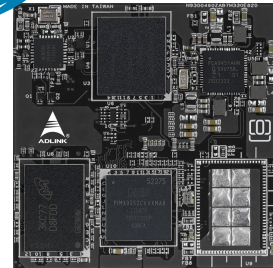


OSM-IMX93

OSM Size-L Module with NXP®
i.MX93 Series

Preliminary



Features

- NXP® i.MX93 series with 2-core Arm Cortex-A55 & M33
- In-SoC Arm Ethos U-65 microNPU
- OSM revision 1.1 compliant
- LVDS, DSI graphic output interfaces
- Dual GbE (one TSN capable)
- ADC 4 channel, 12-bit
- Rugged operating temperature option: -40°C to 85°C
- Dual CAN bus
- USB2 interfaces
- I2S audio codec interface
- 15 year product availability

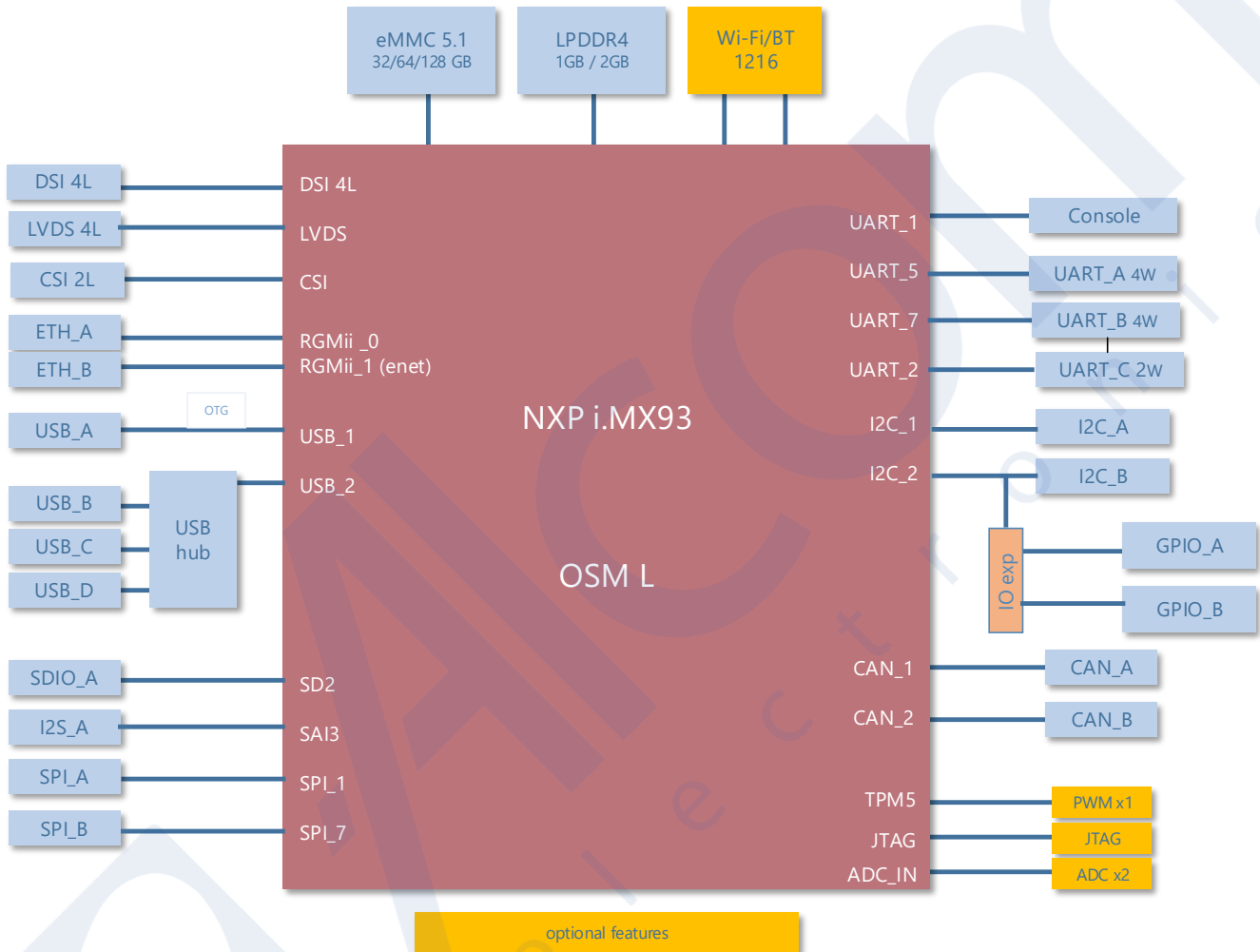
Specifications

Processor & System	CPU	NXP® i.MX93 series with 2-core Arm Cortex-A55 & M33 TrustZone Technology with Armv8 Cryptography Arm® Ethos™ U-65 microNPU
	Memory	1/2GB LPDDR4L
	L2 Cache	32kB L1-I, 32kB L1-D, and 64kB L2 cache per core
	Security	<ul style="list-style-type: none"> • TRDC – Resource Domain Controller <ul style="list-style-type: none"> ◦ Supports up to 16 resource domains • Arm TrustZone® (TZ) architecture • Secure and trusted access control • Battery Backed Security Module (BBSM) <ul style="list-style-type: none"> ◦ Monotonic counter - Secure real-time clock (RTC) - Zeroizable Mast
Video	GPU Core	PXP 2D accelerator
	MIPI DSI	1x MIPI DSI 4 lanes (up to 1920x1200p60)
	LVDS	up to 1366x768p60 or 1280x800p60
	Camera	MIPI CSI RX interface <ul style="list-style-type: none"> • Compatible with MIPI Alliance Interface spec v1.0 • Up to 2 data lanes, up to 1.0 Gb/s per lane • MIPI-HS, MIPI-LP mode support
System Storage	SDIO	1x SDIO (4-bit) compatible with SD/SDIO standard, up to version 3.0
	eMMC	32, 64, or 128 GB (build option) Compatible with eMMC spec 4.41, 4.51, 5.0, 5.1

Specifications

Debug Header	JTAG interface	
Audio	Audio Codec	I ² S audio codec located on carrier
Dual Ethernet	Primary LAN	10/100/1000 Ethernet controller on SoC (TSN capable)
	Secondary LAN	10/100/1000 Ethernet controller on SoC
Extension Buses	USB	3x USB 2.0, 1x USB 2.0 OTG
	UART	4x UART interfaces (UART A/B has TX/RX/CTS/RTS)
	CAN	2x CAN2.0B only or mixed CAN2.0B and CAN FD mode, data bit rate up to 8 Mbps
	SPI	2x SPI
	I ² S	1x I ² S interfaces with audio resolution from 16-bits to 32-bits and sample rate up to 192kHz (see Audio Codec support)
	I ² C	2x I ² C interfaces - Support for 7-bit and 10-bit address mode - Software programmable clock frequency of 100 kbit/s in Standard-mode, 400 Kbit/s in the Fast-mode or 1 Mbit/s in Fast-mode Plus
	GPIO	16x GPIO with interrupt
Power	Input	5V DC +/- 5%
Mechanical and Environmental	Form Factor	SGET OSM Specifications 1.1
	Dimension	OSM Size-L (Large) module 45 mm x 45 mm
	Operating Temperature	Standard: 0°C to 60°C 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
Operating Systems	Standard Support	Yocto Linux BSP
	Extended Support (BSP)	Foundries.IO

Block diagram



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