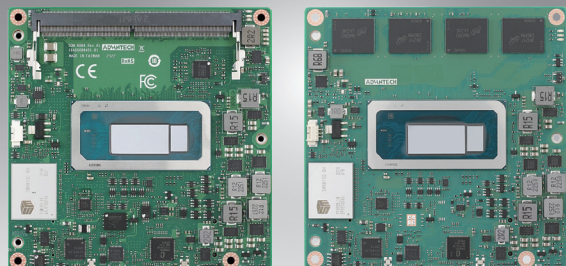


# SOM-6884

## 13th Gen Intel® Core™ Processor (Code Name: Raptor Lake-P) COM Express® Compact Type 6



SOM-6884 A1

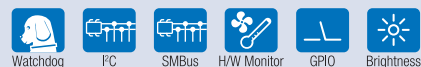
SOM-6884 A2



### Features

- 13th Generation Intel® Core™ Processor
- COM Express R3.1 Compact Module Type 6 Pinout
- Dual channel DDR5 memory up to 64GB, 4800MT/s (A1 version)
- Dual channel LPDDR5 on-board memory up to 64GB, 6000MT/s (A2 version)
- High speed I/O: 12x PCIe Gen4, Extra 4x PCIe Gen4 (A2 version), 8x PCIe Gen3, 2x USB4 & 4x USB3.2 Gen2
- Supports SUSI, DeviceOn and Edge AI Suite

