

RZ MPU Verified Linux Package

Version 4.0.0

R01US0797EJ0100
Rev. 1.00
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Release Note

Introduction

This release note describes the contents and important points of the RZ MPU Verified Linux Package (hereinafter referred to as “VLP”).

Please also refer to the following documents that describe the instructions to build VLP and boot the evaluation boards.

- r01us0798ej0100-rz(Linux Start-up Guide RZG2L,LC).pdf

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1. Release Items

- **Name and version**

RZ MPU Verified Linux Package

Version 4.0.0 (hereinafter referred to as “VLP v4.0.0”)

- **Distribution method**

Please visit the site below and create an account to download the packages. This site is for the entire RZ Family which includes the RZ/G series. Basic packages of VLP v4.0.0 which are listed in Table 2 can be downloaded.

RZ Family:

<https://www.renesas.com/products/microcontrollers-microprocessors/rz-arm-based-high-end-32-64-bit-mpus>

You can also download the basic packages of VLP v4.0.0 which are listed in Table 2 from the site below.

RZ MPU Verified Linux Package [6.1-CIP]:

<https://www.renesas.com/en/software-tool/rz-mpu-verified-linux-package-61-cip>

- **Target boards**

The target boards of this VLP are as below table.

Table 1. Target board list

Device	Evaluation Board
RZ/G2L	RZ/G2L Evaluation Board Kit (P/N: RTK9744L23S01000BE)
RZ/G2LC	RZ/G2LC Evaluation Board Kit (P/N: RTK9744C22S01000BE)

- **Build Environment**

Linux Host PC

OS: Ubuntu 22.0.4 LTS (64 bit OS must be used.)

200GB free space on HDD or SSD is necessary. (*)

(*) The necessary free space

Note) Please note that the building of VLP failed when Ubuntu 24.04 is used.

- **Verified functions**

Linux VLP

- Linux Kernel
- Linux Drivers
- Graphics Libraries
- Codec Libraries

- **File contents**

VLP is delivered by the files listed in Table 2.

Table 2. RZ MPU Verified Linux Package**Basic files of VLP v4.0.0**

File	Description
RTK0EF0045Z0021AZJ-v4.0.0.zip (*1)	Verified Linux Package. This file includes the Yocto recipe packages and the necessary documents.
rz_vlp_v4.0.0.tar.gz	Yocto recipe packages
r01us0797ej0100-rz(Release Note).pdf	This document
r01us0798ej0100-rz(Linux Start-up Guide RZG2L,LC).pdf	Documents describing booting method and the required settings of bootloader for RZ/G2L and RZ/G2LC .
oss_pkg_rz_v4.0.0.7z (*1)	Open source software packages See the Note below before you download.

(*1) These packages are provided “AS IS” with no warranty and the license which is described in the source code. Please check the contents of the license, then consider the applicability to the product carefully.

Note) The open source software (OSS) packages contain all the relevant source code files. These are the same versions of OSS that was used when VLP was verified. Downloading a using this large OSS package file (oss_pkg_rz_XXX.7z) is not mandatory if your build PC is connected to the Internet and can directly download the individual source code packages listed in the Yocto recipes. However, if your build PC is not connected to the Internet, this OSS package file contains all the source packages required by the Yocto build.

Open source software packages are required for an “offline” environment. The word “offline” means an isolated environment which does not connect to any network. VLP can always build images in this “offline” environment by using these packages without affected from changes of original repositories of OSSs. Also, this “offline” environment always reproduces the same images as the images which were verified by Renesas. Note that if you build without using open source software packages, there are possibilities to use different source codes than Renesas used due to the implicit changes of the repositories of OSSs. Most bootable images that VLP supports can be built on an “offline” environment. Please refer to the documents of “Linux_StartUp_Guide”.

Optional packages (*1)

	File (“XX” is replaced by “EN” or “JP”.)	Description
RZ MPU Graphics Library	RTK0EF0045Z14001ZJ-4.1.2.5_XX.zip	For RZ/G2L and RZ/G2LC . This provides graphics function compliant with the OpenGL ES standard.
RZ MPU Video Codec Library	RTK0EF0045Z16001ZJ-4.1.3.0_XX.zip	RZ MPU Video Codec Library for RZ/G2L .

Additional packages

File	Description
RTK0EF0045Z9006AZJ-v4.0.0.zip	BSP Manual Set for RZ/G2L, RZ/G2LC, RZ/G2UL, RZ/Five, and RZ/V2L.

Note) Detailed information regarding the configuration (Device tree) and usage of the device drivers contained in this VLP can be downloaded from Renesas.com. Please download the "BSP Manual Set".

2. Components

The components which are commonly used in this release are listed in Table 3. Please also refer to the manifest file for details. The manifest file is created to the following path after building the images:

```
$WORK/build/tmp/deploy/images/<board>/core-image-<image-name>-<board>.manifest
```

Note: <board> is refer to Linux Start-up Guide of each device.
<image-name> is minimal or weston.

Please refer to the instructions in Linux Start-up Guide of each device.

