banana pi BPI-M1 dual core single board computer

bananapi

Published with GitBook

Table of Contents

Introduction 0

BPI-M1 hardware 1

- BPI-M1 hardware interface 1.1
- BPI-M1 hardware spec 1.2
- BPI-M1 GPIO Pin define 1.3
- BPI-M1 SD card slot 1.4
- BPI-M1 GigE LAN 1.5
- BPI-M1 HDMI interface 1.6
- BPI-M1 IR interface 1.7
- BPI-M1 CAN Bus 1.8
- BPI-M1 Camera interface 1.9
- BPI-M1 RGB DSI interface 1.10
- BPI-M1 SATA interface 1.11
- BPI-M1 MIC 1.12
- BPI-M1 Audio 1.13
- BPI-M1 OTG interface 1.14
- BPI-M1 UART interface 1.15
- BPI-M1 DC Power interface 1.16
- BPI-M1 schematic diagram 1.17
- BPI-M1 DXF and 3D design 1.18
- BPI-M1 CE FCC RoHS Certification 1.19

BPI-M1 software 2

- BPI-M1 quick start 2.1
- Android software 2.2
  - Android Mattrix XBMC/KODI Image - V3.1 2.2.1
- Linux software 2.3
  - Arch Linux 2.3.1
  - Armbian Linux 2.3.2
  - OpenSuse 2.3.3
  - Bananian Linux 2.3.4

- OpenWRT 2.4
  - Officeal OpenWRT 2.4.1
  - How to build OpenWRT image from github 2.4.2
  - Lamobo Openwrt image 2.4.3
- Asterisk for VOIP 2.5
- OpenMediaVault 2.6
- RaspBSD on BPI-M1 2.7
- BPI-M1 WiringPi 2.8
  - WiringPi python 2.8.1

Reference documents 3

- BPI-M1 linux-sunxi wiki 3.1
- NetBSD/evbarm on Allwinner Technology SoCs 3.2
- Arch linux wiki for BPI-M1 3.3

banana pi BPI-M1

Banana PI BPI-M1 is an Open Source hardware platform. Banana PI BPI-M1 a dual core, which is much better than the Raspberry Pi.

The Banana Pi BPI-M1 hardware runs Android, Debian Linux, Ubuntu Linux, OpenSuse linux and images that run on the Raspberry Pi B and Cubieboard.

Banana PI BPI-M1 has a Gigabit Ethernet port and a SATA Socket. It can run with Android 4.2.2 smoothly. The size of Banana PI M1 is about the same size as a credit card,

It can easily run games as it supports 1080P high definition video output. The GPIO is compatible with Raspberry Pi and can run Raspberry Pi images directly.

