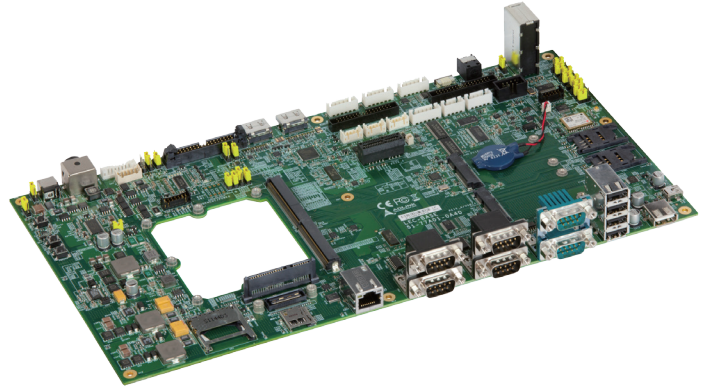


LEC-BASE R1

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)	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
Camera	Combined HDMI, 18/24-bit RGB Camera input 0: CSI-2 Camera input 1: RGB or CSI-4	SATA	One SATA with power interface
SDIO	4-bit SD/SDIO card interfaces 8-bit eMMC/SD/SDIO interfaces	Ethernet	RJ-45 10/100/1000 Ethernet (by LAN transformer)
SPI	Off module boot use (optional) G-sensor ADXL345 BCCZ 2x SPI interface	S/PDIF	S/PDIF header for audio
I ² S	3x I ² S interface - Audio codec TLV320AIC23BPW - Line-in, Line-out, Mic - Optional with HDA	Boot Select Jumpers	Module: SPI/eMMC/NOR/NAND Carrier: SPI/eMMC/SD Card/SATA DIP Switch (4)
I ² C	4x I ² C - Power Management - HDMI - Camera 0 - Camera 1 or GP	GPIO	12-pin header (including fan control and HDA reset)
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	Alternate Function Blocks	Dedicated AFB connector Pinout is module dependent (see SMARC specification)
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)		

Mechanical and Environmental

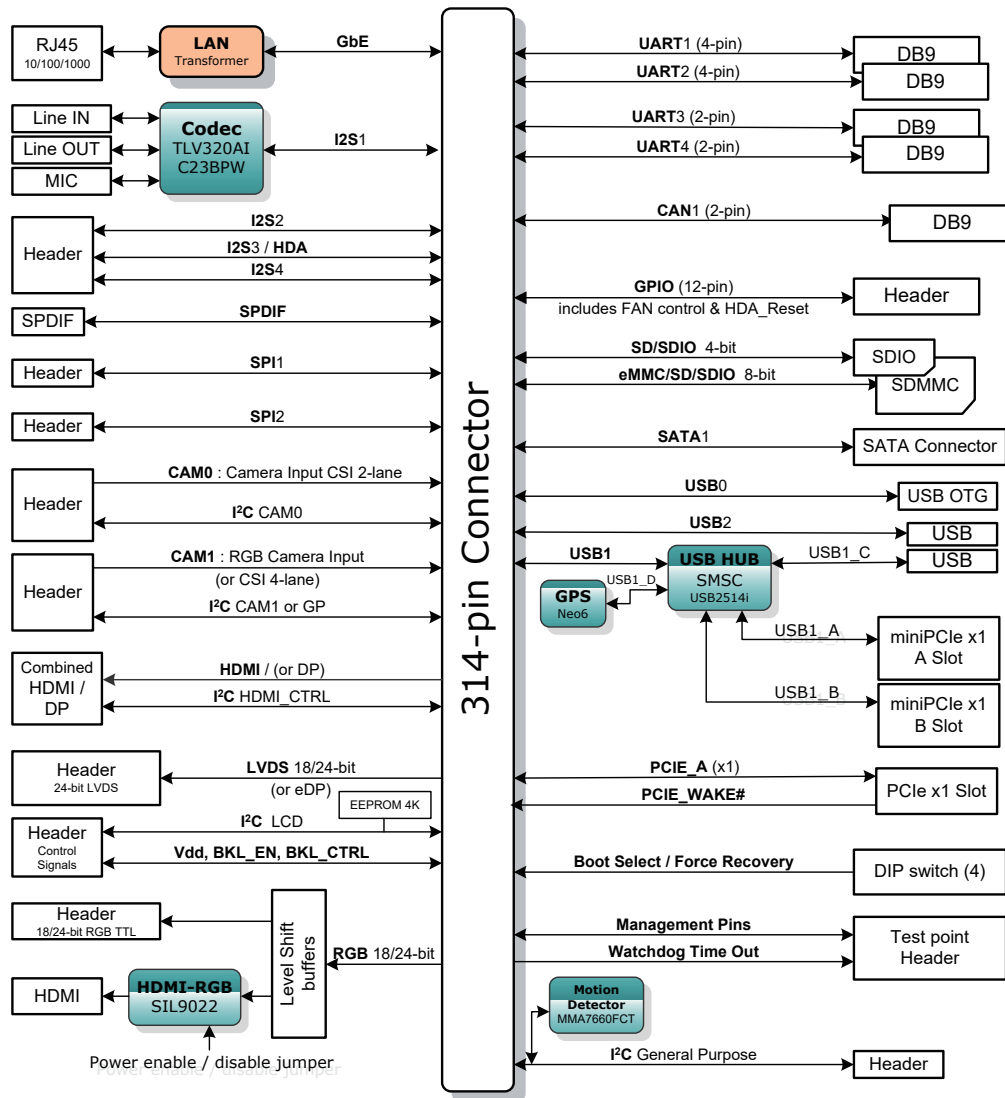
Dimension	330 mm x 175 mm (L x W)
Board Connector	MXM 314 pins

Ordering Information

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

*other configurations by request

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)

Intelligent IOT Platform



Platform Name: SEMA Cloud®
 Description: Application ready comprehensive industrial grade IoT Platform
 Connecting Devices to a Cloud Platform and to Web Applications
 Remote monitoring and controlling managing of connected devices
 Enabling integration of operational device data into business processes
 Cloud based Platform as a Service (PaaS)

