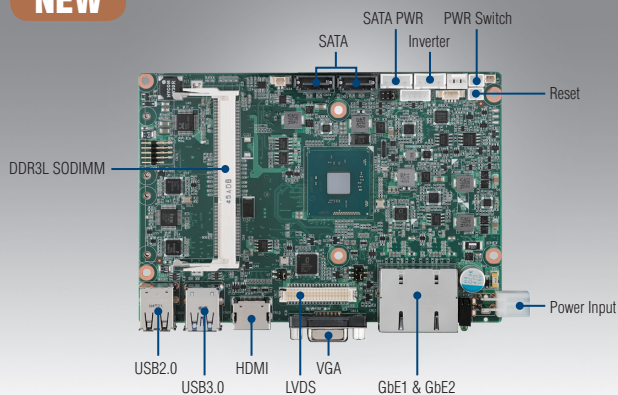


# PCM-9310

**Intel® Celeron N3160/N3060 SoC,  
Intel® Atom E8000 SoC, 3.5" SBC,  
DDR3L, VGA, HDMI, 48-bit LVDS, 2GbE,  
Mini PCIe, mSATA, SUSI API**

**NEW**



**iManager WISE-PaaS/RMM** **CE FCC**

## Features

- Intel® Celeron QC/DC SoC, Intel® Atom QC, DDR3L-1600MHz SODIMM up to 8GB
- DirectX11.1, OpenGL4.2, OpenCL1.2, 3 independent display: VGA + HDMI + LVDS/eDP\*
- Rich I/O: 4 x COM, 2 x SATA, 2 x USB3.0, 4 x USB2.0, TPM2.0, SMBus/I<sup>2</sup>C, GPIO, full-size Mini PCIe w/ SIM holder, full-size mSATA
- Supports SUSI API

