ADLINK
LEADING EDGE COMPUTING

OSM-IMX8MP

OSM Size-L Module with NXP®
i.MX8M Plus Series

Preliminary

Features

- NXP® i.MX8M Plus series with 4-core Arm Cortex-A53 & M7
- In-SoC 2.3 TOPS NPU
- OSM revision 1.1 compliant
- HDMI, LVDS, DSI graphic output interfaces
- Dual GbE (one TSN capable)
- Rugged operating temperature option: -40°C to 85°C
- Dual CAN bus
- USB3.0, 2.0 interfaces
- I2S audio codec interface
- 15 year product availability

Specifications

Processor & System	SoC	NXP® i.MX8M Plus series with 4-core Arm Cortex-A53 & M7 TrustZone Technology with Armv8 Cryptography 2.3 TOPS Neural Processing Unit (optional)
	Memory	2/4/8GB LPDDR4L
	L2 Cache	512kB system L2 cache (ECC)
	Security	• RDC – Resource Domain Controller o Supports up to 4 domains and 8 regions of DDR • Arm TrustZone® (TZ) architecture: Cortex-A53 MPCore TrustZone support • On-chip RAM (OCRAM) secure region protection using OCRAM controller • High Assurance Boot (HAB) • Cryptographic Acceleration and Assurance Module (CAAM) • Widevine and PlayReady content protection support • Public Key Cryptography (PKHA) with RSA and Elliptic Curve (ECC) algorithms • Real-time integrity checker (RTIC) • DRM support for RSA, AES, 3DES, DES • Side channel attack resistance • True random number generation (RNG) • Manufacturing protection support / Secure Non-Volatile Storage (SNVS)
Video	GPU Core	Vivante GC7000UL
	GPU Feature Support	GC7000UL (2 shaders), OpenGL ES 2.0/3.0/3.1, Vulkan, OpenCL 1.2; GC380 (2D)
	MIPI DSI	1x MIPI DSI 4 lanes
	LVDS	2-channel LVDS port 18/24 bit
	Camera	MIPI CSI RX interface • Compatible with MIPI Alliance Interface spec v1.0 • Up to 4 data lanes, up to 1.0 Gb/s per lane • MIPI-HS, MIPI-LP mode support
System Storage	SDIO	2x 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^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	2x USB 3.0, 2x USB 2.0 (one with 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	8x 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, Android
	Extended Support (BSP)	Foundries.IO Linux microPlatform (LMP)

Ordering Information

Part name	Description/Configuration
OSM-IMX8MP-Q-N-2G-32G-ER	OSM L-size Module with 4-core NXP i.MX8M-PLUS, NPU, 2GB LPDDR4, 32GB eMMC, -40°C to 85°C

Block diagram