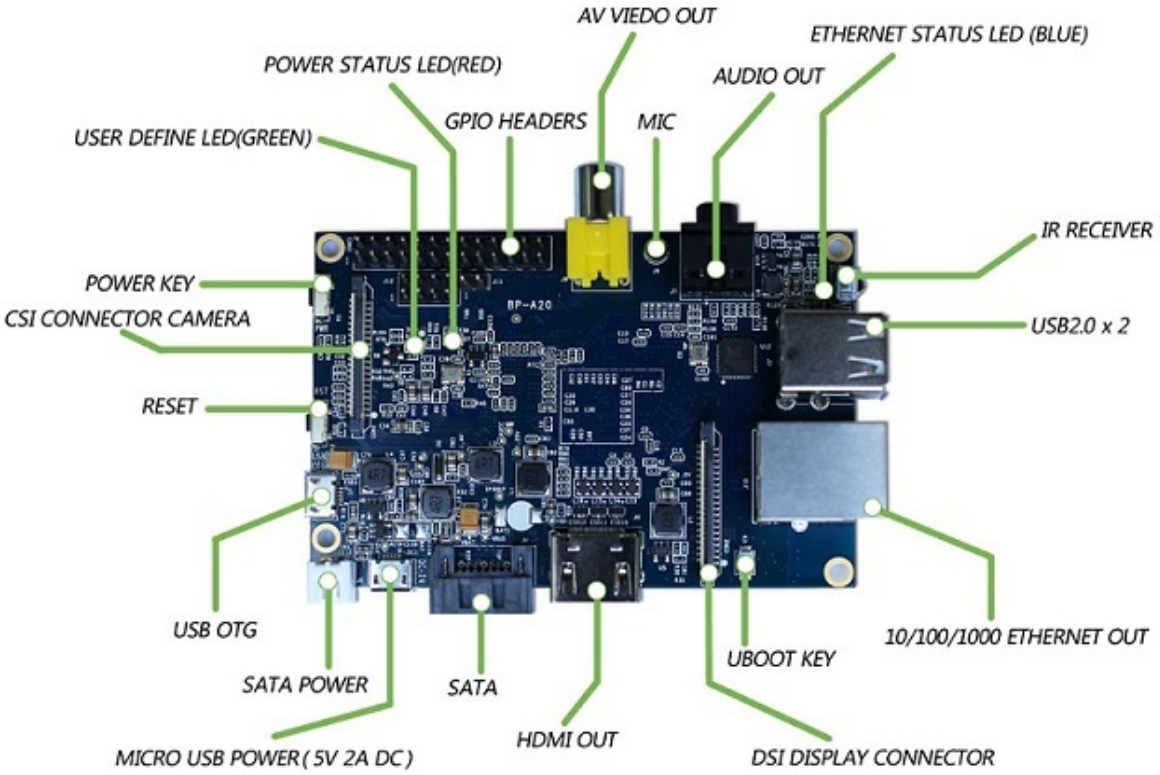
forum: http://www.banana-pi.org

forum: http://www.bananapi.com

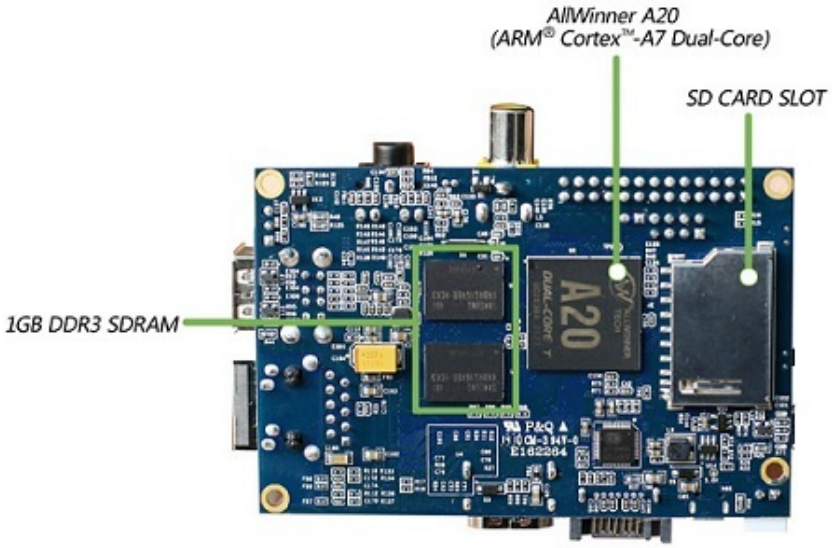
product: http://www.banana-pi.com

BPI-M1 hardware interface

Hardware interface:

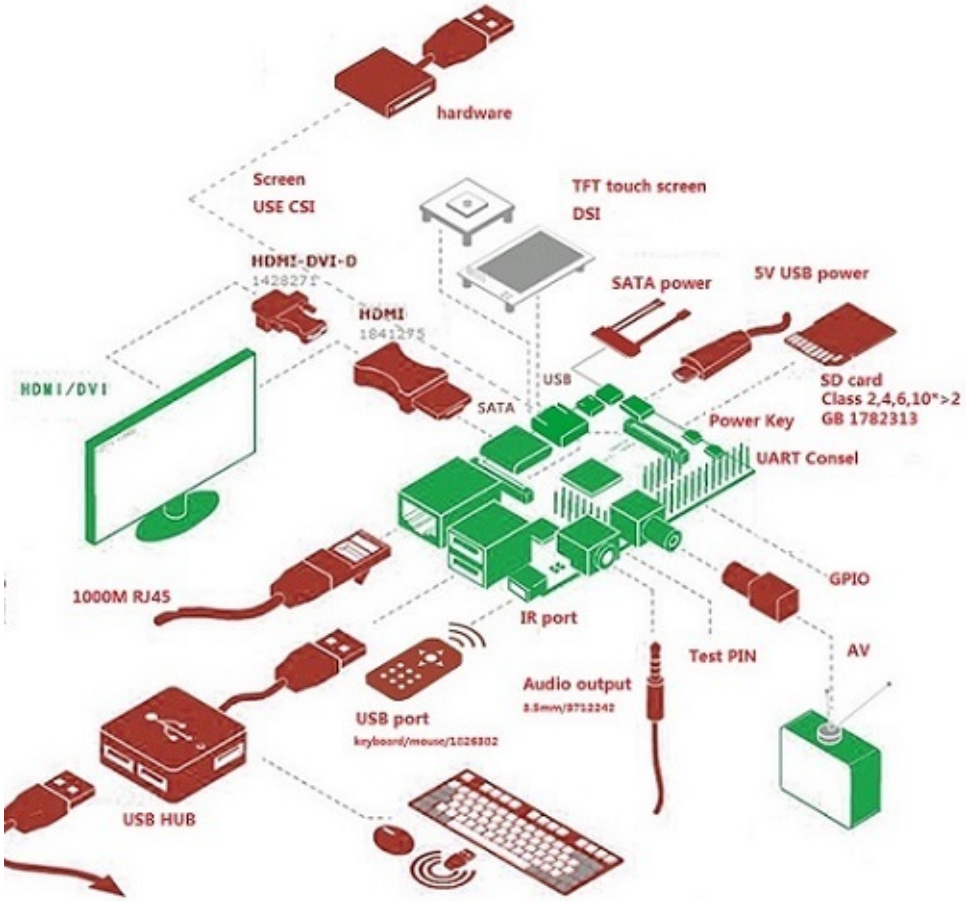


Front side



Back side

hardware interface:

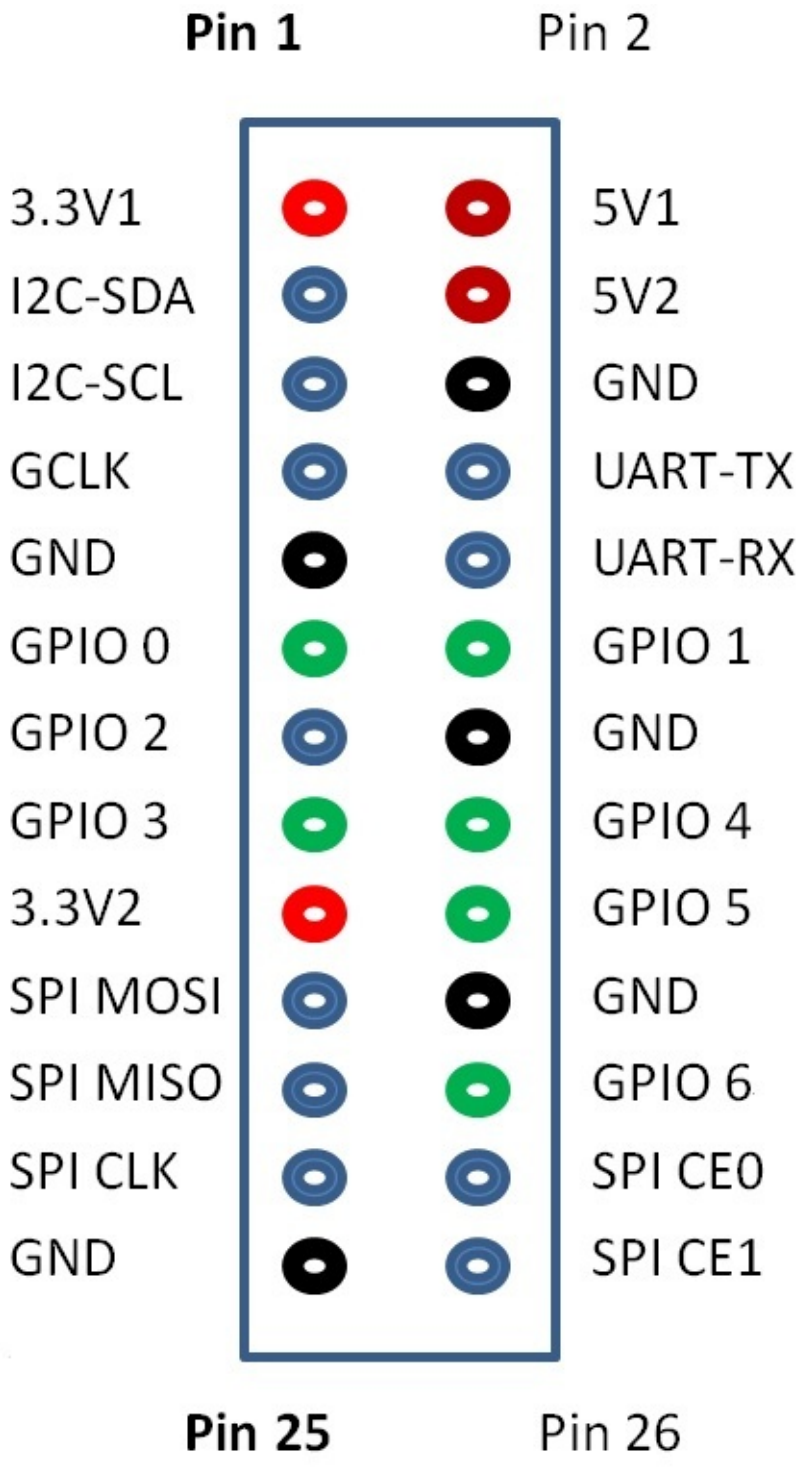


Hardware specification

CPU	A20 ARM Cortex™-A7 Dual-Core
GPU	ARM Mali400MP2Complies with OpenGL ES 2.0/1.1
Memory	(SDRAM) 1GB DDR3 (shared with GPU)
Onboard Storage	SD (Max. 64GB) / MMC card slot UP to 2T on 2.5 SATA disk
Onboard Network	10/100/1000 Ethernet RJ45,optional WIFI
Video Input	A CSI input connector allows for the connection of a designed camera module
Video Outputs	HDMI, CVBS , LVDS/RGB
Audio Output	3.5 mm Jack and HDMI
Power Source	5 volt via MicroUSB(DC In Only) and/or MicroUSB (OTG)
USB 2.0 Ports	2 (direct from Allwinner A20 chip)
Buttons	Reset button: Next to MicroUSB connector,Power button: Next to Reset button,Boot button (Optional): Behind HDMI connector
GPIO(2X13) pin	GPIO,UART,I2C bus,SPI bus with two chip selects,CAN bus,ADC,PWM,+3.3v,+5v,ground.
LED	Power Key & RJ45
Remote	IR (Optional)
OS	Android 4.2, Linux etc. OS
Product size	92 mm × 60mm
Weight	48g
working temperature range	-15~75°C

banana pi BPI-M1 26 PIN GPIO define

Banana Pi BPI-M1 has a 26-pin GPIO header that matches that of the Model A and Model B Raspberry Pi. Following is the Banana Pi GPIO Pinout:



Note: 5V1,5V2 only support output,not support input

CSI Camera Connector specification:

CSI Camera Connector The CSI Camera Connector is a 40-pin FPC connector which can connect external camera module with proper signal pin mappings. The pin definitions of the CSI interface are shown as below. This is marked on the Banana Pi board as “CON1″.

CSI Pin	Pin Name	GPIO
CON1 P01	LINEINL	
CON1 P02	LINEINR	
CON1 P03	VCC-CSI	
CON1 P04	ADC_X1	
CON1 P05	GND	
CON1 P06	ADC_X2	
CON1 P07	FMINL	
CON1 P08	ADC_Y1	
CON1 P09	FMINR	
CON1 P10	ADC_Y2	
CON1 P11	GND	
CON1 P12	CSI-FLASH	PH17
CON1 P13	LRADC0	
CON1 P14	TWI1-SDA	PB19
CON1 P15	LRADC1	
CON1 P16	TWI1-SCK	PB18
CON1 P17	CSI-D0	PE4
CON1 P18	CSI0-STBY-EN	PH19
CON1 P19	CSI0-D1	PE5
CON1 P20	CSI-PCLK	PE0
CON1 P21	CSI-D2	PE6
CON1 P22	CSI0-PWR-EN	PH16
CON1 P23	CSI-D3	PE7
CON1 P24	CSI0-MCLK	PE1
CON1 P25	CSI-D4	PE8
CON1 P26	CSI0-RESET#	PH14
CON1 P27	CSI-D5	PE9
CON1 P28	CSI-VSYNC	PE3

