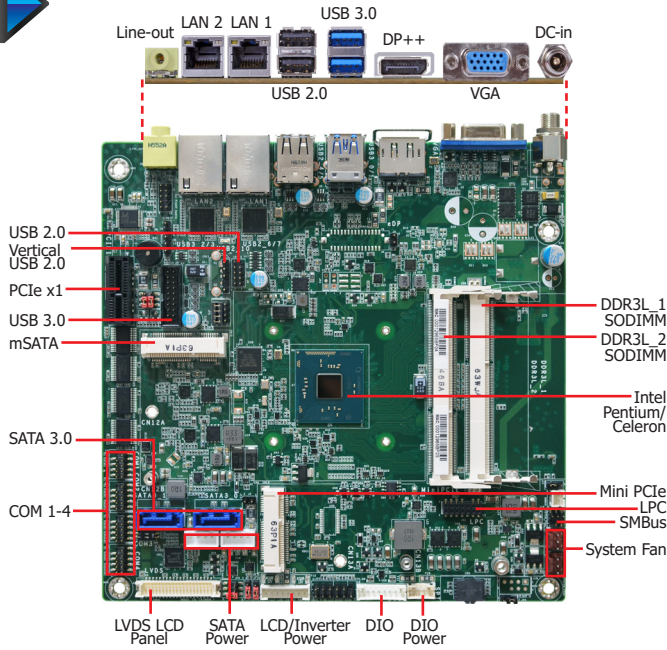


BW171/BW173

Atom



* The photos above refer to BW171.

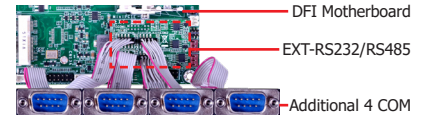
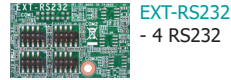
Features

- 2 DDR3L 1600MHz SODIMM up to 8GB
- Three independent displays: DP++*/eDP + VGA + LVDS
- DP++ resolution supports up to 3840x2160 @ 30Hz
- Multiple expansion:
1 PCIe x1, 1 Mini PCIe, 1 mSATA, 1 SIM (Opt.), 1 LPC
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.0, 5 USB 2.0
- LPC EXT-RS232/485 module supports 4 COM ports

