

# i.MX8M Plus-System on Module (SOM)



## Cloud Service



## Processor

Freescale iMX8M Plus Arm® Cortex®-A53

## Software

Linux, Android, Yocto



FirstView follows up on the success of i.MX6 and i.MX8X Series SOM offering with a rugged, reliable and low cost i.MX8MPlus Version. The FVC-MX8MPlus-SOM is an embedded single board module optimized for performance and power with a life cycle that removes concerns for obsolescence. The board is designed to be paired with a custom carrier board to fit specific applications in a wide range of environments.

## i.MX8M Plus Smarc 2.0 Module

i.MX8M Plus CPU general-purpose system on module compliant with SMARC 2.0. Designed to work in Industrial, Automotive and consumer environment

### Features of the SOM module

		NXP i.MX 8M Plus ARM Processor Cores			
		Commercial	Arm Cortex®-A53	Arm Cortex®-M7	Part differentiator description
CPU	i.MX 8M Plus Quad	4 x 1.8GHz	800 MHz		NPU1, ISP2, VPU3, HiFi4, CAN
	i.MX 8M Plus Quad Lite	4 x 1.8GHz	800 MHz		CAN, CAN-FD
	i.MX 8M Plus Dual	2 x 1.8GHz	800 MHz		NPU, ISP, VPU, HiFi4, CAN
	<b>Industrial</b>				
	i.MX 8M Plus Quad	4 x 1.6 GHz	800 MHz		NPU, ISP, VPU, HiFi4, CAN-FD
	i.MX 8M Plus Quad	4 x 1.6 GHz	800 MHz		ISP, VPU, CAN-FD
	i.MX8M Plus Quad Lite	4 x 1.6 GHz	800 MHz		CAN-FD
	i.MX8M Plus Dual	2 x 1.6 GHz	800 MHz		NPU, ISP, VPU, HiFi4, CAN-FD
DRAM	<ul style="list-style-type: none"> <li>16/32 LPDDR4/DDR4 (Inline ECC),</li> <li>Up to 8GByte onboard LPDDR4</li> <li>memory @ 4000 MT/s</li> </ul>	<b>I/O Interfaces</b>		<ul style="list-style-type: none"> <li>5x USB3.0 &amp; USB 2.0 (shared with 1x USB OTG client)</li> <li>1x PCIe 3.0, 3x SDIO 3.0, 3x I<sup>2</sup>C Bus, 2x SPI,</li> <li>up to 3x UART (1x with handshake GPIOs),</li> <li>HDMI 2.0a Tx (eARC), Camera ISP 2x 187 MP/1x</li> <li>375 MP dewarp, CAN x2</li> </ul>	
Ethernet	1 x Gigabit Ethernet	<b>Video Decode and Encode</b>		<ul style="list-style-type: none"> <li>1080p60 H.265, H.264, VP9, VP8 decoder</li> <li>1080p60 H.265, H.264 encoder</li> </ul>	
Storage	eMMC 5.1 up to 128 GByte with HS400 compliance, Dual-ch QuadSPI	<b>Graphics</b>		GC7000UL (2 shaders), OpenGL ES 1.1/2.0/3.0/3.1, Open VG 1.1, Vulkan, OpenCL 1.2; GC520L (2D)	
Sound	2x I <sup>2</sup> S   Hi Res Audio   32-bit up to 384KHz with DSD512 and TDM support	<b>Embedded Features</b>		<ul style="list-style-type: none"> <li>Watchdog Timer</li> <li>I<sup>2</sup>C bus 320Kbps, JTAG debug interface</li> <li>Real Time Clock</li> </ul>	
Display	2 x LVDS0, LVDS1 Tx 4-Lane, (8-lane)	<b>Temperature</b>		<ul style="list-style-type: none"> <li>Industrial: Operating: -40 to +85°C</li> <li>Storage: -40 to +85°C</li> <li>Commercial: Operating: 0 to +60°C</li> <li>Storage: -40 to +85°C</li> </ul>	
Form factor	82 x 50 mm	<b>Extended longevity</b>		up to 15 years	

