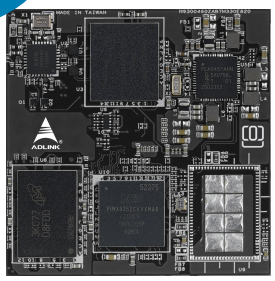
OSM-IMX93

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 LPDDR4
	L2 Cache	32kB L1-I, 32kB L1-D, and 64kB L2 cache per core
	Security	• TRDC – Resource Domain Controller o Supports up to 16 resource domains • Arm TrustZone® (TZ) architecture • Secure and trusted access control • Battery Backed Security Module (BBSM) o 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 • 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

Note: "Build option""indicates an alternative BOM configuration to support additional or alternative functions that are not available on the standard product. Be aware that these "build option" part numbers will need to be newly created and this will result in production lead times.

Specifications

Debug Header	JTAG interface	
Audio	Audio Codec	I^2S 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^2S	1x I^2S interfaces with audio resolution from 16-bits to 32-bits and sample rate up to 192kHz (see Audio Codec support)
	I^2C	2x I^2C 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

Ordering Information

Part Name	Description/Configuration
OSM-iMX93-2G-32G-CT	OSM Size-L module with NXP i.MX 93 SoC, microNPU, 2GB LPDDR4, 32GB eMMC, 0°C to 60°C
OSM-iMX93-2G-32G-ER	OSM Size-L module with NXP i.MX 93 SoC, microNPU, 2GB LPDDR4, 32GB eMMC, -40°C to 85°C
OSM-iMX93-2G-32G-BW-CT	OSM Size-L module with NXP i.MX 93 SoC, microNPU, 2GB LPDDR4, 32GB eMMC, AC Wi-Fi BT 5.1, 0°C to 60°C

Note: For processor or memory SKUs not listed, please contact our ADLINK representative.

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Block diagram