#### Software APIs:

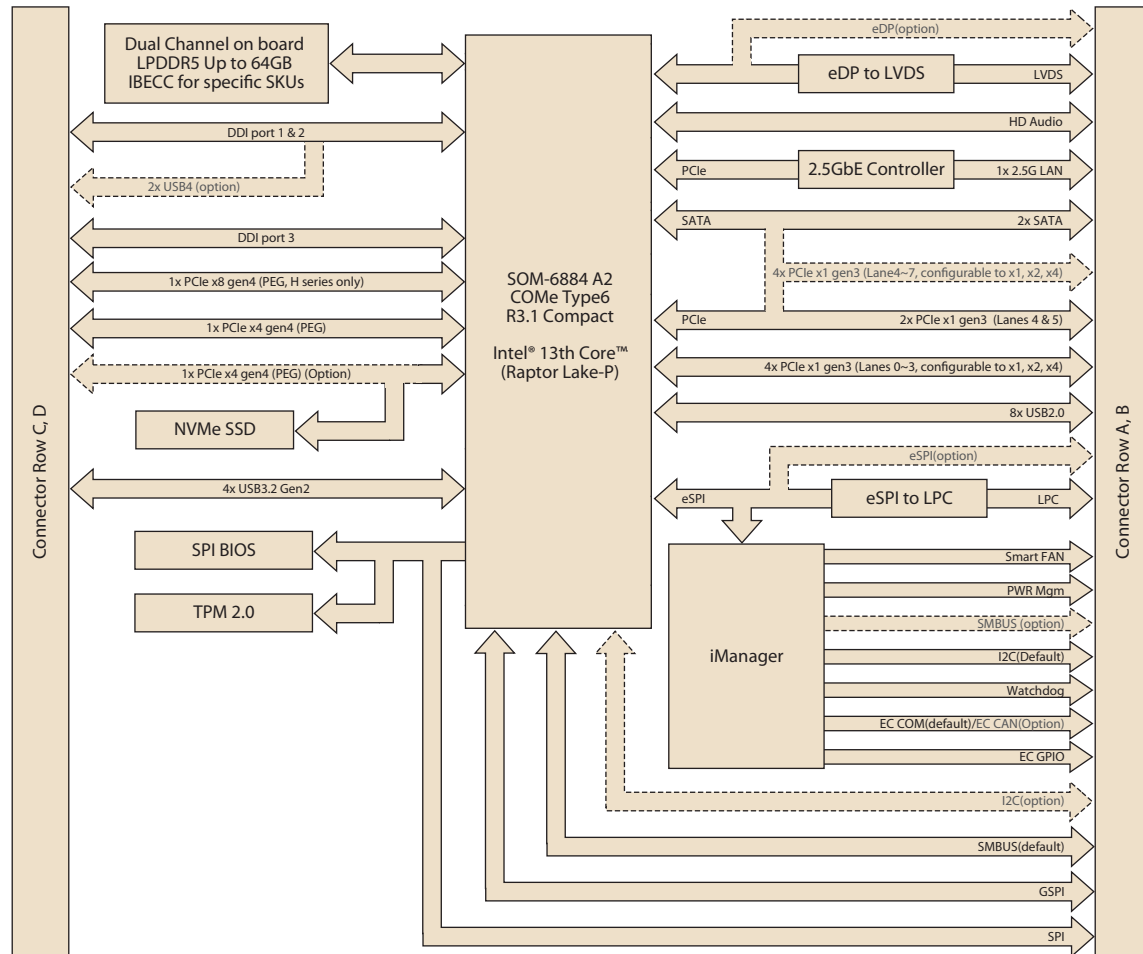


### Specifications

|                  |                                |                                                                                                                                        |                                          |                                          |
|------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|
| Form Factor      | Form Factor                    | COM Express Compact Module                                                                                                             |                                          |                                          |
|                  | Pin-out Type                   | COM Express R3.1 Type 6 compatible                                                                                                     |                                          |                                          |
| Processor System | CPU                            | 13th Gen Intel® Core™ Processor H series                                                                                               | 13th Gen Intel® Core™ Processor P Series | 13th Gen Intel® Core™ Processor U series |
|                  | P-core<br>Base/Turbo Frequency | 2.5/5.0GHz                                                                                                                             | 1.9/4.8GHz                               | 1.7/4.9GHz                               |
|                  | E-core<br>Base/Turbo Frequency | 1.8/4.0GHz                                                                                                                             | 1.2/3.7GHz                               | 1.2/3.7GHz                               |
|                  | Cores                          | 14C (6P+8E)                                                                                                                            | 14C (6P+8E)                              | 10C (2P+8E)                              |
|                  | Cache                          | 24M                                                                                                                                    | 24M                                      | 12M                                      |
|                  | CPU TDP                        | 45W                                                                                                                                    | 28W                                      | 15W                                      |
| Memory           | Technology                     | A1 version: DDR5, 4800MT/s<br>A2 version: LPDDR5, 6000MT/s                                                                             |                                          |                                          |
|                  | Channel/Socket                 | A1 version: Dual Channel, 2 Sockets SODIMM, 1DPC<br>A2 version: Dual Channel, Memory Down                                              |                                          |                                          |
|                  | ECC support                    | IB ECC Supported by Specific CPU SKUs                                                                                                  |                                          |                                          |
| Graphics         | Controller                     | Intel® Iris® Xe Graphics/UHD Graphics Architecture                                                                                     |                                          |                                          |
|                  | Max Graphic Frequency          | 1.4GHz                                                                                                                                 |                                          |                                          |
|                  | 3D graphic HW acceleration     | DX12, Open GL 4.6, Vulkan 1.2                                                                                                          |                                          |                                          |
|                  | HW Media Acceleration          | oneVPL                                                                                                                                 |                                          |                                          |
| Display          | Encode/Decode                  | H.2641/AVC, H.265/HEVC                                                                                                                 |                                          |                                          |
|                  | LCD                            | LVDS dual channel: 1920 x 1200@60Hz (option support eDP1.4b 4096 x 2304@60Hz, 24bpp)                                                   |                                          |                                          |
|                  | DDI                            | 3 DDI ports support configurable HDMI/DisplayPort<br>-HDMI 2.0b: 4Kx2K 48-60Hz 24bpp<br>-DisplayPort 1.4a: 4096x2304 60Hz 36bpp        |                                          |                                          |
|                  | Multiple Display               | Four displays with each display combinations                                                                                           |                                          |                                          |
| Expansion        | PEG                            | A1 version:<br>-PEG (H series): PCIe Gen4, 12 lanes, Bifurcate to 1 x8, 1 x4<br>-PEG (U series): PCIe Gen4, 4 lanes, Bifurcate to 1 x4 |                                          |                                          |
|                  |                                | A2 version:<br>-PEG (H series): PCIe Gen4, 16 lanes, Bifurcate to 1 x8, 2 x4<br>-PEG (U series): PCIe Gen4, 8 lanes, Bifurcate to 2 x4 |                                          |                                          |
|                  | PCI Express                    | PCIe: PCIe gen3, Up to 8 lanes & Up to 6 end devices                                                                                   |                                          |                                          |
