

ROCK PI S - Mini Computer with Rockchip RK3308 - 512MB RAM

SKU 102110364

Rock Pi S is a Single-board computer(SBC) with a small size and high-performance cost ratio

Looking for a tiny SBC for some small projects? You must take a look at Rock Pi S.

The Rock Pi S is a single-board computer(SBC) that equips an RK3308 Rockchip by Radxa. It is assembled by a 64bits quad-core processor, USB, ethernet and voice detection engine at the size of 1.7 inches. The Rock Pi S is suitable for voice applications and some IoT projects. What 's more? The Rock Pi S has a 26-pin expansion header which includes 4 I2C interfaces, 3 PWM interfaces, 2 SPI interfaces, 3 UART interfaces, and one I2SO interface. All these functional interfaces can be embedded into 1.7 inches tinny Pi. This little board is able to support Debian system successfully, and there are wifi and blue tooth module on this board as well. It is a good idea to develop this board into a central controller of the media center with a tiny size and attractive price.

I hope you enjoy your own project with this high-performance cost ratio board.

Features

- Rockchip RK3308 Quad A35 64bit processor with built-in VAD
- 512 MB RAM
- USB 2.0 OTG(type-C) + USB 2.0 HOST(type-A)
- RJ45 10/100Mbit Ethernet
- 802.11 b/g/n Wifi +bluetooth 4.0 with external antenna connector
- 26 pin GPIO header
- 26 pin voice/audio header includes I2C, PCM, TDM, PDM, SPDIF, and HDMI ARC
- Size 1.7x1.7 inch (~38.1mmx38.1mm)
- Debian and Buildroot successfully tested

Related products

- ROCK PI S - Mini Computer with Rockchip RK3308 - 256RAM
- ROCK PI S - Mini Computer with Rockchip RK3308 - 512MB RAM/1GB NAND Flash
- ROCK Pi 4 Model A 1GB
- ROCK Pi 4 Model A 2GB
- ROCK Pi 4 Model A 4GB
- ROCK Pi 4 Model B 1GB
- ROCK Pi 4 Model B 2GB
- ROCK Pi 4 Model B 4GB
- Radxa Rock pro

ECCN/HTS

HSCODE	8543709990
UPC	

This guide is designed for ROCK Pi S enthusiast. The purpose is to learn about the ROCK Pi S board as well as how to prepare and set up for basic use. We will introduce the board information as much as possible.

What you need

Necessary

- ROCK Pi S main board
- One of the Storage media below:
 - μ SD card, larger than 8GB.
- USB type C to type A cable
 - For both power and USB communication(adb/fastboot) with HOST PC.
- PC/Laptop which has USB ports
 - The ROCK Pi S can be powered from the PC/Laptop USB ports directly

Optional

- μ SD Card Reader
 - For flashing the image into μ SD Card or eMMC Module.
- USB to TTL serial cable
 - For serial console, low level troubleshooting, development etc.
- Ethernet cable
 - ROCK Pi S supports Internet access via WIFI or Ethernet.
 - An Ethernet cable is used to connect your ROCK Pi S to a local network and the Internet.

Close look of ROCK Pi S

- ROCK Pi S front view



- ROCK Pi S front with an angle view



- ROCK Pi S back view



Features

Model	ROCK Pi S
Processor	SoC RK3308 Quad Cortex-A35 ARM 64bits processor frequency up to 1.3GHz
Memory	256MB or 512MB DDR3
Storage	MicroSD(TF), optional on board 1/2/4/8Gb NAND flash
Wireless	802.11 b/g/n wifi Bluetooth 4.0(rtl8723DS) external antenna
USB	USB2.0 Type-A HOST x1 USB3.0 Type-C OTG x1
Key	maskrom x1 reset x1
Ethernet	100MB ethernet, optional PoE(additional HAT required)
IO	26-pin expansion header I2C x4 PWM x3 SPI x2 UART x3 I2S0 x1 5V DC power in x2 3.3V DC power in x2

Others	---
Power	USB Type-C DC 5V
Size	1.7inch square

Starting the board for the first time

ROCK Pi S can be started with μ SD Card.

1. Prepare the image

- When start system with μ SD Card

Insert the μ SD Card into μ SD Card Reader, which connects to host computer.