### Software APIs:



### Utilities:

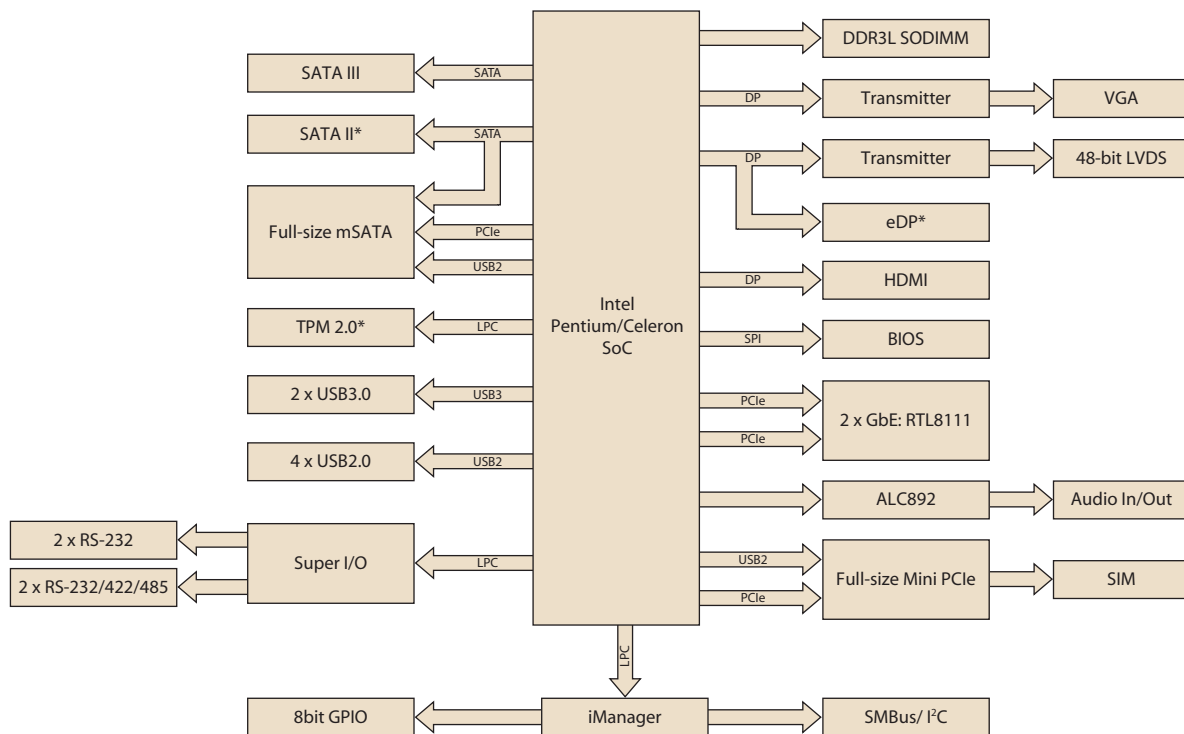


## Specifications

|                          |                             | Intel Celeron N3160                                                                                                                                                                          | Intel Celeron N3060    | Intel Atom E8000      |
|--------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|
| Processor System         | CPU                         | Intel Celeron N3160                                                                                                                                                                          | Intel Celeron N3060    | Intel Atom E8000      |
|                          | Base Frequency              | 1.6 GHz (Quad-Core)                                                                                                                                                                          | 1.6 GHz (Dual-Core)    | 1.04 GHz (Quad-Core)  |
|                          | Burst Frequency             | 2.24 GHz                                                                                                                                                                                     | 2.48 GHz               | 2.00 GHz              |
|                          | L2 Cache                    | 2MB                                                                                                                                                                                          |                        |                       |
| Memory                   | BIOS                        | AMI UEFI BIOS at 64 Mb                                                                                                                                                                       |                        |                       |
|                          | Technology                  | DDR3L-1600MHz                                                                                                                                                                                |                        |                       |
|                          | Max. Capacity               | 8 GB                                                                                                                                                                                         |                        |                       |
|                          | Socket                      | 1 x 204-pin SODIMM                                                                                                                                                                           |                        |                       |
| Display                  | Controller                  | Intel® HD Graphics 400                                                                                                                                                                       |                        |                       |
|                          | Graphic Features            | DirectX11.1, OpenGL4.2, OpenCL1.2 (OpenCL not for Win7)<br>HW Decode: H.265/HEVC @ level 5, H.264 @ Level 5.2, MPEG2, MVC, VC-1, WMV9, JPEG, VP8.<br>HW Encode: H.264 @ Level 5.1, MVC, JPEG |                        |                       |
|                          | VGA                         | 1920 x 1200 at 60Hz                                                                                                                                                                          |                        |                       |
|                          | LVDS                        | Single/dual-ch 18/24bit up to 1920 x 1200 at 60Hz                                                                                                                                            |                        |                       |
|                          | eDP*                        | 3.3/ 5/ 12V for VDD power, 5/12V for inverter<br>eDP 1.3 up to 2560x1440 (Optional)                                                                                                          |                        |                       |
|                          | HDMI                        | HDMI 1.4b up to 2560x1600 at 60Hz                                                                                                                                                            |                        |                       |
|                          | 3 Independent Display       | VGA + HDMI + LVDS/eDP*                                                                                                                                                                       |                        |                       |
| Ethernet                 | Speed                       | 10/100/1000Mbps                                                                                                                                                                              |                        |                       |
|                          | Controller                  | RTL8111E                                                                                                                                                                                     |                        |                       |
|                          | Connector                   | 2 RJ45                                                                                                                                                                                       |                        |                       |
| Audio                    | Codec                       | ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in                                                                                                                                |                        |                       |
| WatchDog Timer           |                             | Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds                                                                                                                      |                        |                       |
| Storage                  | SATA                        | 1 x SATA III up to 600 MB/s<br>1 x optional SATA II up to 300 MB/s                                                                                                                           |                        |                       |
|                          | mSATA                       | 1 x Full-size (support Mini PCIe by request)                                                                                                                                                 |                        |                       |
| Rear I/O                 | Ethernet                    | 2 (10/100/1000Mbps)                                                                                                                                                                          |                        |                       |
|                          | VGA                         | 1                                                                                                                                                                                            |                        |                       |
|                          | HDMI                        | 1                                                                                                                                                                                            |                        |                       |
|                          | USB 2.0                     | 2                                                                                                                                                                                            |                        |                       |
|                          | USB 3.0                     | 2                                                                                                                                                                                            |                        |                       |
|                          | LED                         | Power, HDD                                                                                                                                                                                   |                        |                       |
| Internal I/O             | DC Jack*                    | 1 (Optional)                                                                                                                                                                                 |                        |                       |
|                          | Serial                      | 2 x RS-232, 2 x RS-232/422/485 with auto flow control (ESD protection: air gap ±15kV, contact ±8kV)                                                                                          |                        |                       |
|                          | USB2.0                      | 2                                                                                                                                                                                            |                        |                       |
|                          | I <sup>2</sup> C            | 1 (Shared with SMBus pin)                                                                                                                                                                    |                        |                       |
|                          | SMBus                       | 1 (Shared with I <sup>2</sup> C pin)                                                                                                                                                         |                        |                       |
| Expansion                | GPIO                        | 8-bit (5V tolerance)                                                                                                                                                                         |                        |                       |
|                          | Mini PCIe                   | 1 x full-size with SIM holder<br>1 x full-size (default support mSATA)                                                                                                                       |                        |                       |
| Power                    | Power Type                  | Single 12V DC power input                                                                                                                                                                    |                        |                       |
|                          | Power Supply Voltage        | 12V ± 10%                                                                                                                                                                                    |                        |                       |
|                          | Power Consumption (Typical) | 0.58 A @ 12 V (7.05 W)                                                                                                                                                                       | 0.38 A @ 12 V (4.55 W) | 0.58A @ 12V (6.95W)   |
|                          | Power Consumption (Max)     | 1.03A @ 12 V (12.27 W)                                                                                                                                                                       | 0.85A @12 V (10.20 W)  | 0.85A @ 12 V (10.20W) |
|                          | Power Management            | ACPI                                                                                                                                                                                         |                        |                       |
| Environment              | Battery                     | Lithium 3 V / 210 mAh                                                                                                                                                                        |                        |                       |
|                          | Operational                 | 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)                                                                                                                |                        |                       |
| Physical Characteristics | Non-Operational             | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing                                                                                                                                             |                        |                       |
|                          | Dimensions (L x W)          | 146 x 102 mm (5.7" x 4")                                                                                                                                                                     |                        |                       |
|                          | Weight                      | 0.6 kg (1.2 lb)                                                                                                                                                                              |                        |                       |
|                          | Height                      |                                                                                                                                                                                              |                        |                       |

