

## Main Features

- Support Wide Range Operating Temperature
- Support Intel® E640Ultra Low Power Consumption SoC
- On-board DDR2 1GB Main Memory
- Support VGA/ LVDS Display
- Two Gigabit Ethernet
- Support Video Decode (MPEG2, MPEG4, H.264, VC1, WMV9) / Encode (MPEG4, H.264)
- One CAN Controller
- 3x COMs, 5x USB 2.0, 2x SATA
- Single DC 12V Power Input

## Product Overview

The EBC 310X is a 3.5" ECX embedded board with an on-board Intel® Atom™ E640T 1.0GHz SoC with L2 cache 512 KB and extreme low power consumption 3.6 watts. It supports operating temperature form -40°C to 85°C. The EBC 310X features DDR2 1GB memory on-board, dual display application to support independent CRT and LVDS interface and build-in HD video decoder/encoder. Intel® PCH EG20T PCH supports 1x CAN and USB 2.0 controller. The EBC 310X embedded board supports a various operation systems such as Windows 7 and XP embedded, Win CE and Linux.

## Specifications

### CPU Support

- On-board Intel® Atom™ E640T 1.0GHz SoC (System-On-Chip)

### Main Memory

- On-board DDR2 800-MHz 1GB, non-ECC and un-buffered

### Chipset

- Intel® EG20T (PCH)

### BIOS

- AMI System BIOS
- Plug and play support

### On-board LAN

- 1 x Intel® 82574L Gigabit Ethernet controller
- 1 x Realtek 8211CL Gigabit Ethernet controller
- Support Boot from LAN and Wake on LAN
- 2 x RJ45 with LED

### Display

- Intel® Atom™ E600 series integrated graphic engine, support video decode (MPEG2, MPEG4, H.264, VC1, WMV9)/ encode (MPEG4, H.264)
- Analog VGA interface: 1 x DB15 VGA port, support resolution up to 1280x 1024

- LVDS interface: support single 18/24-bit LVDS channel, resolution up to 1280x 768

### Audio

- Realtek ALC886 CODEC for High Definition
- 1 x Mic-in and 1 x Line-out pin header

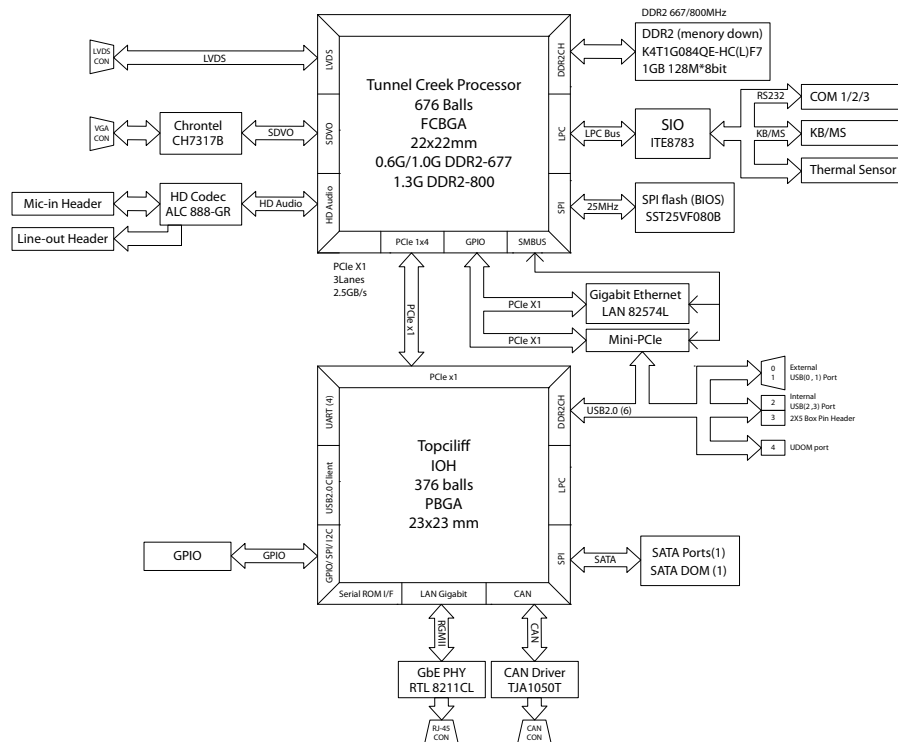
### Expansion

- 1 x Mini-PCIe socket

### I/O Interface

- Serial port: 3 ports
- 1 x RS232 DB9 Connector (COM1)
- 1 x RS232 with 10-pin box header, 2.0mm pitch (COM3)
- 1 x RS232/ 422/ 485 (COM2) with 10-pin box header, 2.0mm pitch
- USB 2.0: 5 ports
- 2 ports with USB 2.0 connector
- 2 ports with 2x 5-pin header, 2.0mm pitch
- 1 port supports USB DOM
- CAN: Integrated CAN 2.0 Controller supporting IEEE1588 over CAN External CAN Bus Driver – TJA1050 2x 2-pin header, 2.54mm pitch
- 8 x GPIO, 10-pin pin header, (GPI 0~3 and GPO0~3) with TTL Level (0/5 V)
- On-board Power LED and HDD Active LED Pin Header

## Block Diagram



- 1 x 4-pin fan connector (for CPU)
- 6-pin JST connector for PS2 keyboard/ mouse
- On-board buzzer/ SMBus2.0/ reset/ On & Off switch button

### Watchdog Timer

- Watchdog timeout can be programmable by Software from 1 second to 255 seconds and from 1 minute to 255 minutes (Tolerance 15% under room temperature 25°C)

### Storage

- 2 x SATA connector (support 1x SATA DOM)

### System Monitor

- Monitoring of 5 voltages and 2 temperature
- 5 voltages (12, 5, 3.3, VNN, Vcore)
- 2 temperature (CPU, system)

### On-board RTC

- On-chip RTC with battery backup
- 1 x External Li-Ion battery

### Power Input

- Support AT and ATX mode (ATX as the default)

### Power Requirements

- Power requirement: +12 V DC Input
- One 4-pin power connector

### Dimensions

- 3.5" ECX form factor
- 146mm (L) x 105mm (W) (5.7"x4.1")

### Environment

- Operating temperatures: -40°C to 85°C
- Storage temperature: -40°C to 85°C
- Relative humidity: Operating 10% to 90%, non-condensing

### Certifications

- CE approval
- FCC Class A

## Ordering Information

### • EBC 310X (P/N: 10E00310X00X0) RoHS Compliant

Ultra Low power embedded board with Intel® Atom™ E640T processor, on-board DDR2 1GB memory, VGA/ LVDS, 1x CAN, 2x GbE, 1x mini-PCle, 3x COM, 6x USB 2.0, DC12V input