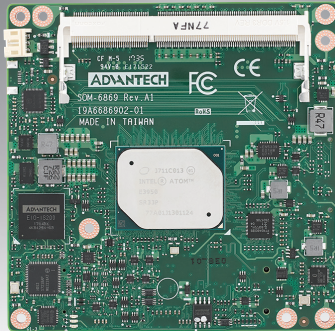


# SOM-6869

## Intel® Atom™ E3900 & Pentium™ and Celeron™ N Series Processors COM-Express Compact Module

NEW



### Features

- COM R2.1 Type 6 Compact Module
- Intel® Atom™ E3900 & Pentium™ and Celeron™ N Series Processors
- Max. 8GB, dual Channel DDR3L memory (A1: non-ECC ; B1: ECC)
- Supports up to 3 simultaneous displays: LVDS/eDP, VGA, HDMI/DisplayPort
- Supports H.264/AVC, H.265/HEVC, VP9, VP8 HW DECODE
- Supports wide operational temperature range
- iManager, WISE-PaaS/RMM, and Embedded Software APIs

#### Software APIs:



#### Utilities:

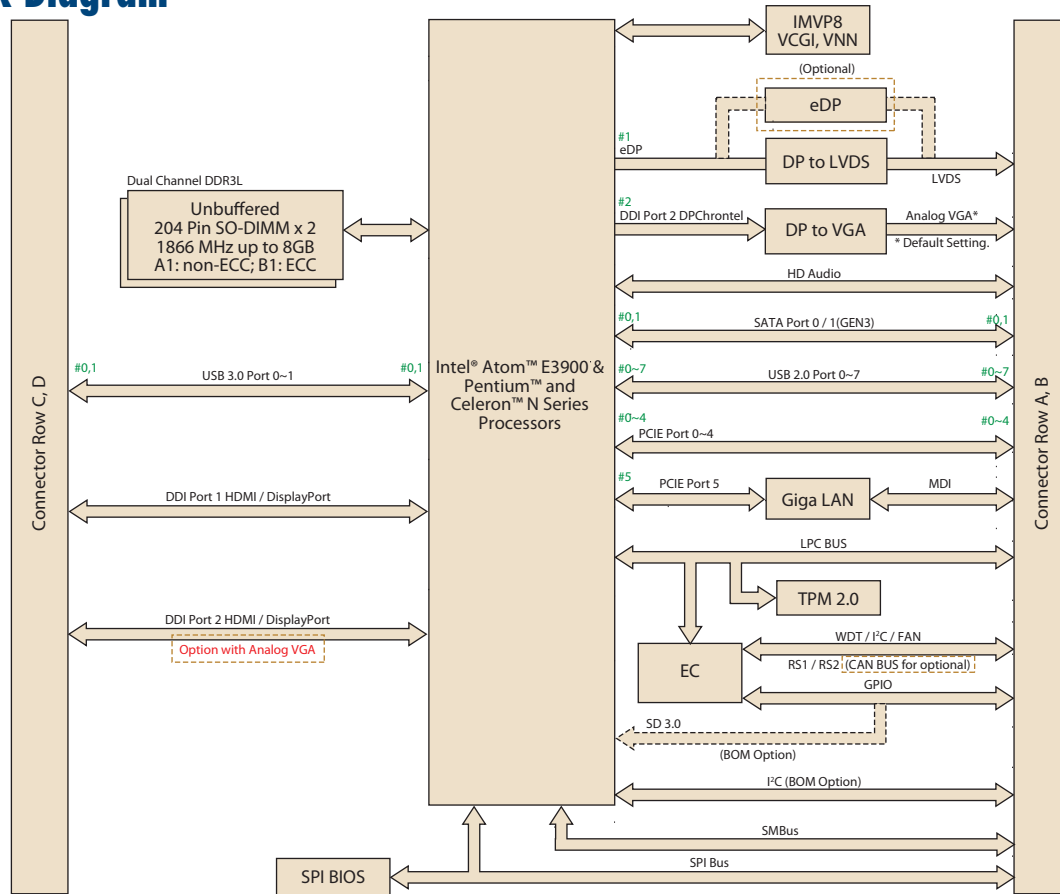


Windows Embedded iManager WISE-PaaS/ DeviceOn C E FC

### Specifications

|             |                          |                                                                                                                                                                                                                              |                        |                        |                    |
|-------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|--------------------|
| Compliance  | Form-Factor              | COM Express Compact Module                                                                                                                                                                                                   |                        |                        |                    |
|             | Pin-Out Type             | COM Express R2.1 Type 6 pin out                                                                                                                                                                                              |                        |                        |                    |
| Platform    | Processor                | Atom X7-E3950                                                                                                                                                                                                                | Atom X5-E3940          | Atom X5-E3930          | Pentium® N4200     |
|             | Base Frequency           | 1.6GHz                                                                                                                                                                                                                       | 1.6GHz                 | 1.3GHz                 | 1.1GHz             |
|             | Burst Frequency          | 2GHz                                                                                                                                                                                                                         | 1.8GHz                 | 1.8GHz                 | 2.5GHz             |
|             | Core/Thread              | 4/4                                                                                                                                                                                                                          | 4/4                    | 2/2                    | 4 / 4              |
|             | LLC                      | 2 MB                                                                                                                                                                                                                         | 2 MB                   | 2 MB                   | 2MB                |
|             | CPU TDP                  | 12 W                                                                                                                                                                                                                         | 9.5 W                  | 6.5 W                  | 6W                 |
| Memory      | BIOS                     | AMI UEFI BIOS @ 64 Mb                                                                                                                                                                                                        |                        |                        |                    |
|             | Technology               | Dual channel DDR3L, 1866 for non ECC/1600 for ECC                                                                                                                                                                            |                        |                        |                    |
|             | ECC Support              | A1: non-ECC; B1: ECC (E3900 SKU only)                                                                                                                                                                                        |                        |                        |                    |
|             | Channel/Socket           | Dual channels / 2 sockets                                                                                                                                                                                                    |                        |                        |                    |
| Graphics    | Max. Capacity            | Up to 8 GB                                                                                                                                                                                                                   |                        |                        |                    |
|             | Controller               | Intel® HD Graphics 505                                                                                                                                                                                                       | Intel® HD Graphics 500 | Intel® HD Graphics 500 | Intel® HD Graphics |
|             | Graphics Burst Frequency | 650MHz                                                                                                                                                                                                                       | 600MHz                 | 550MHz                 | 750MHz             |
|             | Graphics Memory          | Intel DMV15.0                                                                                                                                                                                                                |                        |                        |                    |
|             | 3D/HW Acceleration       | DX (9.3, 10, 11.3, 12), OpenGL 4.3, OGL ES 3.0, OpenCL 2.0<br>HEVC (H.265) @ L5, H.264 @ 5.2, MVC, MPEG2, VP8, VP9, VC-1, WMV9, JPEG/MJPEG HW Decode,<br>HEVC (H.265) @ L4, H.264 @ 5.2, MVC, VP8, VP9, JPEG/MJPEG HW Encode |                        |                        |                    |
| Display     | VGA                      | 1 port up to 1920 x 1200                                                                                                                                                                                                     |                        |                        |                    |
|             | LCD (LVDS/DP)            | LVDS: Dual channel 18/24-bit, up to 1366 x 768<br>eDP: Up to 4096 x 2160 @ 60 Hz                                                                                                                                             |                        |                        |                    |
|             | DDI (HDMI/DisplayPort)   | Multi-independent display: Up to 3 simultaneous displays (1 Internal + 2 Externals)<br>Resolution: <ul style="list-style-type: none"><li>HDMI1.4b: 3840 x 2160 @ 30Hz</li><li>DP1.2a: 4096 x 2160 @ 60Hz</li></ul>           |                        |                        |                    |
|             | Triple Display           | eDP, VGA, HDMI/DisplayPort(DDI1)<br>LVDS, VGA, HDMI/DisplayPort(DDI1)<br>eDP, HDMI/DisplayPort(DDI1), HDMI/DisplayPort(DDI2)<br>LVDS, HDMI/DisplayPort(DDI1), HDMI/DisplayPort(DDI2)                                         |                        |                        |                    |