Table 3. Versions of commonly used components

Components	VLP v4.0.0
Linux kernel	6.1.107-cip28
gcc	13.3.0
glibc	2.39
busybox	1.36.1
openssl	3.2.4
gststreamer1.0	1.22.12
wayland	1.22.0
weston	13.0.1
python3	3.12.9
docker	25.0.3

Please note that VLP v4.0.0 includes packages licensed under the GPLv3 by default. If you wish to exclude these packages, please refer to the Linux Start-up Guide for instructions.

3. Changes

Renesas has released the RZ/G Verified Linux Package Version 3.0.x. This chapter describes the changes from VLP v3.0.x to VLP v4.0.0.

Table 4. Change points from VLPv3 to VLPv4

Features	Description
Package	Some building instructions are changed; please refer to the Linux Start-up Guide for instructions.
Yocto recipes	<ul style="list-style-type: none">- Upgrade Yocto version to 5.0 (Scarthgap).- Remove Qt recipes from meta-renesas. Qt recipes will be released in another package.- GPLv3-licensed packages are installed as default.
Kernel	<ul style="list-style-type: none">- Upgrade the kernel version from 5.10 to 6.1.- ECC is not supported in kernel v6.1.
RZ MPU Graphics Library (RZ/G2L, LC)	New Graphics libraries for VLPv4 are released.
RZ MPU Graphics Video Codec Library (RZ/G2L)	New Video Codec libraries for VLPv4 are released.
ECC	ECC is not supported in kernel v6.1.

4. Restrictions

None.

5. Notes

5.1 Memory Map

5.1.1 RZ/G2L Series

Following Figure 1 and Figure 2 show memory map of RZ/G2L Series in this Linux BSP package.

Note)

- The volume of SDRAM is total:
 - 2GB (RZ/G2L Evaluation Board Kit PMIC version)
- The following region is used as a secure region. It doesn't allow U-Boot and kernel to access those regions.
 - 128MB from 0x00_4000_0000 to 0x00_47FF_FFFF in SDRAM

