

# SOM-7568

## Intel® Pentium®/Celeron® N3000 Series and Atom Series COM Express Mini Module Type 10

NEW



Windows Embedded

iManager WISE-PaaS/RMM CE FCC

### Features

- Intel® Pentium®/Celeron® N3000 Series and Atom™ SoC
- Dual Channel DDR3L 1600 non-ECC onboard memory up to 8 GB
- Support HEVC/H.265, H.264 MPEG2 HW Decode
- Support rich display interface: LVDS/eDP, HDMI/DisplayPort/DVI
- iManager WISE-PaaS/RMM, and Embedded Software APIs

Software APIs:



Watchdog



I2C



SMBus



H/W Monitor



GPIO

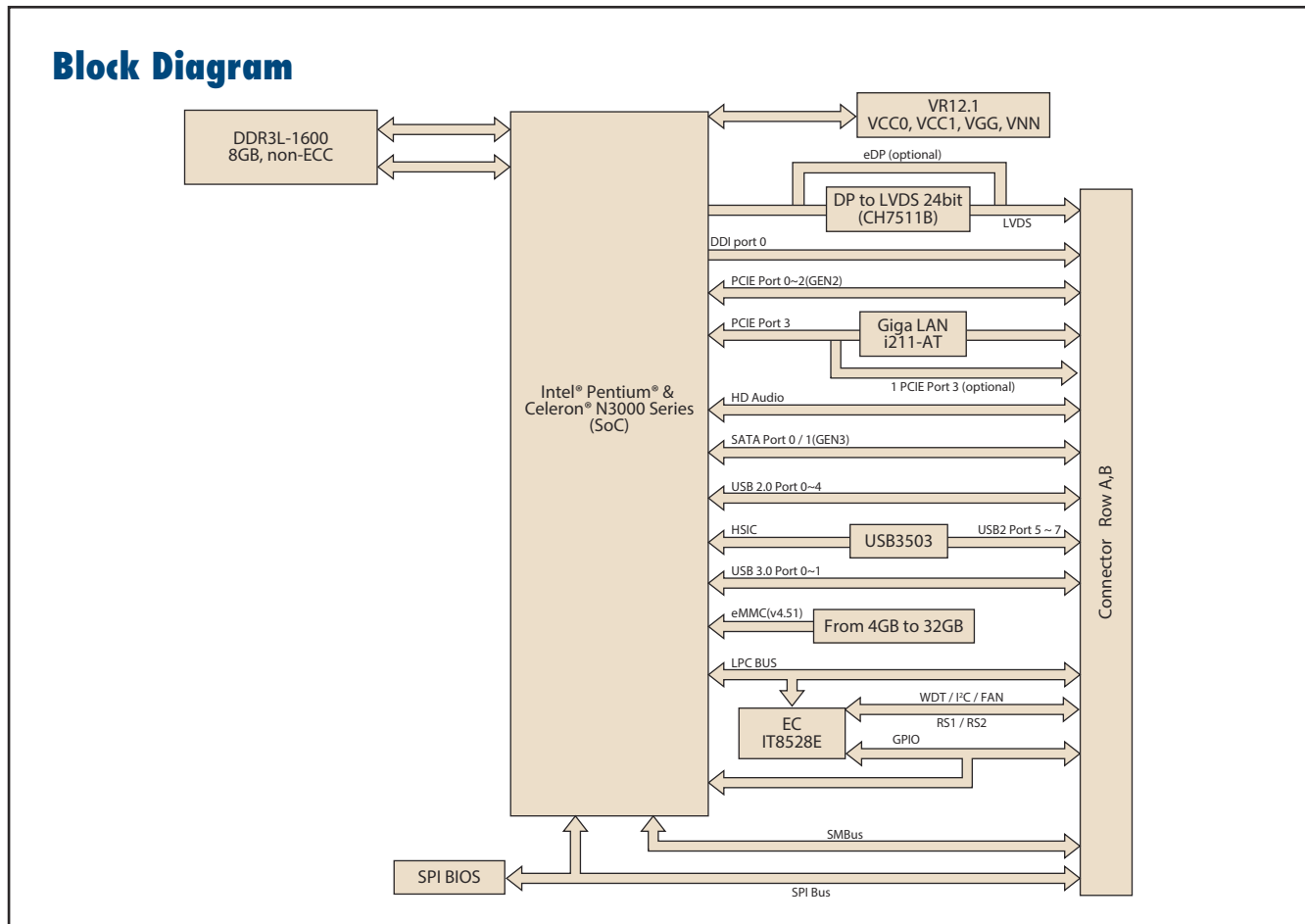


Brightness Control

### Specifications

|                  |                          |  |                    |                    |                    |                    |
|------------------|--------------------------|--|--------------------|--------------------|--------------------|--------------------|
| Form Factor      | Form Factor              | COM Express Mini Module Compatible   |                    |                    |                    |                    |
|                  | Pin-out Type             | COM Express R2.1 Type 10 Pin-out Compatible  |                    |                    |                    |                    |
| Processor System | SoC                      | Pentium® N3710   | Celeron® N3160     | Celeron® 3060      | Celeron® N3010     | Atom™ X5-E8000     |
|                  | Base Frequency           | 1.6 GHz  | 1.6 GHz            | 1.6 GHz            | 1.04 GHz           | 1.04 GHz           |
|                  | Burst Frequency          | 2.56 GHz   | 2.24 GHz           | 2.48 GHz           | 2.24 GHz           | 2 GHz              |
|                  | Core/Thread              | 4/4  | 4/4                | 2/2                | 2/2                | 4/4                |
|                  | LLC                      | 2 MB   | 2 MB               | 2 MB               | 2 MB               | 2 MB               |
|                  | CPU TDP                  | 6W   | 6W                 | 6W                 | 4W                 | 5W                 |
|                  | BIOS                     | AMI UEFI BIOS @ 64Mb   |                    |                    |                    |                    |
| Memory           | Technology               | Onboard DDR3L-1600   |                    |                    |                    |                    |
|                  | ECC Support              | N/A  |                    |                    |                    |                    |
|                  | Channel                  | Dual-Channel   |                    |                    |                    |                    |
|                  | Max. Capacity            | 8GB  |                    |                    |                    |                    |
| Graphics         | Controller               | Intel® HD Graphics   | Intel® HD Graphics | Intel® HD Graphics | Intel® HD Graphics | Intel® HD Graphics |
|                  | Base Freq.               | 400 MHz  | 320 MHz            | 320 MHz            | 320 MHz            | 320 MHz            |
|                  | Graphics Burst Frequency | 700 MHz  | 640 MHz            | 600 MHz            | 600 MHz            | 320 MHz            |
|                  | 3D/HW Acceleration       | DX 11.1, OpenGL 4.2, OpenGL ES 3.0, OpenCL 1.2, HW Decode: HEVC (H.265) @ L5, H.264 @ 5.2, MPEG2, MVC, VC-1, WMV9, JPEG/MJPEG, VP8 HW Encode: H.264 @ 5.1, MVC, JPEG/MJPEG |                    |                    |                    |                    |
| Display          | LCD                      | LVDS: Single channel 18/24-bit, up to 1366 x 768<br>Optional eDP: Up to 3840 x 2160 @ 30Hz or 2560 x 1600 @ 60Hz; eDP Version 1.4  |                    |                    |                    |                    |