|             | PCI Express x1           | 5 PCIe x1, 1 PCIe x4 + 1 PCIe x1 (Optional)                                                                                                                                                                                  |                        |                        |                    |
| Expansion   | Audio Interface          | Intel HD Audio Interface                                                                                                                                                                                                     |                        |                        |                    |
|             | LPC                      | Yes (25MHz)                                                                                                                                                                                                                  |                        |                        |                    |
| Serial Bus  | SMBus                    | Yes (Default from CPU; Option from EC)                                                                                                                                                                                       |                        |                        |                    |
|             | I2C Bus                  | Yes (Default from EC; Option from CPU)                                                                                                                                                                                       |                        |                        |                    |
| Ethernet    | Controller               | Intel i210IT/i210AT                                                                                                                                                                                                          |                        |                        |                    |
|             | Speed                    | 10/100/1000 Mbps                                                                                                                                                                                                             |                        |                        |                    |
| I/O         | SATA                     | 2 ports, Support Gen 1(1.5 Gb/s) or Gen2 (3 Gb/s) and Gen3.1 (6Gb/s)                                                                                                                                                         |                        |                        |                    |
|             | USB3.0                   | 2 ports                                                                                                                                                                                                                      |                        |                        |                    |
|             | USB2.0                   | 8 ports                                                                                                                                                                                                                      |                        |                        |                    |
|             | SPI Bus                  | Support SPI BIOS EEPROM                                                                                                                                                                                                      |                        |                        |                    |
|             | GPIO                     | 8-bit GPIO programmable                                                                                                                                                                                                      |                        |                        |                    |
|             | SDIO                     | Optional                                                                                                                                                                                                                     |                        |                        |                    |
|             | Watchdog                 | 65536 level, 0 ~ 65535 sec                                                                                                                                                                                                   |                        |                        |                    |
|             | COM Port                 | 2 Ports (2-Wire)                                                                                                                                                                                                             |                        |                        |                    |
|             | Express Card             | 2                                                                                                                                                                                                                            |                        |                        |                    |
|             | TPM                      | TPM2.0                                                                                                                                                                                                                       |                        |                        |                    |
|             | CAN Bus                  | Optional                                                                                                                                                                                                                     |                        |                        |                    |
|             | Smart Fan                | 2 Ports: 1 Port on COM Module, Support 12V Fan, 1 Port on Carrier Board                                                                                                                                                      |                        |                        |                    |
| Power       | Type                     | ATX: Vin, VSB; AT: Vin                                                                                                                                                                                                       |                        |                        |                    |
|             | Supply Voltage           | ATX (Vin 4.75-20V, Vsb 4.75-5.25V)<br>AT (Vin 4.75-20V)                                                                                                                                                                      |                        |                        |                    |
|             | Power Consumption        | Max. 14.76Watt. (N4200)<br>Idle 4.46Watt.(N4200)                                                                                                                                                                             |                        |                        |                    |
| Environment | Temperature              | Operating Standard: 0 ~ 60° C (32 ~ 140° F), Extend: -40 ~ 85° C (-40 ~ 185° F) (E3900 SKU only)<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")                                                                                                                                                                                                   |                        |                        |                    |

