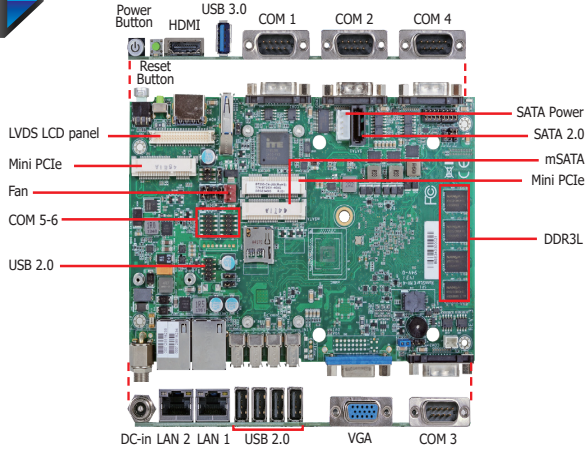


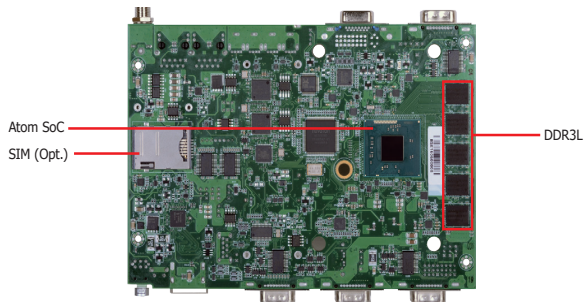


**Intel® Atom™ E3800 Series  
4" SBC**

**BT253**



Bottom View



Top View

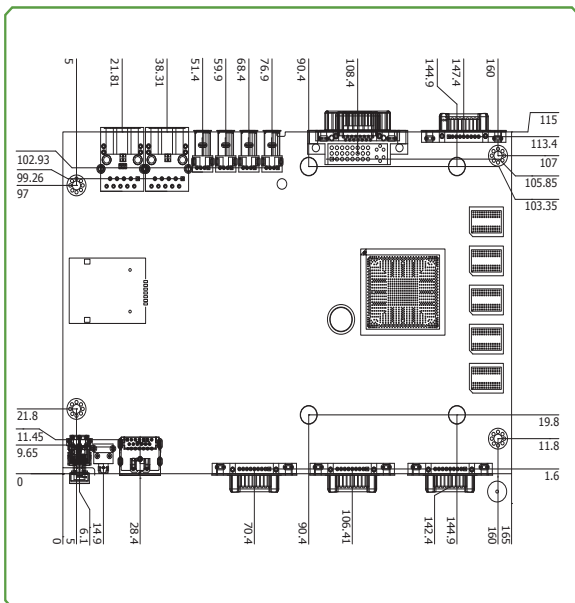


**Features**

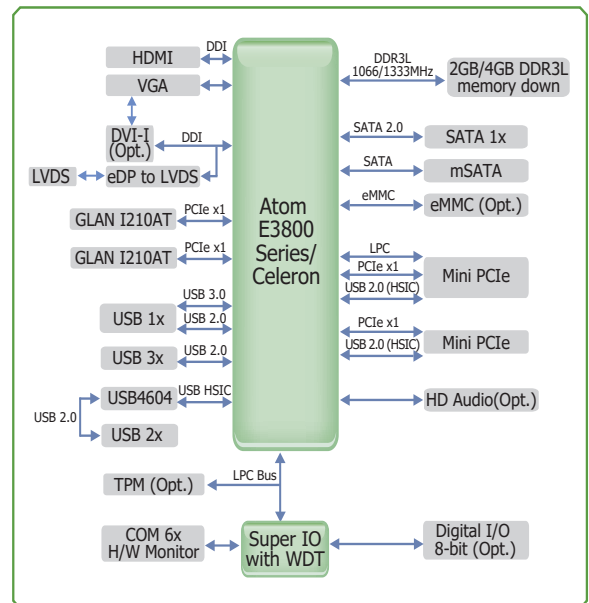
MEMORY	2GB/4GB DDR3L ECC memory down
EXPANSION	3 Mini PCIe
DISPLAY OUTPUTS	1 VGA, 1 LVDS, 1 HDMI
LAN	2 LAN
COM	6 COM
USB	6 USB: 1 USB 3.0, 5 USB 2.0
STORAGE	1 SATA 2.0 eMMC (optional)
DIMENSIONS	165mm x 115mm (6.49" x 4.53")



