

iMX RT1052 OEM Board Feature Highlights

- NXP i.MX RT1052 ARM Cortex-M7, 600 MHz
- 4 MByte OctalSPI Flash, EcoXiP from Adesto Tech.
- 32 MByte SDRAM, 16-bit databus, optional
- 10/100 Mbps Ethernet PHY, optional
- Wi-Fi, NINA-W131 from uBlox, optional
- Parallel RGB graphical output
- Multiple connectivity interfaces
- Low-power consumption - very power efficient
- FreeRTOS BSP
- 68 x 30 mm SODIMM200 form factor
- Long term availability

Introduction

The **iMX RT1052 OEM Board** provides a quick and easy solution for implementing a high-performance ARM Cortex-M7 based design. The i.MX RT1052 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 supports **2D graphical acceleration** and has a parallel RGB display interface, up to WVGA 800x480px 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.

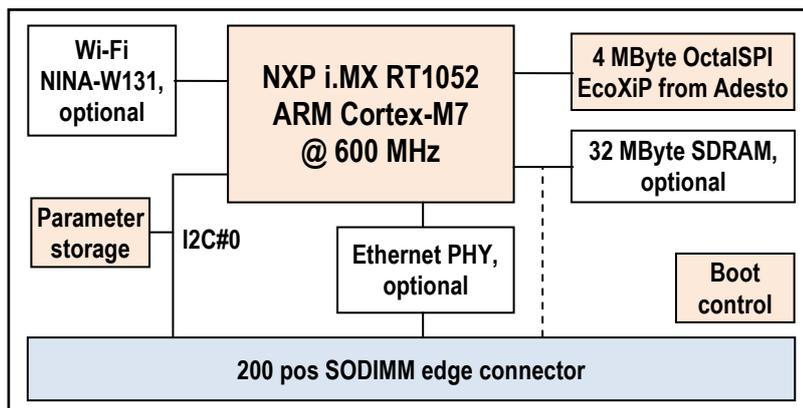
Specification

Processor	Core / MCU	ARM Cortex-M7 / NXP i.MX RT1052
	Frequency	600 MHz
Memory	On-chip SRAM	512 KByte Tightly Coupled Memory (TCM)
	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 800 x 480 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
RF	Wi-Fi	IEEE 802.11b/g/n, NINA-W131, optional
I/O (all functions are not available at the same time)	Ethernet	10/100 Mbps Ethernet interface, optional
	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
	Power Management	On-chip iMX RT1052 power management
	Accelerators	Encryption engine co-processor, True random number generator
Power	Supply voltage	+3.3V

	Power consumption	TBD
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	SDRAM	Ethernet	Wi-Fi	Operating Temperature
EAC00295	MIMXRT1052DVL6A	32 MByte	Yes	No	0 - 70 °C
EAC00297	MIMXRT1052DVL6A	32 MByte	Yes	NINA-W131	0 - 70 °C

[1] Standard configurations listed. Others on request.

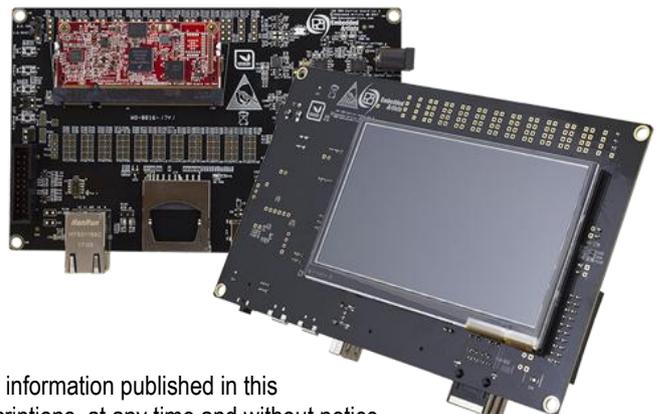
Support Highlights

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- 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 iMX RT1052 OEM Board is supported by the **iMX RT1052 Developer's Kit** that provides a quick path to get started with development and integration work. The kit provides reference implementations of key interfaces. Ordering part No. **EAK00296**



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