Computer on Module
CL-SOM-IMX8X

Datasheet v1.2

CL-SOM-iMX8X is a tiny Computer-on-Module (CoM) built around i.MX8 Quad X Plus. Built with a high-level integration to support graphics, video, image processing, audio and voice functions, it is ideal for safety-certificable and efficient performance requirements and applications such as industrial automation, HMI, industrial control, robotics, building control, automotive cluster, display audio infotainment, and telematics applications.

Measured just 38mm x 68mm x 5mm for 14 grams, this tiny module offers up to 4GB RAM and 64GB eMMC, 2 x GigE ports, 1 x PCIe, 1 x USB 3.0, 4 UARTs, and up to 96 GPIOs. Display and camera connectivity is supported with MIPI interface. In addition, SOM-iMX8X features on-board WiFi 802.11ac and Bluetooth 4.2 BLE interfaces implemented with a pre-certified module.

Key Features:

- Quad-core ARM Cortex-A35, 1.2GHz
- Integrated 2D/3D GPU and 4K VPU
- Real-time ARM Cortex-M4 co-processor
- Up to 4GB LPDDR4 and 64GB eMMC
- 2 x MIPI-DSI / LVDS, up to 1080p60
- Certified WiFi 802.11ac, BT 4.2 BLE
- 2 x GbE, PCIe, USB 2.0, 3 x CAN-FD, 4 x UART, 96 x GPIO;
- Wide temperature range of -40°C to +85°C

CL-SOM-iMX8X

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
CPU	NXP i.MX8 Quad X Plus, quad-core ARM Cortex-A35, 1.2GHz	+
Video	Decode: 4K H.265, 1080p H.264, VP8, MPEG4, RealVideo Encode: 1080p H.264	C1200QM
GPU	GC7000 Lite GPU OpenGL 3.0, OpenGL ES 3.1, OpenCL 1.2 FP, OpenVG 1.1, Vulkan	C1200QM
DSP	Tensilica® HiFi 4 DSP	
Real-Time Co-processor	ARM Cortex-M4F, 266 MHz	+
RAM	1GB – 4GB, LPDDR4	D
Storage	eMMC flash, 4GB - 64GB	N

Display & Camera

Display	2 x MIPI-DSI, 4 data lanes, up to 1080p60	C1200QM
	Dual-channel / 2 x single-channel LVDS, up to 1080p60	
Touchscreen	Capacitive touch-screen support through SPI and I2C interfaces	+
Camera	MIPI-CSI, 4 data lanes	+

Network

Ethernet	1 x Gigabit Ethernet port (MAC+PHY)	E1
	2 x Gigabit Ethernet ports (MAC+PHY)	E2
	Up to 2x RGMII / RMII	not E1 and not E2
WiFi	Certified 802.11ac WiFi interface Intel 8265 chipset * mutually exclusive with PCIe port	WB
Bluetooth	Bluetooth 4.2 BLE	WB

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Audio

Feature	Specification	Option
Digital Audio	Up to 1 x I2S / SAI	+
	S/PDIF input/output	+

I/O

PCI Express	1 x PCIe Gen. 3.0 * mutually exclusive with WiFi	+
USB	1 x USB2.0 dual-role port	+
	Additional 1 x USB2.0 host port	not WB and not UH
	Additional 3 x USB2.0 host ports	UH
UART	Up to 4 x UART ports	+
SD/MMC	Up to 1 x SD/ MMC	+
CAN bus	Up to 3 x CAN / CAN-FD	+
SPI	Up to 4x SPI	+
I2C	Up to 3 x I2C	+
PWM	Up to 4 x general purpose PWM signals	+
ADC	5 x general-purpose ADC channels	+
GPIO	Up to 96 x GPIO (multifunctional signals shared with other functions)	+
RTC	Real Time Clock, powered by external battery	+
JTAG	JTAG debug interface	+

