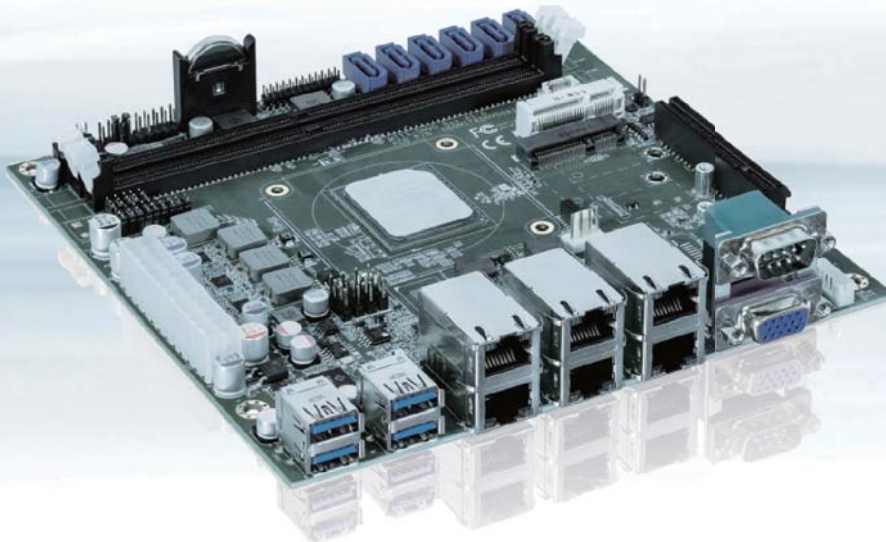


# mITX-DNV

## IDEAL FOR DENSE LOW-POWER APPLICATIONS

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### MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® DENVERTON PROCESSORS

- ▶ 1x VGA for display output
- ▶ 6x GbE LAN for Ethernet
- ▶ 4x USB 3.0, 2x USB 2.0, 2x RS232/422/485, 1x 8-bit DIO for peripherals
- ▶ Up to 6x SATA 3.0, Up to 1x mSATA, 1x M.2 Key B, optional eMMC for storage
- ▶ Up to 1x mPCIe, 1x PCIe x8 for expansion

# mITX-DNV

## MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® DENVERTON PROCESSOR

mITX-DNV is a Mini-ITX industrial motherboard equipped with Intel® Denverton SoC processors, Atom™ C3000 Series, which is specially suitable for dense low-power network, storage, and IoT applications.

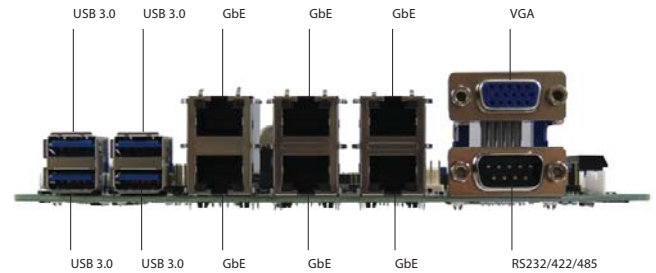
It has up to six SATA3.0 sockets and one M.2 Key B socket for HDD / SSD storage device connection as well as optional eMMC drive soldered on-board. In addition, It also supports 6 GbE LAN ports to deliver

sufficient traffic flow for huge data volumes.

