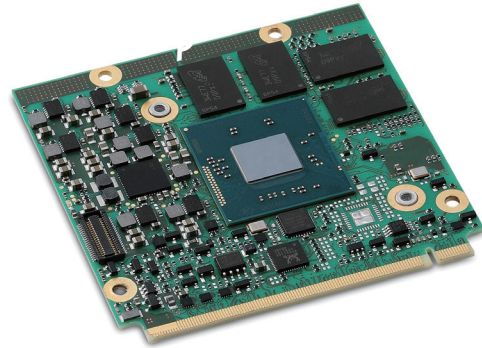


# Q7-BT

## Qseven® Standard Size Module with Intel® Atom™ Processor E3800 Series System-on-Chip

### Features

- Single, dual or quad-core Intel® Atom™ Processor E3800 Series System-on-Chip
- Up to 4 GB DDR3L at 1066/1333 MHz
- HDMI 1.4b and dual channel LVDS
- GbE, MIPI CSI camera interface
- 2x SATA 3Gb/s or 1x SATA and 1x SATA-SSD
- Extreme Rugged™ -40°C to +85°C or commercial temp. 0°C to +60°C
- Supports Smart Embedded Management Agent (SEMA) functions 2.5 or 3.0



### Specifications

#### • Core System

##### CPU

Intel® Atom Atom™ Processor E3800 Series, single, dual or quad-core SoC with integrated graphics

E3845 (4C/1333), 1.91 GHz, Gfx 542/792 MHz (Turbo), 10 W TDP

E3826 (2C/1066), 1.46 GHz, Gfx 533/667 MHz (Turbo), 7 W TDP

E3815 (1C/1066), 1.46 GHz, Gfx 400 MHz (no Turbo), 5 W TDP

E3805 (2C/1066), 1.33 GHz (No GFX) 3W TDP

Other processors on request

##### Memory

Up to 4 GB DDR3L at 1066/1333 MHz

##### Embedded BIOS

AMI UEFI with CMOS backup in 8 MB SPI BIOS, Fast Boot support

##### Cache

512 kB to 2 MB L2 cache

##### SEMA Board Controller

Supports: Voltage/Current monitoring, Power Sequencing, Logistics and Forensic Information, Flat Panel Control, I<sup>2</sup>C Bus Control, GPIO Control, User Flash, Failsafe BIOS (dual BIOS), Watchdog Timer and Fan Control

#### • Audio

##### Chipset

Intel® HD Audio integrated in SoC

##### Ports

HDA for audio codec on carrier

#### • Ethernet

##### Intel® MAC/PHY

1x Intel® i210-IT Ethernet controller

##### Interface

1x 10/100/1000 GbE

#### • I/O Interfaces

##### PCIe

3x PCIe x1 Gen2

##### USB

1x USB 3.0 + 5x USB 2.0 host + 1x USB 2.0 client

##### SATA

2x SATA 3 Gb/s or 1x SATA & 1x SATA-SSD (optional)

##### SSD

onboard SATA-SSD (optional)

##### SDIO

1x SDIO (4-bit)

##### Camera

CSI 4L/1L on feature connector

##### Serial

1x I<sup>2</sup>C, 1x SPI, 1x HS-UART, Power Management, SMBus

##### eMMC

Soldered, bootable eMMC flash storage from 4GB to 64GB (optional)

##### LPC

1x LPC

#### • Video

##### GPU Feature Support

7th generation Intel® graphics core architecture with four execution units, supports two independent displays 2D and 3D graphics hardware acceleration Support for DirectX 11.1, OGL ES 2.0, OGL 3.2

Video decode HW acceleration for H.264, MPEG2, VC1, VP8 formats

Video encode HW acceleration for H.264, MPEG2 formats

##### LVDS

Single channel 18/24-bit LVDS from DDIO

##### HDMI/DP++

HDMI 1.4a from DDIO

- **Mechanical and Environmental**

**Form Factor**

Qseven Specification 2.0

**Dimension**

Standard size, 70 mm x 70 mm

**Operating Temperature**

Standard: 0°C to +60°C

Extreme Rugged: -40°C to +85°C

**Humidity**

5-90% RH operating, non-condensing

5-95% RH storage (and operating with conformal coating)

**Shock and Vibration**

IEC 60068-2-64 and IEC-60068-2-27, MIL-STD-202 F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D