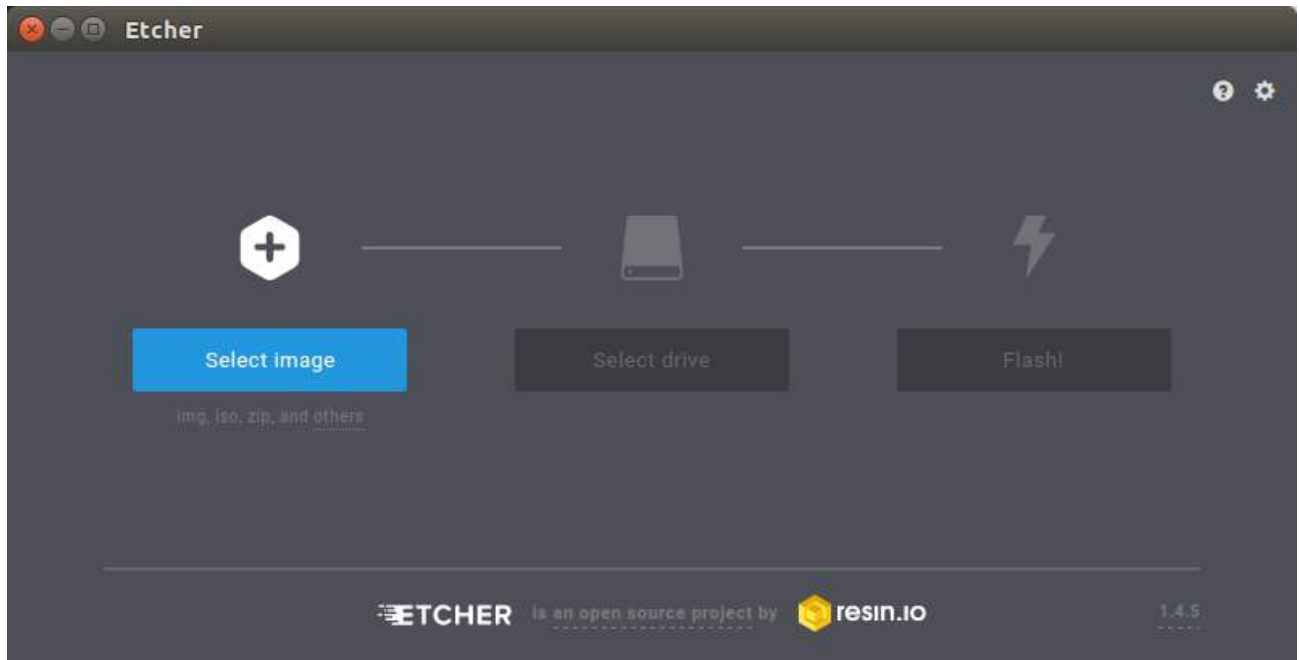
2. Write Image to uSD card

- Download the flash tool, etcher, from [Downloads](#). Choose the right version for your host operation system. Here we operate on host Ubuntu 16.04.
- After unpacking the package, we run the tool by executing the command

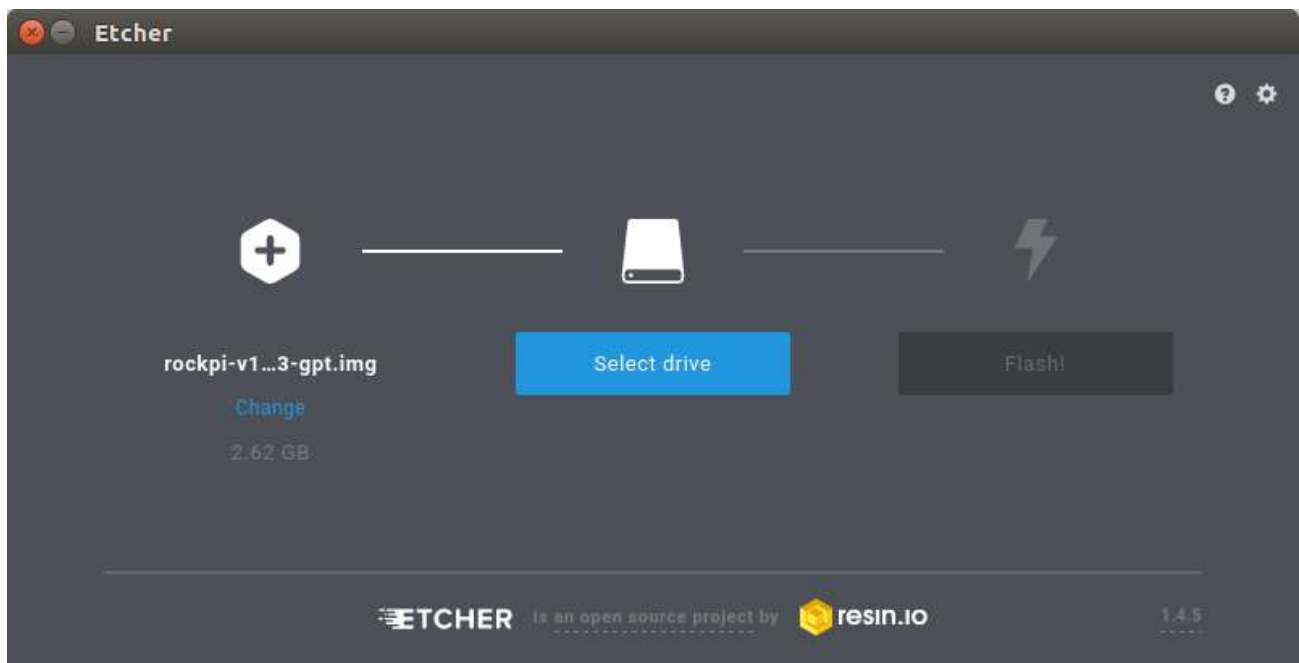
```
$ ./etcher-etcher-electron-1.4.5-x86_64.AppImage
```