## Block Diagram



## Ordering Information

| Part No.          | CPU            | Frequency Base/Burst | Core | CPU TDP | ECC | Thermal Solution | Operating Temperature |
|-------------------|----------------|----------------------|------|---------|-----|------------------|-----------------------|
| SOM-6869ACD-S3A1E | Atom x5-E3930  | 1.3/1.8 GHz          | 2C   | 6.5W    | No  | Passive          | 0 ~ 60 °C             |
| SOM-6869ACD-S6A1E | Atom x5-E3940  | 1.6/1.8 GHz          | 4C   | 9.5W    | No  | Passive          | 0 ~ 60 °C             |
| SOM-6869ACD-S7A1E | Atom x7-E3950  | 1.6/2.0 GHz          | 4C   | 12W     | No  | Passive          | 0 ~ 60 °C             |
| SOM-6869ACC-S3B1  | Atom x5-E3930  | 1.3/1.8 GHz          | 2C   | 6.5W    | Yes | Passive          | 0 ~ 60 °C             |
| SOM-6869ACC-S6B1  | Atom x5-E3940  | 1.6/1.8 GHz          | 4C   | 9.5W    | Yes | Passive          | 0 ~ 60 °C             |
| SOM-6869ACC-S7B1  | Atom x7-E3950  | 1.6/2.0 GHz          | 4C   | 12W     | Yes | Passive          | 0 ~ 60 °C             |
| SOM-6869AXD-S3A1E | Atom x5-E3930  | 1.3/1.8 GHz          | 2C   | 6.5W    | No  | Active           | -40 ~ 85 °C           |
| SOM-6869AXD-S6A1E | Atom x5-E3940  | 1.6/1.8 GHz          | 4C   | 9.5W    | No  | Active           | -40 ~ 85 °C           |
| SOM-6869AXD-S7A1E | Atom x7-E3950  | 1.6/2.0 GHz          | 4C   | 12W     | No  | Active           | -40 ~ 85 °C           |
| SOM-6869ACCX-S3B1 | Atom x5-E3930  | 1.3/1.8 GHz          | 2C   | 6.5W    | Yes | Active           | -40 ~ 85 °C           |
| SOM-6869ACCX-S6B1 | Atom x5-E3940  | 1.6/1.8 GHz          | 4C   | 9.5W    | Yes | Active           | -40 ~ 85 °C           |
| SOM-6869ACCX-S7B1 | Atom x7-E3950  | 1.6/2.0 GHz          | 4C   | 12W     | Yes | Active           | -40 ~ 85 °C           |
| SOM-6869PCD-S2A1E | Pentium N4200E | 1.1/2.5 GHz          | 4C   | 6W      | No  | Passive          | 0 ~ 60 °C             |

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

## Packing List

| Part No.       | Description                  | Quantity |
|----------------|------------------------------|----------|
| -              | SOM-6869 CPU Module          | 1        |
| 1960080792T000 | Heatspreader (for E3900 SKU) | 1        |
| 1960080793T010 | Heat spreader (for N SKU)    | 1        |

## Development Board

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

## Optional Accessories

| Part No.       | Description                      |
|----------------|----------------------------------|
| 1960048815N001 | Semi-Heatsink 95 x 95 x 16.25 mm |
| 1960048819N001 | Semi-Cooler 95 x 95 x 33 mm      |

## Embedded OS

| OS                  | Part No.       | Description                        |
|---------------------|----------------|------------------------------------|
| Win10 with DeviceOn | 20706WX6ES0040 | img W10 16EL SOM-6869 64b 1709 ENU |

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