CON1 P29	CSI-D6	PE10
CON1 P30	CSI-HSYNC	PE2
CON1 P31	CSI-D7	PE11
CON1 P32	CSI1-STBY-EN	PH18
CON1 P33	RESET#	
CON1 P34	CSI1-RESET#	PH13
CON1 P35	CSI-IO0	PH11
CON1 P36	HPR	
CON1 P37	HPL	
CON1 P38	IPSOUT	
CON1 P39	GND	
CON1 P40	IPSOUT	

LVDS specification

LVDS (LCD display interface) The LVDS Connector is a 40-pin FPC connector which can connect external LCD panel (LVDS) and touch screen (I2C) module as well. The pin definitions of this connector are shown as below. This is marked on the Banana Pi board as “CON2″.

LVDS Pin	Pin Name	Multiplex Function Select	GPIO
		Multi 1	Multi 2
CON2 P01	IPSOUT(5V output)		
CON2 P02	TWI3-SDA		PI1
CON2 P03	IPSOUT(5V output)		
CON2 P04	TWI3-SCK		PI0
CON2 P05	GND		
CON2 P06	LCD0-IO0		PH7
CON2 P07	LCDIO-03		PH12
CON2 P08	LCD0-IO1		PH8
CON2 P09	LCD0-D0	LVDS0-VP0	PD0
CON2 P10	PWM0		PB2
CON2 P11	LCD0-D1	LVDS0-VN0	PD1
CON2 P12	LCD0-IO2		PH9

CON2 P13	LCD0-D2	LVDS0-VP1	PD2
CON2 P14	LCD0-DE		PD25
CON2 P15	LCD0-D3	LVDS0-VN1	PD3
CON2 P16	LCD0-VSYNC		PD27
CON2 P17	LCD0-D4	LVDS0-VP2	PD4
CON2 P18	LCD0-HSYNC		PD26
CON2 P19	LCD0-D5	LVDS0-VN2	PD5
CON2 P20	LCD0-CS		PH6
CON2 P21	LCD0-D6	LVDS0-VPC	PD6
CON2 P22	LCD0-CLK		PD24
CON2 P23	LCD0-D7	LVDS0-VNC	PD7
CON2 P24	GND		
CON2 P25	LCD0-D8	LVDS0-VP3	PD8
CON2 P26	LCD0-D23		PD23
CON2 P27	LCD0-D9	LVDS0-VN3	PD9
CON2 P28	LCD0-D22		PD22
CON2 P29	LCD0-D10		PD10
CON2 P30	LCD0-D21		PD21
CON2 P31	LCD0-D11		PD11
CON2 P32	LCD0-D20		PD20
CON2 P33	LCD0-D12		PD12
CON2 P34	LCD0-D19		PD19
CON2 P35	LCD0-D13		PD13
CON2 P36	LCD0-D18		PD18
CON2 P37	LCD0-D14		PD14
CON2 P38	LCD0-D17		PD17
CON2 P39	LCD0-D15		PD15
CON2 P40	LCD0-D16		PD16

UART specification:

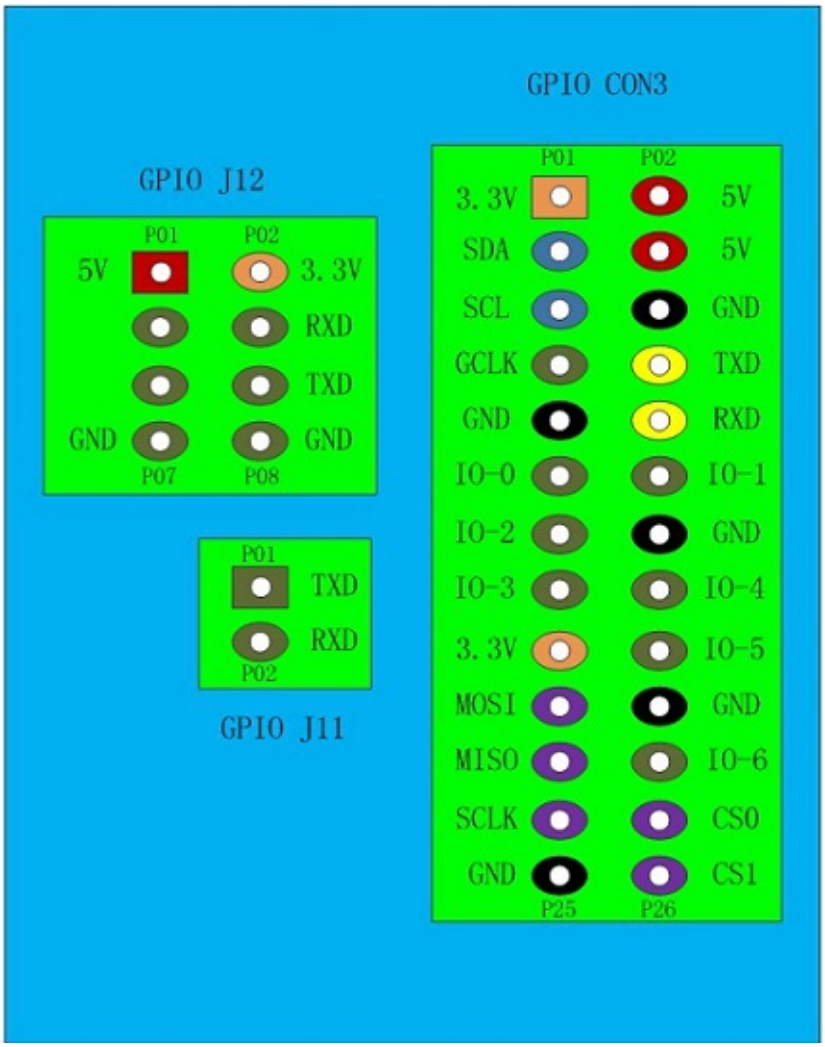
The jumper J11 is the UART interface. For developers of Banana Pi, this is an easy way to get the UART console output to check the system status and log message.

J11 Pin	Pin Name	Multiplex Function Select	GPIO
		Multi 1	Multi 2
J11 Pin1	TXD	UART0-TX	PB22
J11 Pin2	RXD	UART0-RX	PB23

The jumper J12 provides the power source including 3.3V and 5V. There is a pair of UART TX/RX signals output here.

J12 Pin	Pin Name	Multiplex Function Select	GPIO
		Multi 1	Multi 2
J12 Pin1	5V		
J12 Pin2	3.3V		
J12 Pin3	NC	IO-7	PH5
J12 Pin4	RXD	UART7_RX	PI21
J12 Pin5	NC	IO-8	PH3
J12 Pin6	TXD	UART7_TX	PI20
J12 Pin7	GND		
J12 Pin8	GND		

All GPIO define list:


GPIO CON3
P01
P02
3.3V
5V
SDA
5V
SCL
GND
GCLK
TXD
GND
RXD
IO-0
IO-1
IO-2
GND
IO-3
IO-4
3.3V
IO-5
MOSI
GND
MISO
IO-6
SCLK
CS0
GND
CS1
P25
P26
GPIO J12
P01
P02
5V
3.3V
RXD
TXD
GND
GND
P07
P08
P01
TXD
RXD
P02
GPIO J11

BPI-M1 SD card slot

BPI-M1+ have support a SD card slot. you can burn image to SD card ,and use it boot BPI-M1 same as raspberry pi.

BPI-M1 GigE RJ45 LAN

BPI-M1 have one GigE LAN port. use RTL8211E chip on board

BPI-M1 HDMI interface

BPI-M1 has a standard HDMI 1.4 interface. so We can use HDMI-to-HDMI cable to connect BPI-M1 to the display monitor that has HDMI interface.

