

Quick start guide to RZ/[G2L, G2LC, G2UL, V2L] with classic Ubuntu images

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1. Prerequisites

1.1. Hardware

- Laptop with Ubuntu, recommended version - 24.04 (noble) or later
 - For a Windows workstation please see [Windows remark](#)
- The EVKIT, one of the following:
 - RZ/G2L [\[link\]](#)
 - RZ/G2LC [\[link\]](#)
 - RZ/G2UL [\[link\]](#)
 - RZ/V2L [\[link\]](#)
- USB Type-C power supply 5V (for the Renesas board)
- microUSB cable for UART (serial console of the Renesas board)
- microHDMI <-> HDMI cable (optional)
- microHDMI connector board (optional, G2UL only, included in the package)
- an HDMI-compatible monitor (optional)

2. Quick start guide for Ubuntu Classic

2.1. How to flash using Windows

If you use windows as your workstation, please refer to the [Renesas RZ/G2L Quick start guide](#). The commands in principle are identical, the only prerequisite is obtaining the files (see next chapter).

2.2. Get the files

Download the files for Ubuntu Classic download files from, the image and the bootassets

<https://ubuntu.com/download/renesas-iot>

The contents should look something like this, depending on if you downloaded desktop or server (equivalent list of files provided in the server download) and the chosen model of the board:

```
bootassets_rzg2l.zip
iot-renesas-rzg2l-lc-ul-classic-desktop-2404-release-20260111.img.xz
```

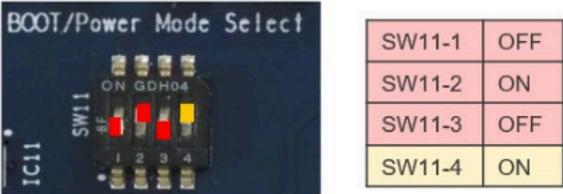
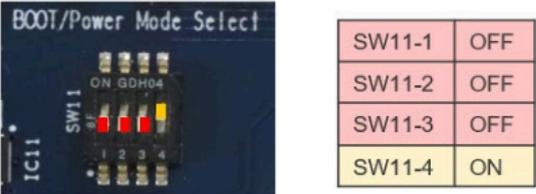
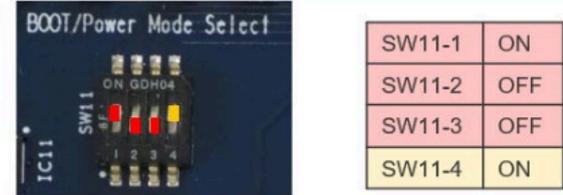
SCIF Download Mode(*1)	QSPI Boot (1.8V) Mode
	
eMMC Boot (1.8V) Mode	eSD Boot Mode
	

Figure 2.3.1

2.3. Flash the boot assets

Bootassets contain the FSBL, TF-A, u-boot and other boot loaders that are written into the QSPI-connected flash memory of the device.

Connect the power supply to the board (USB-C) and the RZ board with the microUSB cable to your host PC. Please follow the steps below to flash the bootloader to the device:

- Configure DIP Switch for SCIF (see Fig. 2.3.1)
- Power on the device and press the red button for ~2 power the device
- You will notice that serial port will appear under `/dev/ttyUSB*` within your computer.
- Open a terminal window and create a serial port session with 115200 baud rate.
- Unarchive the `bootassets.tar.gz`, the result is 3 folders named after each board.
- Bootassets are board-specific, make sure you're using the correct ones!
- Although the filenames for each board are slightly different, they all have the same prefix: `Flash_Writer_*`, `bl2_b_*` and `fip_*`. We're using the G2L full filenames for reference, make sure to use the files specific to your board instead (G2UL/G2LC).
- Send the resulting from previous step Flash Writer program to the device with;

```
$ sudo su  
$ cat Flash_Writer_SCIF_RZG2L_SMARC_DDR4_2GB.mot > dev/ttyUSBx
```

- Once the flash writer is sent through the serial interface, you can see it using the terminal. Then, you would need to interact with the Flash Writer to write bootloader images.
- Before writing the bootloader files, you would need to change baud rate from 115200 to 921600 with "SUP" command. Please note that you are running this command from the serial terminal. It is a command of the Flash Writer tool.

```
$ SUP
```

- As a next step, you would need to send/flash two bootloader files. Re-initiate the serial terminal for 921600 as baud-rate configuration.
- XLS2 command will be used to write the files to the QSPI flash.

```
$ XLS2
```

- You would need to pass the address of the files to be written to the QSPI flash. Please write; 11E00 and 00000
- Now, it is time to send the bootloader file `bl2_bp-smarc-rzg2l_pmic.srec`.

```
$ sudo su  
$ cat bl2_bp-smarc-rzg2l_pmic.srec > dev/ttyUSBx
```

- We will repeat the same process for the fip-smarc-rzg2l_pmic.srec binary as well.
- Just type XLS2 in the terminal and enter 00000 and 1D200 respectively. Finally you can transfer the file.
- Power off the device, set the bitrate back to 115200, change DIP Switches to QSPI mode and now you can power on and see the boot logs in the terminal.

