

Computer on Module

CL-SOM-iMX8

Datasheet v.1.3



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

Featuring integrated 2D/3D Vivante graphics and a 4K Video processing unit, this extremely powerful module comes with a wide range of high-speed interfaces including MIPI-DSI, LVDS and HDMI.

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
- HDMI 2.0a, LVDS and MIPI-DSI, up to 4096x 2160
- Gbit Ethernet, Wifi 802.11a/b/g/n/ac and Bluetooth 4.1
- Wide temperature range of -40° to +85°C
- 2 x PCIe, 2 x USB3.0, 4 x UART, 90 x GPIO

CL-SOM-iMX8

System and Graphics

CPU	NXP i.MX8M Quad Core ARM Cortex-A53, 1.5GHz
	NXP i.MX8M Dual Core ARM Cortex-A53, 1.5GHz
Video	4Kp60 HEVC/H.265, 4Kp60 VP9, 4Kp30 AVC/H.264 1080p60 MPEG-2, MPEG-4, VC-1, VP8, H.263
GPU	Vivante GC7000Lite GPU OpenGL ES 3.1, Open CL 1.2 and Vulkan
Real-Time Coprocessor	ARM Cortex-M4
RAM	1GB – 4GB, LPDDR4
Storage	eMMC flash, 4GB – 64GB

Display & Camera

Display	HDMI 2.0a, up-to 4096 x 2160 @60Hz
	LVDS, up-to 1920 x 1080 @60Hz
	MIPI-DSI, 4 data lanes, up to 1920 x 1080 @60Hz
	Parallel RGB, 24-bit, up to 1600 x 1200
Touchscreen	Capacitive touch-screen support through SPI and I2C interfaces
Camera	MIPI-CSI, 4 data lanes

Network

Ethernet	1x 10/100/1000Mbps Ethernet port (MAC+PHY)
WiFi	Certified 802.11ac WiFi interface Intel 8265 chipset
Bluetooth	Bluetooth 4.2 BLE mutually exclusive with second USB port

Audio

Analogue Audio	Audio codec with analog stereo output, stereo input and microphone support
Digital Audio	Up to 4 x I2S/SAI
	S/PDIF input/output

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I/O

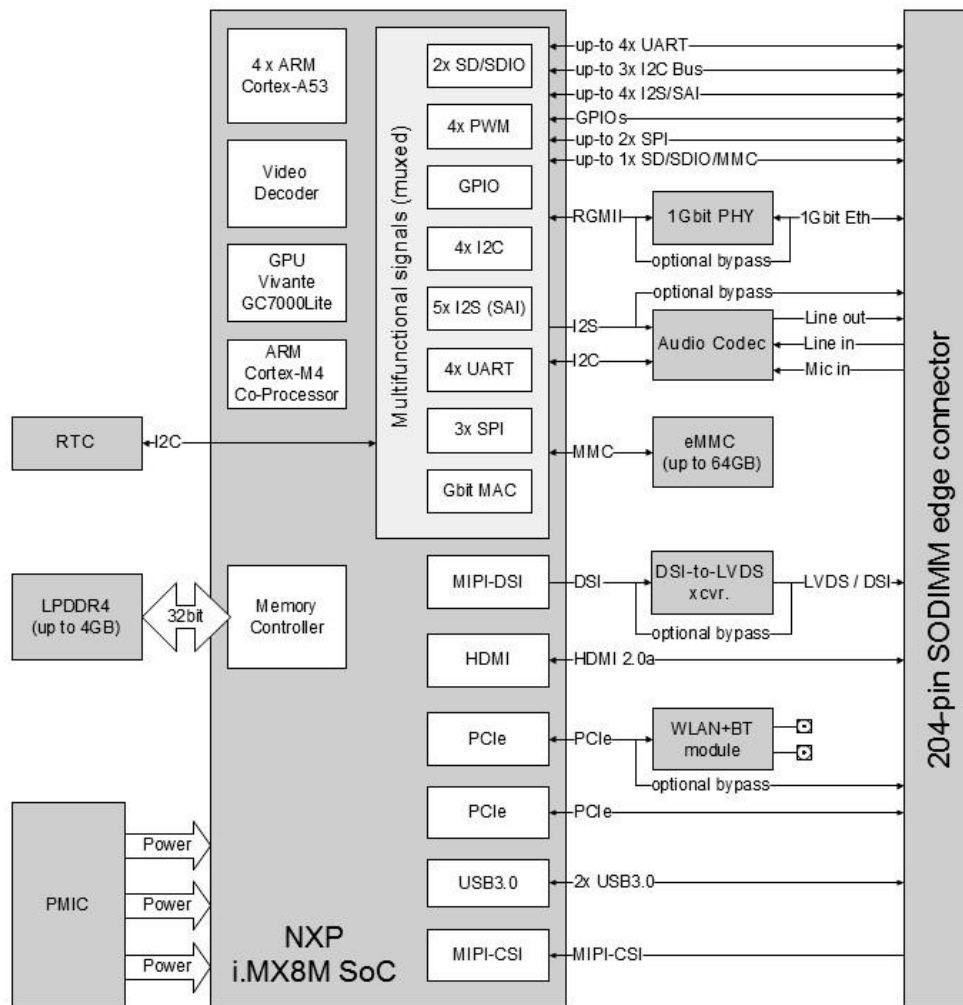
PCI Express	PCIe x1 Gen. 2.1
	Additional PCIe x 1 Gen. 2.1
USB	2x USB3.0 dual-role ports
UART	Up to 4x UART ports
MMC/SD/SDIO	Up to 1x MMC/SD/SDIO
SPI	Up to 2x SPI
I2C	Up to 3x I2C interfaces
PWM	Up to 4x general purpose PWM signals
GPIO	Up to 90x GPIO (multifunctional signals shared with other functions)
RTC	Real Time Clock, powered by external lithium battery
JTAG	JTAG debug interface

Electrical, Mechanical and Environmental Specifications

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

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Block Diagram



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CL-SOM-iMX8 and SBC-iMX8 Evaluation Kit

Package contents

- 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. Eval Kit will be accepted for refund if the product not suitable.

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