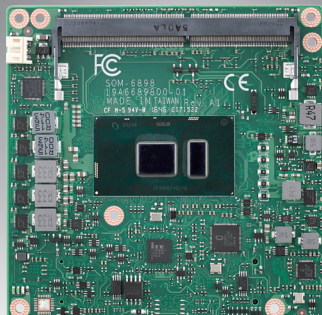


# SOM-6898

## 7<sup>th</sup> Gen Intel Core/Celeron Processors COM Express Compact Module Type 6

NEW



Windows Embedded

iManager WISE-PaaS/RMM



## Specifications

|             |                      |                                                                                                                                                                                                                          |                        |                        |                        |
|-------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|------------------------|
| Compliance  | Form-Factor          | COM Express Compact Module                                                                                                                                                                                               |                        |                        |                        |
|             | Pin-out Type         | COM Express R2.1 Type 6 pin out                                                                                                                                                                                          |                        |                        |                        |
| Platform    | SoC                  | i7-7600U                                                                                                                                                                                                                 | i5-7300U               | i3-7100U               | Celeron3965U           |
|             | Base Frequency       | 2.8 GHz                                                                                                                                                                                                                  | 2.6 GHz                | 2.4 GHz                | 2.2 GHz                |
|             | Turbo Boost Freq.    | 3.9 GHz                                                                                                                                                                                                                  | 3.5 GHz                | N/A                    | N/A                    |
|             | Core/Tread           | 2/4                                                                                                                                                                                                                      | 2/4                    | 2/4                    | 2/2                    |
|             | LLC                  | 4M                                                                                                                                                                                                                       | 3M                     | 3M                     | 2M                     |
|             | CPU TDP              | 15W                                                                                                                                                                                                                      | 15W                    | 15W                    | 15W                    |
|             | Chipset              | integrated in CPU                                                                                                                                                                                                        |                        |                        |                        |
| Memory      | BIOS                 | AMI EFI BIOS                                                                                                                                                                                                             |                        |                        |                        |
|             | Technology           | DDR4 2133                                                                                                                                                                                                                |                        |                        |                        |
|             | ECC Support          | Not supported                                                                                                                                                                                                            |                        |                        |                        |
|             | Channel/Socket       | Dual channels / 2 sockets                                                                                                                                                                                                |                        |                        |                        |
|             | Max. Capacity        | 32GB                                                                                                                                                                                                                     |                        |                        |                        |
| Graphics    | Controller           | Intel® HD Graphics 620                                                                                                                                                                                                   | Intel® HD Graphics 620 | Intel® HD Graphics 620 | Intel® HD Graphics 610 |
|             | Base/Turbo Freq.     | 300MHz/1.15GHz                                                                                                                                                                                                           | 300MHz/1.10GHz         | 300MHz/1GHz            | 300MHz/900MHz          |
|             | Graphics Memory      | Intel DVMT                                                                                                                                                                                                               |                        |                        |                        |
|             | 3D/HW Acceleration   | Direct3D 2015/11.2/11.1/10/9, Direct2D, OpenGL 5.0, OpenCL 2.1/2.0/1.2<br>HW Decode: H.265/HEVC, H.264/AVC, VP9, VP8, MPEG2, WMV9/VC1, JPEG/MJPEG<br>HW Encode: H.265/HEVC, H.264/AVC, VP9, VP8, MPEG2, JPEG             |                        |                        |                        |
| Display     | VGA                  | Support up to 1920 x 1200 @ 60 Hz                                                                                                                                                                                        |                        |                        |                        |
|             | LCD                  | LVDS support 2 channels 18/24-bit, up to 1920 x 1200 @ 60Hz<br>Optional eDP up to 3840 x 2160 @ 60Hz 24bpp or 4096 x 2304 @ 60Hz 24bpp                                                                                   |                        |                        |                        |
|             | DDI                  | 1 Ports, optional 2 while remove VGA, configurable to HDMI1.4/DVI/Displayport1.2<br>HDMI up to 4096 x 2160 @ 24Hz 24bpp<br>DVI up to 1920 x 1080 @ 60Hz<br>DP up to 3840 x 2160 @ 60Hz 24bpp or 4096 x 2304 @ 60Hz 24bpp |                        |                        |                        |
|             | Multiple Display     | Support 3 independent display                                                                                                                                                                                            |                        |                        |                        |
|             | PCI Express x16      | Not available                                                                                                                                                                                                            |                        |                        |                        |
| Expansion   | PCI Express x1       | PCI Express Gen3 (8.0 GT/s)<br>4 PCIe x1 + 1 PCIe x4, 5 PCIe x1 (Optional)                                                                                                                                               |                        |                        |                        |
