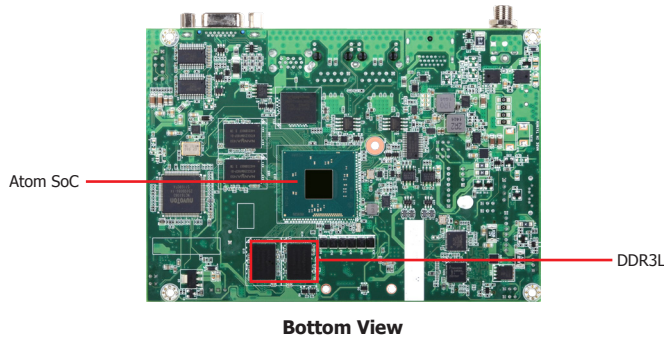
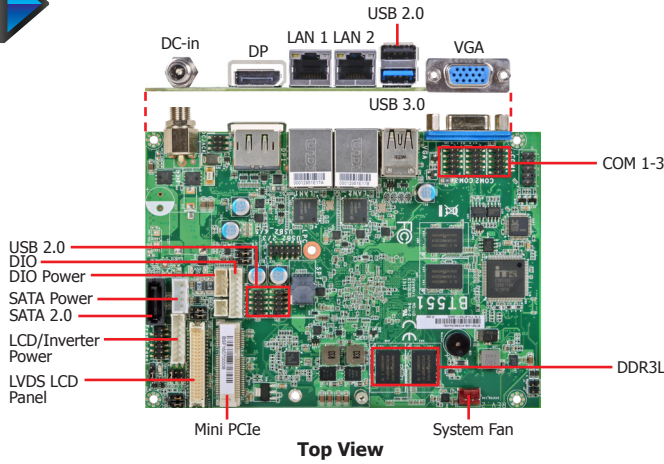




# BT551/BT553

Atom



Bottom View

\* The photos above refer to BT551.

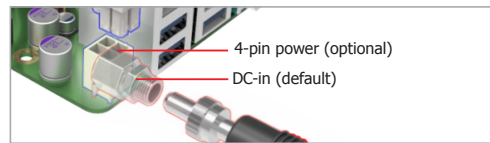
Model Name	Power
BT551	12V DC-in
BT553	15~36V DC-in

## Features

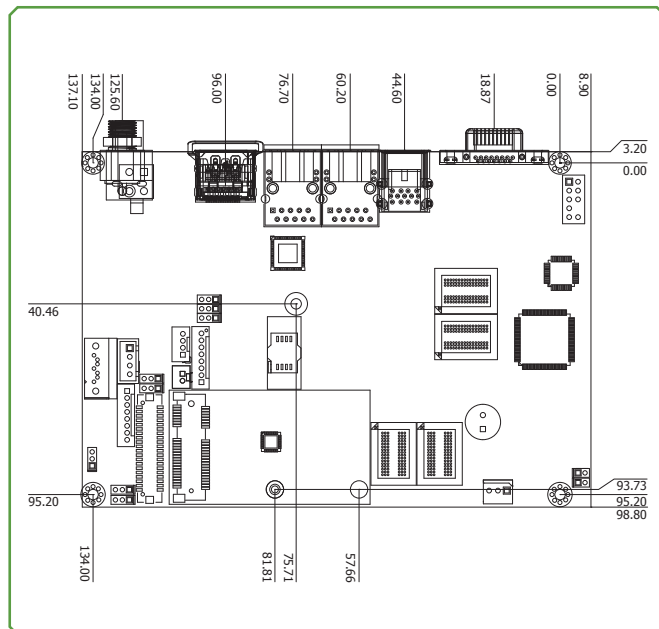
MEMORY	2GB/4GB DDR3L memory down
EXPANSION	1 Mini PCIe
DISPLAY OUTPUTS	1 VGA, 1 LVDS, 1 DP
LAN	2 LAN
COM	3 COM
USB	6 USB: 1 USB 3.0, 5 USB 2.0
STORAGE	1 SATA 2.0 eMMC (optional)
DIO	8-bit DIO
DIMENSIONS	146mm x 102mm (5.75" x 4.02")