|                  | DDI                      | HDMI & DisplayPort: Up to 3840 x 2160 @ 30Hz or 2560 x 1600 @ 60Hz, 24 bpp; HDMI Version 1.4b; DisplayPort Version 1.1a  |                    |                    |                    |                    |
|                  | Multiple Display         | LVDS, HDMI/DisplayPort<br>Optional: eDP, HDMI/DisplayPort  |                    |                    |                    |                    |
| Expansion        | PCI Express x1           | 3 PCIe x1; (Optional 1 PCIe x4 without LAN)  |                    |                    |                    |                    |
|                  | Audio Interface          | HD Audio   |                    |                    |                    |                    |
|                  | LPC                      | Yes  |                    |                    |                    |                    |
| Serial Bus       | SMBus                    | Yes  |                    |                    |                    |                    |
|                  | I2C Bus                  | Yes  |                    |                    |                    |                    |
| Ethernet         | Controller               | Intel® i211AT  |                    |                    |                    |                    |
|                  | Speed                    | 10/100/1000 Mbps   |                    |                    |                    |                    |
| Onboard Storage  | eMMC/SATA SSD            | eMMC4.51, 4GB to 32GB  |                    |                    |                    |                    |
| I/O              | SATA                     | 2 Ports, Support Gen3 (6Gb/s) and Gen2 (3 Gb/s) or Gen 1(1.5 Gb/s)   |                    |                    |                    |                    |
|                  | USB3.0                   | 2 Ports  |                    |                    |                    |                    |
|                  | USB2.0                   | 8 Ports  |                    |                    |                    |                    |
|                  | SPI Bus                  | Yes  |                    |                    |                    |                    |
|                  | SDIO/SDXC                | Support 4 GPI and 4 GPO  |                    |                    |                    |                    |
|                  | GPIO                     | 8-bit GPIO   |                    |                    |                    |                    |
|                  | Watchdog                 | 65536 level, 0 ~ 65535 sec   |                    |                    |                    |                    |
|                  | COM Port                 | 2 Ports (2-Wire)   |                    |                    |                    |                    |
|                  | Express Card             | 2 Ports  |                    |                    |                    |                    |
|                  | 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           | Vin: 4.75 (5-5%) ~ 20V (19+5%), VSB: 5V±5%, RTC Battery: 2.0-3.3V  |                    |                    |                    |                    |
|                  | Power Consumption (Max.) | Max. 6.99Watt. (N3700)   |                    |                    |                    |                    |
|                  | Power Consumption (Idle) | Idle 2.64Watt. (N3700)   |                    |                    |                    |                    |
| Environment      | Temperature              | Operating: 0 ~ 60° C (32 ~ 140° F), with 0.7m/s air flow<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               | 84 x 55 mm (3.3" x 2.17")  |                    |                    |                    |                    |

