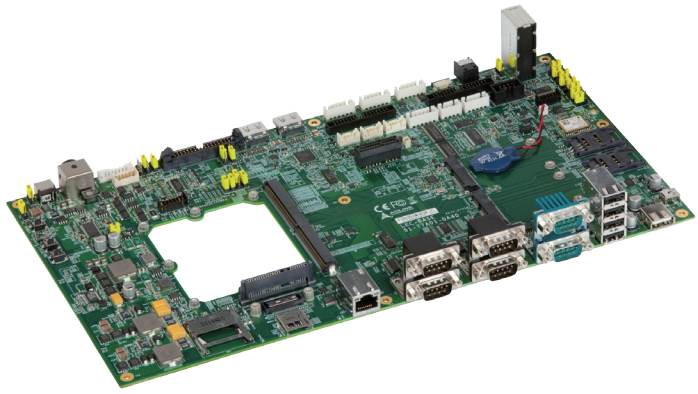
LEC-BASE R1

SMARC Reference Carrier Board

Features

- SMARC compliant carrier board with MXM3 connector
- Compatible with both short and full size SMARC modules
- Supports parallel RGB, LVDS and HDMI displays
- Two mini PCIe slots for expansion cards (e.g. Wi, 3G, ...) (not included) and two SIM card slots
- 2 camera connectors
- 4x UART, 2x CAN
- USB hub



Specifications

- **Interfaces**

Display
Combined HDMI, DP, LVDS 18/24-bit or eDP
Panel support signals (I²C, Power Enables, PWM)
Combined HDMI, 18/24-bit RGB

Camera
Camera input 0: CSI-2, Camera input 1: RGB or CSI-4

SDIO
4-bit SD/SDIO card interfaces, 8-bit eMMC/SD/SDIO interfaces

SPI
Off module boot use (optional), G-sensor ADXL345 BCCZ, 2x SPI interface

I²S
3x I²S interface
- Audio codec TLV320AIC23BPW
- Line-in, Line-out, Mic
- Optional with HDA

I²C
4x I²C
- Power Management
- HDMI
- Camera 0
- Camera 1 or GP

Asynchronous Serial Port
4x asynchronous serial ports (UART)
- Two with 2 wire handshake (RXD, TXD, RTS#, CTS#)
- Two with data only (RXD, TXD)
- Logic level interface

CAN Bus
2x CAN bus (D-SUB9)
Logic level signals from module based CAN bus protocol controllers RXD, TXD only

USB
5x USB
- One with USB 2.0 OTG
- 4x USB 2.0 Host operation (full speed and high speed)

PCI Express
One PCIe x1 link connector, Two mini PCIe x1 slots, PCIe Gen1 or Gen 2 (module dependent), Reference clock pair, Full set of PCIe support signals, PCIe wake signal

SATA
One SATA with power interface

Ethernet
RJ-45 10/100/1000 Ethernet (by LAN transformer)

S/PDIF
S/PDIF header for audio

Boot Select Jumpers
Module: SPI/eMMC/NOR/NAND, Carrier: SPI/eMMC/SD Card/SATA, DIP Switch (4)

GPIO
12-pin header (including fan control and HDA reset)

Alternate Function Blocks
Dedicated AFB connector Pinout is module dependent (see SMARC specication)

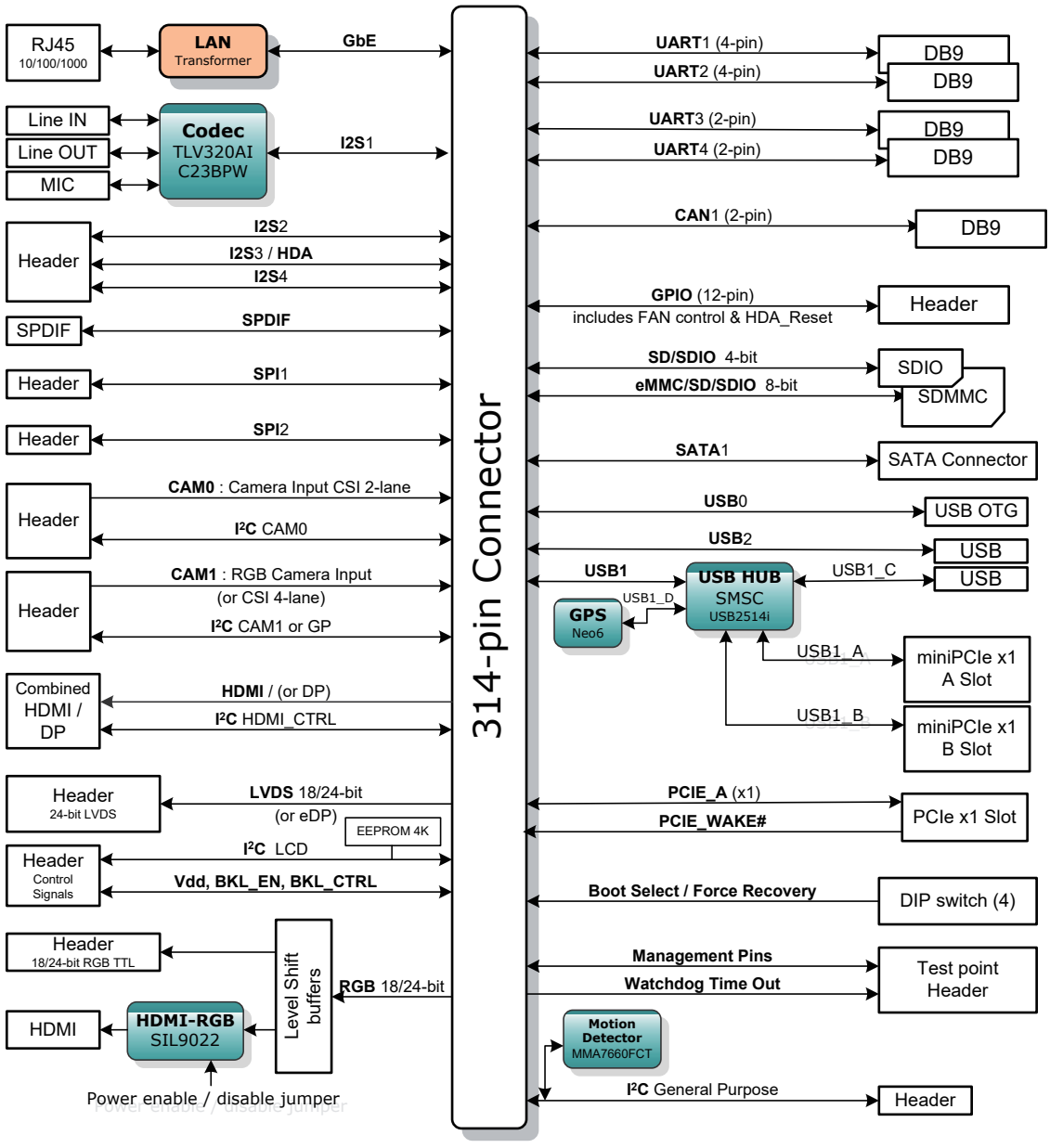
- **Mechanical and Environmental**

Dimension
330 mm x 175 mm (L x W)

Board Connector
MXM 314 pins

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Functional Diagram



Intelligent Middleware

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

Ordering Information

- **LEC-BASE-R01**
  2SMARC Reference Carrier Board, MXM 314 pins, 330 x 175 mm

*other configurations by request

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