

# Computer on Module

## CL-SOM-iMX8

Datasheet v1.4



**CL-SOM-iMX8 is a tiny Computer-on-Module (CoM) built around NXP i.MX8 and features high performance graphics and image capabilities for a wide range of applications which require high-speed graphics including industrial HMI, medical, IOT, digital signage and professional audio visual devices.**

Featuring integrated 2D/3D Vivante graphics and a 4K Video processing unit, this extremely powerful module offers a wide range of high-speed display interfaces including HDMI, DP, 2x MIPI-DSI / LVDS. With up-to 16GB RAM and 64GB eMMC, it also features a rich I/O, including Gbit Ethernet, Wifi 802.11a/b/g/n/ac and Bluetooth 4.1, 2 x PCIe, 2 x USB3.0, 4 x UART, 90 x GPIO. In addition, CL-SOM-iMX8 offers a wide temperature range of -40°C to +85°C.

### Key Features:

- Quad Core ARM Cortex A-53 CPU at 1.5GHz
- Integrated 2D/3D GPU and 4K VPU
- Up to 4GB LPDDR4 and 64GB eMMC
- HDMI2.0A, LVDS and MIPI-DSI up to 4096x2160
- Gbit Ethernet, Wifi 802.11a/b/g/n/ac and Bluetooth 4.1
- Wide temperature range of -40°C to +85°C
- 2 x PCIe, 2 x USB3.0, 4 x UART, 90 x GPIO

# CL-SOM-iMX8

## System and Graphics

Note:

- "Option" column specifies the configuration code required to have the particular feature.
- "+" means that the feature is always available

Feature	Specification	Option
<b>CPU</b>	NXP i.MX8M Quad, quad-core ARM Cortex-A53, 1.5GHz	C1500Q
	NXP i.MX8M Dual, dual-core ARM Cortex-A53, 1.5GHz	C1500D
<b>Video</b>	4Kp60 HEVC/H.265, 4Kp60 VP9, 4Kp30 AVC/H.264 1080p60 MPEG-2, MPEG-4, VC-1, VP8, H.263	+
<b>GPU</b>	Vivante GC7000Lite GPU OpenGL ES 3.1, Open CL 1.2 and Vulkan	+
<b>Real-Time Coprocessor</b>	ARM Cortex-M4	+
<b>RAM</b>	1GB – 4GB, LPDDR4, 64-bit	D
<b>Storage</b>	eMMC flash, 4GB – 64GB	N

## Display & Camera

<b>Display</b>	HDMI 2.0a, up-to 4096 x 2160 @60Hz	+
	LVDS, up-to 1920 x 1080 @60Hz	LL
	MIPI-DSI, 4 data lanes, up to 1920 x 1080 @60Hz	no LL
<b>Touchscreen</b>	Capacitive touch-screen support through SPI and I2C interfaces	+
<b>Camera</b>	MIPI-CSI, 4 data lanes	+

## Network

<b>Ethernet</b>	1x 10/100/1000Mbps Ethernet port (MAC+PHY)	E1
<b>WIFI</b>	Certified 802.11ac WiFi module Intel 8265 chipset	WB
<b>Bluetooth</b>	Bluetooth 4.2 BLE * mutually exclusive with 2 <sup>ND</sup> USB2.0 port	

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## Audio

Feature	Specification	Option
<b>Analog Audio</b>	Audio codec with analog stereo output, stereo input and microphone support	A
<b>Digital Audio</b>	Up-to 4x I2S / SAI	+
	S/PDIF input/output	+

## I/O

<b>PCI Express</b>	1x PCIe Gen. 3.0	+
	additional 1x PCIe Gen. 2.1	Not WB
<b>USB</b>	2x USB3.0 dual-role ports *2nd USB port is functionally mutually exclusive with Bluetooth	+
<b>UART</b>	Up to 4x UART	+
<b>MMC/SD/SDIO</b>	Up to 1x MMC/SD/SDIO	+
<b>CAN bus</b>	Up to 3x CAN / CAN-FD	+
<b>SPI</b>	Up to 2x SPI	+
<b>I2C</b>	Up to 3x I2C	+
<b>PWM</b>	Up to 4x general purpose PWM signals	+
<b>GPIO</b>	Up to 90x GPIO (multifunctional signals shared with other functions)	+
<b>RTC</b>	Real Time Clock, powered by external lithium battery	+
<b>JTAG</b>	JTAG debug interface	+

