

iMX RT1064 uCOM Board Feature Highlights

- NXP i.MX RT1064 ARM Cortex-M7, up to 600 MHz
- On-chip 4 MByte QSPI Flash
- 32 MByte SDRAM, 16-bit databus
- Optional on-board eMMC and QSPI Flashes
- Parallel RGB graphical output
- Low-power consumption - very power efficient
- FreeRTOS BSP
- **Multiple Wi-Fi solutions available**
Optional Murata 1ZM Wi-Fi/BT module supporting 802.11 a/b/g/n/ac and BT/BLE 5.1
- 42 x 45 mm small form factor
- Long term availability

Introduction

The **iMX RT1064 uCOM Board** provides a quick and easy solution for implementing a high-performance ARM Cortex-M7 based design. The i.MX RT1064 is the highest performing Cortex-M7 with Real Time Operation and an applications processor level of functionality, delivering 3020 CoreMark/1284 DMIPS @ 600 MHz. It has very low dynamic power consumption, enabled by integrated DC-DC converter and efficient power gating - as low as 110uA/MHz.

The i.MX RT1064 supports **2D graphical acceleration** and has a parallel RGB display interface, up to 1366 x 768px resolution. It also has high security enabled by AES-128, HAB and On-the-fly QSPI Flash Decryption.

Rapid and easy development with support from major microcontroller tool chains. The BSP contains a FreeRTOS port. Typical applications are graphical interface solutions for home, building and industrial control, communication solutions and connected real-time systems.

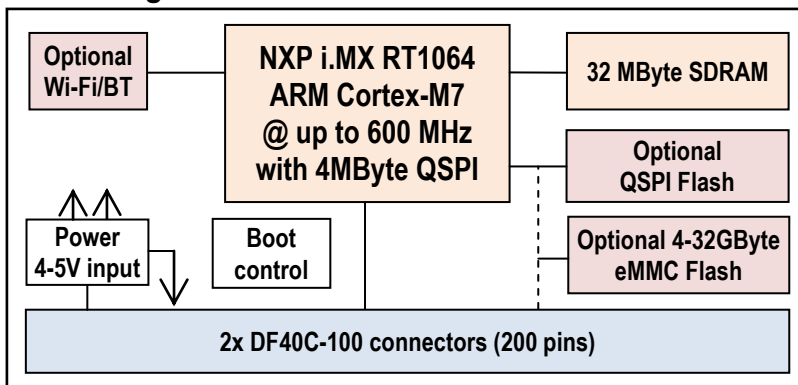
Specification

Processor	Core / MCU	ARM Cortex-M7 / NXP i.MX RT1064
	Frequency	600 MHz / 528MHz (commercial/industrial temp range)
Memory	On-chip SRAM	1 MByte (512 KByte FlexRAM, can be used as Tightly Coupled Memory and 512 KByte OCRAM)
	SDRAM	32 MByte, 16-bit databus
	FLASH	On-chip 4 MByte QSPI
	eMMC FLASH	Optional 4-32GByte eMMC
Graphics output	Parallel RGB	Up to 24-bit, up to 1366 x 768 pixels
	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
Wi-Fi/BT		Optional Murata LBEE5QD1ZM (1ZM) Wi-Fi/BT module, 802.11 a/b/g/n/ac and BT/BLE 5.1, SDIO
Ethernet		10/100 Mbps Ethernet interface, requires external Ethernet-PHY on carrier board
I/O (all functions are not available at the same time)	QSPI	Optional on-board QSPI flash, can also be located on carrier board
	USB	2x FS USB2.0 OTG
	UART, SPI, I2C, Audio	8x UART, 4x SPI, 4x I2C, 3x SAI, S/PDIF
	CAN	2x CAN bus 2.0B
	GPIO, FlexIO	Large number of GPIOs and keypad pins available, 2x FlexIO blocks
	Memory card	2x SD3.0, One used for optional on-board Wi-Fi/BT module and one for optional eMMC FLASH
	ADC and Analogue	16ch 12-bit resolution, 4x comparators
Other	Watchdog	On-board watchdog functionality
	RTC	On-chip iMX RT1064
	Power Management	On-chip iMX RT1064 power management
	Accelerators	Encryption engine co-processor, True random number generator

Power	Supply voltage	4 to 5.0V input. On-board 3.3V/2A supply generated for external use on carrier board
	Power consumption	See datasheet for details. Typically much less than 1 Watt.
Environment	Operating Temperature	0 - 70° or -40 - 85° Celsius
	Operating Humidity	5 - 90% relative humidity, non-condensing
Mechanical	Dimensions (W x H x D)	42 x 45 x 5 mm, EAuCOM form factor
Connectors		2x Hirose DF40C-100 connectors, 0.4 mm pitch
		Optional u.fl. antenna connector if Wi-Fi/BT module mounted

Note that all interfaces may not be available simultaneously due to I/O multiplexing limitations.

Block Diagram



Ordering Information

Part No. ^[1]	CPU	Core Frequency	SDRAM	Wi-Fi/BT	eMMC/QSPI	Operating Temperature
EAC00375	MIMXRT1064CVL5A	528 MHz max	32 MByte	No	No	-40 - 85 °C

[1] Standard configurations listed. Others on request. All configurations may not be stocked.

Support Highlights

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

- Professional and responsive support
- Carrier boards with reference implementations
- 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 iMX RT1064 uCOM Board are supported by the **iMX RT1064 uCOM Developer's Kit** that provides a quick path to get started with development and integration work. The kits provides reference implementations of key interfaces.

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