Embedded Artists'
iMX6 SoloX COM Board rev A
The Art of Embedded Systems Development – **made Easy™**

Document status: Preliminary

iMX6 SoloX COM Board Feature Highlights

- NXP ARM Cortex-A9 and Cortex-M4 **i.MX 6SoloX** running at 1 GHz / 227 MHz
- 1 GByte DDR3L 800 MT/s, 32-bit databus
- 4 GByte eMMC on-board Flash
- 16 MByte QSPI
- 24-bit parallel RGB and LVDS graphical output
- OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
- Dual 10/100/1000 Gigabit Ethernet with on-board PHY
- Low-power consumption
- Linux BSP
- 82 x 50 mm small form factor
- Long term availability

Introduction

The **iMX6 SoloX COM Board** provides a quick and easy solution for implementing a high-performance ARM Cortex-A9/M4 based design. The heterogeneous multiprocessing architecture enables the system to run an OS like **Linux on the Cortex-A9** and a **Real-Time OS (RTOS) on the Cortex-M4**.

The i.MX 6SoloX supports **2D/3D graphical acceleration** and has two display outputs (RGB and LVDS).

The design has a **low-power implementation** with DDR3L memories and a PMIC supporting DVFS techniques, making the board ideal for portable applications. Other typical applications are graphical interface solutions, communication solutions and connected real-time systems.

Specification

Processor	Cores	NXP ARM Cortex-A9 and Cortex-M4 i.MX6SoloX
	Frequency	1 GHz on Cortex-A9 227 MHz on Cortex-M4
Memory	SDRAM	1 GByte DDR3L 800 MT/s, 32-bit databus
	NAND FLASH	4 GByte eMMC NAND Flash for OS and bootloader
	QSPI FLASH	16 MByte dual QSPI NOR Flash for Cortex-M4 code
Graphics output	LVDS	18/24 bit, up to 85 Mpixels/sec, for example WXGA (1366 x 768 px) at 60 Hz
	Parallel RGB	24-bit, up to WXGA (1366 x 768 px) at 60 Hz
	Graphics Engine	GPU (GC400T) supporting OpenGL ES 1.1/2.0 and OpenVG 1.1 APIs
Graphics input	Digital	CMOS sensor interface (camera), parallel interface
	Analogue	NTSC/PAL analogue video input interface (4 ch)
Ethernet		Dual 10/100/1000 Mbps Gigabit Ethernet interface based on Atheros AR8031 Ethernet PHY
I/O (all functions are not available at the same time)	PCIe	1x PCIe 2.0, 1x Lane
	USB	1x USB2.0 OTG, 1x USB2.0 Host
	UART, SPI, I2C, Audio	6x UART, 5x SPI, 4x I2C, ESAI, 3x I2S/SSI, S/PDIF TX/RX
	CAN	2x CAN bus 2.0B
	GPIO	Up to 99 pins and 8 pins for keypad
	Memory card	3x SD/MMC 4.5
	ADC	2x 4ch 12-bit resolution
Other	Boot parameters	E2PROM storing board information including Ethernet MAC address and memory bus setup params.
	RTC	i.MX6SoloX on-chip RTC
	Watchdog	On-board watchdog functionality
	Power Management (PMIC)	PMIC (MMPF0200) supporting DVFS techniques for low power modes
Power	Supply voltage	+3.3V
	Power consumption	See datasheet for details, but 1-2 Watt typical when active

Environment	Operating Temperature	0 - 70° Celsius or -40 - 85° Celsius
	Operating Humidity	5 - 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm, same as SMARC form factor but different pinning for better carrier board routing
Connectors		314 pos MXM3 edge connector, 0.5 mm pitch
		10 pos 0.5 mm pitch FPC for JTAG

Block Diagram
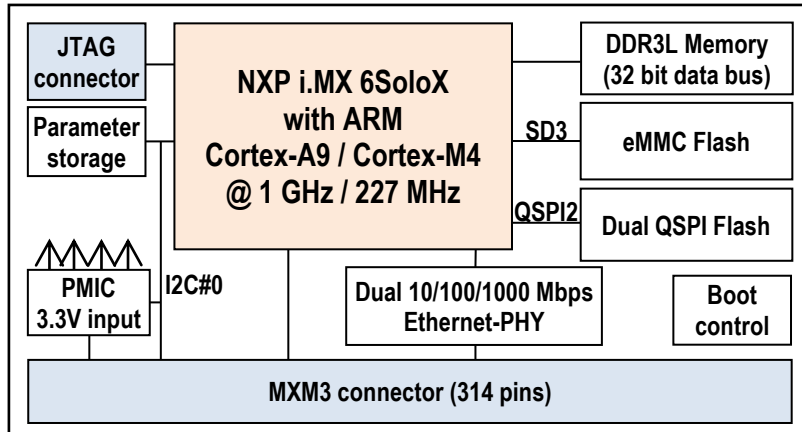
Ordering Information

Part No.[1]	CPU	SDRAM	eMMC	QSPI	Ethernet	Pinning	Supply Voltage	Operating Temperature
EAC00433	MCIMX6X4CVM08AB	1 GByte DDR3L	4 GByte	Dual, 16 Mbyte	Dual 1 Gbps RTL8211FDI	EACOM board spec	3.3V	-40 - 85° C

[1] Standard configurations listed. Others on request.

Support Highlights

Embedded Artists is a reliable and competent partner - we help you become successful!

- Professional and responsive support
- Pre-designed standard Carrier boards for integration
- Custom Carrier board design
- Customization
  - Different pinning, supply voltage, memory sizes, etc
  - Single Board Computer (SBC) solutions
- Display solutions
- Mechanical solutions
- Schematic review of customer carrier board designs
- Driver and application development

Development Kit

The iMX6 SoloX COM Board is supported by the *iMX6 SoloX Developer's Kit V2* that provides a quick path to get started with development and integration work. The kit provides reference implementations of key interfaces.
Ordering part No. **EAK00331**
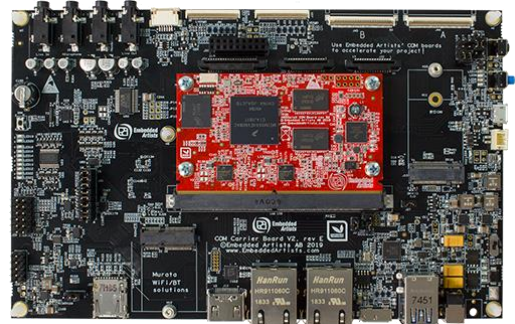
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