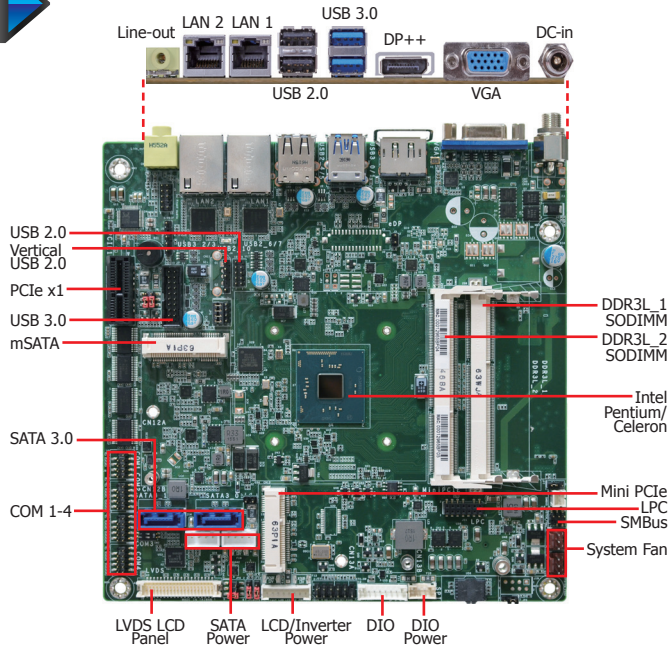




BW171/BW173

Atom



* The photos above refer to BW171.

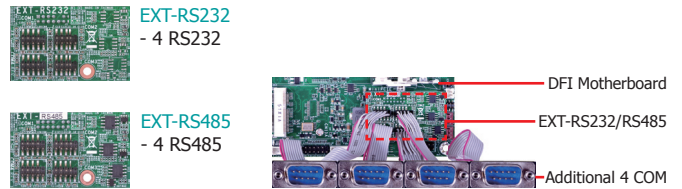
Features

- 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)

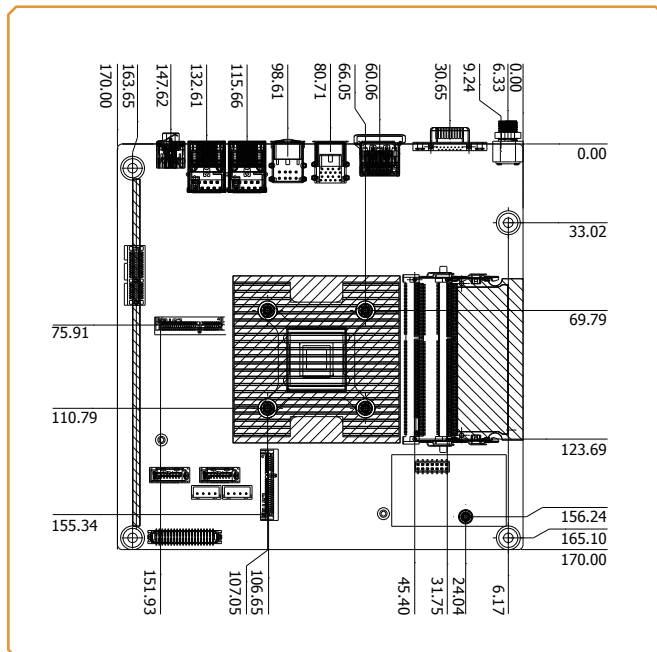


Ordering Information

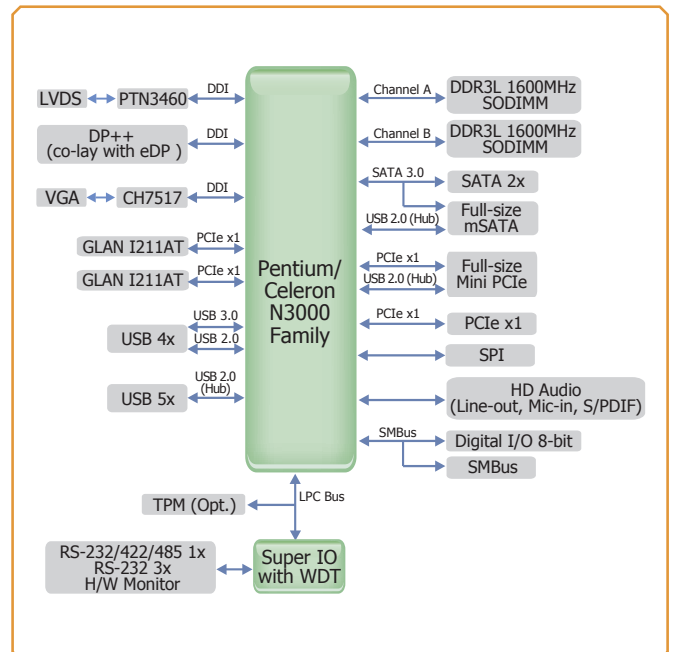
Model Name	P/N	Processor	Memory	DP++/eDP	GbE	RS-232/422/485	RS-232	USB3.0	USB2.0	Power	Thermal	Temp.
BW171-NB-N3710	770-BW1712-100G	N3710	2 SODIMM	DP++	2	1	3	4	5	12V DC	Fanless	0 to 60°C
BW171-NB-E8000	770-BW1712-200G	x5-E8000	2 SODIMM	DP++	2	1	3	4	5	12V DC	Fanless	0 to 60°C
BW171-NB-N3060	770-BW1712-000G	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) Ubuntu 15.10 (Intel graphic driver available)	
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 DVD	
• 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