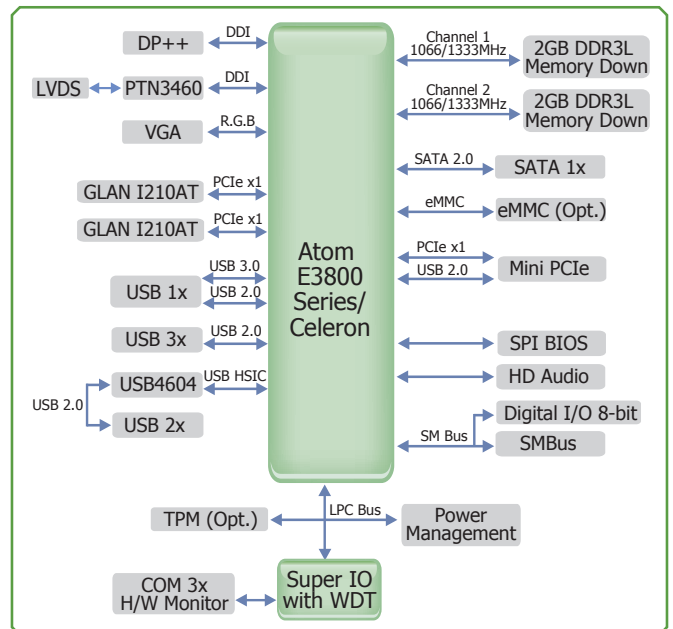
## Power Connector



## Mechanical Drawing



## Block Diagram





# BT551/BT553

**Specifications** \* Optional and is not supported in standard model. Please contact your sales representative for more information.

**PROCESSOR**

- Intel® Atom™/Intel® Celeron® processors
- BGA 1170 packaging technology
- 22nm process technology
- Please refer to the Ordering Information below

**SYSTEM MEMORY**

- 2GB/4GB DDR3L memory down
- Supports DDR3L 1066/1333MHz
- Supports dual channel memory interface

**EXPANSION SLOTS**

- 1 Mini PCIe slot
  - Supports USB and PCIe signals
  - Supports full size Mini PCIe card

**ONBOARD GRAPHICS FEATURES**

- Intel® HD Graphics
- Display ports: 1 VGA, 1 LVDS, 1 DP
- VGA: 24-bit, resolution up to 1920x1200 @ 60Hz
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- DP: supports DP++, resolution up to 2560x1600 @ 60Hz
- Supports hardware acceleration for DirectX 11, OCL 1.2, OGL 4.0, H.264, MPEG2, MVC, VC-1, WMV9 and VP8 (supported version dependent on OS)

**ONBOARD AUDIO FEATURES**

- Realtek ALC888 2.1-channel High Definition Audio

**ONBOARD LAN FEATURES**

- 2 Intel® I210 PCI Express Gigabit Ethernet controllers
- Integrated 10/100/1000 transceiver
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

**SERIAL ATA INTERFACE**

- 1 SATA 2.0 port with data transfer rate up to 3Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller

**eMMC\***

- Supports 8GB, 16GB and 32GB eMMC onboard
- \* CPU J1900 does not support eMMC as storage and boot in Windows 7

**TRUSTED PLATFORM MODULE (TPM)\***

- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

**WATCHDOG TIMER**

- Watchdog timeout programmable via software from 1 to 255 seconds

**REAR PANEL I/O PORTS**

- 1 12V (BT551) or 15~36V (BT553) DC-in jack or 4-pin power connector\*
- 1 DP port
- 1 VGA port
- 2 RJ45 LAN ports
- 1 USB 3.0 port
- 1 USB 2.0 port