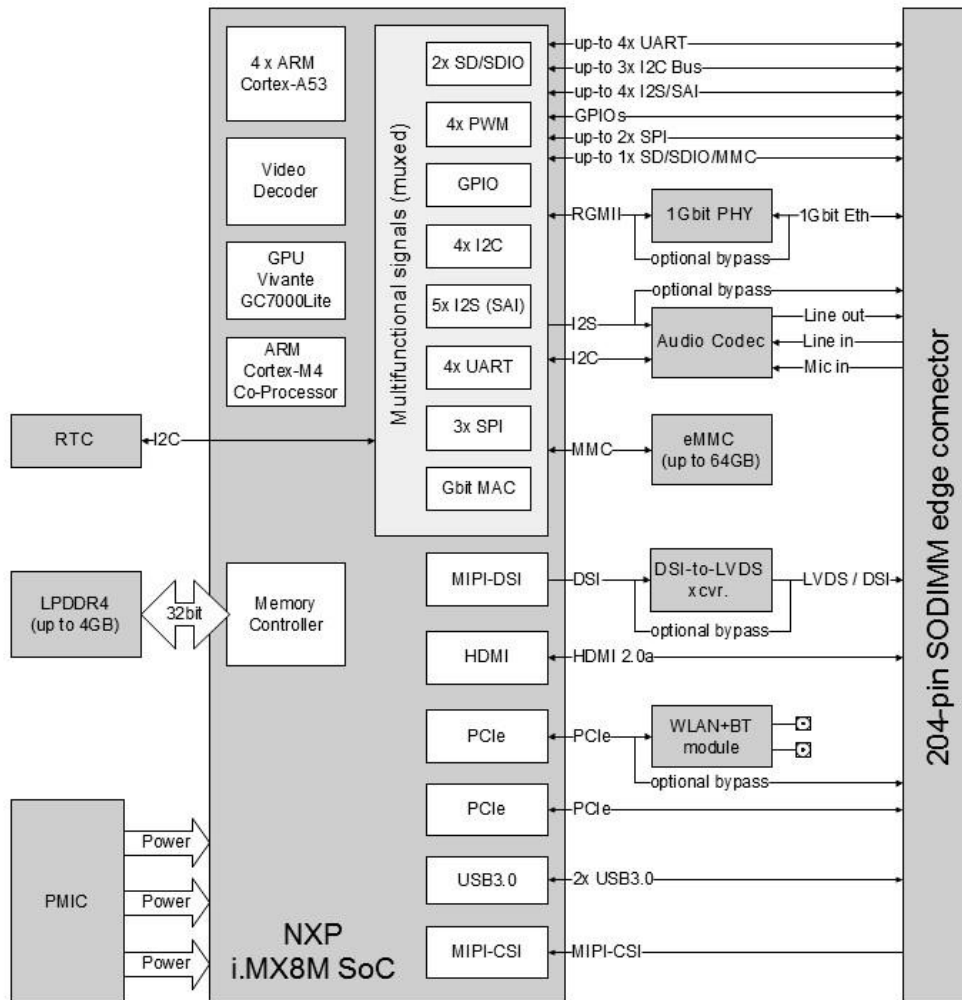
## CL-SOM-iMX8

### Electrical, Mechanical and Environmental Specifications

<b>Supply Voltage</b>	3.35V to 4.2V
<b>Digital I/O Voltage</b>	3.3V
<b>Dimensions</b>	42 x 68 x 5 mm
<b>Weight</b>	14 grams
<b>Connectors</b>	204-pin SO-DIMM edge connector
<b>MTTF</b>	> 200,000 hours
<b>Operating Temperature (case)</b>	Commercial: 0°C to +70°C Extended: -20°C to +70°C Industrial: -40°C to +85°C
<b>Storage Temperature</b>	-40°C to +85°C
<b>Relative Humidity</b>	10% to 90% (operation) 05% to 95% (storage)
<b>Shock</b>	50G / 20 ms
<b>Vibration</b>	20G / 0 - 600 Hz

# CL-SOM-iMX8

## Block Diagram



# CL-SOM-iMX8

## CL-SOM-iMX8 Evaluation Kit

### Hardware

- SOM-iMX8-C1500Q-D2-N16-E-LL-A-WB-H
- SB-iMX8 carrier board
- WiFi antenna and cable
- Serial port cable
- USB cable and adapter
- 12V power supply

### Technical Support

- Technical support for 12 months.
- Schematics review of the customer's carrier board design.
- LCD panel compatibility verification and driver adaptation service.
- 45-day trial period. Evaluation kit will be accepted for refund if the user finds the product not suitable for their needs.

