, RoHS, UKCA

ORDERING INFORMATION

Model Name	P/N	Processor	eDP/ LVDS	CPU TDP	TPM 2.0	Thermal	Operating Temp.
RPP968-BC00-13800HE	770-RPP9681-000G	I7-13800HE	LVDS	45W	Yes	Cooler	0 to 60°C
RPP968-TC06-1370PE	770-RPP9681-100G	I7-1370PE	LVDS	28W			-40 to 85°C
RPP968-TC00-1365UE	770-RPP9681-200G	I7-1365UE	LVDS	15W			-40 to 85°C
RPP968-BC00-13800HRE	770-RPP9681-300G	I7-13800HRE	eDP	45W			0 to 60°C
RPP968-TC00-1315UE	770-RPP9681-400G	I3-1315UE	LVDS	15W			-40 to 85°C
RPP968-TC00-U300E	770-RPP9681-500G	U300E	LVDS	15W			-40 to 85°C
RPP968-TC00-1345UE	770-RPP9681-600G	i5-1345UE	LVDS	28W			-40 to 85°C
RPP968-TC00-1350PE	770-RPP9681-700G	i5-1350PE	LVDS	28W			-40 to 85°C

OPTIONAL ITEMS

COM335 carrier board kit	770-CM3351-000G
Heat spreader	A71-808365-000G