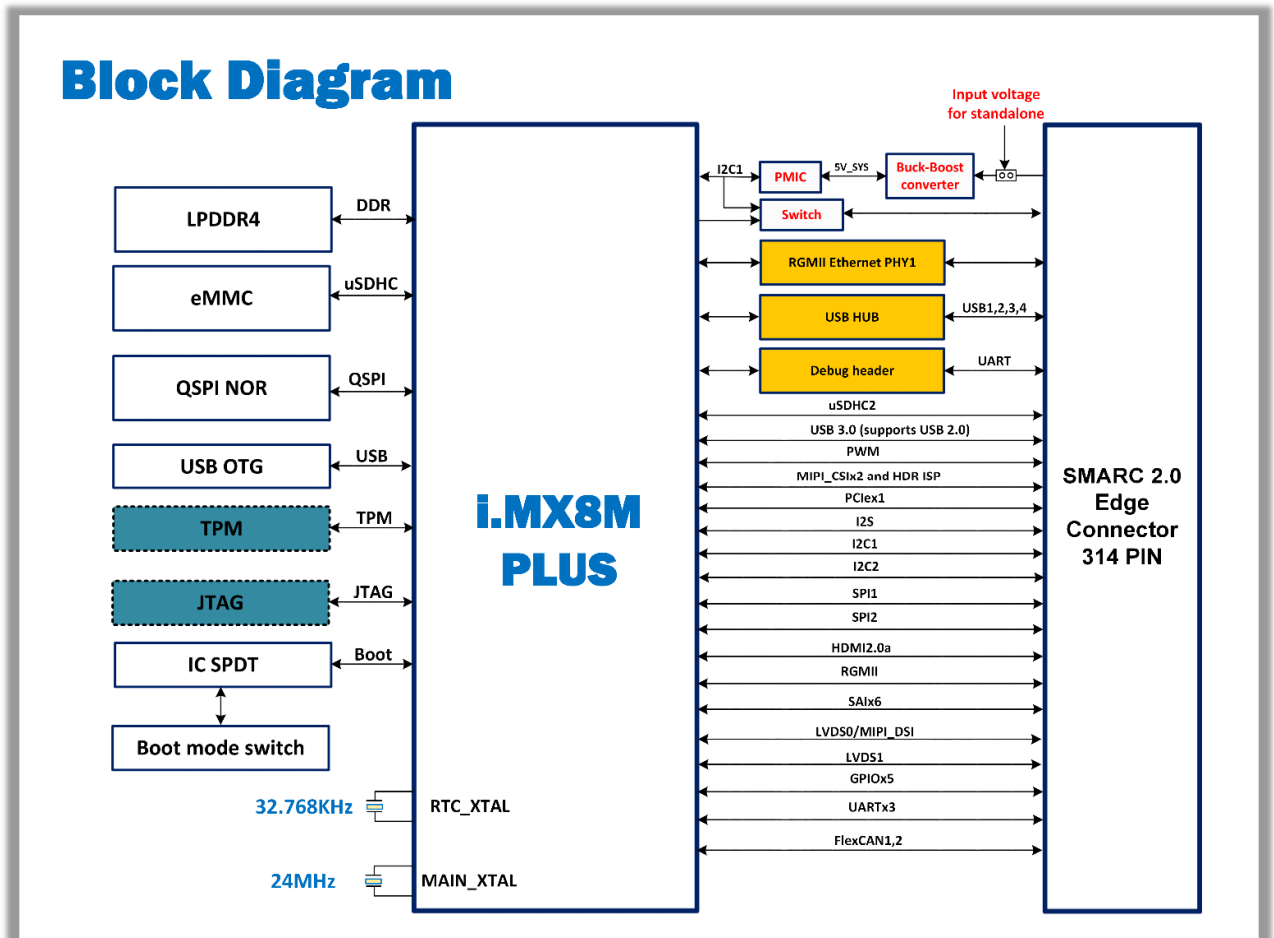
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## Additional Features

- The i.MX 8M Plus family focuses on machine learning and vision, advanced multimedia, and industrial IoT with high reliability. High industrial reliability with DRAM inline ECC and ECC on on-chip RAM.
- LP-DDR4 memory interface for high performance and low standby power, or DDR3L interfaces for lowest system cost. For fast boot from SPI NOR flash, eMMC 5.1 and NAND
- A powerful and efficient upgrade path for next-generation solutions. The Cortex-A53 is Arm's first Armv8-A processor aimed at providing power efficient 64-bit processing.
- Double the clock rate! SoC designs get the same data bandwidth with 16 data bits clocked at 1600MHz instead of the DDR3 designs get with 800MHz.
- LPDDR4 is the mobile equivalent of DDR4 memory. Compared to DDR4, it offers reduced power consumption but does so at the cost of bandwidth. LPDDR4 has dual 16-bit channels resulting in a 32-bit total bus. The DDR4 has an 8word prefetch or a 64bit channel. Therefore, LPDDR4 RAM halves the bus but makes up for this with a measly operating voltage of 1.1-1.2V

## Block Diagram



## Services

FirstView Consultants can provide full software support, custom modifications, development of carrier boards, and technical consulting for your project.

## Applications

- Automotive
- Industrial
- Multimedia
- Healthcare
- Security
- Smart City and Smart Home