|                  |                                | A1 version: Default 5 lanes, Option 8 lanes with LAN & 2x SATA<br>A2 version: Default 6 lanes, Option 8 lanes with 2x SATA             |                                          |                                          |
| Serial Bus       | SMBus                          | Yes                                                                                                                                    |                                          |                                          |
|                  | I2C Bus                        | Yes                                                                                                                                    |                                          |                                          |
| Ethernet         | Gigabit                        | Intel® I226 controller; 10M/100M/1000M/2.5Gbps                                                                                         |                                          |                                          |
| I/O              | SATA3.0                        | 2 Ports (6Gbps)                                                                                                                        |                                          |                                          |
|                  | Onboard Storage                | On-board NVME SSD (Optional; Max. Capacity, 512GB)                                                                                     |                                          |                                          |
|                  | USB 4                          | 2 Ports (SOM-MZ20 required, MUX with DDI1/2)                                                                                           |                                          |                                          |
|                  | USB 3.2 (Gen2)                 | 4 Ports (10Gbps)                                                                                                                       |                                          |                                          |
|                  | USB 2.0                        | 8 Ports (480Mbps)                                                                                                                      |                                          |                                          |
|                  | LPC                            | Yes                                                                                                                                    |                                          |                                          |
|                  | SPI Bus                        | Yes                                                                                                                                    |                                          |                                          |
|                  | GPIO                           | 8-bits GPIO                                                                                                                            |                                          |                                          |
|                  | Watchdog                       | 65536 level, 0 ~ 65535 sec                                                                                                             |                                          |                                          |
|                  | CAN Bus                        | Support one CAN Bus option from COM Port                                                                                               |                                          |                                          |
|                  | COM Port                       | 2 Ports (2-Wire)                                                                                                                       |                                          |                                          |
| Power            | TPM                            | TPM2.0                                                                                                                                 |                                          |                                          |
|                  | Smart Fan                      | 2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board                            |                                          |                                          |
|                  | Type                           | ATX: Vin, VSB; AT: Vin                                                                                                                 |                                          |                                          |
| Environment      | Supply Voltage                 | Vin: 8.5V~20V (±5%); VSB: 5 ±5%, RTC Battery: 2.0V ~ 3.3V                                                                              |                                          |                                          |
|                  | Operating Temperature          | Operating Standard: 0 ~ 60° C (32 ~ 140° F)                                                                                            |                                          |                                          |
|                  | Storage Temperature            | Storage: 0 ~ 60 °C (32 ~ 140 °F)                                                                                                       |                                          |                                          |
| Mechanical       | Humidity                       | Operating: 40°C@95% relative humidity, non-condensing<br>Storage: 60°C@95% relative humidity, non-condensing                           |                                          |                                          |
|                  | Vibration Resistance           | 3.5 Grms                                                                                                                               |                                          |                                          |
|                  | Dimensions                     | 95 x 95 mm (3.74" x 3.74")                                                                                                             |                                          |                                          |

