

NEW



Features

- Single, dual, quad-core Intel® Atom™ or Celeron® Processor System-on-Chip
- Up to 4GB soldered Dual Channel DDR3L at 1333MHz
- One DDI channel, one LVDS (optional eDP)
- Three PCIe x1, GbE
- Two SATA 3Gb/s, four USB and one USB client
- Supports Smart Embedded Management Agent (SEMA) functions
- Extreme Rugged operating temperature: -40°C to +85°C (optional)

Specifications

Core System

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| CPU | Single, dual, quad-core Intel® Atom™ or quad-core Celeron® Atom™ E3845 1.91 GHz 542/792 Gfx (Turbo) 10W (4C/1333) Atom™ E3827 1.75 GHz 542/792 Gfx (Turbo) 8W (2C/1333) Atom™ E3826 1.46 GHz 533/667 Gfx (Turbo) 7W (2C/1066) Atom™ E3825 1.33 GHz 533 Gfx (No Turbo) 6W (2C/1066) Atom™ E3815 1.46 GHz 400 Gfx (No Turbo) 5W (1C/1066) Atom™ E3805 1.33 GHz (No GFX) 3W (2C/1066) Celeron® N2930 1.83/2.16 (Burst) GHz, 313/854 (Turbo) 7.5W (4C/1333) Celeron® J1900 2.0/2.42 (Burst) GHz, 688/854 (Turbo) 10W (4C/1333) |
| | Supports: Single, dual or quad Out-of-Order Execution (OOE) processor cores, Intel® VT-x, Intel® SSE4.1 and SSE4.2, Intel® 64 architecture, IA 32-bit, PCLMULQDQ Instruction DRNG, Intel® Thermal Monitor (TM1 & TM2) |
| | Note: Availability of features may vary between processor SKUs. |

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| Memory | Single channel non-ECC 1333/1066 MHz soldered DDR3L memory up to 4GB (2GB or 4GB) |
| Embedded BIOS | AMI EFI with CMOS backup in 8MB SPI BIOS |
| Cache | Primary 32 KB, 8-way L1 instruction cache and 24 KB, 6-way L1 write-back data cache 2MB for E3845, N2930 and J1900 1MB for E3827, E3826, E3825 and E3805 512K for E3815 |
| Expansion Busses | 3 PCI Express x1 Gen2 (AB): lanes 0/1/2; optional PCIe x4 (lose GbE) LPC bus, SMBus (system), I ² C (user) |
| SEMA Board Controller | Supports: Voltage/Current monitoring, Power sequence debug support, AT/ATX mode control, Logistics and Forensic information, Flat Panel Control, General Purpose I ² C, Watchdog Timer |
| Debug Headers | 40-pin multipurpose flat cable connector Use in combination with DB-40 debug module providing BIOS POST code LED, BMC access, SPI BIOS flashing, power test points, debug LEDs 60-pin XDP header for ICE debug of CPU/chipset on break out board |

Video

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|------------------------------------|---|
| GPU Feature Support | 7th generation Intel® graphics core architecture with four execution units supporting two independent displays 3D graphics hardware acceleration Supports for DirectX11, OCL 1.1, OGL ES Halt/2.0/1.1, OGL 3.2 Video decode hardware acceleration including support for H.264, MPEG2, MVC, VC-1, WMV9 and VP8 formats Video encode hardware acceleration including support for H.264, MPEG2 and MVC formats |
| Digital Display Interface LVDS/eDP | One DDI channel supporting DisplayPort/HDMI/DVI Single channel 18/24-bit LVDS (BOM option support for 24-bit EDID panel) eDP support (optional) |

Audio

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|-------------|-----------------------------------|
| Chipset | Intel® HD Audio integrated in SOC |
| Audio Codec | Located on carrier miniBASE-10R |

Ethernet

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|--------------------------|---|
| Intel® MAC/PHY Interface | Intel® i210LM (MAC/PHY) Ethernet controller 10/100/1000 GbE connection |
|--------------------------|---|

