

Guiliani on Renesas GR-Mango Evaluation Board Kit: Quickstart Guide – “GuilianiDemo” application

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1 Introduction

The “GuilianiDemo” presents some of the capabilities of the Guiliani HMI framework running on the Renesas GR-Mango. It uses the TES eGML software rendering.

Additionally the efficient way of working for HMI application development by using the Guiliani Streaming Editor (GSE) is introduced. The user may make some first changes to the “GuilianiDemo”, simulate the changes on PC and download the changes to the GR-Mango board – all without the need of compiling and linking a new executable.

This quick guide runs you through this process within minutes!

- Preparing your PC, i.e. installing and configuring the required tool chain
- Installing the “GuilianiDemo” demo on the GR-Mango boards
- Using the Guiliani Editor (GSE) to simulate the “GuilianiDemo” on PC and to make your own first changes to the “GuilianiDemo”.
- Exporting your changes and loading them to the GR-Mango board
- Compiling your own GSE and StreamRuntime

2 System Preparation

- Unpack the GR-Mango target, described on <https://www.renesas.com/us/en/products/gadget-renesas/boards/gr-mango>
- Connect the GR-Mango target (USB2, see Fig. 1) via an USB cable to a Windows PC to power it up

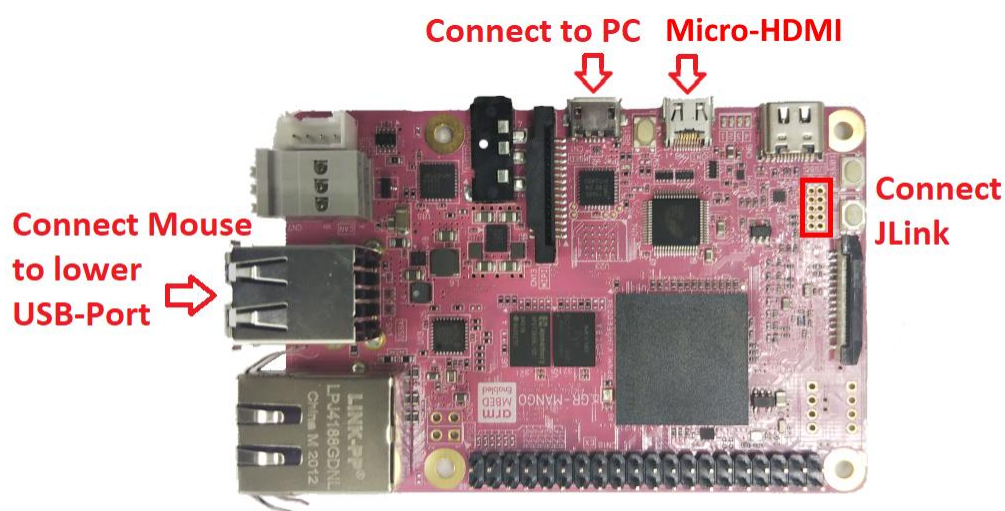


Fig. 1 Connect via USB

GR-Mango will be mounted as volume MBED on Windows.

- For direct flashing via JLink, drivers need to be installed (at least version 6.56b is needed! **Note: newer versions might cause problems due to different device-names**)

Download here: <http://www.segger.com/jlink-software.html>

To connect the JLink to the board you will need an adapter for CortexM with 10pins

3 Load pre-built example project

3.1 Via JLink

Use the flashing-batch-file to flash application and/or resources via jlink. The JLink must be connected to the 10-pin-connector on the board.

3.2 Via mounted Windows-drive

After the flash-disc is mounted you can simply copy the GuilianiDemo to it:

- Copy GuilianoDemoResources.bin from folder Export/GRMango to the drive. This file can be created either by compiling GuilianiDemo in e2studio or by executing the respective menu-point in the flashing-batch-file.
- Wait until the flash process has finished. This will take some time.
- Restart the target pushing the reset button (between USB-Port and MicroHDMI)
- Now you are ready to play with the GuilianiDemo.

4 Edit example project on the computer

Please read the “GuilianiDemo Manual” (found in the documentation folder) for a short description on the contents of the demo and how to modify and export the project.

5 Load edited example project onto the board

When you have successfully exported the changed GuilianiDemo you can copy the file Resources.dat to the board and start the program as described previously.

5.1 Resources.dat file size

The size for the resources including both themes Light and Dark Mode is 5 MB (Export\GRMango\Resources.dat). Because 4 MB are needed for the GuilianiDemo application it is not possible to flash the full resources onto the 8 MB QSPI flash. This is why the GuilianiDemo only provides the Light Mode when loaded from the target internal flash.

The current partitioning allows flashing resources with a size less than 4 MB. If your resources are bigger you have to copy these to an SD card. For further information please read ,Using SDK Guiliani with eGML on GR-Mango within e2Studio.pdf’.

5.2 Change Flashing script

(*) If you want to export the project to a different folder, you will have to modify the *FlashGuilianiDemo.bat* file (Fig. 7). Please substitute the text “..\Export\GRMango\Resources.dat” with the required path, where the resources will be exported.

Note: The file which will be flashed is “Resources.bin” which is a copy from your “Resources.dat”. The script will automatically copy your file and rename the new one.

```

137 :RZA2M
138 if not exist "..\Export\RZA2M\Resources.dat" goto :errorNoResourceFile_RZA2M
139 copy ..\Export\RZA2M\Resources.dat ..\Export\RZA2M\Resources.bin >nul
140 echo.
141 pause
142 cd JLink
143 cls
144 "%BASE%\JLink.exe" -if JTAG -speed 12000 -device R7S721031 -jtagconf -1,-1 -CommanderScript FlashResources_RZA2M.Command
145 pause
146 cd ..
147 goto :loop

```

Fig. 2 FlashGuilianiDemo.bat

You will also need to change J-Link command files present under “FlashTools\JLink”. To modify the path for the resources of GR-Mango platform, open FlashResources_GRMango.command file (Fig. 8) and change the path of loadbin and verifybin command.

```

4  exec .device . = .R7S921053
5  loadbin ..\..\Export\RZA2M\Resources.bin, 0x19000000
6  verifybin ..\..\Export\RZA2M\Resources.bin, 0x19000000
7

```

Fig. 3 Command File for Flashing Resources for GR-Mango platform

6 Compiling your own GSE and StreamRuntime

If you like to extend your GSE project with your own functionality, you have to re-compile GSE and StreamRuntime. For this you have to take CMake as the build environment. Please refer to chapter “3.Preparation and compilation” inside the manual “Custom Extensions.pdf” which you will find in the documentation folder.