**BIOS**

- Insyde BIOS
- 64Mbit SPI BIOS

**Ordering Information**

Model Name	Processor	Memory	eMMC	RS232	RS485	Power	Thermal	Temperature
BT551-NB-21E26	Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W	2GB Bundle	16GB	2	1	12V DC-in	Fanless	0°C to 60°C
BT551-NB-41E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	4GB Bundle	16GB	2	1	12V DC-in	Fanless	0°C to 60°C
BT551-NB-41J00	Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W	4GB Bundle	16GB	2	1	12V DC-in	Fanless	0°C to 60°C
BT551-NT-21E26	Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W	2GB Bundle	16GB	2	1	12V DC-in	Fanless	-40°C to 85°C
BT551-NT-41E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	4GB Bundle	16GB	2	1	12V DC-in	Fanless	-40°C to 85°C
BT553-NB-21E26	Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W	2GB Bundle	16GB	2	1	15~36V DC-in	Fanless	0°C to 60°C
BT553-NB-41E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	4GB Bundle	16GB	2	1	15~36V DC-in	Fanless	0°C to 60°C
BT553-NB-41J00	Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W	4GB Bundle	16GB	2	1	15~36V DC-in	Fanless	0°C to 60°C
BT553-NT-41E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91 GHz, 10W	4GB Bundle	16GB	2	1	15~36V DC-in	Fanless	-40°C to 85°C

The following specifications will be available upon request. Please contact your sales representative for more information.

Power	Temperature	Memory Down	eMMC	Processors
BT55 1 1: 12V DC-in 3: 15~36V DC-in	- N B B: 0°C to 60°C E: -20°C to 70°C T: -40°C to 85°C	- 2 2: 2GB 4: 4GB	0 0: None 8: 8GB 1: 16GB 3: 32GB	E45 E45: Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W E26: Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W E15: Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46 GHz, 5W J00: Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W

**Packing List**

- 1 BT551/BT553 board
- 1 Serial ATA data with power cable: A81-002013-000G
- 1 DVD
- 1 Heat spreader with heat sink: 761-BT5511-000G

**I/O CONNECTORS**

- 2 connectors for 4 external USB 2.0 ports
- 3 connectors for 3 external serial ports (2.0mm pitch)
  - 1 RS485
  - 2 RS232
- 1 LVDS LCD panel connector
- 1 LCD/inverter power connector
- 1 8-bit DIO connector
- 1 DIO power connector
- 1 front audio connector for line-out and mic-in jacks
- 1 LPC connector
- 1 SMBus connector
- 1 Serial ATA connector
- 1 Serial ATA power connector
- 1 front panel connector
- 1 chassis intrusion connector
- 1 fan connector

**ENERGY EFFICIENT DESIGN**

- Supports ACPI
- System Power Management
- Wake-On-Events include:
  - Wake-On-USB KB/Mouse\*
  - Wake-On-LAN
  - RTC timer to power-on the system
- AC power failure recovery

**DAMAGE FREE INTELLIGENCE**

- Monitors CPU/system temperature and overheat alarm
- Monitors VCORE/12V/5V/DDR voltages and failure alarm
- Monitors system fan speed and failure alarm
- Read back capability that displays temperature, voltage and fan speed

**POWER CONSUMPTION**

- TBD

**OS SUPPORT**

- Windows 7 Ultimate x86 & SP1 (32-bit)
- Windows 7 Ultimate x64 & SP1 (64-bit)
- Windows 8.1 Embedded Pro x86 (32-bit)
- Windows 8.1 Embedded Pro x64 (64-bit)
- Windows 10 IoT Enterprise (64-bit)

**TEMPERATURE**

- Operating
  - : 0°C to 60°C - Atom, Celeron (Fanless)
  - : -20°C to 70°C - Celeron (Fanless)
  - : -40°C to 85°C - Atom (Fanless)
- Storage: -40°C to 85°C

**HUMIDITY**

- 5% to 90%

**MTBF**

- BT551 : 382,618 hrs @ 25°C; 225,868 hrs @ 45°C
- BT553 : 373,288 hrs @ 25°C; 218,452 hrs @ 45°C
- Calculation model: Telcordia Issue 2, Method I Case 3
- Environment: GB, GC – Ground Benign, Controlled

**DIMENSIONS**

- 3.5" board
- 146mm (5.75") x 102mm (4.02")

**CERTIFICATION**

**Optional Items**

- USB port cable: A81-001032-016G
- COM port cable: 332-753040-000G
- Power adapter (100W, 12V, Level 6) : 671-110002-100G (BT551)
- Power adapter (120W, 19V, Level 6) : 671-110003-100G (BT553)