|             | Audio Interface      | Intel HD Audio                                                                                                                                                                                                           |                        |                        |                        |
|             | LPC                  | Yes (24MHz)                                                                                                                                                                                                              |                        |                        |                        |
| Serial Bus  | SMBus                | Yes                                                                                                                                                                                                                      |                        |                        |                        |
|             | IPC Bus              | Yes                                                                                                                                                                                                                      |                        |                        |                        |
| Ethernet    | Controller           | Intel i219LM                                                                                                                                                                                                             |                        |                        |                        |
|             | Speed                | 10/100/1000 Mbps                                                                                                                                                                                                         |                        |                        |                        |
| I/O         | SATA                 | Supports 2 SATA 3.0 (6 Gbit/s), optional support 3 SATA 3.0 (6 Gbit/s)<br>Support RAID 0/1/5/10, AHCI 1.3/1.3.1                                                                                                          |                        |                        |                        |
|             | USB3.0               | 4 Ports                                                                                                                                                                                                                  |                        |                        |                        |
|             | USB2.0               | 8 Ports                                                                                                                                                                                                                  |                        |                        |                        |
|             | SPI Bus              | For BIOS only                                                                                                                                                                                                            |                        |                        |                        |
|             | GPIO                 | 8-bit GPIO                                                                                                                                                                                                               |                        |                        |                        |
|             | eMMC                 | Optional (up to 64GB)                                                                                                                                                                                                    |                        |                        |                        |
|             | Watchdog             | 65536 level, 0 ~ 65535 sec                                                                                                                                                                                               |                        |                        |                        |
|             | COM Port             | 2 Ports (2-wire, support console redirection)                                                                                                                                                                            |                        |                        |                        |
|             | Express Card         | 2 ports                                                                                                                                                                                                                  |                        |                        |                        |
|             | TPM                  | TPM2.0 (Infineon SLB9665)                                                                                                                                                                                                |                        |                        |                        |
|             | Smart Fan            | 2 Ports; 1 Port on COM Module. Support 12V Fan, 1 Port on Carrier Board                                                                                                                                                  |                        |                        |                        |
|             | Type                 | ATX: Vin, VSB; AT: Vin                                                                                                                                                                                                   |                        |                        |                        |
|             | Supply Voltage       | Vin: 8.5V (9V-5%) ~ 20V (19+5%); VSB: 5V ±5%                                                                                                                                                                             |                        |                        |                        |
| Power       | Burn in:             | 17.9W                                                                                                                                                                                                                    |                        |                        |                        |
|             | Idle:                | 4.4W                                                                                                                                                                                                                     |                        |                        |                        |
|             | Power Consumption    | *Only for reference and will depends on custom software loading, detail refer to user manual                                                                                                                             |                        |                        |                        |
| Environment | Temperature          | Operating : 0 ~ 60° C (32 ~ 140° F) (Extend model -40 ~ 85° C)<br>Storage : -40 ~ 85° C (-40 ~ 185° F)                                                                                                                   |                        |                        |                        |
|             | Humidity             | Operating: 40° C @ 95% relative humidity, non-condensing<br>Storage: 60° C @ 95%relative humidity, non-condensing                                                                                                        |                        |                        |                        |
|             | Vibration Resistance | 3.5 Grms                                                                                                                                                                                                                 |                        |                        |                        |
| Mechanical  | Dimensions           | 95 x 95 mm (3.74" x 3.74")                                                                                                                                                                                               |                        |                        |                        |

