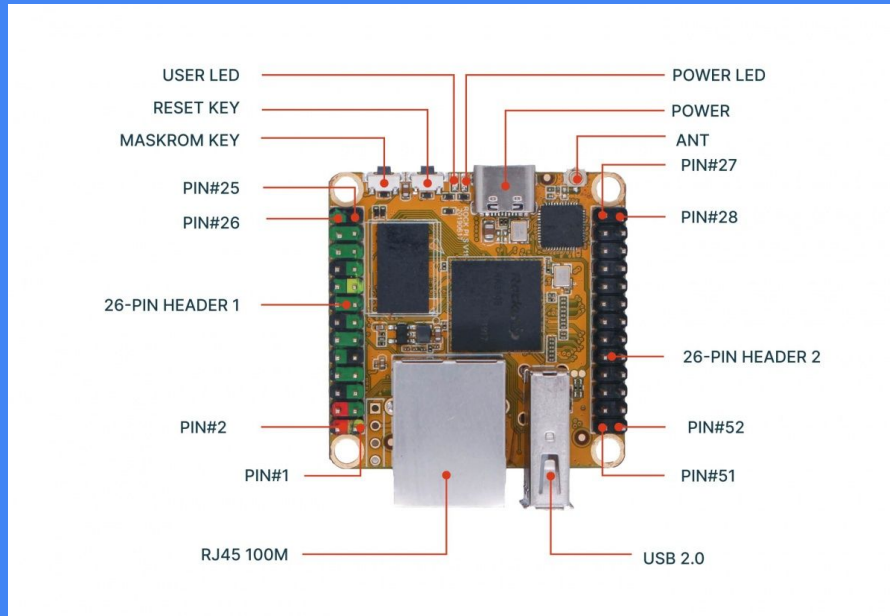


# RockPi

## IoT Introduction



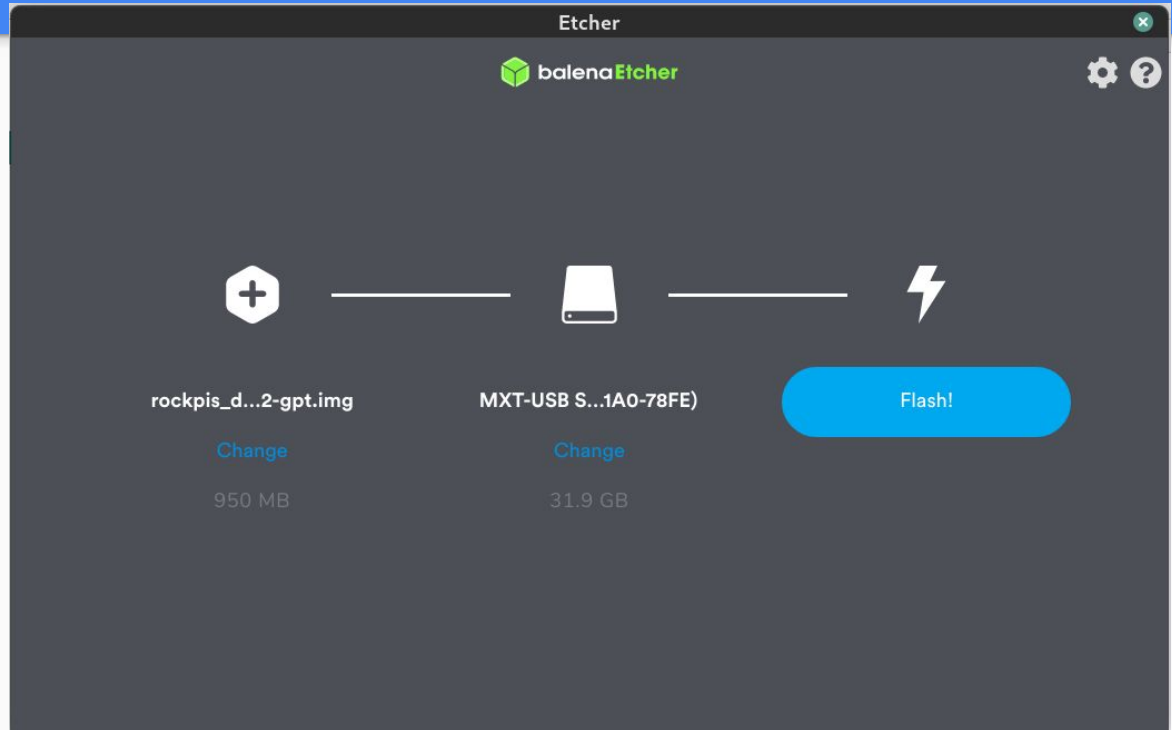
<https://gitlab.fi.muni.cz/iot-courses/pv284.git>

