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R20TS0616EJ0100

Rev.1.00

RZ Family RZ/A2M Software Package for GR-MANGO V1.00

Oct.01, 2020

Outline

As a derivative package of the RZ/A2M Software Package, a software development kit for the RZ/A2M group, the RZ/A2M Software Package for GR-MANGO V1.00 that supports GR-MANGO boards developed by CORE CORPORATION is now available for download.

This product is available free of charge.

1. Features

The RZ/A2M Software Package for GR-MANGO is a software development kit for the RZ/A2M group that consistently supports camera input, display output, and image adjustment.

The RZ/A2M Software Package for GR-MANGO V1.00 includes the following software components:

- Sample applications for camera input and display output
- Various drivers, middleware, and applications supported by the utilities
 - USB Host HID class mouse
 - Sound input/output
 - DRP basic sample programs
 - File system (FatFS)
 - MicroSD memory card
- Device drivers
- OS (FreeRTOS)

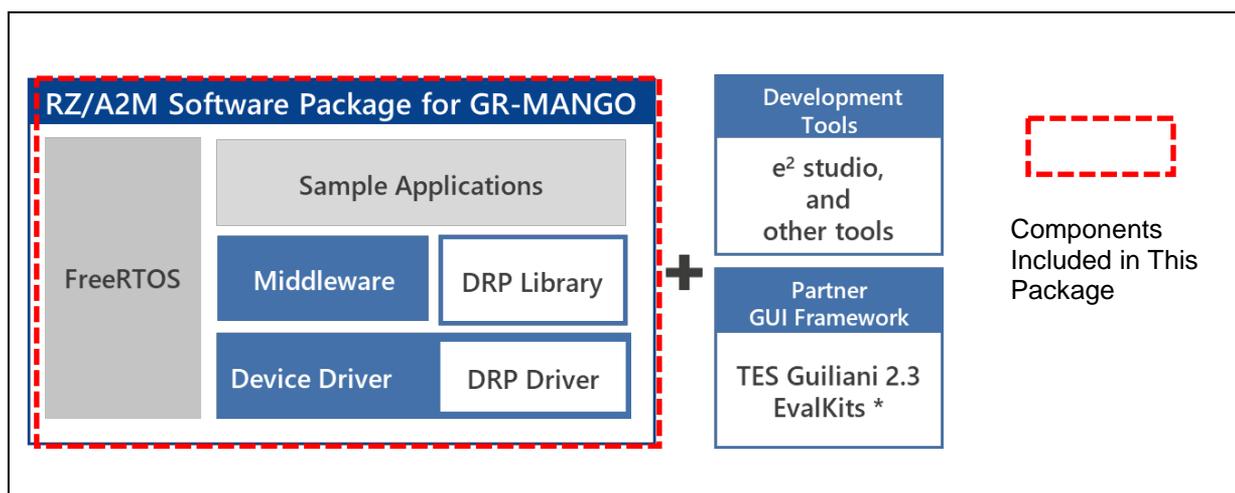


Figure 1. Structure of the RZ/A2M Software Package for GR-MANGO

*: By combining this RZ/A2M Software Package for GR-MANGO with Guiliani EvalKits, a GUI framework kit developed by TES Electronic Solutions, you can easily develop GUIs for HMI applications, leveraging the RZ/A2M group functions.

TES Guiliani 2.3 EvalKits will be available in 4Q 2020 from the following URL:

<https://www.guiliani.de/mediawiki/index.php?title=Downloads:EvalKits>

2. GR-MANGO

A GR-MANGO is a Gadget Renesas (GR) board developed by CORE CORPORATION for the RZ family RZ/A2M group.

Pin-compatible with Raspberry Pi and designed for use in the Mbed™ development environment provided by Arm®, it enables you to develop programs through your Web browser utilizing a rich set of libraries. In addition to the previous development environment for GR-MANGO, this package provides a development environment that utilizes FreeRTOS™.

A GR-MANGO includes a 4 MB on-chip RAM and computing capability of Arm® Cortex®-A9, making it suitable for rapid prototyping of IoT devices utilizing HMI including graphics, a touch panel, camera input, and audio. In addition, by including a dynamically reconfigurable processor (DRP) which processes input images at high speed, the RZ/A2M group can process images more than ten times faster^(Note) than CPU-based software processing and can be applied to image recognition applications for a wide variety of systems from home appliances to industrial equipment.

In this board, since you can just drag and drop to download a program, you can easily try out a RZ/A2M group MCU without an in-circuit emulator.

Note: As an example, in an image edge detection algorithm called Canny Edge Detection, it is observed that a DRP can process 13.5 times faster per frame than a CPU.

- Software processing by a CPU: 110.6 ms/frame
- Hardware processing by a DRP: 8.17 ms/frame

See Gadget Renesas: <https://www.renesas.com/products/gadget-renesas.html>



Figure 2. GR-MANGO Image

3. Supported Devices

RZ/A2M group

4. Operating Environment

The following shows the main operating environment.

- Integrated development environment: e² studio 2020-07 and later versions

<https://www.renesas.com/e2studio>

- Compiler: GNU Arm Embedded Toolchain (6-2017-q2)

<https://developer.arm.com/tools-and-software/open-source-software/developer-tools/gnu-toolchain/gnu-rm/downloads>

- Supported board: GR-MANGO

<https://www.renesas.com/products/gadget-renesas/boards/gr-mango.html>

5. Obtaining the Package

Obtain the package from the URL below.

<https://www.renesas.com/rza2-software-development-kit-free-rtos>

6. Using the Package

Download the package from the URL shown in section 5. Decompress the zip file, then start building your project in e² studio.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Oct.01.20	-	First edition issued

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Corporate Headquarters

TOYOSU FORESIA, 3- 2- 24 Toyosu,
Koto-ku, Tokyo 135- 0061, Japan

www.renesas.com

Contact information

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