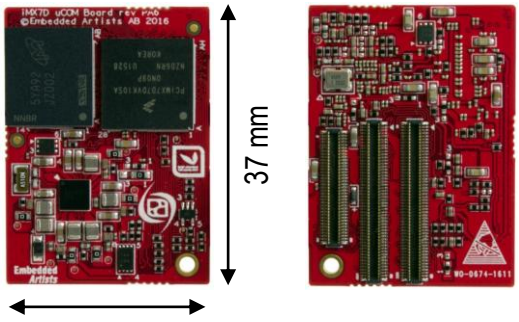
Embedded Artists'

iMX7 Dual uCOM Board rev A

The Art of Embedded Systems Development – **made Easy™**

Document status: Preliminary



iMX7 Dual uCOM Board Feature Highlights

- NXP i.MX 7Dual, dual-core ARM Cortex-A7 and Cortex-M4, 1GHz/200MHz
- High performance 2x1800+250 DMIPS
- 1 GByte LPDDR3 1066 MT/s, 32-bit databus
- 8 GByte eMMC on-board Flash
- 24-bit parallel RGB and MIPI-DSI graphical output
- PCIe, USB, CAN and many more interfaces
- ROHM PMIC BD71815GW with on-chip battery charger
- Low-power consumption - very power efficient
- Linux and Android BSP
- 27 x 37 mm ultra small form factor
- Long term availability

Introduction

The **iMX7 Dual uCOM Board** provides a quick and easy solution for implementing a high-performance ARM dual-core Cortex-A7 / Cortex-M4 based design. The Cortex-A7 / Cortex-M4 heterogeneous architecture enables the system to run an OS like **Linux on the dual-core Cortex-A7** and a **Real-Time OS (RTOS) on the Cortex-M4**.

The i.MX 7Dual supports **2D graphical acceleration** and has dual display outputs (RGB and MIPI-DSI).
The design has a **low-power implementation** with LPDDR3 memories and a PMIC supporting DVFS techniques and integrated battery charger, 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 i.MX 7Dual dual-core ARM Cortex-A7 and Cortex-M4
	Frequency	1 GHz on Cortex-A7 200 MHz on Cortex-M4
Memory	SDRAM	1 GByte LPDDR3 1066 MT/s, 32-bit databus
	NAND FLASH	8 GByte eMMC NAND Flash for OS and bootloader
Graphics output	Parallel RGB	24-bit, up to 1920 x 1080 pixels at 60 Hz
	MIPI-DSI	2 lanes, maximum bit rate of 1.5 Gbps
	Graphics Engine	PXP - PiXel processing pipeline for imagine resize, rotation, overlay and color space conversion.
Graphics input	CMOS sensor interface (camera)	Parallel, up to 24 bit
		Serial, MIPI-CSI2, 2 lanes, maximum bit rate of 1.5 Gbps
Ethernet		Two 10/100/1000 Mbps Gigabit Ethernet interfaces (requires off-board Ethernet-PHY)
I/O (all functions are not available at the same time)	PCIe	1x PCIe 2.1, 1x lane
	USB	2x USB2.0 OTG, 1x HSIC
	UART, SPI, I2C, Audio	7x UART, 4x SPI, 4x I2C, 3x I2S/SSI
	CAN	2x CAN bus 2.0B
	GPIO	Large number of GPIOs and keypad pins available
	Memory card	2x SD3.0/MMC5.0
	ADC	4ch 12-bit resolution
Other	Boot parameters	E2PROM storing board information including Ethernet MAC address and memory bus setup params.
	Watchdog	On-board watchdog functionality
	RTC	ROHM BD71815GW integrated low-power RTC
	Power Management (PMIC)	ROHM BD71815GW supporting DVFS techniques for low power modes
	Battery Charger	ROHM BD71815GW with Coulomb counter for battery fuel gauging. Up to 28V input voltage
	White LED Driver	25mA, up to 26V

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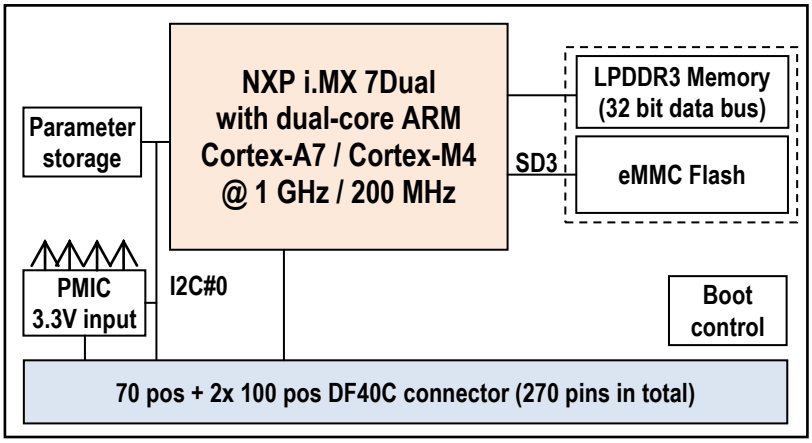
Power	Supply voltage	+3.3V
	Power consumption	TBD
Environment	Operating Temperature	0 - 70° or -20 - 85° Celsius
	Operating Humidity	5 - 90% relative humidity, non-condensing
Mechanical	Dimensions (W x H x D)	27 x 37 x 4 mm
Connectors		70 pos DF40C-70DP-0.4V connector with 0.4mm pitch Dual 100 pos DF40C-100DP-0.4V connector with 0.4mm pitch

Block Diagram



Ordering Information

Part No.[1]	CPU	SDRAM	eMMC	I/O Voltage[2]	Supply Voltage	Operating Temperature
EAC00266	MCIMX7D7DVK10SC	1 GByte LPDDR3	8 GByte	3.3V	3.3V	0 - 70° C
EAC00267	MCIMX7D5EVK10SC Note, no EPDC peripheral	1 GByte LPDDR3	8 GByte	3.3V	3.3V	-20 - 85° C

[1] Standard configurations listed. Others on request.
[2] 1.8V I/O voltage on request.

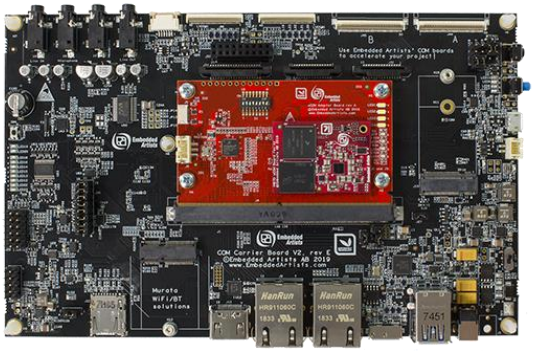
Support Highlights

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 iMX7 Dual uCOM Board is supported by the ***iMX7 Dual uCOM 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. **EAK00344**



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