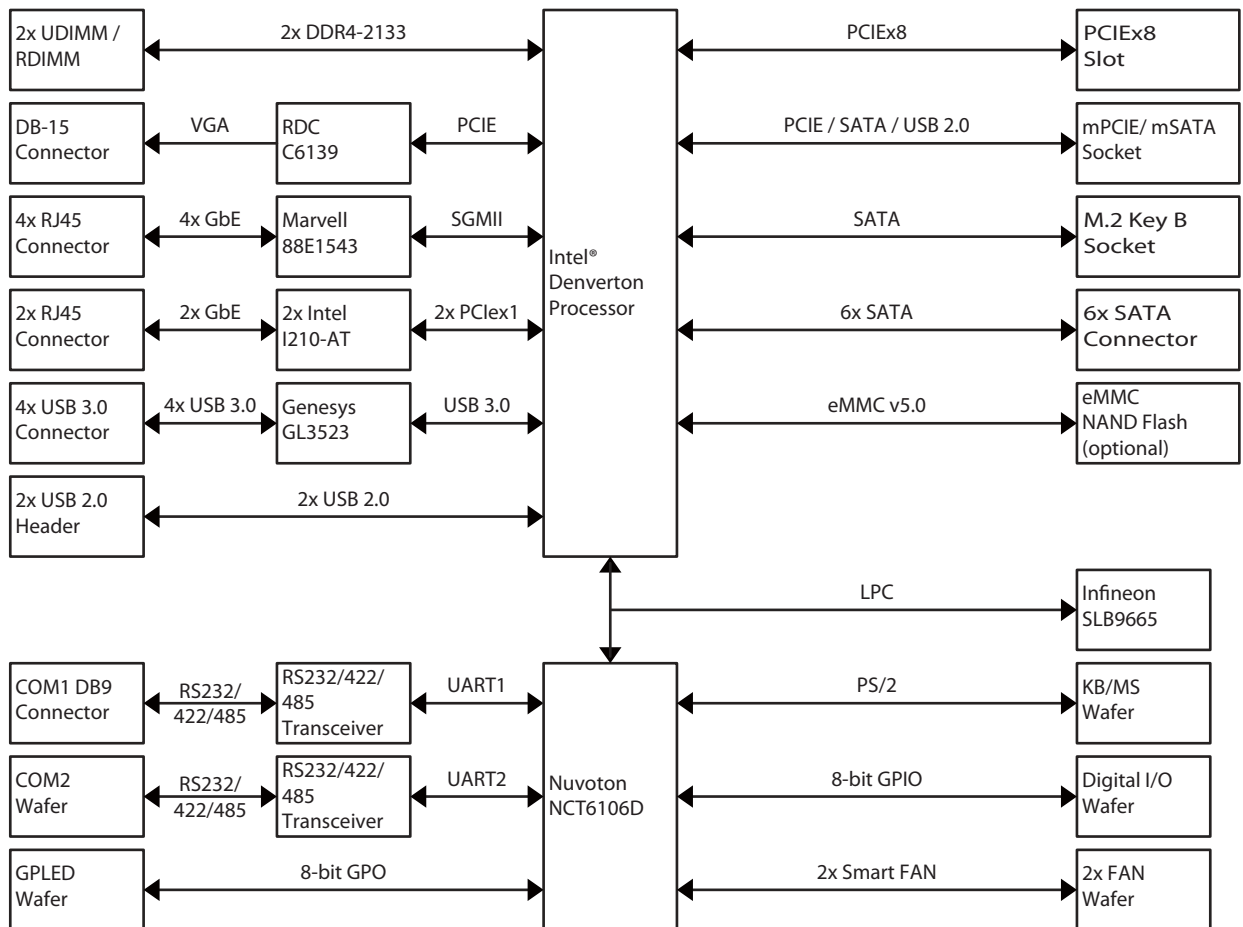
mITX-DNV reserves one mPCIe slot and one PCIe x8 slot, allowing users to expand specific functions such as wireless connection or additional network interface card.

### ▶ PRODUCT HIGHLIGHTS

- ▶ Intel® Denverton Processor, Atom™ C3000 Series
- ▶ Up to 2x DDR4 UDIMM memory socket
- ▶ 1x VGA for video output
- ▶ 6x GbE LAN for Ethernet
- ▶ 4x USB 3.0, 2x USB 2.0, 2x RS232/422/485, 1x 8-bit DIO for peripherals
- ▶ Up to 6x SATA 3.0, 1x M.2 Key B, optional eMMC for storage
- ▶ Up to 1x mPCIe, 1x PCIe x8 for expansion
- ▶ TPM 2.0 support
- ▶ Extended temperature model available: -20 °C ~ 70 °C



