Computer on Module
CL-SOM-iMX7

Datasheet v1.2

CL-SOM-iMX7 is a tiny Computer-on-Module (CoM) board built around Freescale i.MX7 and designed to serve as a building block in embedded applications.

Featuring a wide range of embedded interfaces, CL-SOM-iMX7 is a versatile platform for industrial automation and control systems. Dual Gbit Ethernet, 2x2 MIMO dual-band 802.11a/b/g/n WiFi and Bluetooth 4.1 make CL-SOM-iMX7 an excellent solution for networking, communications and IoT applications.

The low price makes CL-SOM-iMX7 an ideal selection for cost-sensitive systems, while its miniature size and low power consumption enable integration into portable and space-constrained designs.

CL-SOM-iMX7 is provided with a full Board Support Package and ready-to-run images for the Linux operating system. The CL-SOM-iMX7 BSP includes Linux kernel 3.14, Yocto Project file-system and U-Boot boot-loader.

CL-SOM-iMX7

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	Freescale i.MX 7Solo ARM Cortex-A7, 800MHz NEON SIMD and VFPv4	C800
	Freescale i.MX 7Dual ARM Cortex-A7, 1GHz NEON SIMD and VFPv4	C1000D
Real-Time Coprocessor	ARM Cortex-M4, 200Mhz	+
RAM	256MB – 2GB, DDR3L-1066	D
Storage	SLC NAND flash, 128MB – 1GB	N
	eMMC flash, 4GB – 32GB	

Display & Camera

Display	Parallel 24-bit display interface, up to 1920 x 1080 @60Hz	+
	LVDS, up to 1400 x 1050 @60Hz	L
	MIPI-DSI, 2 data lanes, up to 1400 x 1050 @60Hz	Ł
Touchscreen	On-board 4-wire resistive touch-screen controller	I
	Capacitive touch-screen support through SPI and I2C interfaces	+
Camera	Parallel camera interface, up to 24-bit	+
	MIPI-CSI, 2 data lanes	+

Network

Ethernet	1x 10/100/1000Mbps Ethernet port (MAC+PHY)	E1
	2x 10/100/1000Mbps Ethernet ports (MAC+PHY)	E2 and C1000D

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Feature	Specification	Option
WiFi	802.11b/g/n WiFi interface TI WiLink 8 WL1801 chipset	W
	Dual-band 2x2 802.11a/b/g/n WiFi interface TI WiLink 8 WL1837 chipset	WAB
Bluetooth	Bluetooth 4.1 BLE	WAB

Audio

Analogue Audio	Audio codec with stereo output, stereo input and microphone support	A
Digital Audio	I2S compliant digital audio interface	+
	MQS audio interface	+