If you get an error message: "No polkit authentication agent found" you can try and start it with sudo, but do know that this is running the tool as **root**.

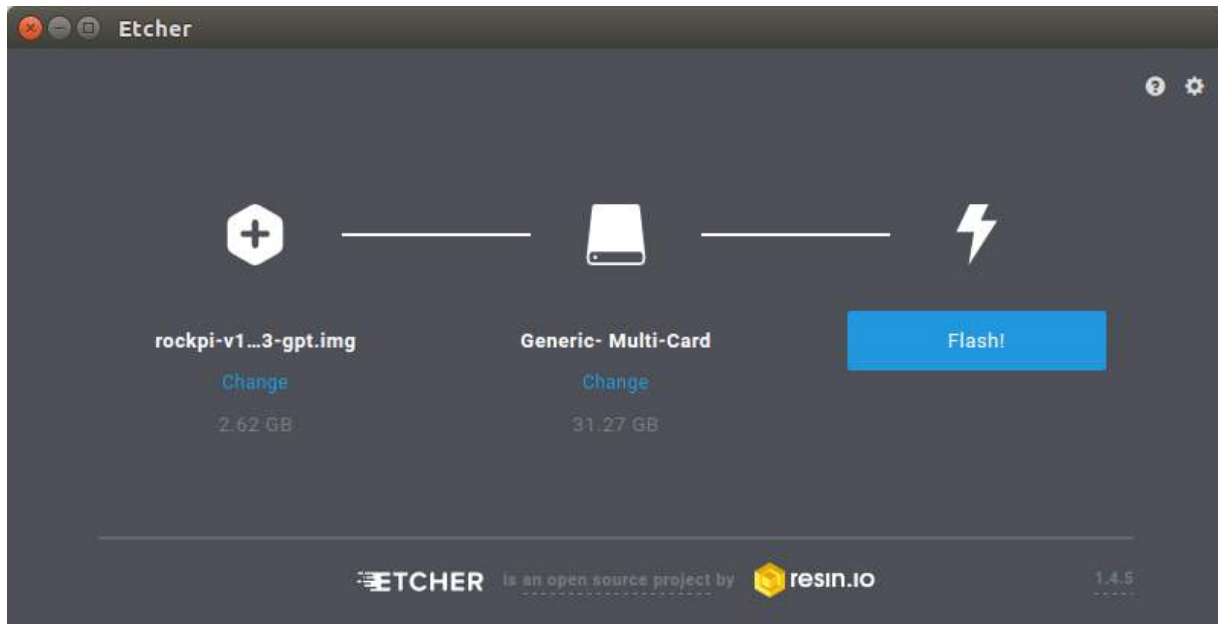
- In the etcher window, click **Select image**.