# Download and Flash Debian Image

Etcher - flash application

Debian Image

<https://wiki.radxa.com/RockpiS/downloads>





# Console speed modification

console speed in /boot uEnv.txt

The console speed needs to be changed to:

console=ttyS0,9600n8

```
/dev/ttyUSB0 - PuTTY
root@rockpis:/# cd boot/
[ 1035.917868] FAT-fs (mmcblk0p1): utf8 is not a recommended IO charset for FAT
filesystems, filesystem will be case sensitive!
root@rockpis:/boot# ls
System.map-4.4.143-65-rockchip-g58431d38f8f3
boot.cmd
boot.scr
config-4.4.143-65-rockchip-g58431d38f8f3
dtbs
extlinux
initrd.img-4.4.143-65-rockchip-g58431d38f8f3
uEnv.txt
vmlinuz-4.4.143-65-rockchip-g58431d38f8f3
root@rockpis:/boot# more uEnv.txt
verbosity=7
fdtfile=rockchip/rk3308-rock-pi-s.dtb
console=ttyS0,150000n8
overlays=rk3308-uart0
rootuuid=2a975457-7408-4fda-bd37-22b8d2df5b6f
initrdsize=0x5c9a03
kernelversion=4.4.143-65-rockchip-g58431d38f8f3
initrdimg=initrd.img-4.4.143-65-rockchip-g58431d38f8f3
kernelimg=vmlinuz-4.4.143-65-rockchip-g58431d38f8f3
root@rockpis:/boot#
```

# Programming RockPi

<https://wiki.radxa.com/RockpiS/dev/libmraa>

```
apt-get update --fix-missing
```

```
apt-get upgrade
```

```
apt-get install libmraa
```

```
apt-get install -y build-essential
```

# libmraa

## mraa-gpio list

A test with push-button application:

mraa-gpio set **12** 0

**12** = GP-1 GPIO2\_A5 (LED pin in the hardware description)

0 = pin's value

```
root@rockpi3:/# mraa-gpio list
01      3V3:
02      5V:
03      I2C_SDA: GPIO I2C
04      5V:
05      I2C_SCL: GPIO I2C
06      GND:
07 I2SD0_SCH_MC: GPIO
08      UART0_TX: GPIO UART
09      GND:
10      UART0_RX: GPIO UART
11 PWM2,I2C3_S: GPIO I2C PWM
12 I2SD0_SCH_SC: GPIO
13 PWM3,I2C3_S: GPIO I2C PWM
14      GND:
15      SPDIF_TX: GPIO
16 I2SD0_SCH_SD: GPIO
17      3V3:
18 I2SD0_SCH_SD: GPIO
19 UART1_RTSN,: GPIO SPI  UART
20      GND:
21 UART1_CTSN,: GPIO SPI  UART
22 I2SD0_SCH_LR: GPIO
23 UART1_RX,I2: GPIO I2C  SPI  UART
24 UART1_TX,I2: GPIO I2C  SPI  UART
25      GND:
26      ADC_IN0: AIO
27      GND:
28 I2SD0_SCH_SD: GPIO
29 ADC_KEY_IN1: AIO
30 I2SD0_SCH_SD: GPIO
31 MICBIAS2:
32 I2SD0_SCH_SD: GPIO
33 MICBIAS1:
34 I2SD0_SCH_SD: GPIO
35      MICN8:
36      MCIP8:
37      MICN7:
38      MCIP7:
39 UART3_TX, I: GPIO I2C  SPI  UART
40 UART3_RX, I: GPIO I2C  SPI  UART
41      SPI1_CLK: GPIO SPI
42      SPI1_MISO: GPIO SPI
43 I2SD0_SCH_SD: GPIO
44 I2SD0_SCH_SD: GPIO
45 I2SD0_SCH_LR: GPIO
46 I2SD0_SCH_SC: GPIO
47      MICN2:
48      MCIP2:
49      MICN1:
50      MCIP1:
51      LINEOUT_R:
52      LINEOUT_L:
```

# libmraa

```
cp -av /usr/local/share/mraa/examples/c /home/rock/mraa-examples
```

```
cd /home/rock/mraa-examples
```

Compiling - example:

```
rock@rockpis:~/mraa-examples$ gcc -o test-spi test-spi.c -lmraa
```