The iMX RT1062 OEM Board provides a quick and easy solution for implementing a high-performance ARM Cortex-M7 based design. The i.MX RT1062 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 RT1062 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

<table>
<thead>
<tr>
<th>Processor</th>
<th>ARM Cortex-M7 / NXP i.MX RT1062</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>600 MHz / 528MHz (commercial/industrial temp range)</td>
</tr>
<tr>
<td>Memory</td>
<td>On-chip SDRAM 1 MByte (512 KByte FlexRAM, can be Tightly Coupled Memory (TCM), and 512 KByte CRAM ) SDRAM 32 MByte, 16-bit databus, optional FLASH 4 MByte OctalSPI or 16 Mbyte QuadSPI, supports execute-in-place</td>
</tr>
<tr>
<td>Graphics output</td>
<td>Parallel RGB Up to 24-bit, up to 1366 x 768 pixels</td>
</tr>
<tr>
<td>Graphics input</td>
<td>CMOS sensor interface (camera) Parallel, up to 24 bit</td>
</tr>
<tr>
<td>I/O (all functions are not available at the same time)</td>
<td>Ethernet 10/100 Mbps Ethernet interface, optional i.MX RT1062 has an additional Ethernet interface (requires external Ethernet-PHY on carrier board) USB 2x FS USB2.0 OTG UART, SPI, I2C, Audio 8x UART, 4x SPI, 4x I2C, 3x SAJ, S/PDIF CAN 2x FlexCAN/CAN-FD bus 2.0B GPIO, FlexIO Large number of GPIOs and keypad pins available, 3x FlexIO blocks Memory card 1x SD3.0 ADC and analogue 16x 12-bit resolution, 4x comparators</td>
</tr>
<tr>
<td>Other</td>
<td>Boot parameters E2PROM storing board information including Ethernet MAC address Watchdog On-board watchdog functionality RTC On-chip iMX RT1062 Power Management On-chip iMX RT1062 power management Accelerators Encryption engine co-processor, True random number generator</td>
</tr>
<tr>
<td>Power</td>
<td>Supply voltage +3.3V</td>
</tr>
</tbody>
</table>

**iMX RT1062 OEM Board Feature Highlights**

- NXP i.MX RT1062 ARM Cortex-M7, up to 600 MHz
- 4 MByte OctalSPI Flash or 16 Mbyte QuadSPI
- 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
Power consumption: See datasheet for details. Typically much less than 1 Watt.

Environment:
- Operating Temperature: 0 - 70° or -40 - 85°C 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.

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**Block Diagram**

[NXP i.MX RT1062 ARM Cortex-M7 @ up to 600 MHz

4 MByte OctalSPI or 16 Mbyte QuadSPI

32 MByte SDRAM, optional

200 pos SODIMM edge connector

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**Ordering Information**

<table>
<thead>
<tr>
<th>Part No.[1]</th>
<th>CPU</th>
<th>Core Frequency</th>
<th>Flash</th>
<th>SDRAM</th>
<th>Ethernet</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAC00308</td>
<td>MIMXRT1062CVL5</td>
<td>528 MHz max</td>
<td>4 Mbyte OctalSPI</td>
<td>32 MByte</td>
<td>Yes</td>
<td>-40 - 85 °C</td>
</tr>
<tr>
<td>EAC00309</td>
<td>MIMXRT1062CVL5</td>
<td>528 MHz max</td>
<td>4 Mbyte OctalSPI</td>
<td>No</td>
<td>Yes</td>
<td>-40 - 85 °C</td>
</tr>
<tr>
<td>EAC00428</td>
<td>MIMXRT1062CVL5</td>
<td>528 MHz max</td>
<td>16 Mbyte QuadSPI</td>
<td>32 MByte</td>
<td>Yes</td>
<td>-40 - 85 °C</td>
</tr>
</tbody>
</table>

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

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**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

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**Development Kit**

The iMX RT1062 OEM Boards are supported by the **iMX RT1062 Developer's Kits** that provides a quick path to get started with development and integration work. The kits provide reference implementations of key interfaces.

Ordering part No. **EAK00310** with iMX RT1062 and M.2 connector for Wi-Fi/BT.

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