I/O Interfaces

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| USB | 1x USB 3.0 (USB 0) 3x USB 2.0 (USB 1,2,3) and 1x USB 2.0 client (USB 7) |
| SATA | Two SATA 3 Gb/s ports |
| Serial | 2 UART ports COM 0/1 (COM 0 support console redirection) |
| eMMC | Optional soldered on module bootable eMMC flash storage 8G to 32 GB |
| SD | Optional, SD support multiplexed over GPIO pins eMMC and SD functions may vary between OS |
| GPIO | 4 GPO and 4 GPI |

Super I/O

On carrier if needed (standard support for W83627DHG-P)

Power

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| Standard Input | ATX = 12V±5% / 5Vsb ±5% or AT = 12V±5% |
| Wide Input | ATX = 5-14V / 5Vsb (standard temp. only) AT = 5-14V (standard temp. only) |
| Management | ACPI 4.0 compliant, Smart Battery support |
| Power States | C0, C1, C1E, C4, C6 S0, S3, S4, S5 (Wake on USB S3/S4, WOL S3/S4/S5) |
| ECO mode | Supports deep S5 (ECO mode) for power saving |

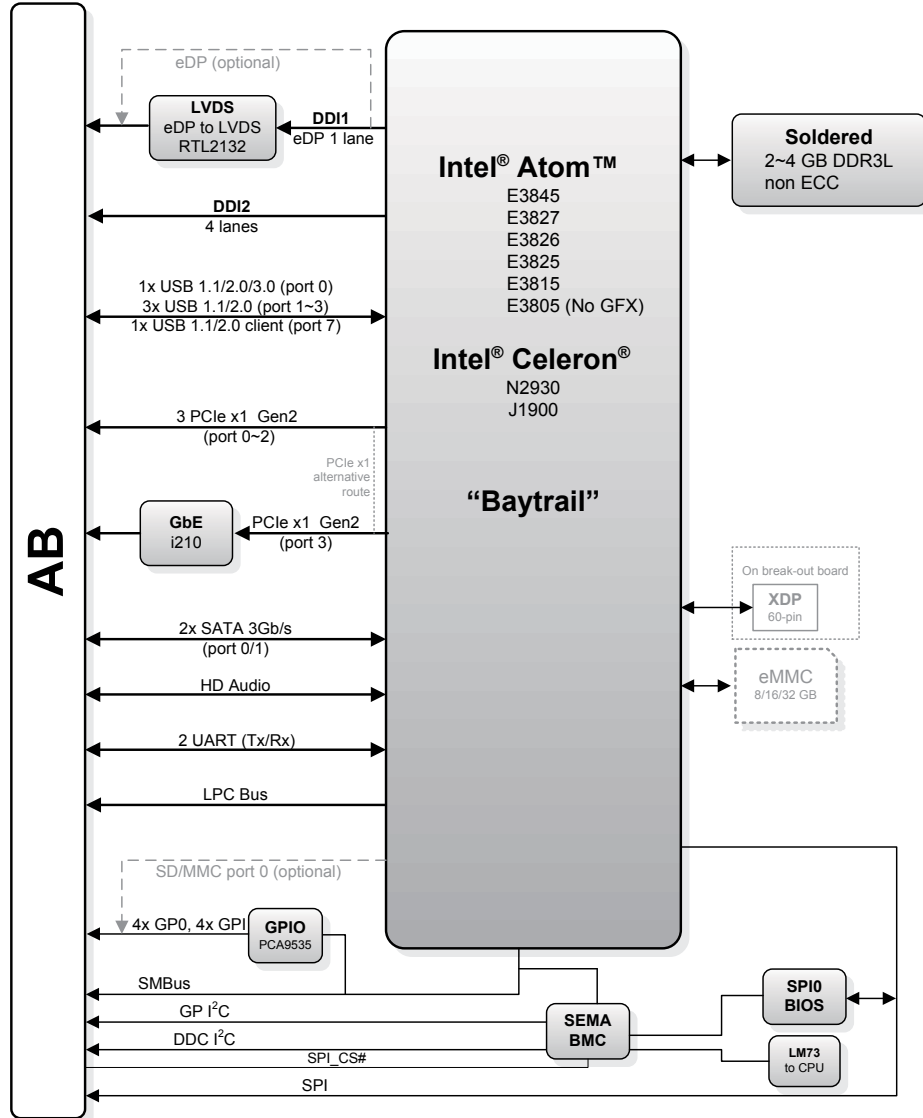
Mechanical and Environmental

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| Form Factor | PICMG COM.0: Rev 2.1 Type 10 |
| Dimension | Mini size: 84 mm x 55 mm |
| Operating Temperature | Standard: 0°C to +60°C Extreme Rugged: -40 to +85°C (optional, Atom™ E38xx series only) |
| Humidity | 5-90% RH operating, non-condensing 5-95% RH storage (and operating with conformal coating) |
| Shock and Vibration | IEC 60068-2-64 and IEC-60068-2-27 MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D |
| HALT | Thermal Stress, Vibration Stress, Thermal Shock and Combined Test |

Operating Systems

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| Standard Support | Windows 7/8 32/64-bit, Linux 32/64-bit |
| Extended Support (BSP) | WES7/8, Linux, VxWorks 32/64-bit WEC7 32-bit |

Functional Diagram