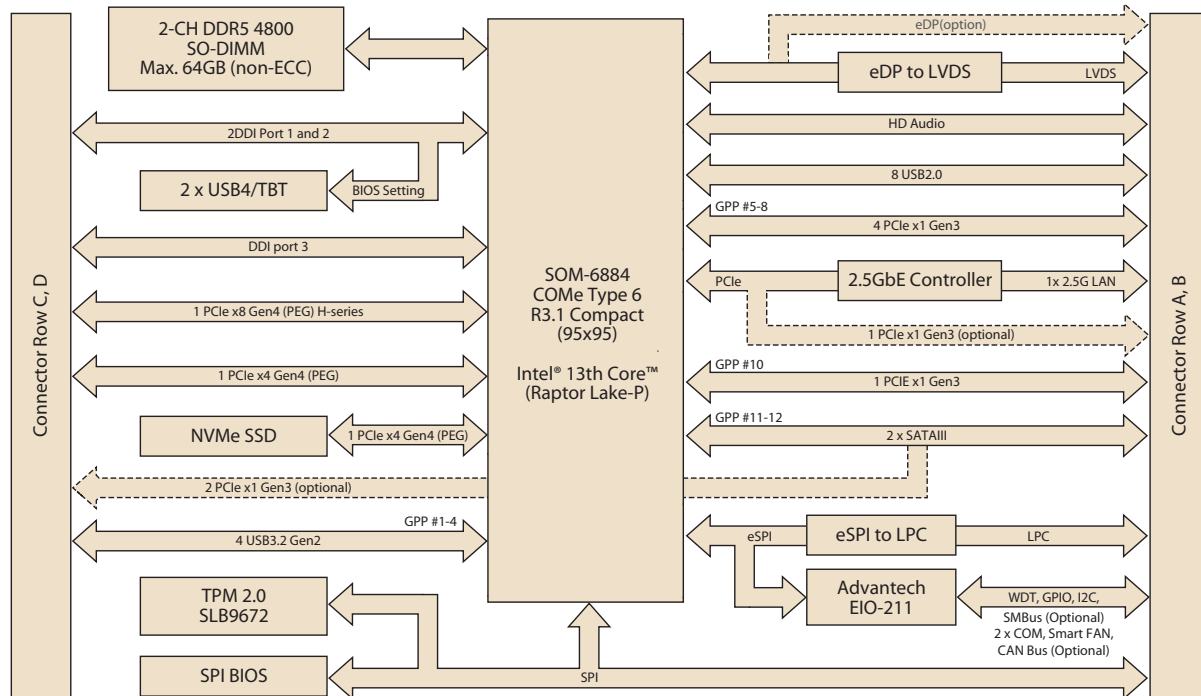
## Block Diagram

Block Diagram for A2



## Block Diagram

Block Diagram for A1



## Ordering Information

| Part No.          | CPU               | Cores (P+E) | Default TDP | P-core Base/Turbo Freq. | E-core Base/Turbo Freq. | Onboard NVMe | PEG x8 GEN4 | IBEC | USB4    | Thermal Solution | Operating Temperature |
|-------------------|-------------------|-------------|-------------|-------------------------|-------------------------|--------------|-------------|------|---------|------------------|-----------------------|
| SOM-6884C7H-U5A1  | Core™ i7-13800HE  | 14C (6+8)   | 45W         | 2.5GHz/5.0GHz           | 1.8GHz/4.0GHz           | 64GB         | YES         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C5H-U7A1  | Core™ i5-13600HE  | 12C (4+8)   | 45W         | 2.7GHz/4.8GHz           | 1.9GHz/3.6GHz           | N/A          | YES         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C3H-U1A1  | Core™ i3-13300HE  | 8C (4+4)    | 45W         | 2.1GHz/4.6GHz           | 1.5GHz/3.4GHz           | N/A          | YES         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C3HA-U1A1 | Core™ i3-13300HE  | 8C (4+4)    | 45W         | 2.1GHz/4.6GHz           | 1.5GHz/3.4GHz           | N/A          | YES         | N/A  | Option* | Active           | 0-60°C                |
| SOM-6884C7HX-U5A1 | Core™ i7-13800HRE | 14C (6+8)   | 45W         | 2.5GHz/5.0GHz           | 1.8GHz/4.0GHz           | 64GB         | YES         | Yes  | N/A     | Active           | -40-85°C              |
| SOM-6884C7U-S7A1  | Core™ i7-1365UE   | 10C (2+8)   | 15W         | 1.7GHz/4.9GHz           | 1.2GHz/3.7GHz           | N/A          | N/A         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C5U-S4A1  | Core™ i5-1345UE   | 10C (2+8)   | 15W         | 1.4GHz/4.6GHz           | 1.1GHz/3.4GHz           | N/A          | N/A         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C3U-S2A1  | Core™ i3-1315UE   | 6C (2+4)    | 15W         | 1.2GHz/4.5GHz           | 0.9GHz/3.3GHz           | N/A          | N/A         | N/A  | N/A     | Active           | 0-60°C                |
| SOM-6884C7UX-S7A1 | Core™ i7-1365URE  | 10C (2+8)   | 15W         | 1.7GHz/4.9GHz           | 1.2GHz/3.7GHz           | NA           | NA          | YES  | NA      | Active           | -40-85°C              |
| SOM-6884C3PX-S7A1 | Core™ i3-1320PRE  | 8C (4+4)    | 28W         | 1.7GHz/4.5GHz           | 1.2GHz/3.3GHz           | NA           | NA          | YES  | NA      | Active           | -40-85°C              |

| Part No.           | CPU               | Cores (P+E) | Default TDP | P-core Base/Turbo Freq. | E-core Base/Turbo Freq. | Onboard NVMe | Onboard RAM | PEG x8 GEN4 | IBEC | USB4 | Thermal Solution | Operating Temperature |
|--------------------|-------------------|-------------|-------------|-------------------------|-------------------------|--------------|-------------|-------------|------|------|------------------|-----------------------|
| SOM-6884C7HXA-U5A2 | Core™ i7-13800HRE | 14C (6+8)   | 45W         | 2.5GHz/5.0GHz           | 1.8GHz/4.0GHz           | 1TB          | 64GB        | YES         | YES  | NA   | Active           | -40-85°C              |
| SOM-6884C7UXA-S7A2 | Core™ i7-1365URE  | 10C (2+8)   | 15W         | 1.7GHz/4.9GHz           | 1.2GHz/3.7GHz           | 1TB          | 64GB        | NA          | YES  | NA   | Active           | -40-85°C              |
| SOM-6884C7UXB-S7A2 | Core™ i7-1365URE  | 10C (2+8)   | 15W         | 1.7GHz/4.9GHz           | 1.2GHz/3.7GHz           | 512GB        | 32GB        | NA          | YES  | NA   | Active           | -40-85°C              |
| SOM-6884C5UA-S4A2  | Core™ i5-1345URE  | 10C (2+8)   | 15W         | 1.4GHz/4.6GHz           | 1.1GHz/3.4GHz           | NA           | 16GB        | NA          | YES  | YES  | Active           | 0-60°C                |

\*Any other sku or combination is project based support. Please contact sales for details.

