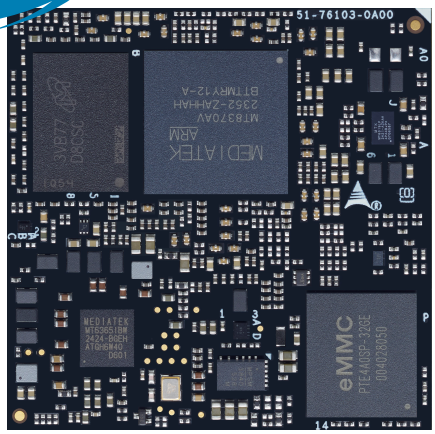
OSM-MTK510

OSM Size-L Module with
MediaTek Genio 510 Series

Preliminary



Features

- MediaTek Genio 510 with dual core Arm Cortex-A78 and quad-core Cortex-A55
- MediaTek DLA+VPU AI engine up to 3.2 TOPS
- OSM revision 1.1 compliant
- HDMI/DP, eDP, DSI graphic output interfaces
- Rugged operating temperature option : -40°C to +85°C (standard SKU, consumer temperature)
- 10 year product availability
- USB 3.0 / 2.0 interfaces
- Gigabit RGMii Ethernet
- eMMC / Q-SPI flash

Specifications

Core System	SoC	Genio 510 with dual-core Cortex-A78 and quad-core Cortex-A55 Ethos™ U-VP6 AI processing unit
	Memory	2/4/8 GB LPDDR4L
	L2 Cache	512 KB system L2 cache (ECC)
	Security	•Resource Domain Controller (RDC) supports 4 domains and up to 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) •Capable to support Widevine and PlayReady content protection •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)

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

Video	GPU Core	Arm Mali-G57 MC2 GPU
	GPU Feature Support	
	HDMI	HDMI 2.0a
	MIPI DSI	1x MIPI DSI 4 lanes
	eDP	Dual-channel LVDS port, 18/24-bit
	Camera	MIPI CSI RX Interface • Compatible with the MIPI Alliance Interface Specification v1.0 • Up to 4 data lanes, with a maximum data rate of 1.0 Gbps per lane • Supports MIPI-HS, MIPI-LP modes
System Storage	Expansion Busses	2x SDIO (4-bit), compatible with SD/SDIO standard, up to version 3.0
	SEMA Board Controller	32, 64, or 128 GB (build option) Compatible with eMMC specifications 4.41, 4.51, 5.0, and 5.1
	Flash	SPI NOR flash (build option)
Debug Header		
Audio	Audio Codec	I^2S audio codec (located on the carrier)
Dual Ethernet	Primary LAN	MAC 10/100/1000 RGMii interface
Extension Busses	USB	1x USB 3.0, 2x USB 2.0
	UART	4x UART interfaces (UART A has TX/RX/CTS/RTS)
	SPI	3x SPI interfaces
	I^2S	2x I^2S interfaces with audio resolution from 16-bits to 32-bits and sample rate up to 192kHz (see Audio Codec support)
	I^2C	3x I^2C interfaces
	GPIO	17x GPIOs with interrupts
Power	Input	5Vdc +/-5%
Mechanical and Environmental	Form Factor	SGeT OSM revision 1.1
	Dimensions	OSM Size-L 45x45 mm
	Operating Temperature	Standard: 0°C to +60°C 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-202F, 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 (by project)
	Extended Support	Foundries.IO Linux microPlatform (LMP)

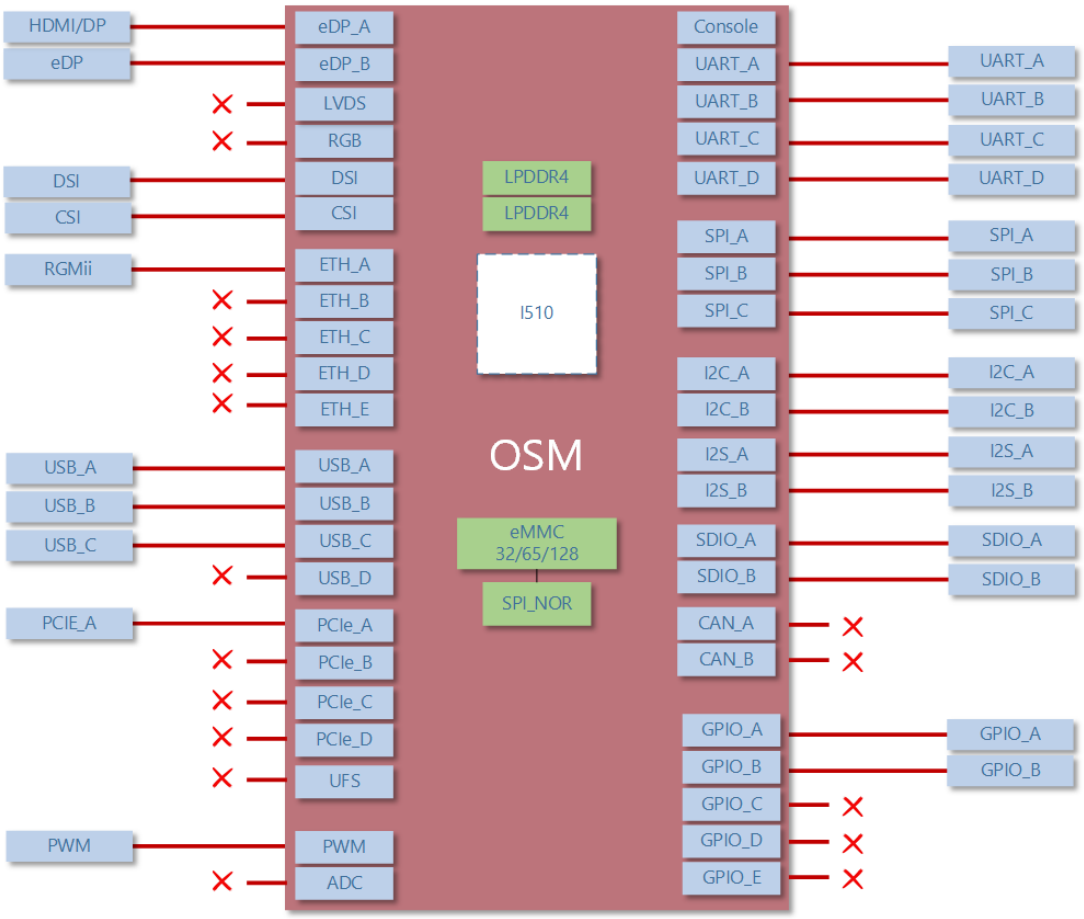
Note: "Build option" indicates an alternative BOM configuration to support additional or alternative functions that are not available on the standard product. Be aware that these "build option" part numbers will need to be newly created and this will result in production lead times.

Ordering Information

Part name	Description/Configuration
OSM-MTK510-2G-32G-CT	OSM Size-L module with Genio 510 SOC , NPU , 2 GB LPDDR4, 32 GB eMMC, 0°C to 70°C
OSM-MTK510-4G-32G-ER	OSM Size-L module with Genio 510 SOC , NPU , 4 GB LPDDR4, 32 GB eMMC, -40°C to 85°

Note: Non-listed configurations are available upon request.

Block diagram



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.

All products and company names listed are trademarks or trade names of their respective companies. Updated December 12, 2024. ©2024 ADLINK Technology, Inc. All Rights Reserved. All pricing and specifications are subject to change without further notice.