**HALT**

Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

- **Power**

**Standard Input**

3.0 V~5.25 V DC ±5%

**Power States**

C0-C6, S0, S3, S4, S5

- **Operation System**

**Standard Support**

Linux, VxWorks, Windows 7/8, Windows Embedded, Compact 7

**On Request**

QNX, Android

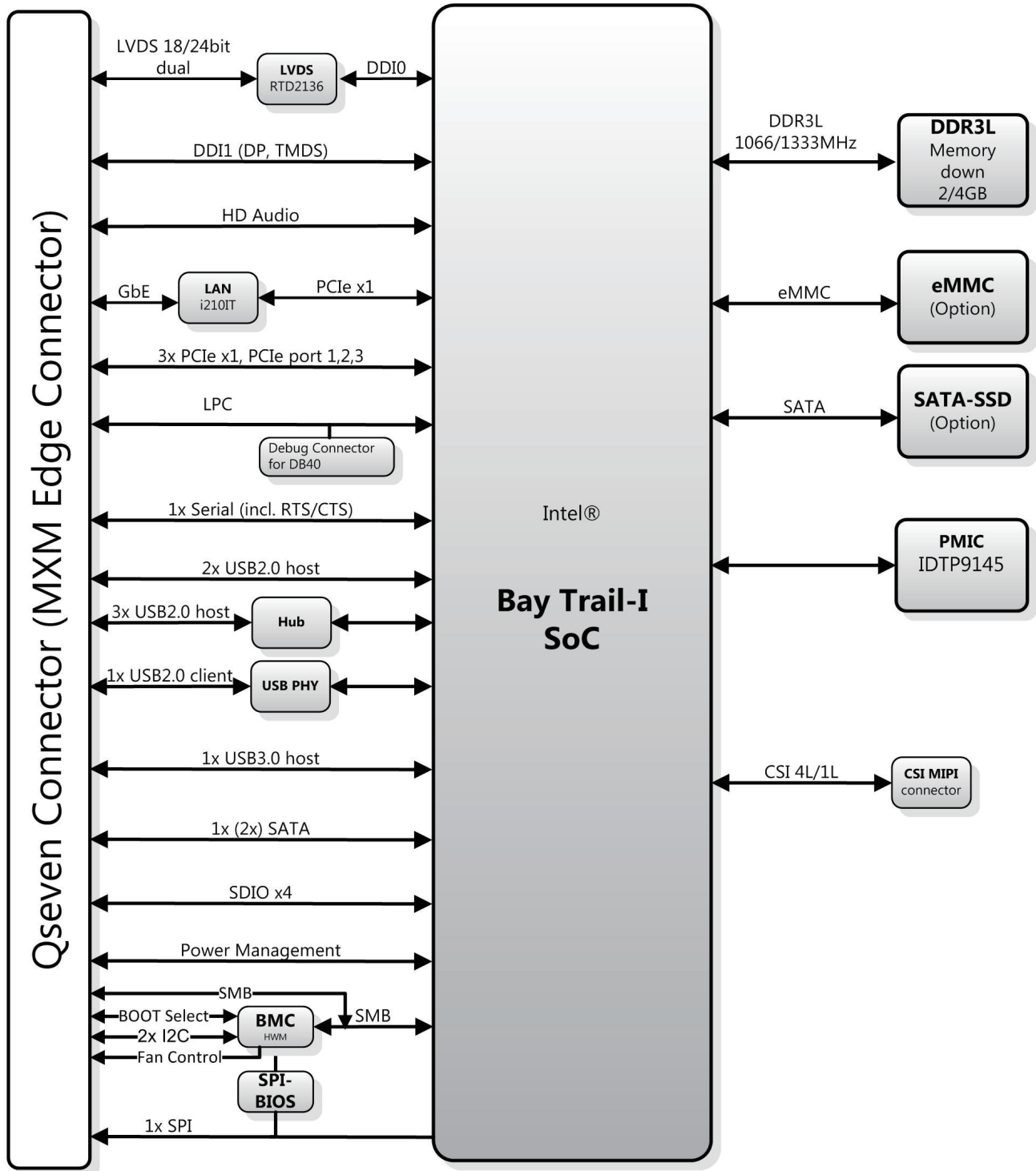
- **Intelligent Middleware**

**SEMA®**

Local management, control of embedded computer systems Extended EAPI for monitoring, controlling and analytics applications Multiple OS support and across platforms (x86, ARM)



# Functional Diagram



## Ordering Information

- **Q7-BT4-4G-8G-ER**  
Qseven module with Intel® Atom E3845, quad core,  
4 GB DDR3L, 8GB eMMC, -40°C to +85°C
- **Q7-BT2-4G-8G-ER**  
Qseven module with Intel® Atom E3826, dual core,  
4 GB DDR3L, 8GB eMMC, -40°C to +85°C
- **Q7-BT4-4G-8GS-ER**  
Qseven module with Intel® Atom E3845, quad core,  
4 GB DDR3L, 8GB SATA SSD, -40°C to +85°C
- **Q7-BT1-2G-8G-ER**  
Qseven module with Intel® Atom E3815, single core,  
2 GB DDR3L, 8GB eMMC, -40°C to +85°C
- **Q7-BT-HS**  
Heatspreader for Q7-BT
- **Q7-BT-HS2**  
Passive heatsink for Q7-BT, dual core, 0°C to 70°C

\*other configurations by request