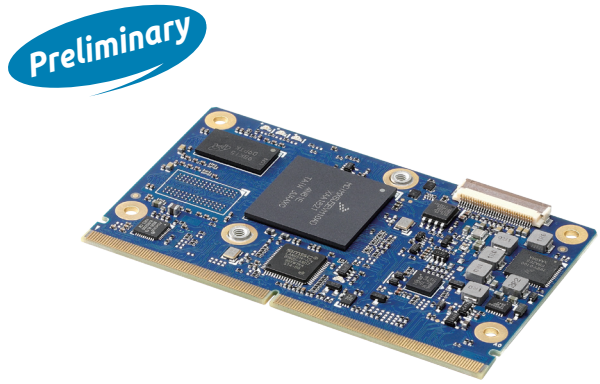
LEC-iMX6R2

SMARC Short Size Module with NXP i.MX 6 Multicore Arm® Cortex®-A9

Features

- NXP SoC i.MX6 ARM Cortex A9 Solo, DualLite, Dual or Quad processor
- Integrated 2D/3D graphics processors, 3D 1080p video processing, power management
- Onboard DDR3L-1600 system memory from 512 MB to 2 GB
- Supports up to 64 GB eMMC, 1x SD/MMC, 1x SATA 3Gb/s
- Extreme Rugged operating temperature: -40°C to +85°C (optional)
- 15 year product availability



Specifications

Core System

SoC

NXP i.MX6 Solo, DualLite, Dual or Quad processor
i.MX6 Quad, 4 cores, 1.2GHz* MHz, 1 MB L2 cache, 3 displays, 1x SATA
i.MX6 Dual, 2 cores, 1.2 GHz* MHz, 1 MB L2 cache, 3 displays, 1x SATA
i.MX6 DualLite, 2 cores, 1GHz* MHz, 512 kB L2 cache, 1 display, no SATA
i.MX6 Solo, 1 core, 1 GHz* MHz, 512 kB L2 cache, 1 display, no SATA
*Extreme Rugged operating temperature SKUs support 800 GHz CPU clock speed

Memory

512 MB up to 2GB DDR3L memory down

L2 Cache

From 512 kB to 1 MB

Security

Advanced security support:
High Assurance Boot
Cryptographic cipher engines
Random number generator
Tamper detection

Video

Graphics Support

GPU 3D: Vivante GC2000, 200Mtri/s 1000Mpxl/s, OpenGL® ES 3.0 and Halti, CL EP)
GPU 2D: Vivante GC355 (Vector Graphics), 300 Mpxl/s, OpenVG™ 1.1
GPU 2D: Vivante GC320 (Composition), 600 Mpxl/s, BLIT
Video Decode: 1080p60, H.264
Video Encode: 1080p30, H.264 BP, dual 720p encode

HDMI

HDMI 1.4 up to WUXGA (1920x1080), FHD 1080p @ 30fps

LVDS

Dual-channel 18/24-bit max, 1600 x 1200 @ 30fps
Single-channel 18/24-bit max, 1366 x 768 @ 30fps

MIPI DSI

Camera

MIPI CSI-2 serial camera port

Audio

Audio Codec

Supports SGTL5000 codec

Dual Ethernet

Interface

10/100/1000 GbE Ethernet Phy

Expansion Busses

PCIe

1x PCI Express x1 Gen2

USB

4x USB 2.0 host, 1x USB OTG

UART

4x UART interfaces: Tx/Rx/CTS/RTS (SER0, SER2) and Tx/Rx (SER1, SER3)

CAN

2x CAN 2.0B only or mixed CAN 2.0B and CAN FB mode, data bit rate up to 8 Mbps

SPI

2x SPI

I²S

3x I²S interfaces

I²C

3x I²C interface

GPIO

12x GPIO with interrupt

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Specifications

System Storage

SDIO

1x SDIO (4-bit) compatible with SD/SDIO standard, up to version 3.0

eMMC

8, 16, or 32 GB (64 GB by build option), compatible with eMMC specification 4.41, 4.51, 5.0, 5.1

SEMA Board Controller

Voltage/current monitoring, boot configuration, logistics and forensic information, flat panel control, watchdog timer

Debug Header

30-pin multipurpose flat cable connector for use with optional DB-30 ARM debug module providing JTAG, BMC access, UART, power testpoints, diagnostic LEDs, power, reset, boot configuration

Mechanical and Environmental

Form Factor

SGET SMARC Hardware Specification 2.1

Dimension

SMARC short size module, 82 mm x 50 mm

Operating Temperature

Standard: 0°C to +60°C
Extreme Rugged: -40°C to +85°C (optional)

