RZ/Five Verified Linux Package
Version 3.0.5

Release Note

Introduction

This release note describes the contents and important points of the RZ/Five Verified Linux Package (hereinafter referred to as "VLP/F").

Please refer to "r01us0618ej0103-rz-five(Linux Start-up Guide RZFive).pdf" that describes the instruction to build VLP/F and boot the evaluation board.

Contents

1. Release Items

- **Name and version**
  RZ/Five Verified Linux Package
  Version 3.0.5 (hereinafter referred to as "VLP/F v3.0.5")

- **Distribution method**
  Please visit the site below and create an account to download the packages. Basic packages of VLP/F v3.0.5 which are listed in the Table 1 can be downloaded.

  RZ/Five product page:
  https://www.renesas.com/us/en/products/microcontrollers-microprocessors/rz-mpus/rzfive-risc-v-general-purpose-microprocessors-risc-v-cpu-core-andes-ax45mp-single-10-ghz-2ch-gigabit-ethernet

  RZ/Five Verified Linux Package [5.10-CIP]:
  https://www.renesas.com/us/en/software-tool/rzfive-verified-linux-package-510-cip

- **Target board**
  RZ/Five reference board

  - RZ/Five Evaluation board Kit (smarc-rzfive) (*)
    - o   RZ/Five SMARC Module Board (P/N: RTK9743F01C01000BE)
    - o   RZ SMARC Series Carrier Board (P/N: RTK97X4XXXB00000BE)

(*)   "RZ/Five Evaluation board Kit" includes the RZ/Five SMARC Module Board and the RZ SMARC Series Carrier Board.
      The "Evaluation board Kit for RZ/Five MPU" will be called "RZ/Five Evaluation Kit" in the next section.

- **Build Environment**
  Linux Host PC
     OS: Ubuntu 20.0.4 LTS (64 bit OS must be used.)
     20.04 inside a docker container also OK.
     100GB free space on HDD or SSD is necessary.

- **Functions**
  Linux VLP
  - Linux Kernel
  - Linux Drivers

- **File contents**
  VLP/F is delivered by the files listed in the Table 1.

Table 1. RZ/Five Verified Linux Package

Basic packages

File	Description
RTK0EF0045Z0025AZJ-v3.0.5.zip (*1)	RZ/Five Verified Linux Package. This file includes the Yocto recipe packages and the necessary documents.
rzfive_vlp_v3.0.5.tar.gz (*1)	Yocto recipe packages
oss_pkg_rzfive_v3.0.5.7z (*1)	Open source software packages See the Note below before download
r01us0608ej0103-rz-five(Release Note).pdf	This document
r01us0618ej0101-rz-five(Linux Start-up Guide RZFive).pdf	Documents describing building instruction, booting method and the required settings of bootloader for RZ/Five.

(*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)   Open source software packages contain all source codes of OSSs. These are the same versions of OSSs used when VLP/F was verified.
<u>If you are just evaluating VLP/F and RZ/Five series, open source software packages are not mandatory to use.</u>
Usually, all the software can be built without using these files if your build machine is connected to the Internet.

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/F 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.

Additional packages

File	Description
RTK0EF0045Z9006AZJ-v3.0.3.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".

Download URL: https://www.renesas.com/document/oth/rzg2l-group-bsp-manual-set

2. Components

The components which are commonly used in this release are listed in Table 2. Please also refer to the manifest file for details.
Please refer to:

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

Note: `<image-name>` is minimal or bsp.

Table 2. commonly used components

Components	VLP/F v3.0.4	VLP/F v3.0.5
Linux kernel	5.10.175-cip29	5.10.184-cip36
GCC	8.3.0 (RISC-V GCC 8.3-2019.03)	8.3.0 (RISC-V GCC 8.3-2019.03)
glibc	2.28	2.28
busybox	1.30.1	1.30.1
openssl	1.1.1n	1.1.1n

3. Changes

The following table lists the changes from the previous version.

Table 3. Changes

Features	Description
Package	No update
Yocto	3.1.26 (dunfell)
	Add support SBoM SPDX.
	Add support WIC image.
	Update Flash-writer, TF-A, U-boot and Kernel to the latest commit revision.
	Add audio initializing script.
	Update OpenSSL of Debian Buster to v1.1.1n-0+deb10u6.
Linux Kernel	Update the kernel version to v5.10.184-cip36-rt14
	Add ECC support
	RTC: fix do not advertise update interrupt feature if no interrupt specified
	MTU3: fix possible case dividing by zero in pwm_config
	Versa3clock: add property to enable/disable 32kHz free-running clock
	Pin control: add bias pull up/down pin configuration
	Emergency shutdown: add support this feature
U-boot	Update default environment variables for all Renesas RZ/G platforms
Trusted-firmware-a	Update to v2.9
	Add ECC support

4. Restrictions

None

5. Notes

None.

6. Revision History

Rev.	Date	Description Page	Summary
1.00	Dec. 27, 2022	-	First edition for VLP/F v3.0.2
1.01	Feb. 10, 2023	13	Add the appendix section for VLP/F v3.0.2-update1.
1.02	Jun. 30, 2023	-	Move to "Linux Start-up Guide" that Build Instruction section.
		5	Add "Changes" section.
1.03	Oct. 31, 2023	-	First edition for VLP/F v3.0.5.

Website and Support

Renesas Electronics Website
   http://www.renesas.com/

Inquiries
   http://www.renesas.com/contact/

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