

iW-RainboW-G23S

RZ/G1C Single Board Computer

Linux3.10.31-YoctoDaisy Release Notes

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1. Purpose

The main purpose of this release is to support Linux 3.10.31 Kernel with Yocto Daisy BSP with Wayland filesystem for RZ/G1C CPU based iW-RainboW-G23S SBC. This release package contains BSP source, Binaries and User Manuals.

2. Release contents

Features	Category	File Name	Description
Binaries	Loader	iW_RainboW_G23S_SPI_LOADER_V020_DDR3_e6300000_v100.bin	This loader binary is used to initialize SPI & DDR3 and loads u-boot for iW-RainboW-G23S SBC.
	UBoot	u-boot.bin	This UBoot binary is used as the boot loader for iW-RainboW-G23S SBC.
	Linux	ulmage	This Linux binary is used to test all the features of iW-RainboW-G23S SBC.
		rootfs.tar.bz2	This binary is used to launch the Yocto Daisy-Wayland file system in iW-RainboW-G23S SBC.
		r8a7747x-iwg23s_Pi.dtb	This device tree binary file is for RZ/G1C CPU based iW-RainboW-G23S SBC.
		iwtest	This folder has sample audio and video files for testing the video feature.
Documents	Quick Start Guide	iW-RainboW-G23S-RZG1C_SBC-QuickStartGuide-REL1.0	This document is intended as the guide for unpacking iW-RainboW-G23S SBC Development platform and setting up the test environment for it. It also gives details about safety information and important cautions which should adhere while installing the platform.
	Hardware User Guide	iW-RainboW-G23S-RZG1C_SBC-HardwareUserGuide-REL1.0	This document is the Hardware user guide for iW-RainboW-G23S SBC. This Guide provides detailed information on the overall design from Hardware System perspective.
	Software User Guide	iW-RainboW-G23S-RZG1C_SBC-Linux3.10.31-SoftwareUserGuide-REL1.0.pdf	This document is to help the software engineers to program and test the iW-RainboW-G23S SBC. This will also guide to configure the Linux development environment in the Host PC and build the board support package.
	Release Notes	iW-RainboW-G23S-RZG1C_SBC-Linux3.10.31-YoctoDaisy-REL1.0-ReleaseNote.pdf	This document contains important information about the software release contents, supported features and known issues/limitations.
Source-Code	Loader	Loader-iwg23s.tar.gz	Source code of loader for RZ/G1C CPU based iW-RainboW-G23S SBC

Features	Category	File Name	Description
		PATCH000-iW-PRFCC-SC-01-R3.0-REL1.0-Linux3.10.31_Loader_basic_customization.patch	This patch incorporates the basic customization of loader for RZ/G1C CPU based iW-Rainbow-G23S SBC
	U-Boot	u-boot-iwg23s.tar.gz	Source code of U-boot for RZ/G1C CPU based iW-RainboW-G23S SBC.
		PATCH001-iW-PRFCC-SC-01-R3.0-REL1.0-Linux3.10.31_UBoot_basic_customization.patch	This patch incorporates the basic customization of U-boot for RZ/G1C CPU based iW-RainboW-G23S SBC.
	Linux	linux-iwg23s.tar.gz	Source code of Linux operating system for RZ/G1C CPU based iW-RainboW-G23S SBC.
		PATCH002-iW-PRFCC-SC-01-R3.0-REL1.0-Linux3.10.31_Kernel_basic_customization.patch	This patch incorporates the basic customization of Linux for RZ/G1C CPU based iW-RainboW-G23S SBC.
	Yocto	PATCH003-iW-PRFCC-SC-01-R3.0-REL1.0-YoctoDaisy_basic_customization.patch	This patch incorporates the basic customization of Yocto for RZ/G1C CPU based iW-RainboW-G23S SBC.
		PKG-DIR	Multimedia package directory
		Copy_proprietary_softwares.sh	Script file for extracting multimedia packages

3. BSP Supported Features

Feature	Comments
Supported Processors	
Processors	Renesas' RZ/G1C
Kernel	
Kernel	Linux 3.10.31
File System	Yocto Daisy (Wayland) file system is used in EXT4 partition of eMMC ¹
Boot Loader	
U-Boot	U-Boot Version: 2013.01
Character Device Drivers	
UART	Debug Console support via SCIF1
	Data UART is supported via SCIF2, SCIF4 & SCIF5 (without CTS & RTS)
	Data UART is supported via HSCIF1 & HSCIF2 (with CTS and RTS)
Graphic Drivers	
Frame Buffer driver	Frame buffer driver for DU
HDMI	Supports SII902x HDMI transmitter via DU0 (24bit RGB) <i>Note: Only HDMI video support is added and HDMI audio support is not added</i>
Multimedia Drivers	
CVBS Video IN	Supports CVBS video decoder via VINO
VSP	Supports Hardware encoders and decoders
GPU	Supports GPU
Networking Drivers	
EthernetAVB	Supports 100/1000Mbps through Microchip's KSZ9031 Ethernet PHY
Block drivers	
SDHI	Micro SD (4-bit) via SDHI2
eMMC	eMMC (8-bit) via SDHI1
SPI-NOR Flash	Supports SPI NOR Flash via QSPI
USB Drivers	
USB2.0 Host	Supports USB2.0 Host via USB1
USB2.0 Device	Supports USB2.0 OTG as Device via USB0
General drivers	
I2C	Supports I2C master via I2C1, I2C3 & I2C4
Watchdog	Supports Watchdog reset

¹ Yocto Daisy GUI binary is provided "as is" from Renesas BSP release "<https://github.com/renesas-rz/meta-renesas>".

4. Known issues / Limitations

Features	Category	Description	Resolution/Workaround
Known Issues			
VSP	Software	While playing video/ camera overlay with Gstreamer, sometimes VSP internal data error is observed. Only board restart will solve this issue.	No
Limitations			
HDMI	Hardware/ Software	The resolution of HDMI display width must be multiple of 16. Otherwise, CPU DU will not output the display data and HDMI display won't work.	No