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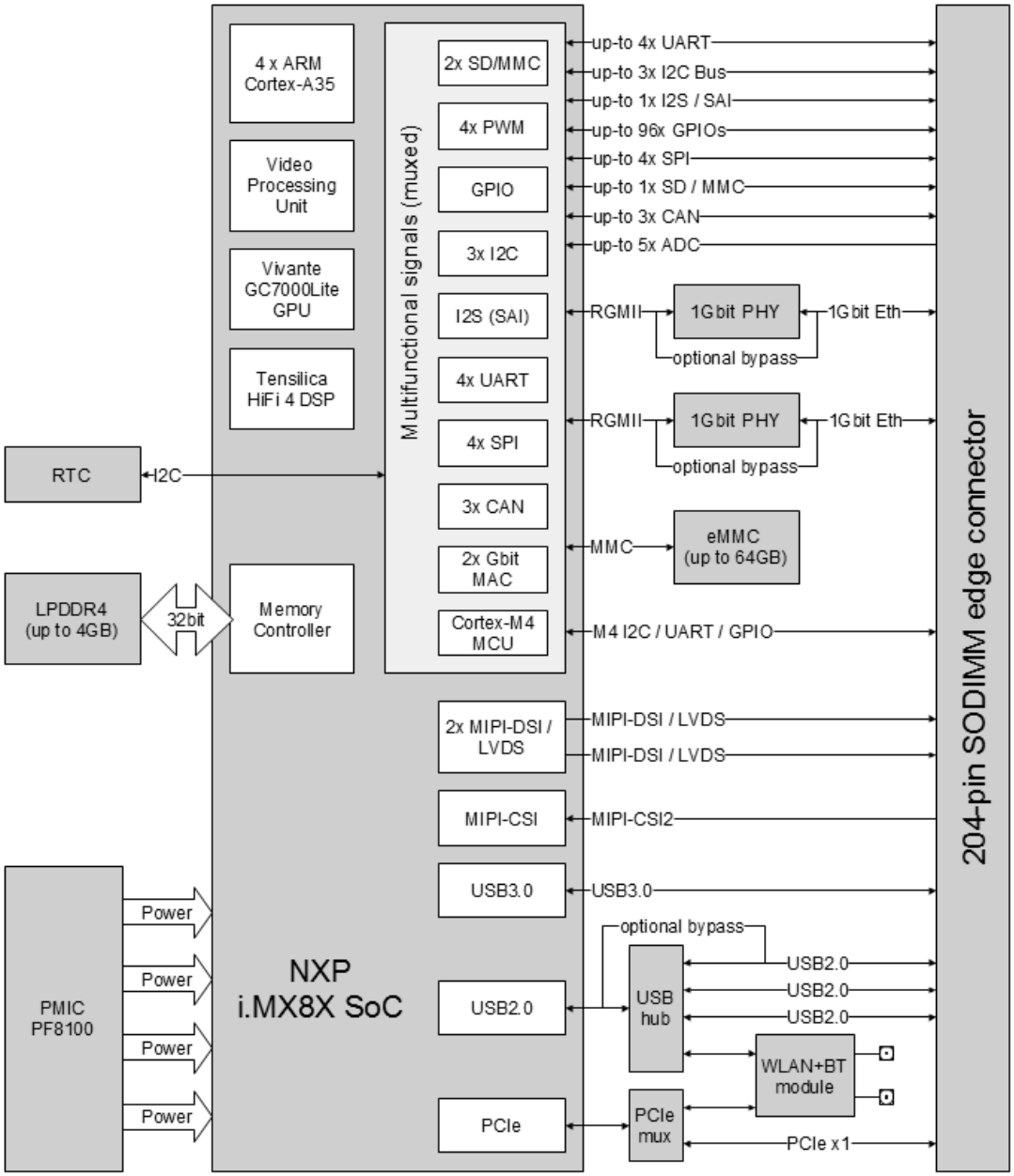
Electrical, Mechanical and Environmental Specifications

Supply Voltage	4.0V to 4.5V
Digital I/O Voltage	3.3V
Dimensions	38 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

CL-SOM-iMX8X

Block Diagram



CL-SOM-iMX8X

CL-SOM-iMX8X and SBC-iMX8X Evaluation Kit

Package contents
Hardware

- SOM-iMX8X-C1200QM-D2-N16-E2-UH-WB
- SB-iMX8X carrier board
- WiFi antenna and cable
- Serial port cable
- MIPI-DSI to HDMI adapter
- 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. Eval Kit will be accepted for refund if the user finds the product not suitable for his needs.