**Mechanical Drawing**



**Block Diagram**





# BT253

**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 ECC memory down (-E45/-E25)
- 2GB/4GB DDR3L memory down (-J00/-N07)
- Supports DDR3L 1333MHz (-E45/-J00/-N07)
- Supports DDR3L 1066MHz (-E25)
- Supports single channel memory interface

### EXPANSION SLOTS

- 3 Mini PCIe slots
  - 1 full size supports USB, PCIe and 3G signals
  - 1 full size supports mSATA
  - 1 half size supports USB, PCIe and LPC signals
- 1 SIM socket (available upon request)
- 1 microSD socket\*

### ONBOARD GRAPHICS FEATURES

- Intel® HD Graphics
- Display ports: 1 LVDS, 1 HDMI, 1 VGA (default) or 1 DVI-I\*
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- HDMI, DVI: resolution up to 1920x1080 @ 60Hz
- VGA: 24-bit, resolution up to 1920x1200 @ 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 5.1-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 4GB, 8GB, 16GB and 32GB eMMC onboard
- Supports Windows 8.1 and Ubuntu 14.04

### TRUSTED PLATFORM MODULE (TPM)\*

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

### FRONT PANEL I/O PORTS

- 1 power button
- 1 reset button
- 3 DB-9 serial ports
  - supports RS232/422/485
  - One of the ports supports an optional 8-bit DIO
- 1 USB 3.0 port
- 1 HDMI port

## Ordering Information

Model Name	P/N	Processor	Memory	eMMC	RS232	RS232/422/485	Power	Thermal	Temperature
BT253-C4-E45	770-BT2535-900G	Intel® Atom™ E3845, Quad Core	4GB ECC Bundle	None	2	4	16~24V DC	Fanless	0°C to 60°C
BT253-C2-N07	770-BT2535-700G	Intel® Celeron® N2807, Dual Core	2GB Non-ECC Bundle	None	2	4	16~24V DC	Fanless	0°C to 60°C
BT253-C4-J00	770-BT2535-800G	Intel® Celeron® J1900, Quad Core	4GB Non-ECC Bundle	None	2	4	16~24V DC	Fanless	0°C to 60°C
BT253-C2-E25	770-BT2535-A00G	Intel® Atom™ E3825, Dual Core	2GB ECC Bundle	None	2	4	16~24V DC	Fanless	0°C to 60°C

## Packing List

- 1 BT253 board
- 1 Serial ATA data with power cable: A81-002008-000G
- 1 Heat spreader: A31-030022-200G

### REAR PANEL I/O PORTS

- 1 16~24V DC-in jack
- 1 DB-9 serial port
  - supports RS232/422/485
- 1 VGA port; or 1 DVI-I port\*
- 2 RJ45 LAN ports
- 4 USB 2.0 ports (default); or 3 USB 2.0 ports and 1 line-out jack\*

### I/O CONNECTORS

- 1 connector for 1 external USB 2.0 port
- 2 connectors for 2 external RS232 serial ports (2.0mm pitch)
- 1 LVDS LCD panel with power connector
- 1 mic-in connector
- 1 Serial ATA connector
- 1 Serial ATA power connector
- 1 chassis intrusion connector
- 1 fan connector

### BIOS

- AMI BIOS
- 64Mbit SPI BIOS

### WATCHDOG TIMER

- Watchdog timeout programmable via software from 1 to 255 seconds

### 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 CPU/system fan speed and failure alarm
- Read back capability that displays temperature, voltage and fan speed

### POWER CONSUMPTION

- BT253-C4-E45: 18.12W with E3845 at 1.91GHz and 4GB DDR3L ECC memory down

### OS SUPPORT

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

### TEMPERATURE

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

### HUMIDITY

- 5% to 90%

### MTBF

- 321,859 hrs @ 25°C; 186,244 hrs @ 45°C
- Calculation model: Telcordia Issue 2, Method I Case 3
- Environment: GB, GC – Ground Benign, Controlled

### DIMENSIONS

- 4" board
- 165mm (6.49") x 115mm (4.53")

### CERTIFICATION

- CE, FCC Class B, RoHS, UL

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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