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

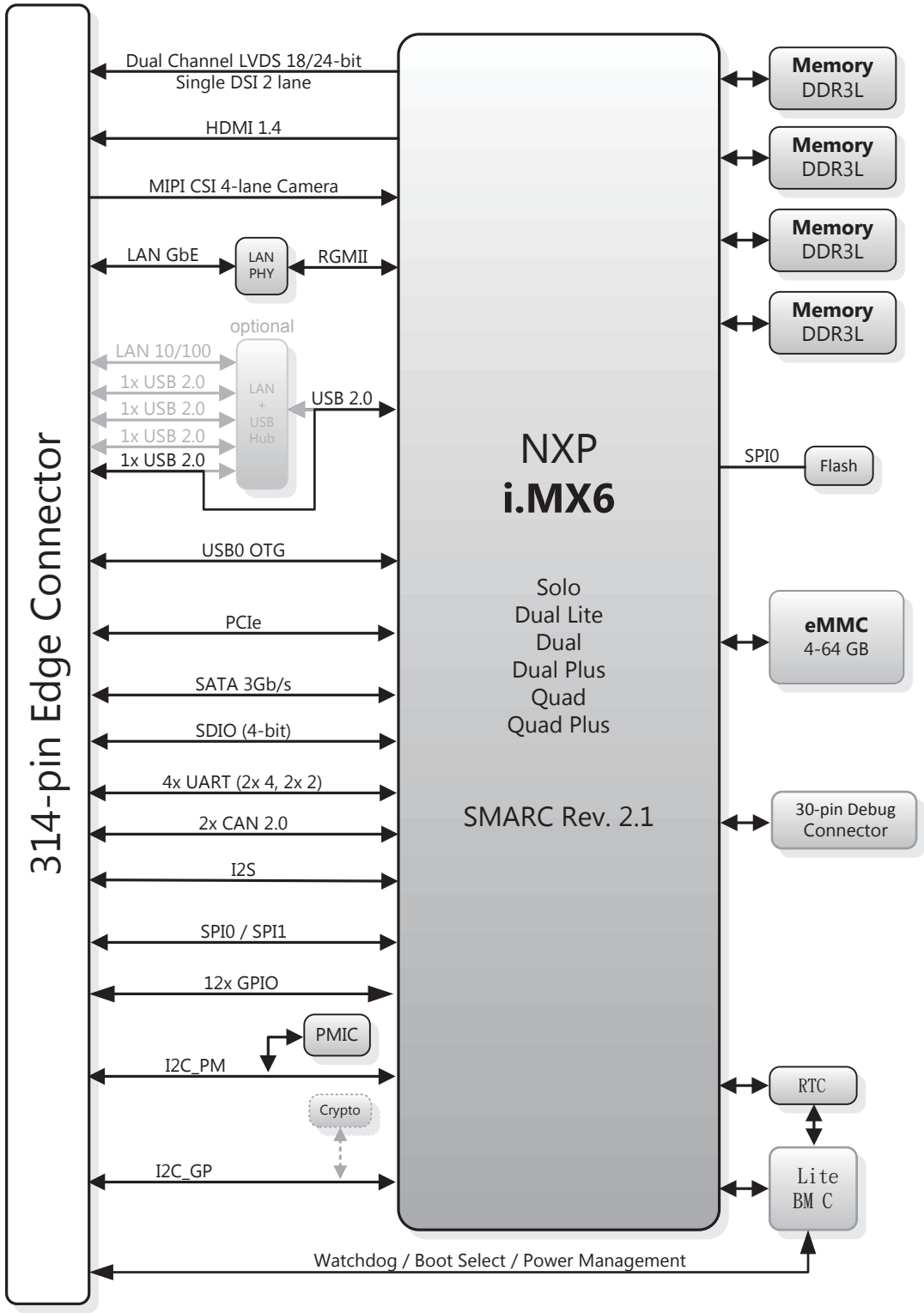
HALT

Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

Operation System

Yocto Linux BSP at https://github.com/ADLINK/meta-adlink-nxp
Ubuntu 18.04 basic support

Functional Diagram



Ordering Information

- **LEC-iMX6R2-DL-512M-16G-CT**
  SMARC Short Size Module with NXP i.MX6, Dual Lite, 512 MB DDR3L and 16 GB eMMC, 0°C to +60°C
- **LEC-iMX6R2-DL-512M-16G-ER**
  SMARC Short Size Module with NXP i.MX6, Dual Lite, 512 MB DDR3L and 16 GB eMMC, -40°C to +85°C
- **LEC-iMX6R2-D-1G-16G-CT**
  SMARC Short Size Module with NXP i.MX6, Dual, 1 GB DDR3L and 16 GB eMMC, 0°C to +60°C
- **LEC-iMX6R2-D-1G-16G-ER**
  SMARC Short Size Module with NXP i.MX6, Dual, 1 GB DDR3L and 16 GB eMMC, -40°C to +85°C
- **LEC-iMX6R2-Q-2G-16G-CT**
  SMARC Short Size Module with NXP i.MX6, Quad, 2 GB DDR3L and 16 GB eMMC, 0°C to +60°C
- **LEC-iMX6R2-Q-2G-16G-ER**
  SMARC Short Size Module with NXP i.MX6, Quad, 2 GB DDR3L and 16 GB eMMC, -40°C to +85°C
- **LEC-iMX6R2-QP-4G-16G-CT**
  SMARC Short Size Module with Quad Plus NXP i.MX6, 4 GB DDR3L and 16 GB eMMC, 0°C to +60°C
- **LEC-iMX6R2-QP-4G-16G-ER**
  SMARC Short Size Module with Quad Plus NXP i.MX6, 4 GB DDR3L and 16 GB eMMC, -40°C to +85°C

Accessories

Heat Solutions

- **HTS-SiMX6R2-SDL**
  Heat spreader for LEC-iMX6R2 with Solo and DualLite SOCs (standard and Extreme Rugged temperature range)
- **HTS-SiMX6R2-DQP**
  Heat spreader for LEC-iMX6R2 with Dual/Quad/DualPlus/ QuadPlus SOCs (standard and Extreme Rugged temperature range)
- **THS-SiMX6R2-SDL**
  Low profile heatsink for LEC-iMX6R2 with Solo and DualLite SOCs (standard temperature range)
- **THS-SiMX6R2-DQP**
  Low profile heatsink for LEC-iMX6R2 with Dual/Quad/DualPlus/ QuadPlus SOCs (standard temperature range)

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