## Development Board

| Part No.         | Description                                                |
|------------------|------------------------------------------------------------|
| SOM-DB5830-00A3  | COMe Devel. Board COMe R3.1 Type6 pin-out (LVDS) 0 ~ 60 °C |
| SOM-DB5830A-00A3 | COMe Devel. Board COMe R3.1 Type6 pin-out (eDP) 0 ~ 60 °C  |

## Packing List

| Part No.       | Description              | Quantity |
|----------------|--------------------------|----------|
| -              | SOM-6884 CPU Module      | 1        |
| 1970005711T000 | Heatspreader of SOM-6884 | 1        |

## Optional Accessories

| Part No.       | Description                              |
|----------------|------------------------------------------|
| 1970004870T001 | Semi-Cooler 95 x 95 x 33 mm with 12V Fan |
| 1970005709T001 | QFCS 95 x 95 x 29.3 mm                   |
| SOM-MZ20-00A1  | SOM-MZ20 USB4 card                       |

## Embedded OS

| OS           | Part No.       | Description                          |
|--------------|----------------|--------------------------------------|
| Win10 (HL)   | 20706WX1HS0044 | img W10 21HL SOM-6884 64b 21H2 ENU   |
| Win10 (VL)   | 20706WX1VS0044 | img W10 21VL SOM-6884 64b 21H2 ENU   |
| Win10 (EL)   | 20706WX1ES0044 | img W10 21EL SOM-6884 64b 21H2 ENU   |
| Ubuntu 22.04 | 20706U22DS0018 | img Ubuntu22 SOM-6884 64b 22.04 ENU  |
| Win10 (HL)   | 20706WX1VS0103 | img W10 21VL SOM-6884A2 64b 21H2 ENU |
| Win10 (VL)   | 20706WX1VS0103 | img W10 21VL SOM-6884A2 64b 21H2 ENU |
| Win10 (EL)   | 20706WX1ES0103 | img W10 21EL SOM-6884A2 64b 21H2 ENU |

# Tento produkt můžete zakoupit u společnosti AutoCont IPC a.s.



## AutoCont IPC a.s.

Váš dodavatel průmyslových počítačů, komponent a speciálních průmyslových IT systémů.

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 [www.autocont-ipc.cz](http://www.autocont-ipc.cz)



### PRŮMYSLOVÉ POČÍTAČE

*fanless embedded PC, do racku, ...*



### POČÍTAČE S DISPLEJEM

*panelové PC, terminály, do vozidel, ...*



### AUTOMATIZACE A SBĚR DAT

*převodníky, karty, moduly, switche, ...*



### PERIFERIE A KOMPONENTY

*monitory, klávesnice, desky, skříně, ...*



### NOTEBOOKY A TABLETY

*odolné, windows, android, IP65, ...*



### INFORMAČNÍ KIOSKY

*interiérové, venkovní, ...*



### MEDICÍNSKÁ TECHNIKA

*počítače, tablety, LCD, klávesnice, ...*



### SOFTWAREVÁ ŘEŠENÍ

*pro výrobu, zaměstnance, kiosky, ...*



### PŘEJÍT DO E-SHOPU

[eshop.autocont-ipc.cz](http://eshop.autocont-ipc.cz)



### DOPRAVA ZDARMA

Doprava zdarma v ČR a SR při objednávce nad 10 000 Kč bez DPH nebo nad 400 EUR.



### PRODLOUŽENÁ ZÁRUKA

Záruka 2 roky na vyráběné počítače s možností jejího prodloužení až na 5 let.



### ODMĚNA ZA VĚRNOST

Pravidelní zákazníci u nás nakupují za nižší ceny. Výše slevy se odvíjí od realizovaného obrátu.



### SERVIS ON-SITE A IN-TIME

K projektovým dodávkám nabízíme rozšířenou podporu a servis s garancí výměny zařízení do 48 hodin.