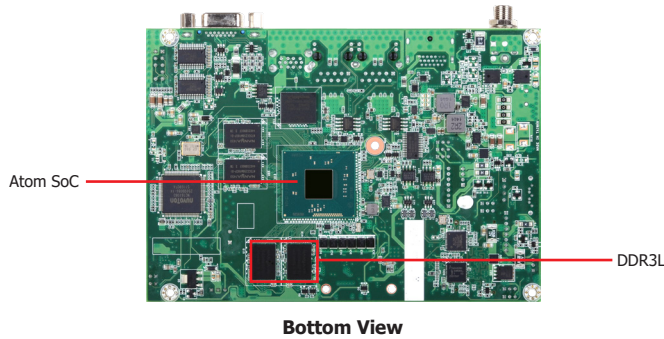
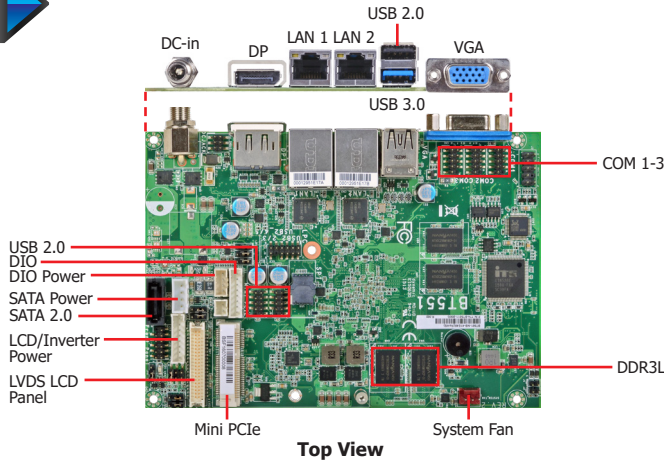




# BT551/BT553

Atom



Bottom View

\* The photos above refer to BT551.

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

## Features

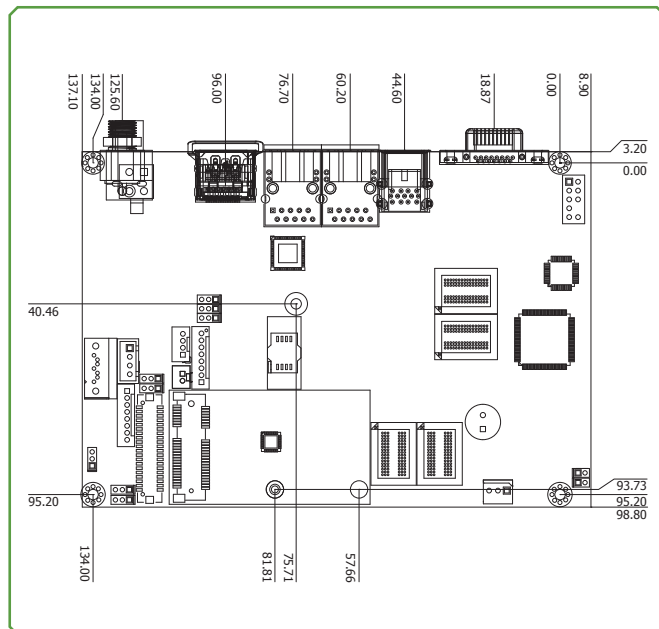
|                 |                               |
|-----------------|-------------------------------|
| MEMORY          | 2GB/4GB DDR3L memory down     |
| EXPANSION       | 1 Mini PCIe                   |
| DISPLAY OUTPUTS | 1 VGA, 1 LVDS, 1 DP           |
| LAN             | 2 LAN               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



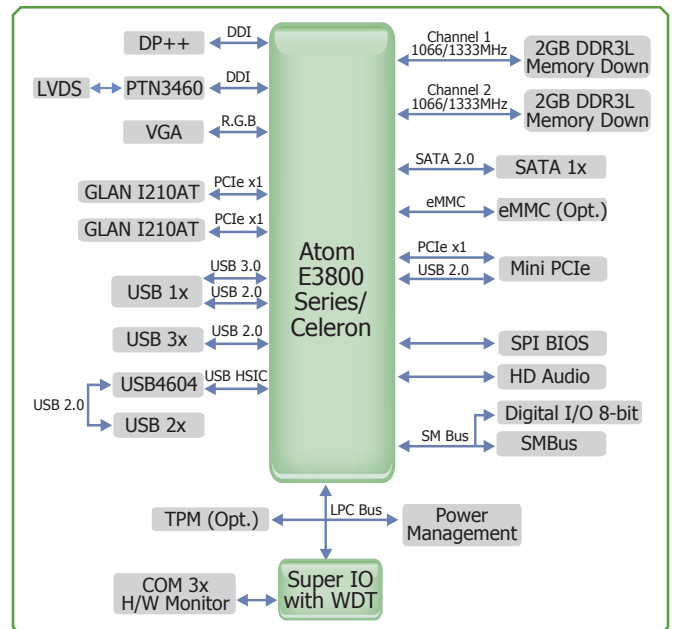
## Power Connector



## 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

### 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

- BT551
  - Idle: E3845 10W: 12V @ 0.4236A (5.0832W)
  - Max: E3845 10W: 12V @ 1.132A (13.584W)
- BT553
  - Idle: E3845 10W: 15V @ 0.413A (6.195W)
  - Max: E3845 10W: 15V @ 0.986A (14.790W)

### 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

- CE, FCC Class B, RoHS

## 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.

| BT55 | Power                           | Temperature  | Memory Down      | eMMC                                    | Processors  |
|------|---------------------------------|--|------------------|---|---|
| BT55 | 1                               | N B  | 2                | 0                                       | E45   |
|      | 1: 12V DC-in<br>3: 15~36V DC-in | B: 0°C to 60°C<br>E: -20°C to 70°C<br>T: -40°C to 85°C | 2: 2GB<br>4: 4GB | 0: None<br>8: 8GB<br>1: 16GB<br>3: 32GB | E45: Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W<br>E26: Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W<br>E15: Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46 GHz, 5W<br>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 Heat spreader with heat sink: 761-BT5511-000G

### Optional Items

- USB port cable: A81-001032-016G
- COM port cable: 332-753040-000G
- Power adapter (60W, 12V, DC Jack): 671-106012-000G (BT551)
- Power adapter (120W, 19V): 671-112009-100G (BT553)