### ▶ BLOCK DIAGRAM



## ► TECHNICAL INFORMATION

|  |  |  |
|--|--|--|
| <b>SYSTEM</b>                          | <b>PROCESSOR</b>                                     | Intel® Atom™ C3338<br>(Dual Core, 4M Cache, up to 2.20 GHz, FCBGA1310, 9 W TDP)  |
|  | <b>MEMORY</b>  | Intel® Atom™ C3538<br>(Quad Core, 8M Cache, up to 2.10 GHz, FCBGA1310, 15 W TDP)<br>1x DDR4 1866 UDIMM (Atom™ C3338 model)<br>2x DDR4 2133 UDIMM (Atom™ C3538 model)   |
| <b>VIDEO</b>                           | <b>GRAPHICS DISPLAY INTERFACE</b>                    | RDC® C6139<br>1x VGA (on rear, 1024 x 768 @ 60 Hz)   |
| <b>NETWORK CONNECTION</b>              | <b>ETHERNET</b>                                      | 6x GbE LAN (RJ45 on rear, 2x Intel® I210-AT, 4x Marvell® 88E1543)  |
| <b>PERIPHERAL CONNECTION</b>           | <b>USB</b>   | 4x USB 3.0 (Type A on rear from HUB)   |
|  | <b>SERIAL PORT</b>                                   | 2x USB 2.0 (by wafer from SoC)   |
|  | <b>OTHER I/Os</b>                                    | 2x RS232/422/485 (1x DB9 on rear w/ 5 V / 12 V output support, 1x by wafer)<br>1x 8-bit DIO (by wafer)<br>1x PS/2 Keyboard / Mouse (by wafer)  |
| <b>STORAGE &amp; EXPANSION</b>         |  | Up to 6x SATA 3.0<br>eMMC support (optional)<br>1x M.2 Key B (type 2280, for SSD only)<br>1x mPCIe / mSATA (full size, mixed with SATA, USB 2.0)<br>1x PCIe x8 (supporting PCIe x1 / x4 / x8 depending on HSIO selection)<br>1x Micro SIM Card Cage (by wafer) |
| <b>POWER</b>                           | <b>CONNECTOR INPUT VOLTAGE</b>                       | 2x12-pin ATX connector<br>DC +5 V / -5 V / +12 V / -12 V / +3.3 V / 5 VSB  |
| <b>FIRMWARE</b>                        | <b>BIOS WATCHDOG H/W MONITOR REAL TIME CLOCK TPM</b> | AMI uEFI BIOS w/ 128 Mb SPI Flash<br>Programmable WDT to generate system reset event<br>Voltages, Temperatures<br>SoC integrated RTC<br>Supported (Infineon SLB9665 TPM 2.0)   |
| <b>SYSTEM CONTROL &amp; MONITORING</b> | <b>FP HEADER</b>                                     | 1x Header for Reset button, HDD LED & External Speaker<br>1x Header for Power button, Power LED & SM bus<br>1x Header for 6x LAN LED<br>1x Header for mPCIe LED<br>1x Header for 8-bit GPLED   |
| <b>COOLING</b>                         | <b>FAN</b>   | 1x Wafer for CPU Smart Fan<br>1x Wafer for System Smart Fan  |
| <b>SOFTWARE</b>                        | <b>OS SUPPORT</b>                                    | Windows Server   |
| <b>MECHANICAL</b>                      | <b>DIMENSION (L x W)</b>                             | Mini-ITX (170 mm x 170 mm / 6.70" x 6.70")   |
| <b>ENVIRONMENTAL</b>                   | <b>OPERATION TEMPERATURE</b>                         | 0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard)   |
|  | <b>STORAGE TEMPERATURE</b>                           | -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended)   |
|  | <b>HUMIDITY</b>                                      | -20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard)<br>-40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended)<br>0 % ~ 95 %  |
| <b>CERTIFICATION</b>                   | <b>EMC &amp; SAFETY</b>                              | CE, FCC Class A  |

## ▶ ORDERING INFORMATION

| ARTICLE           | DESCRIPTION  |
|-------------------|--|
| miTX-DNV-C3338    | Intel® Atom™ C3338, 1x DDR4 UDIMM, Operating Temperature: 0 °C ~ 60 °C   |
| miTX-DNV-C3538    | Intel® Atom™ C3538, 2x DDR4 UDIMM, Operating Temperature: 0 °C ~ 60 °C   |
| miTX-DNV-C3338-ET | Intel® Atom™ C3338, 1x DDR4 UDIMM, Operating Temperature: -20 °C ~ 70 °C |
| miTX-DNV-C3538-ET | Intel® Atom™ C3538, 2x DDR4 UDIMM, Operating Temperature: -20 °C ~ 70 °C |

### ACCESSORIES

| ARTICLE                   | PART NO.         | DESCRIPTION   |
|---------------------------|------------------|---|
| COM PORT CABLE*           | OC5020000005130L | 10-pin pitch = 1.25 mm to DB9 connector, L = 350 mm   |
| DIO CABLE*                | OC5020000003360L | MX51021-10P 1x10P 1.25 pitch to D-SUB-9P (Female), L = 200 mm   |
| USB 2.0 CABLE (2 PORTS)*  | OC5040000000110L | DP-2.54 2x5P pitch = 2.54 mm to 2x USB Female, L = 340 mm   |
| SATA CABLE*               | OC5020000004240L | With lock, 1.27 mm pitch 1x7P, L = 460 mm   |
| PS/2 CABLE*               | OC5020002500010L | Y-cable, 6-pin pitch 2.0 mm wafer connector to KB & MS connector, L = 250 mm  |
| MINI SIM CARD HOLDER KIT* | OZHK12003GSIM003 | W/ SIM card holder x1, cable x1   |
| HEATSINK*                 | OH05XX000002070L | 60 x 60 x 45 mm, Push Pin x4, Thermal Pad: 32 x 32 x 0.2 mm, Lead Free  |
| COOLER*                   | OH05XX000002130L | 60 x 60 x 30 mm, Heatsink: 60 x 60 x 16.5 mm, Fan: 60 x 60 x 10.3 mm, Thermal Pad: 30 x 30 x 0.2 mm, w/ Bracket Lead Free |

(\* : Optional)

## ▶ GLOBAL HEADQUARTERS

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