

Quick start guide to RZ/T2H and RZ/N2H with classic Ubuntu images

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[1. Prerequisites](#)

[1.1. Hardware](#)

[2. Quick start guide for Ubuntu Classic](#)

[2.1. How to flash using Windows](#)

[2.2. Get the files](#)

[2.3. Flash the boot assets](#)

[2.4. Flash the image](#)

[3. Tips](#)

[3.1. Setting the MAC address](#)

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/T2H [\[link\]](#) or RZ/N2H [\[link\]](#)
- USB Type-C power supply
- miniUSB cable for UART (serial console of the Renesas board)

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 MPU Quick start guide](#). The commands in principle are very similar, the difference being the files (see next chapter) and the flashing addresses.

2.2. Get the files

Download the files for Ubuntu Classic from <https://ubuntu.com/download/renesas-iot>.

The contents should look something like this:

```
bootassets-rzt2h.tar.gz
bootassets-rzn2h.tar.gz
iot-renesas-rz-classic-server-2604-release-2026XXXX-filesystem-manifest.txt
iot-renesas-rz-classic-server-2604-release-2026XXXX.img.xz
SHA256SUMS
```

You can verify the data integrity by running

```
$ sha256sum -c SHA256SUMS
```

2.3. Flash the boot assets

1. Power off the board if powered on: slide the POWER_SW to the "OFF" position.
2. Configure the SW_MODE DIP switch to **SCIF Download mode**



RZ/T2H Download mode



RZ/N2H Download mode

Please see [RZ/T2H and RZ/N2H VLP](#) documentation for more information about the SW_MODE switch.

- Power on the board.

Follow these steps to flash the rest of the bootassets:

- a. From this point on, you can use the script that is attached to the bootassets like so to flash the bootassets:

```
./flash_bootloader.py --serial-port /dev/ttyUSB0 --baud-rate 115200 t2h
```

- serial-port is the serial connection to the renesas board, most likely to be /dev/ttyUSBX
- baud-rate should be 115200
- --bootassets-dir argument is pointing to the directory with the .srec files, default is pwd

Make sure you're not connected to the serial port via any other program, like minicom, picocom etc.

b. Manual flashing of the bootloaders

- 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.
- Unzip the bootassets_XXX.zip (XXX stands for the name of the board and other metadata)
- Send the resulting from previous step Flash Writer program to the device with;

```
$ sudo su
$ cat HDR_NM > dev/ttyUSBx
$ cat Flash_Programmer_SCIF_XXX.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.
- XSPIW command will be used to write the files to the QSPI flash.

```
$ XSPIW 0x0 0x0 0x0
```

- After you see the `send file` prompt, it is time to send the bootloader file `bl2\_bp\_xspi0-xxx.srec`.

```
$ bl2_bp_xspi0-xxx.srec > dev/ttyUSBx
```

- Send XSPIW again for the fip file

```
$ XSPIW 0x0 0x060000 0x0
```

- After you see the `send file` prompt, it is time to send the bootloader file `fip-xxx.srec`.

```
$ fip-xxx.srec > dev/ttyUSBx
```

- Power off the device: slide the POWER_SW to the "OFF" position.

- Set the Boot Mode to **SPI** boot (see picture)



RZ/T2H SPI boot mode



RZ/N2H SPI boot mode

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 SPI boot mode.
- Power on the board:
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 serial console connected to the board:

```
Ubuntu 26.04 LTS ubuntu ttySC3
ubuntu login: ubuntu
Password:
Welcome to Ubuntu 26.04 LTS (GNU/Linux 7.0.0-9000-renesas aarch64)

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

System information as of Wed May 20 16:17:10 UTC 2026

System load:  3.62           Temperature:   37.5 C
Usage of /:   77.9% of 2.51GB Processes:     230
Memory usage: 9%           Users logged in: 0
Swap usage:   0%           IPv4 address for end1: 10.42.0.103

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
  just raised the bar for easy, resilient and secure K8s cluster deployment.

  https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

3 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
```

Successful boot of Ubuntu Classic Server

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 eth3addr f6:9b:96:51:d9:ce # set mac address
=> saveenv                          # to persist across reboots
```