But If the display monitor doesn't have HDMI interface,only VGA or DVI port. We should use HDMI-to-VGA or HDMI-to-DVI cable to connect the BPI-M1 to the display monitor.

Note: if the HDMI-to-VGA/DVI cable is a bad quality cable,it will go wrong on the monitor display. please choose a good quality cable for BPI-M1

BPI-M1 IR interface

BPI-M1 support IR interface on board. you can use it as remote control.

How to use IR interface

test on bananian image:

1,install lirc

```
apt-get install lirc
apt-get install evtest
```

2,edit /etc/lirc/hardware.conf as below:

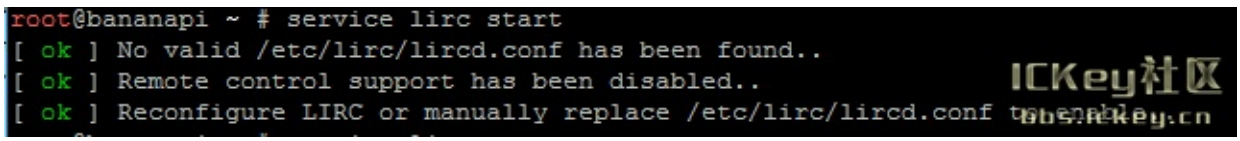
`nano /etc/lirc/hardware.conf`

```
# /etc/lirc/hardware.conf
#
# Arguments which will be used when launching lircd
LIRCD_ARGS="--uinput"
#Don't start lircmd even if there seems to be a good config file
#START_LIRCMD=false

#Don't start irexec, even if a good config file seems to exist.
#START_IREXEC=false

#Try to load appropriate kernel modules
LOAD_MODULES=true

# Run "lircd --driver=help" for a list of supported drivers.
DRIVER="UNCONFIGURED"
# usually /dev/lirc0 is the correct setting for systems using udev
DEVICE="/dev/input/event0"
MODULES="sunxi-ir"
```

ctrl+O save and ctrl+x exit.