Ordering Information

Modules

| Model Number | Description/Configuration |
|-------------------|---|
| nanoX-BT-E3845-2G | COM Express® Mini Size Type 10 with Intel® Atom™ E3845 at 1.91 GHz and 2GB non ECC DDR3L |
| nanoX-BT-E3827-2G | COM Express® Mini Size Type 10 with Intel® Atom™ E3827 at 1.75 GHz and 2GB non ECC DDR3L |
| nanoX-BT-E3826-2G | COM Express® Mini Size Type 10 with Intel® Atom™ E3826 at 1.46 GHz and 2GB non ECC DDR3L |
| nanoX-BT-E3825-2G | COM Express® Mini Size Type 10 with Intel® Atom™ E3825 at 1.33 GHz and 2GB non ECC DDR3L |
| nanoX-BT-E3815-2G | COM Express® Mini Size Type 10 with Intel® Atom™ E3815 at 1.46 GHz and 2GB non ECC DDR3L |
| nanoX-BT-E3805-2G | COM Express Mini Size Type 10 with Intel Atom E3805 at 1.33 GHz and 2GB non ECC DDR3L |
| nanoX-BT-N2930-2G | COM Express® Mini Size Type 10 with Intel® Celeron® N2930 at 1.83 GHz and 2GB non ECC DDR3L |
| nanoX-BT-J1900-2G | COM Express® Mini Size Type 10 with Intel® Celeron® J1900 at 2.00 GHz and 2GB non ECC DDR3L |

Development Tool

| Model Number | Description/Configuration |
|--------------------------|---|
| Type 10 Starter Kit Plus | nanoX-BT Starter Kit Plus with Carrier Board miniBase-10R |

Accessories

| Model Number | Description/Configuration |
|--------------------------|--|
| Heat Spreaders | |
| HTS-nXBT-B | Heatspreader for nanoX-BT with threaded standoffs for bottom mounting |
| HTS-nXBT-BT | Heatspreader for nanoX-BT with through hole standoffs for top mounting |
| Passive Heatsinks | |
| THS-nXBT-B | Low profile heatsink for nanoX-BT with threaded standoffs for bottom mounting |
| THS-nXBT-BT | Low profile heatsink for nanoX-BT with through hole standoffs for top mounting |
| THSM-nXBT-B | High profile heatsink for nanoX-BT with threaded standoffs for bottom mounting |