I/O

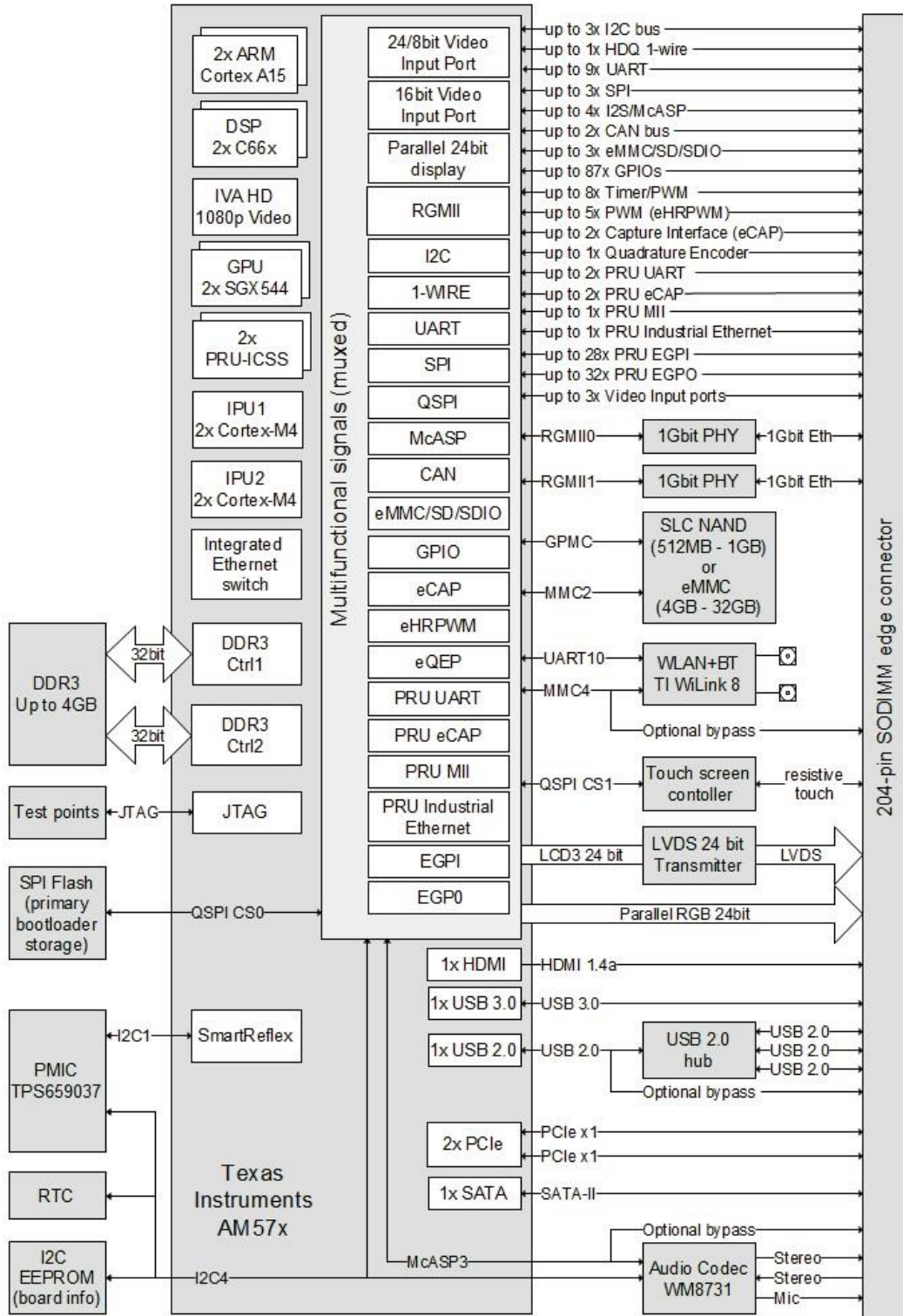|		
PCI Express	PCIe x1 Gen. 2.1	C1000D
Local Bus	External local bus interface, up to 32-bit	+
USB	1x USB2.0 OTG port	+
	Additional 1x USB2.0 host ports	C1000D
	Additional 3x USB2.0 host ports	UH
UART	Up to 7x UART ports, up to 4 Mbps	+
CAN bus	Up to 2x CAN bus, 3.3V levels	+
MMC/SD/SDIO	Up to 2x MMC/SD/SDIO	+
SPI	Up to 3x SPI	+
I2C	Up to 3x I2C interfaces	+
PWM	Up to 4x general purpose PWM signals	+
GPIO	Up to 124x GPIO (multifunctional signals shared with other functions)	+
Timers	Up to 6x Timer outputs	+
ADC	4x general-purpose ADC channels	+
	Additional 4x general-purpose ADC channels	ǂ
RTC	Real Time Clock, powered by external lithium battery	+

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Electrical, Mechanical and Environmental Specifications

Supply Voltage	3.2V to 4.5V / Li-Ion battery
Digital I/O Voltage	3.3V
Active Power Consumption	0.5 – 3W, depending on board configuration and system workload
Dimensions	42 x 68 x 5 mm
Weight	14 gram
Connectors	204-pin SO-DIMM edge connector
MTTF	> 100,000 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

CL-SOM-iMX7

CL-SOM-iMX7 and SBC-iMX7 Evaluation Kit

Technical Support

- Technical support for 12 months.
- 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.

Hardware

- SOM-iMX7-C1000D-D1G-N16G-E2-L-A-I-UH-WAB
- SB-SOM-iMX7 carrier board
- WiFi antenna and cable
- Serial port cable
- HDMI to DVI cable
- USB cable and adapter
- LCD panel
- Adapters & cables for generic LCD panel interface
- 12V power supply