For more details see points 4.3, 4.4 and 4.5 from the [Renesas RZ/G2L Quick start guide](#) (need to have an account at renesas.com).

2.4. Flash the image

Write the .img file on a microSD card. The easiest way to do it is with [rpi-imager](#).

```
$ sudo snap install rpi-imager  
$ unxz <image_name>.img.xz  
$ sudo rpi-imager --cli --disable-verify ./<image_name>.img /dev/sdX
```

Alternatively you can just dd it:

```
$ xzcat <image_name>.img.xz | sudo dd of=/dev/to-sdcard bs=32M;sync
```

Make sure the Boot Mode is QSPI boot (see Fig. 2.3.1).

Power on the board: press the “Power on” button for at least 2s. The default username/password is ubuntu/ubuntu. You will be prompted to change the password on the first boot.

You should see something like this on the HDMI monitor connected to the board:

```
ubuntu login: ubuntu
Password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-9002-renesas aarch64)

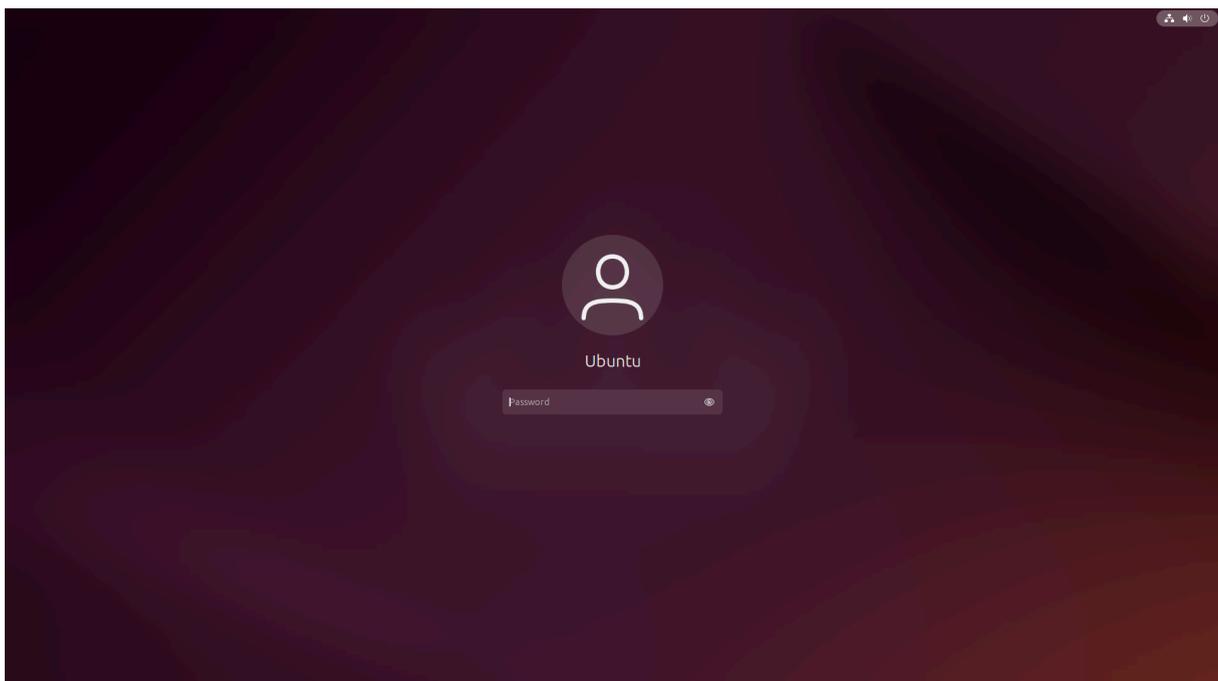
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/pro

System information as of Thu Jun 26 09:49:49 UTC 2025

System load:      0.9          Processes:          206
Usage of /home:   unknown     Users logged in:   0
Memory usage:    2%          IPv4 address for  enp1s0: 10.145.225.84
Swap usage:      0%

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
```

Successful boot of Ubuntu Classic Server



Successful boot of Ubuntu Classic Desktop

3. Tips

3.1. Setting the MAC address

The MAC address on the EVK board cannot be read from EEPROM and will be generated by u-boot on each boot anew. If this presents a problem, you can set and save the mac address in u-boot console on the first boot like so:

```
=> setenv ethaddr f6:9b:96:51:d9:ce # for first ethernet port
=> setenv eth1addr f6:9b:96:51:d9:cd # for the second one
=> saveenv # to persist across reboots
```

G2L has both Ethernet ports functioning, while G2LC has only the Ethernet0 and G2UL only Ethernet1.