\* The specification is supported by request

## Block Diagram



## Ordering Information

| Part No.         | CPU                        | L2 Cache | Memory | LVDS   | VGA | HDMI | GbE | Audio | RS-232/422/485 | RS-232 | USB 3.0 | USB 2.0 | SATA III | Mini PCIe | mSATA     | Power connector | Thermal Solution* | Operation Temp. |
|------------------|----------------------------|----------|--------|--------|-----|------|-----|-------|----------------|--------|---------|---------|----------|-----------|-----------|-----------------|-------------------|-----------------|
| PCM-9310CQ-S6A1E | Intel N3160<br>2.24 GHz 6W | 2MB      | SODIMM | 48-bit | Yes | 1    | 2   | Yes   | 2              | 2      | 2       | 4       | 1        | Full-size | Full-size | 2 x 2pin        | Passive           | 0 ~ 60° C       |
| PCM-9310CD-S6A1E | Intel N3060<br>2.48 GHz 6W | 1MB      | SODIMM | 48-bit | Yes | 1    | 2   | Yes   | 2              | 2      | 2       | 4       | 1        | Full-size | Full-size | 2 x 2pin        | Passive           | 0 ~ 60° C       |
| PCM-9310AQ-S6A1E | Intel E8000<br>2.00GHz 5W  | 2MB      | SODIMM | 48-bit | Yes | 1    | 2   | Yes   | 2              | 2      | 2       | 4       | 1        | Full-size | Full-size | 2 x 2pin        | Passive           | 0 ~ 60° C       |

Note1: passive=fanless

## Packing List

| Part No.       | Description                                    | Quantity |
|----------------|------------------------------------------------|----------|
|                | PCM-9310 SBC                                   | 1        |
|                | Startup Manual                                 | 1        |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1        |
| 1700018785     | SATA 35cm power cable                          | 1        |
| 1701200220     | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 2        |
| 1700019584     | Audio Cable                                    | 1        |
| 9689000002     | mini Jumper pack                               | 1        |
| 1960071176T001 | Heatsink                                       | 1        |

## Optional Accessories

| Part No.       | Description        |
|----------------|--------------------|
| 1960075286T001 | Heat spreader      |
| 1703100260     | Internal USB cable |

## Embedded OS/API

| Embedded OS/API | Part No.   | Description |
|-----------------|------------|-------------|
| Win10           | 2070015309 | 64bit       |
| Win8.1          |            | 64bit       |
| WES7            | 2070014560 | 64bit       |
| VxWorks         |            | (TBD)       |
| Software API    |            | SUSI API    |

## Rear I/O View



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