## Features

- 7<sup>th</sup> Gen Intel Core i7/i5/i3/Celeron w/ integrated PCH-LP
- Support Dual Channel DDR4 2133 SODIMM up to 32GB
- Integrated GFX supports HEVC, VP8, VP9 HW Transcode
- Flexible PCI Express up to 8 lanes
- Supports iManager, WISE-PaaS/RMM, and Embedded Software APIs

### Software APIs:



Watchdog



IPC



SMBus



H/W Monitor



GPIO



Brightness Control

### Utilities:



BIOS flash

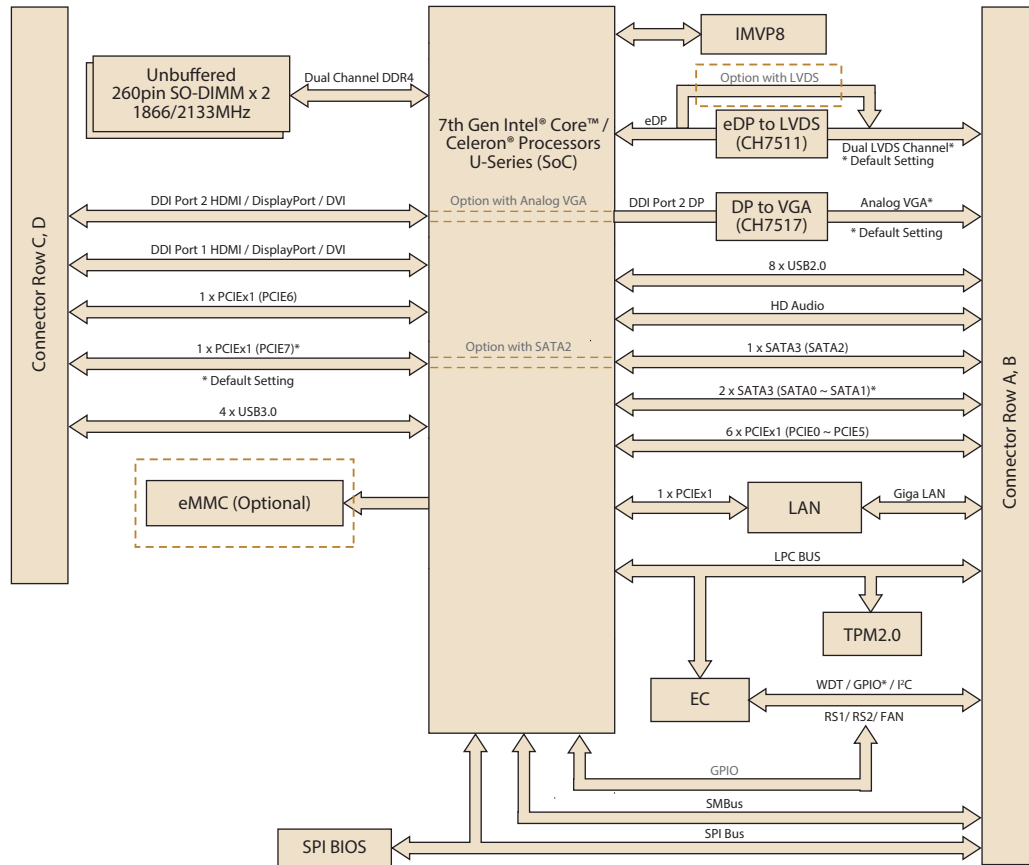


Monitoring



Embedded Security ID

## Block Diagram



## Ordering Information

| Part No.           | SoC           | Base/Turbo Boost Freq. | Core | LLC | CPU TDP | DDR4 Memory | Thermal Solution | Operating Temperature |
|--------------------|---------------|------------------------|------|-----|---------|-------------|------------------|-----------------------|
| SOM-6898C7-U8A1E   | i7-7600U      | 2.8GHz / 3.9GHz        | 2    | 4MB | 15W     | Non-ECC     | Active           | 0 ~ 60° C             |
| SOM-6898C5-U6A1E   | i5-7300U      | 2.6GHz / 3.5GHz        | 2    | 3MB | 15W     | Non-ECC     | Active           | 0 ~ 60° C             |
| SOM-6898C3-U4A1E   | i3-7100U      | 2.4GHz / N/A           | 2    | 3MB | 15W     | Non-ECC     | Active           | 0 ~ 60° C             |
| SOM-6898CR-U4A1E   | Celeron 3965U | 2.2GHz / N/A           | 2    | 2MB | 15W     | Non-ECC     | Active           | 0 ~ 60° C             |
| SOM-6898C7Z2-U8A1E | i7-7600U      | 2.8GHz / 3.9GHz        | 2    | 4MB | 15W     | Non-ECC     | Active           | -40 ~ 85° C           |
| SOM-6898C5Z2-U6A1E | i5-7300U      | 2.6GHz / 3.5GHz        | 2    | 3MB | 15W     | Non-ECC     | Active           | -40 ~ 85° C           |
| SOM-6898C3Z2-U4A1E | i3-7100U      | 2.4GHz / N/A           | 2    | 3MB | 15W     | Non-ECC     | Active           | -40 ~ 85° C           |
| SOM-6898CRZ2-U4A1E | Celeron 3965U | 2.2GHz / N/A           | 2    | 2MB | 15W     | Non-ECC     | Active           | -40 ~ 85° C           |

Note: Any other sku or combination is project based support. Please contact sales for details.

## Development Board

| Part No.         | Description                              |
|------------------|------------------------------------------|
| SOM-DB5800-00A2E | COMe Devel. Board Type6 pint-out Rev. A2 |

## Packing List

| Part No.       | Description         | Quantity |
|----------------|---------------------|----------|
| -              | SOM-6898 CPU module | 1        |
| 1960080159N000 | Heatspreader        | 1        |

## Optional Accessories

| Part No.           | Description                                |
|--------------------|--------------------------------------------|
| 1960048819N001     | Semi-Cooler 95 x 95 x 33.5 mm with 12V Fan |
| 96LEDK-I057VG50NA1 | 5.7" LED PANEL 500N 640X480(G)             |
| 96LEDK-A084SV45NB2 | 8.4" LED PANEL 450N 800X600(G) G084SN05 V9 |
| 96LEDK-C150XG40NG1 | 15" LED PANEL 400N 1024X768(G) G150XGE-L04 |
| 96LEDK-A170SX35NF1 | 17" LED 350N 1280X1024(G) G170EG01 V1      |

## Embedded OS

| OS    | Part Number | Description                        |
|-------|-------------|------------------------------------|
| Win10 | 2070015199  | img W10 16HL SOM-6898 64b 1701 ENU |
| Win10 | 2070015200  | img W10 16VL SOM-6898 64b 1701 ENU |
| Win10 | 2070015201  | img W10 16EL SOM-6898 64b 1701 ENU |