



## Main Features

- On-board Intel® Atom™ processor D2550 1.86GHz CPU
- Intel® NM10 Express chipset
- One 204-pin SO-DIMM socket supports up to 4 GB DDR3 800/1066 MHz SDRAM
- Display: VGA & DVI-I & HDMI & LVDS (1x DF13 20-pin 18/ 24-bit Single channel)
- 2x Mini-PCIe
- 2x Intel® 82574L PCI Express Gigabit Ethernet
- 2x SATA
- 6x USB, 4-in/ 4-out GPIO, Mic-in , Speak out
- Serial port: 3x RS232, 1x RS232/422/485 port
- Support AT/ ATX mode and single +12VDC input

## Product Overview

The EBC 354 is a 3.5" ECX embedded board with an on-board Intel® Atom™ processor D2550 1.86GHz CPU with 1MB L2 cache, which supports DDR3 800/ 1066 memory, along with integrated SGX545 PowerVR Core @ 400/640 MHz Enhanced Gfx & Video, support DX\*10.1, OpenGL 3.0, Full HD decode (MPEG2, VC1, AVC, H.264), along with integrated graphics for large display applications to support multiple displays. Intel® NM10 Express chipset provides two SATA, four serial ports, six USB 2.0 ports, two Gigabit Ethernet LAN port, two Mini-PCIe interface for application. Able to support matrix-displays with rich I/O, the EBC 354 is a great solution featuring a low power consumption and small footprint for multi-media applications.

## Specifications

### CPU Support

- Intel® Atom™ processor D2550 1.86GHz CPU

### Main Memory

- One 204-pin SO-DIMM socket supports up to 4 GB DDR3 800/1066 MHz SDRAM

### Chipset

- Intel® NM10 Express chipset

### BIOS

- AMI BIOS
- Plug & Play support
- Advanced power management
- Advanced configuration & power interface
- 8M bits SPI ROM

### On-board LAN

- 2x Intel® PCI Express Gigabit Ethernet
- Support boot from LAN (PXE)
- 2x RJ45 with LED

### Display

- Intel® Atom™ processor D2550 integrated 3D graphics engine, which enhances Gfx & video, support DX\*10.1, OpenGL 3.0 , and Full HD

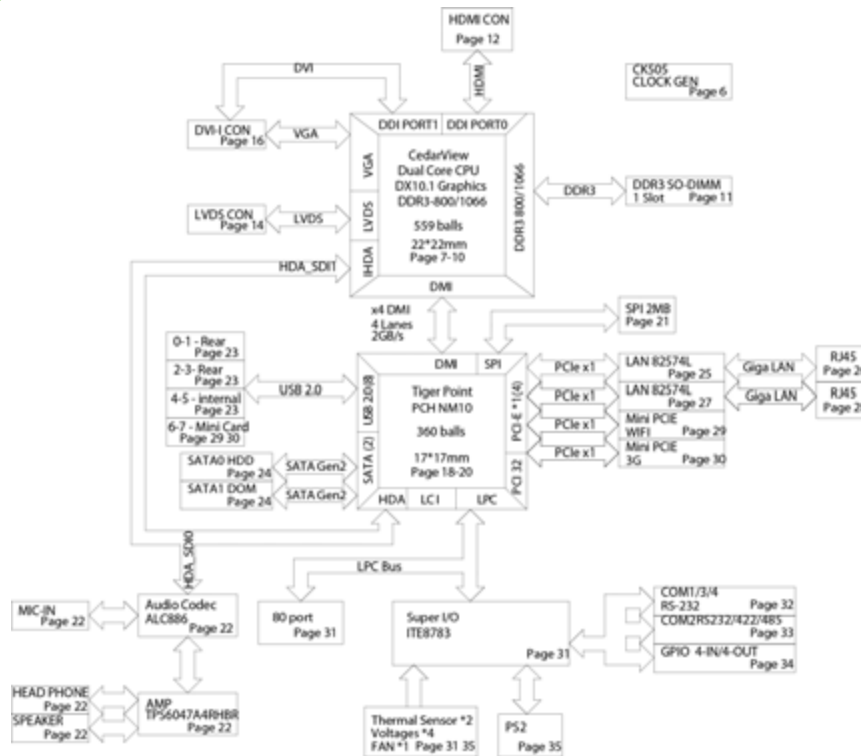
decode (MPEG2,VC1,AVC,H.264), delivers sophisticated graphics for large display applications, supports dual independent displays at graphics base frequency up to 640MHz, and provides multi-options for high-resolution displays

- Analog VGA interface:  
1x VGA within DVI-I connector  
Resolution up to 1920 x 1200 75Hz
- DVI interface:  
1x DVI-I connector  
Resolution up to 1920 x 1200
- HDMI interface:  
1x HDMI connector  
Resolution up to 1920 x 1200
- LVDS interface:  
Single (24bit) LVDS panel, resolution up to 1440 x 900 DF13 20-pin LVDS connector for internal connection
- CCFL interface:  
1x CCFL for LCD Panel Backlight Inverter

### Audio

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

## Block Diagram



### Expansion

- 2x Mini-PCle

### I/O Interface

- Serial port: 4 port  
COM1, 3, 4 support RS232 with 10-pin box header  
COM2 support RS232/422/485 with 10-pin box header
- USB 2.0: 6 ports  
4 ports edge connector  
1 ports by 2.0mm JST connector
- 8 GPIO lines via header (GPI 0~3 and GPO0~3) TTL Level (0/ 5V)
- On-board power LED and HDD active LED pin header
- 1x 3-pin fan connector (for CPU)
- 1x keyboard/ mouse pin header
- Onboard buzzer/ SMBus2.0/ reset SW/ on & off switch button

### Edge I/O Interface

- 1x DVI-I connector
- 1x HDMI connector
- 2x dual stack USB connector
- 2x RJ45 with LED connector

### 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

- 2x SATA port

### System Monitor

- Monitoring of 4 voltages and 2 temperatures
- 4 voltage (Vcore, +12V, +3.3V, 5V)
- 2 temperatures (CPU, system)
- 1 fan speed detection

### On-board RTC

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

### Power Input

- Support AT and ATX mode

### Power Requirements

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

### Dimensions

- 3.5" ECX form factor/ 146mm (L) x 105mm (W) (5.7"x 4.1")

### Environment

- Operating temperature: -15°C to 60°C
- Storage temperature: -20°C to 85°C
- Relative humidity: operating 10% to 90%, non-condensing

### Certifications

- CE approval
- FCC Class A

## Ordering Information

### • EBC 354-2550 (P/N: 10E00035403X0) RoHS Compliant

Low power embedded board with Intel® Atom™ processor D2550 and based on Intel® integrated graphics engine w/ VGA/ 24bit LVDS/ 6x USB2.0/ 4x COMs/ 2x Mini-PCle/ 2x Gigabit LAN/ 2x SATA

### • EBC 353/ EBC 354 Cpu Cooler (P/N: 10E00035301X0)

EBC 353/ EBC 354 Cpu cooler with heat sink, Fau and Thermal Pad

### • Optional EBC 353 Cable Kit (P/N: 10E00035302X0)

Include SATA cable, SATA power cable, PS2 KB/ MS cable, DVI to DVI-D and D-SUB15 cable, COMPORT and USB cable