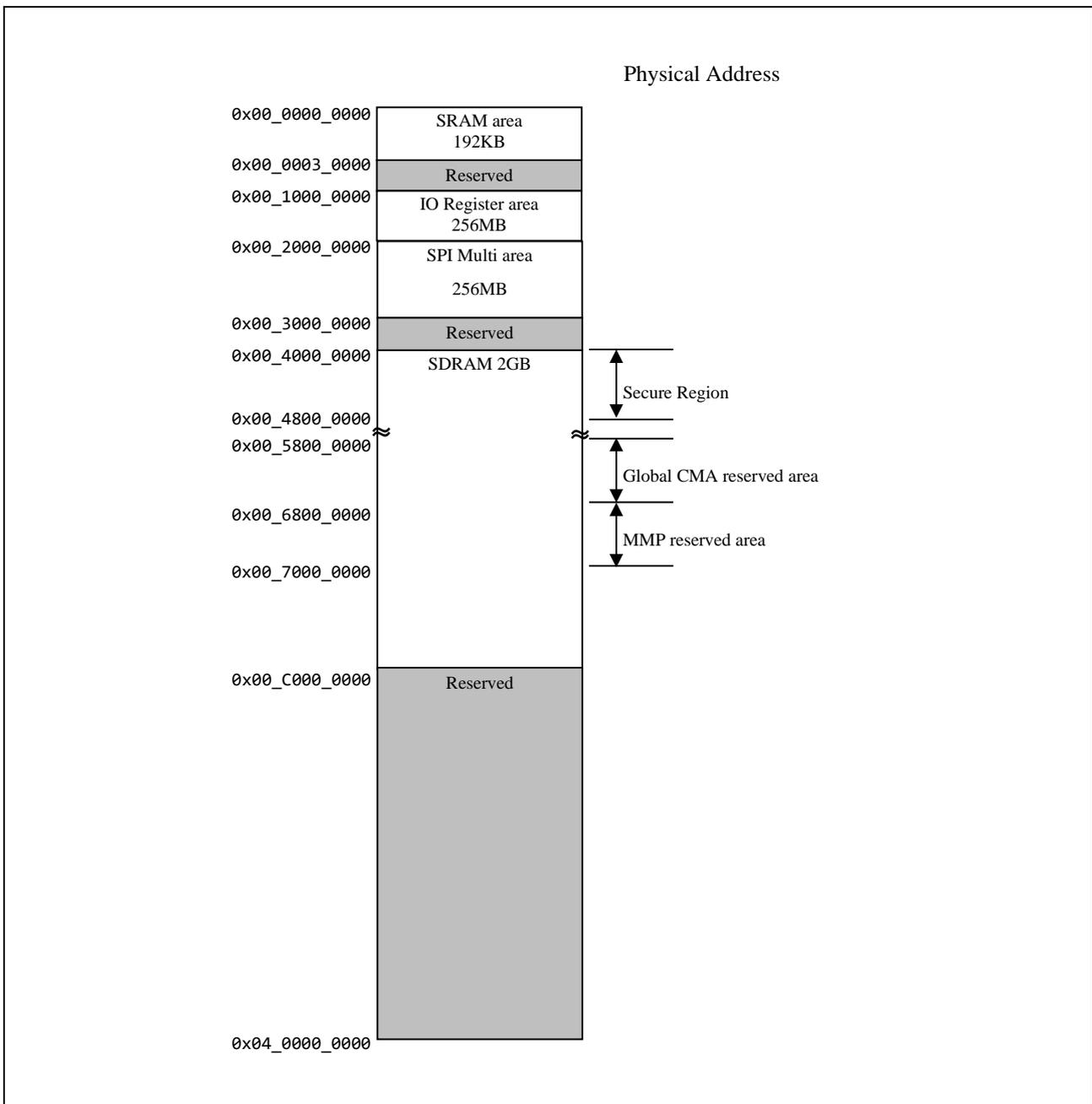


Figure 1. RZ/G2L Evaluation Board Kit PMIC version memory map (Boot)

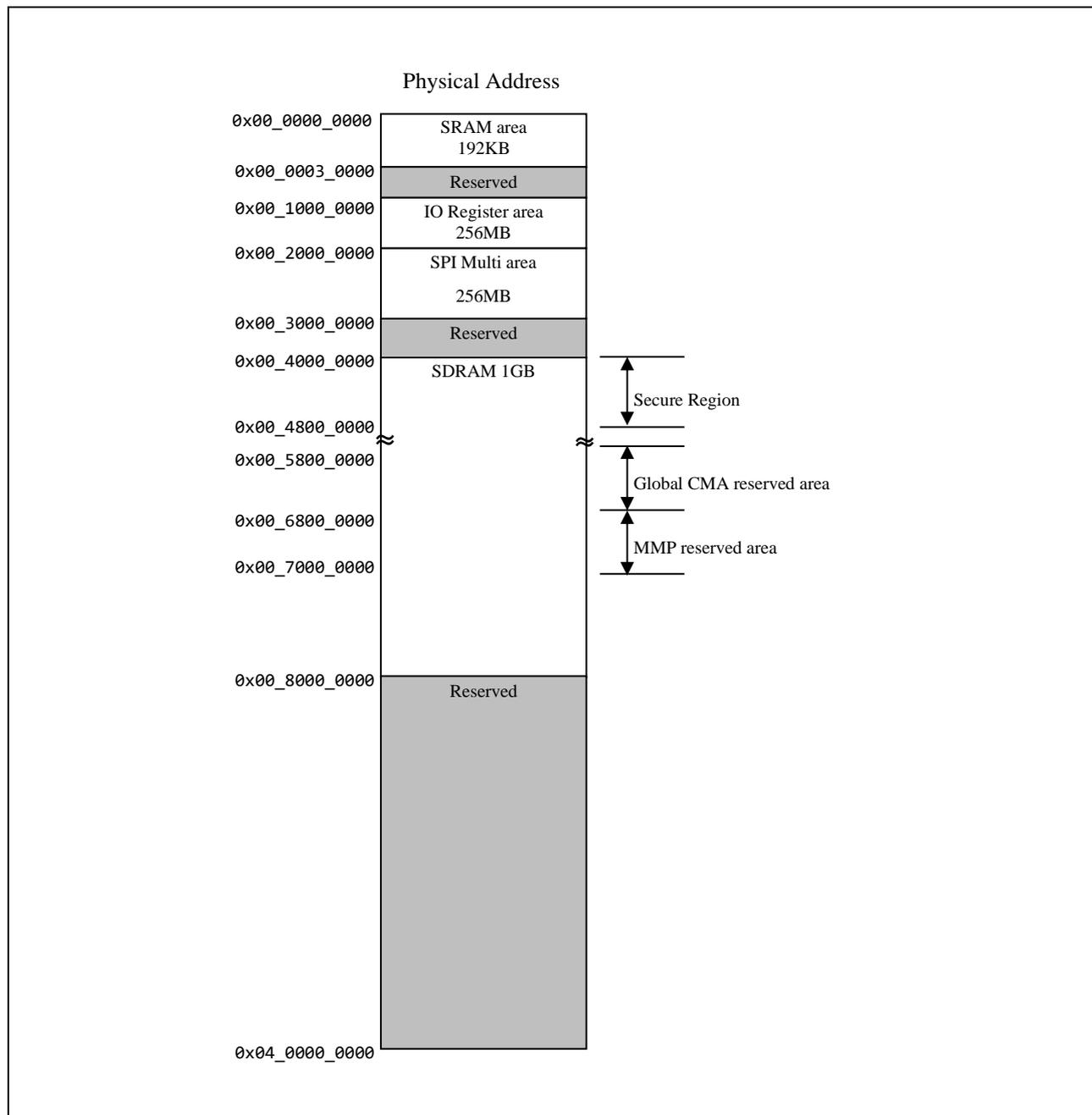


Figure 2. RZ/G2LC Evaluation Board Kit version memory map (Boot)

6. Revision History

Rev.	Date	Description	
		Page	Summary
1.00	May 30, 2025	-	First edition for VLP v4.0.0

Website and Support

Renesas Electronics Website

<http://www.renesas.com/>

Inquiries

<http://www.renesas.com/contact/>

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