* Populated by default



2 Extension Modules for Additional 4 COM Ports (via the LPC connector)

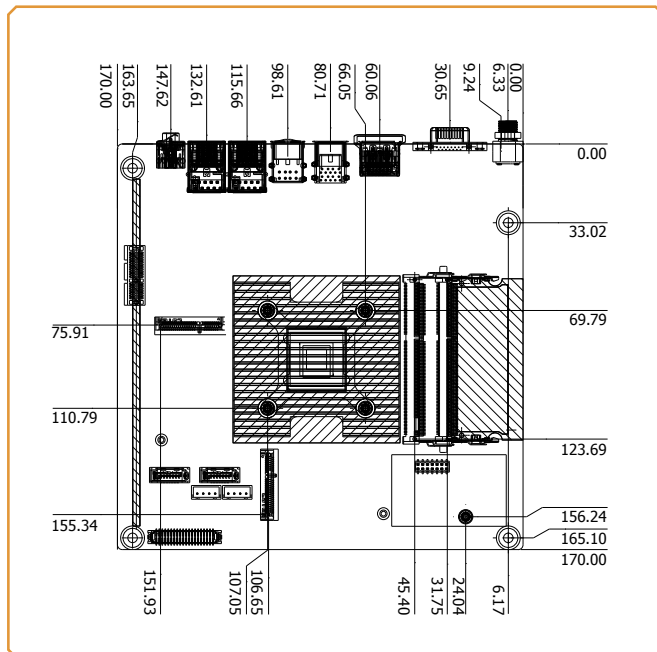


Ordering Information

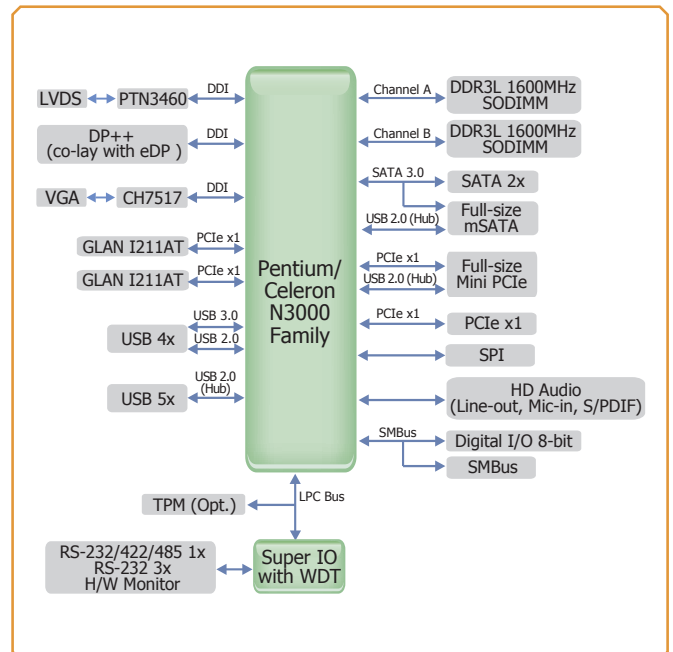
| Model Name | P/N | Processor | Memory | DP++/eDP | GbE | RS-232/422/485 | RS-232 | USB3.0 | USB2.0 | Power | Thermal | Temp. |
|----------------|-----------------|-----------|----------|----------|-----|----------------|--------|--------|--------|-----------|---------|-----------|
| BW171-NB-N3710 | 770-BW1712-100G | N3710 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 12V DC | Fanless | 0 to 60°C |
| BW171-NB-E8000 | 770-BW1712-200G | x5-E8000 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 12V DC | Fanless | 0 to 60°C |
| BW171-NB-N3060 | 770-BW1712-000G | N3060 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 12V DC | Fanless | 0 to 60°C |
| BW173-NB-N3710 | 770-BW1732-100G | N3710 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 15~36V DC | Fanless | 0 to 60°C |
| BW173-NB-E8000 | 770-BW1712-200G | x5-E8000 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 15~36V DC | Fanless | 0 to 60°C |
| BW173-NB-N3060 | 770-BW1712-000G | N3060 | 2 SODIMM | DP++ | 2 | 1 | 3 | 4 | 5 | 15~36V DC | Fanless | 0 to 60°C |

Note: N3160 and N3010 are supported upon request with MOQ requirement.

