

# LEC-BT

SMARC<sup>®</sup> Full Size Module with Intel<sup>®</sup> Atom<sup>™</sup> Processor E3800 Series System-on-Chip

### Features

- Single, dual or quad-core Intel<sup>®</sup> Atom<sup>™</sup> Processor E3800 Series System-on-Chip
- Up to 8 GB DDR3L at 1066/1333 MHz (ECC)
- HDMI and LVDS, onboard eMMC
- GbE, camera interface
- 1x SATA 3Gb/s, 1x USB 3.0, 3x USB 2.0,
- max. 12x GPIO
- Extreme Rugged<sup>™</sup> operating temperatur e: -40°C to 85°C



### **Specifications**

#### • Core System

#### CPU

Intel<sup>®</sup> Atom <sup>™</sup> E3800 Series, single, dual or quad-core SoC with integrated graphics Atom<sup>™</sup> E3845 (4C/1333), 1.91 GHz, Gfx 542/792 MHz (Turbo), 10 W TDP Atom<sup>™</sup> E3826 (2C/1066), 1.46 GHz, Gfx 533/667 MHz (Turbo), 7 W TDP Atom<sup>™</sup> E3815 (1C/1066), 1.46 GHz, Gfx 400/-MHz (No Turbo), 5 W TDP Atom<sup>™</sup> E3805 (2C/1066), 1.33 GHz (No GFX) 3W TDP

#### Метогу

Up to 8 GB DDR3L at 1066/1333 MHz, memory down with ECC

#### 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** 1x I<sup>2</sup>S and 1x HDA for audio codec on carrier

#### • Ethernet

Intel<sup>®</sup> MAC/PHY 1x Intel<sup>®</sup> i210-IT Ethernet controller

Interface 10/100/1000 GbE

#### I/O Interfaces

PCle 3x PCle x1 Gen2 USB 1x USB 3.0 + 3x USB 2.0 SATA 1x SATA 3 Gb/s SDIO 1x SDIO (4-bit) Camera CSI 4L/1L Serial 2x SPI, 2x I2C, 1x I2S, Power Management, 2x UART eMMC Soldered, bootable eMMC flash storage from 4 to 64 GB (optional) GPIO 12x GPIO, 5x used for camera, 7x available

#### • Video

#### **GPU Feature Support**

7th generation Intel<sup>®</sup> graphics core architecture with four execution units, supports two independent displays 2D and 3D graphics hardware acceleration Support for DirectX 11.1, OGLES 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 DDI0

HDMI/DP++ HDMI 1.4a from DDI1

#### Power

**Standard Input** 3.0 V~5.25 V DC ±5%

**Power States** C0-C6, S0, S3, S4, S5

#### • Mechanical and Environmental

Form Factor SMARC Specifications v1.1

Dimension SMARC full size module, 82 mm x 80 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)

HALT Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

#### • Operation System

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

Extended Support (BSP) QNX, Android

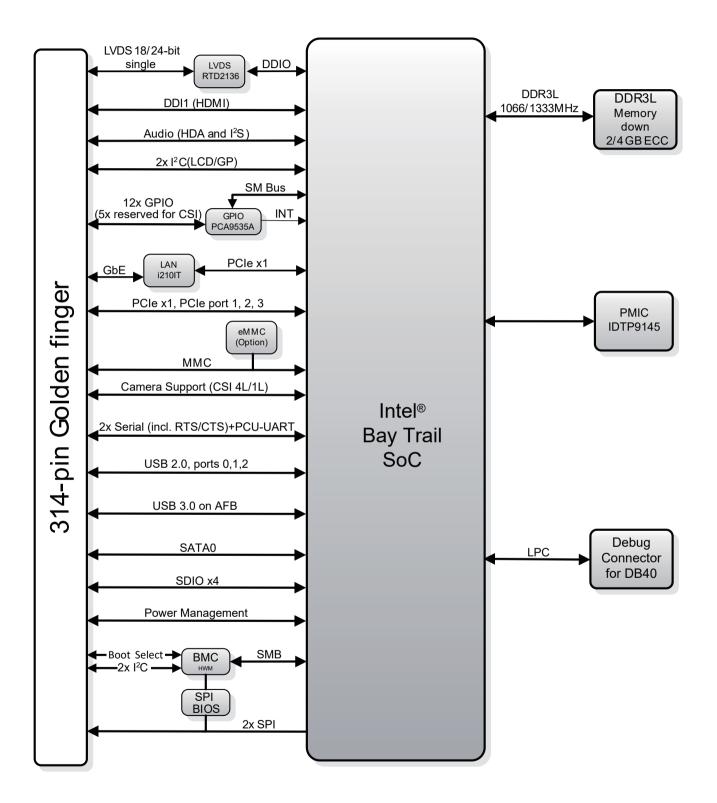
## • Intelligent Middleware



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

EMA

### Functional Diagram



### Ordering Information

#### • LEC-BT4-4G-8G-ER

SMARC Full Size Module with Intel® Atom<sup>™</sup> E3845, quad core, 4 GB DDR3L, 8 GB eMMC, Extreme Rugged<sup>™</sup> operating temperature: -40°C to +85°C

#### • LEC-BT2-2G-8G-ER

SMARC Full Size Module with Intel® Atom™ E3826, dual core, 2 GB DDR3L, 8 GB eMMC, Extreme Rugged™ operating temperature: -40°C to +85°C

#### • LEC-BT1-2G-8G-ER

SMARC Full Size Module with Intel® Atom<sup>™</sup> E3815, single core, 2 GB DDR3L, 8 GB eMMC, Extreme Rugged<sup>™</sup> operating temperature: -40°C to +85°C

#### • LEC-BT-HS

Heatspreader for LEC-BTS

\*other configurations by request



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