## Block Diagram



## Ordering Information

| Part No.           | SoC                   | CPU Stepping | Base / Burst Frequency | Core | LLC | CPU TDP | Onboard Memory | Onboard Flash | Thermal Solution | Operating Temperature |
|--------------------|-----------------------|--------------|------------------------|------|-----|---------|----------------|---------------|------------------|-----------------------|
| SOM-7568CMBC-S7A1E | Intel® Pentium® N3710 | D            | 1.6GHz / 2.56GHz       | 4    | 2MB | 6W      | 4GB            | MLC 32GB      | Passive          | 0 ~ 60° C             |
| SOM-7568BM0C-S6A1E | Intel® Celeron® N3160 | D            | 1.6GHz / 2.24GHz       | 4    | 2MB | 6W      | 2GB            | N/A           | Passive          | 0 ~ 60° C             |
| SOM-7568BM0C-S5A1E | Intel® Celeron® N3060 | D            | 1.6GHz / 2.48GHz       | 2    | 2MB | 6W      | 2GB            | N/A           | Passive          | 0 ~ 60° C             |
| SOM-7568BM0C-S0A1E | Intel® Celeron® N3010 | D            | 1.04GHz / 2.24GHz      | 2    | 2MB | 4W      | 2GB            | N/A           | Passive          | 0 ~ 60° C             |
| SOM-7568BM0C-S1A1E | Intel® Atom™ X5-E8000 | D            | 1.04GHz / 2GHz         | 4    | 2MB | 5W      | 2GB            | N/A           | Passive          | 0 ~ 60° C             |

Note: Intel C stepping CPU might be EOL after Intel D stepping CPU ready.

## Packing List

| Part No.       | Description         | Quantity |
|----------------|---------------------|----------|
| -              | SOM-7568 CPU Module | 1        |
| 1960072329N001 | Heatspreader        | 1        |

## Development Board

| Part No.         | Description                       |
|------------------|-----------------------------------|
| SOM-DB5800-U0A2E | COMe Devel. Board Type10 pint-out |

## Optional Accessories

| Part No.           | Description                                    |
|--------------------|--|
| 1960056280N001     | Semi-Heatsink 84L x 55W x 13.2H mm (0 ~ 60° C) |
| 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 No.   | Description                                |
|-------------------|------------|--|
| WE8.1 IndustryPro | 2070014373 | img WE8.1 IndustryPro SOM-7568 X64 V1.0 EN |
| WES7P             | 2070014003 | img WES7P SOM-7568 X64 V5.6.6 Eng          |