Mechanical Drawing



Block Diagram



► Specifications

| | | | | |
|------------------------|---|---|---|--|
| SYSTEM | Processor | Intel® Pentium®/Celeron® Processor N3000 Family, BGA 1170 Intel® Atom™ Processor x5-E8000, Quad Core, 2M Cache, 1.04GHz, 5W Intel® Pentium® Processor N3710, Quad Core, 2M Cache, 1.6GHz (2.56GHz), 6W Intel® Celeron® Processor N3160, Quad Core, 2M Cache, 1.6GHz (2.24GHz), 6W Intel® Celeron® Processor N3060, Dual Core, 2M Cache, 1.6GHz (2.48GHz), 6W Intel® Celeron® Processor N3010, Dual Core, 2M Cache, 1.04GHz (2.24GHz), 4W | | |
| | Memory | Two 204-pin SODIMM up to 8GB Dual Channel DDR3L 1600MHz | | |
| | BIOS | Insyde SPI 64Mbit | | |
| GRAPHICS | Controller | Intel® HD Graphics | | |
| | Feature | OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4 | | |
| | Display | 1 x VGA 1 x LVDS 1 x DP++/eDP (eDP available upon request) | VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz DP: resolution up to 3840x2160 @ 30Hz or 2560x1600 @ 60Hz eDP: resolution up to 2560x1440 @ 60Hz | |
| Triple Displays | VGA + LVDS + DP++ VGA + LVDS + eDP (available upon request) | | | |
| EXPANSION | Interface | 1 x PCIe x1 (Gen 2) 1 x SIM (available upon request) | 1 x Full-size Mini PCIe (PCIe/USB) 1 x Full-size mSATA (USB/SATA) | |
| AUDIO | Audio Codec | Realtek ALC888 5.1-channel | | |
| ETHERNET | Controller | 2 x Intel® I211AT PCIe (10/100/1000Mbps) | | |
| REAR I/O | Ethernet | 2 x GbE (RJ-45) | | |
| | USB | 2 x USB 3.0 | 2 x USB 2.0 | |
| | Display | 1 x VGA | 1 x DP++ | |
| | Audio | 1 x Line-out | | |
| INTERNAL I/O | Serial | 1 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 3 x RS-232 (2.0mm pitch) | | |
| | USB | 2 x USB 3.0 (2.0mm pitch) 2 x USB 2.0 (2.0mm pitch) | 1 x Vertical USB 2.0 (type A) | |
| | Display | 1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power 1 x eDP LCD Panel (available upon request) | | |
| | Audio | 1 x Audio (Line-out/Mic-in) 1 x S/PDIF | | |
| | SATA | 2 x SATA 3.0 (up to 6Gb/s) (SATA port 1 multiplexed with mSATA) 2 x SATA Power | | |
| | DIO | 1 x 8-bit DIO | | |
| | LPC | 1 x LPC (supports LPC EXT-RS232/RS485 module) | | |
| | SMBus | 1 x SMBus | | |
| | WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | |
| | SECURITY | TPM | Available Upon Request | |
| POWER | Type | Single 12V +/-10% DC (BW171) | Wide Range 15~36V (BW173) | |
| | Connector | DC-in Jack | Right Angle Connector (4-pin) (available upon request) Vertical Type Connector (4-pin) (available upon request) | |
| | Consumption | BW171 Typical: N3710:12V @ 0.436A (5.23Watt) Max.: N3710:12V @ 0.658A (7.90Watt) BW173 Typical: N3710:19V @ 0.186A (3.53Watt) Max.: N3710:19V @ 0.398A (7.56Watt) | | |
| | RTC Battery | Lithium 3V (210mAH) | | |
| OS SUPPORT | Microsoft/Linux | Windows 7 (/WES7) 32/64-bit Windows 8.1 (64-bit) Windows 10 IoT Enterprise 32/64-bit | Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Linux | |
| ENVIRONMENT | Temperature | Operating: 0 to 60°C | Storage: -40 to 85°C | |
| | Humidity | Operating: 10 to 90% RH | Storage: 10 to 90% RH | |
| | MTBF | BW171 : 357,014 hrs @ 25°C; 209,779 hrs @ 45°C ; 132,472 hrs @ 60°C BW173 : 353,593 hrs @ 25°C; 207,418 hrs @ 45°C ; 130,956 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 Environment: GB, GC – Ground Benign, Controlled | | |
| MECHANICAL | Dimensions | Mini-ITX Form Factor | 170mm (6.7") x 170mm (6.7") | |
| | Height | PCB: 1.6mm | Top Side: TBD, Bottom Side: TBD | |

► Packing List

| | |
|--|-----------------|
| • 1 BW171/BW173 motherboard | |
| • 1 COM port cable (Length: 250mm, 1 x COM ports) | A81-015011-001G |
| • 1 Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |
| • 1 Heat sink (Height: 18.3mm) | A71-010026-000G |

► Optional Items

| | |
|--|-----------------|
| • USB 2.0 port cable (Length: 200mm) | A81-001032-016G |
| • USB 3.0 port cable (Length: 200mm) | A81-001034-016G |
| • COM port cable (Length: 250mm, 1 x COM ports) | A81-015011-001G |
| • Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |
| • Power adapter (100W, 12V) (BW171) | 671-110001-100G |
| • Power adapter (120W, 19V) (BW173) | 671-112004-100G |
| • LPC EXT-RS232 module (4 x RS232 ports) | 770-EXTRS1-000G |
| • LPC EXT-RS485 module (4 x RS485 ports) | 770-EXTRS1-100G |
| • I/O shield | A49-BW1710-000G |
| • DT122 Chassis | 761-DT1220-200G |