

iMX RT1052/62 OEM Board Feature Highlights

- NXP i.MX RT1052/62 ARM Cortex-M7, up to 600 MHz
- 4 MByte OctalSPI Flash, EcoXiP from Adesto Tech.
- 32 MByte SDRAM, 16-bit databus, optional
- 10/100 Mbps Ethernet PHY, optional
- Parallel RGB graphical output
- Multiple connectivity interfaces
- Low-power consumption - very power efficient
- FreeRTOS BSP
- **Multiple Wi-Fi solutions available**
- 68 x 30 mm SODIMM200 form factor
- Long term availability



Introduction

The **iMX RT1052/62 OEM Board** provides a quick and easy solution for implementing a high-performance ARM Cortex-M7 based design. The i.MX RT1052/62 is the highest performing Cortex-M7 with Real Time Operation and an applications processor level of functionality, delivering 3015 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 RT1052/62 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 toolchains. 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.

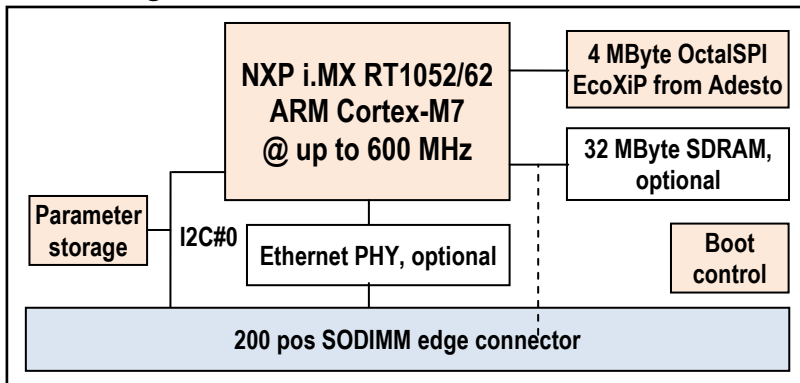
Specification

Processor	Core / MCU	ARM Cortex-M7 / NXP i.MX RT1052/62
	Frequency	600 MHz / 528MHz (commercial/industrial temp range)
Memory	On-chip SRAM	i.MX RT1052: 512 KByte FlexRAM, can be used as Tightly Coupled Memory (TCM) i.MX RT1062: 1 MByte (512 KByte FlexRAM, like above, and 512 KByte OCRAM)
	SDRAM	32 MByte, 16-bit databus, optional
	FLASH	4 MByte OctalSPI EcoXiP, supports high performance eXecute-In-Place
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
I/O (all functions are not available at the same time)	Ethernet	10/100 Mbps Ethernet interface, optional i.MX RT1062 has an additional Ethernet interface (requires external Ethernet-PHY)
	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	1x SD3.0
	ADC and Analogue	16ch 12-bit resolution, 4x comparators
Other	Boot parameters	E2PROM storing board information including Ethernet MAC address
	Watchdog	On-board watchdog functionality
	RTC	On-chip iMX RT1052/62
	Power Management	On-chip iMX RT1052/62 power management
	Accelerators	Encryption engine co-processor, True random number generator

Power	Supply voltage	+3.3V
	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)	67.8 x 30 x 5 mm
Connectors		SODIMM200 edge connector with 0.6mm pitch, 1.8V keying

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	Ethernet	Operating Temperature
EAC00295	MIMXRT1052DVL6A	600 MHz max	32 MByte	Yes	0 - 70 °C
EAC00306	MIMXRT1052CVL5A	528 MHz max	32 MByte	Yes	-40 - 85 °C
EAC00305	MIMXRT1052CVL5A	528 MHz max	No	Yes	-40 - 85 °C
EAC00308	MIMXRT1062CVL5A	528 MHz max	32 MByte	Yes	-40 - 85 °C
EAC00309	MIMXRT1062CVL5A	528 MHz max	No	Yes	-40 - 85 °C

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

Support Highlights

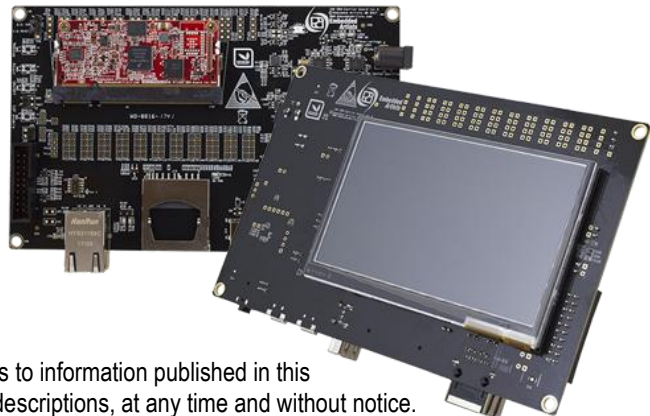
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 - Single Board Computer (SBC) solutions
- Display solutions
- Mechanical solutions
- Schematic review of customer carrier board designs
- Driver and application development

Development Kit

The iMX RT1052/62 OEM Boards are supported by the **iMX RT1052/62 Developer's Kits** that provides a quick path to get started with development and integration work. The kits provides reference implementations of key interfaces. Ordering part No.

EAK00296 (with iMX RT1052),
EAK00310 (with iMX RT1062 and M.2 connector for WiFi/BT)



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