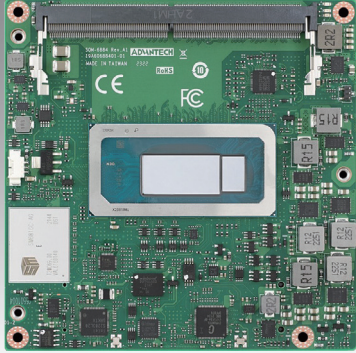


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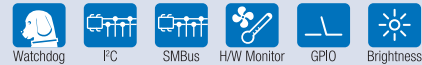
13th Gen Intel® Core™ Processor (Code Name: Raptor Lake-P) COM Express® Compact Type 6



Features

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

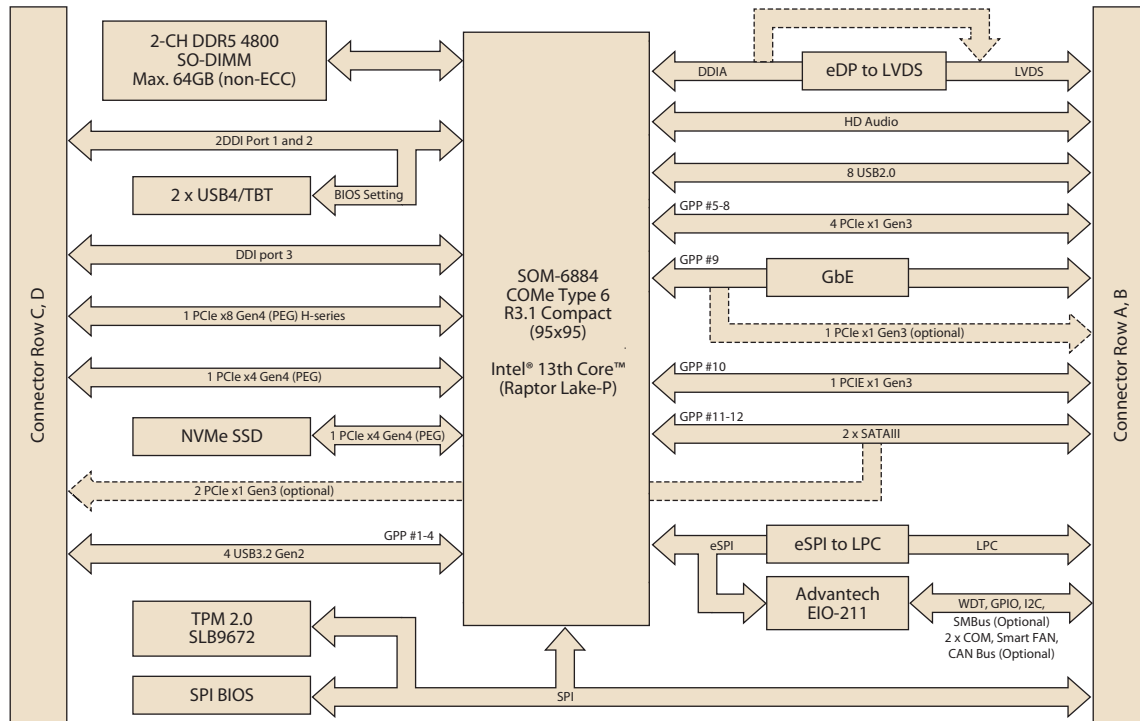
Software APIs:



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 Base/Turbo Frequency | 2.5/5.0GHz | 1.9/4.8GHz | 1.7/4.9GHz |
| | E-core 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 | DDR5, 4800 MT/s, non-ECC | | |
| | SO-DIMM Memory | Up to 64GB by 2 SO-DIMM | | |
| Graphics | Controller | Intel® Iris® Xe Graphics/UHD Graphics Architecture | | |
| | Max Graphic Frequency | 1.4GHz | 1.4GHz | 1.3GHz |
| | 3D graphic HW acceleration | DX12, Open GL 4.6, Vulkan 1.2 | | |
| | HW Media Acceleration | oneVPL | | |
| | Encode/Decode | H.2641/AVC, H.265/HEVC | | |
| Display | LCD | LVDS dual channel: 1920 x 1200@60Hz (option support eDP1.4b 4096 x 2304@60Hz, 24bpp) | | |
| | DDI | 3 DDI ports support configurable HDM/DisplayPort -HDMI 2.0b: 4Kx2K 48-60Hz 24bpp -DisplayPort 1.4a: 4096x2304 60Hz 36bpp | | |
| | Multiple Display | Four displays with each display combinations | | |
| Expansion | PCI Express | PEG: PCIe Gen4, 12 lanes (H series), Bitfurcate to 1 x8, 1 x4 PEG: PCIe Gen4, 4 lanes (P/U series), Bitfurcate to 1 x4 PCIe: PCIe Gen3, 8 lanes max up to 6 end devices, Default 5 lanes (5 x1, 2 x2 + 1 x1), Option 2 x4, 1 x4 + 2 x2 (Co-lay with SATA & Ethernet) | | |
| | | 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, 1TB) | | |
| | 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) | | |
| 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 | | | |
| Power | Type | ATX: Vin, VSB; AT: Vin | | |
| | Supply Voltage | Vin: 8.5V~20V (±5%); VSB: 5 ±5%, RTC Battery: 2.0V ~ 3.3V | | |
| Environment | Operating Temperature | Operating Standard: 0 ~ 60° C (32 ~ 140° F) | | |
| | Storage Temperature | Storage: 0 ~ 60° C (32 ~ 140° F) | | |
| | Humidity | Operating: 40°C@95% relative humidity, non-condensing Storage: 60°C@95% relative humidity, non-condensing | | |
| | Vibration Resistance | 3.5 Grms | | |
| Mechanical | Dimensions | 95 x 95 mm (3.74" x 3.74") | | |

Block Diagram



Ordering Information

| P/N | CPU | Core | CPU TDP | Onboard NVMe | PEG x8 GEN4 | IBEC | USB4 | Thermal Solution | Operating Temperature |
|-------------------|-------------------|-----------|---------|--------------|-------------|------|---------|------------------|-----------------------|
| SOM-6884C7H-U5A1 | Core™ i7-13800HE | 14C (6+8) | 45 W | 64GB | YES | N/A | N/A | Active | 0 ~ 60 °C |
| SOM-6884C5H-U7A1 | Core™ i5-13600HE | 12C (4+8) | 45 W | N/A | YES | N/A | N/A | Active | 0 ~ 60 °C |
| SOM-6884C3H-U1A1 | Core™ i3-13300HE | 8C (4+4) | 45 W | N/A | YES | N/A | N/A | Active | 0 ~ 60 °C |
| SOM-6884C3HA-U1A1 | Core™ i3-13300HE | 8C (4+4) | 45 W | N/A | YES | N/A | Option* | Active | 0 ~ 60 °C |
| SOM-6884C7HX-U5A1 | Core™ i7-13800HRE | 14C (6+8) | 45 W | 64GB | YES | Yes | N/A | Active | -40 ~ 85 °C |
| SOM-6884C7U-S7A1 | Core™ i7-1365UE | 10C (2+8) | 15 W | N/A | N/A | N/A | N/A | Active | 0 ~ 60 °C |
| SOM-6884C5U-S4A1 | Core™ i5-1345UE | 10C (2+8) | 15 W | N/A | N/A | N/A | N/A | Active | 0 ~ 60 °C |
| SOM-6884C3U-S2A1 | Core™ i3-1315UE | 6C (2+4) | 15 W | N/A | N/A | N/A | N/A | 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 |

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 |

Packing List

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

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 UbuntuD SOM-6884 64b 22.04 ENU |