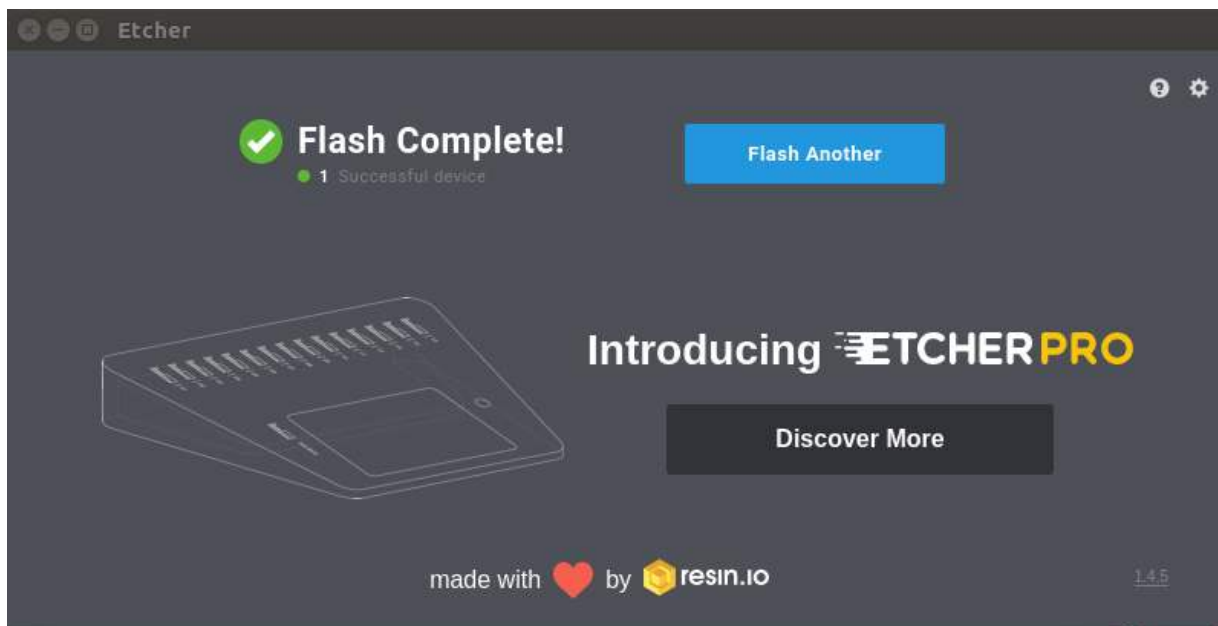
- In the etcher window, click **Select Drive**.



- In the etcher window, click **Flash**.



- In the etcher window, once it shows us Flash Complete! It is done and can be put into the ROCK Pi S.



3. Boot the board

- Now insert the uSD card to the board.
- Use a USB C to USB A cable, connect the board to your PC
- ROCK Pi S will boot, the green power led is on, and after a while, the blue led start blinking

- (Optional) Use a USB to TTL serial cable to make a connection between your PC and ROCK Pi S. See [Serial Console](#)

4. Access from the Host PC/Laptop

Option 1: USB access(adb)

By default, the ROCK Pi S Linux image enables `adb` services, which is a debug bridge from Android now ported on Linux. With one USB A to C cable you can power and access the board, very handy.

To use `adb`, you need to install `adb` tool on the PC/Laptop. Check instructions for [Windows](#) and [Linux](#).

After you have `adb` installed successfully, run the following command on console to login the shell of ROCK Pi S:

```
adb shell
```

Check [Using adb](#).

Option 2: Serial console

Check [Serial Console](#)

Option 3: SSH

SSH server is enabled on port 22 of ROCK Pi S default image.

To access ROCK Pi S by SSH, try

```
ping rockpis.local  
ssh rock@rockpis.local
```

or if your router/network doesn't support Local Domain, you need to check your network/router administrator page and look for the ROCK Pi S ip address.

```
ping ip-of-device  
ssh rock@ip-of-device
```

Note: You can also get the IP of ROCK Pi S from option 1 or option 2 if you can not access network administrator page.

Troubleshooting

- Refer [Troubleshooting page](#)
- Post your issue on the forum: <https://forum.radxa.com/c/rockpiS>

Network state

- Look at network configure:

```
$ sudo ifconfig
```

- Test network:

```
$ ping -c 5 www.google.com
```

WIFI Connection

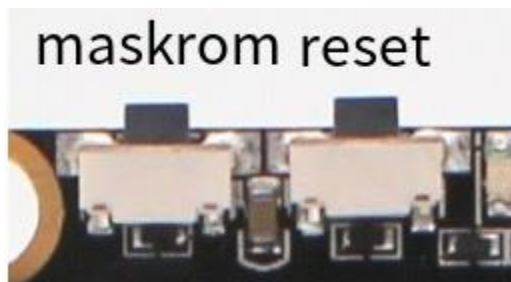
Check [WIFI Connection](#).

Bluetooth

Check [Bluetooth](#).

Buttons

ROCK Pi S have reset key and maskrom key:



- Reset key:

Push this key ROCK Pi S can reset hardware.

- Maskrom key:

ROCK Pi S support boot on SD NAND flash,SD NAND was booting before TF card on default,push maskrom key can ignore the SD NAND flash.

GPIO

ROCK Pi S has two 26-pin expansion header. Each pin is distinguished by color, more information click [here](#)

Development for GPIO ROCK Pi S support libmraa GPIO library, click [here](#) to get more information.

Using OTG

ROCK Pi S has an USB type-C OTG connector, you can using it write or read data by PC to ROCK Pi S, more help click [here](#)