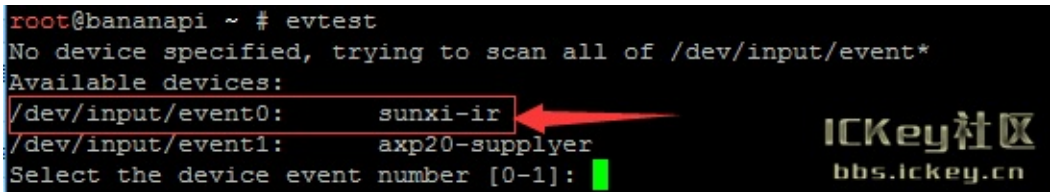
3,test lirc

`service lirc start`

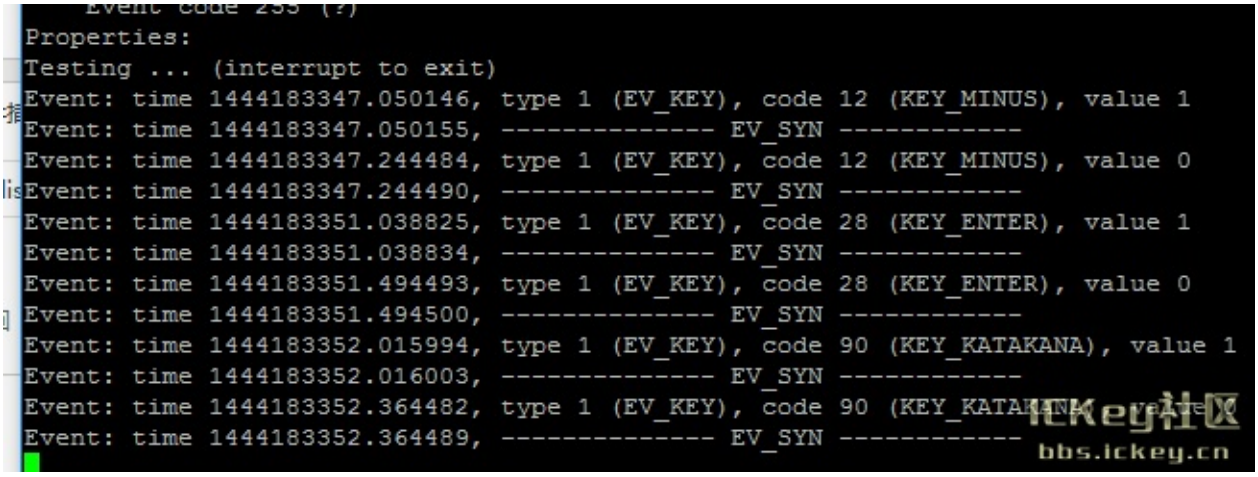


4 test remote-control unit

```
evtest
```



choose "0" must xunxi-ir



please note:value 0 value 1

press is:1，unpress is:0

BPI-M1 CAN Bus

In order to port can4linux to the BananaPi, the CAN module description is needed from the A20 hardware manual. can4linux is a character-driver-based Linux driver used already on desktop PCs and embedded platforms like Freescale FlexCAN (the i.MX series of micro controllers) or Xiliny Zynq.

There is a more detailed document about CAN on the A20 at https://dl.linux-sunxi.org/A20/CAN%20Bus1.pdf

This is a tutorial for using CAN BUS on bananapi with bananian 15-01

Thank selqcir share this example:

- Download and install "bananian-1501.img" into 8 GB SDCard.
- Expand the root file system using "bananian-config"
- Install missing package:

```
apt-get install git
apt-get update
apt-get upgrade
reboot
```

- Get last bananian available, and continu to install missing package:

```
git clone https://github.com/Bananian/linux-bananapi
apt-get install build-essential u-boot-tools uboot-mkimage
apt-get install libusb-1.0-0 libusb-1.0-0-dev git wget fakeroot kernel-package zlib1g
apt-get install subversion
```

- Build kernel:

```
cd linux-bananapi
make menuconfig
```

- Exit without saving when menu appears

```
zcat /proc/config.gz > /root/linux-bananapi/.config
make uImage modules
make INSTALL_MOD_PATH=output modules_install
```

- At this step, kernel should be compiled and "Module.symvers" should be available

- Then rename modules and firmware provide by Bananian, and replace by the new one.

```
mv /lib/modules /lib/modules.old
mv /lib/firmware /lib/firmware.old
mv /root/linux-bananapi/output/lib/modules /lib/modules
mv /root/linux-bananapi/output/lib/firmware /lib/firmware
```

- Same for uImage:

```
mount /dev/mmcblk0p1 /mnt
cd /mnt
mv uImage uImage.old
mv /root/linux-bananapi/arch/arm/boot/uImage /mnt
reboot
```

- Create link for further build:

```
cd /lib/modules/3.4.104/
ln -s /root/linux-bananapi build
cd ~
```

- Get Can4Linux and build it:

```
svn checkout https://svn.code.sf.net/p/can4linux/code/trunk can4linux-code
cd /root/can4linux-code/can4linux/
make TARGET=BANANAPI
```

- Install module for each startup of the board:

```
insmod can4linux.ko
cp can4linux.ko /lib/modules/3.4.104/kernel/net/can/
depmod -A -v
modprobe -v can4linux
echo "" >> /etc/modules ; echo "can4linux" >> /etc/modules
reboot
```

- Build CAN example

```
apt-get install swig
apt-get install python-dev
cd can4linux-code/can4linux-examples/
```

- Update CAN speed and device in file "pyCan-example.py"

ex:

```
# setting the device number
device = 0
defaultBaudrate = '250'
```

- Connect CAN transceiver and CAN bus, and check with for example:

```
python pyCan-example.py
```

That's all

With this method, kernel version is "Linux bananapi 3.4.104" instead of "Linux bananapi 3.4.104+", because i was unable to find same sources than Bananian 15-01 , but CAN bus work !

Feel free to comment or update.

BPI-M1 Camera interface

BPI-M1 CSI Camera Connector is a 40-pin FPC connector which can connect external camera module with proper signal pin mappings. The pin definitions of the CSI interface are shown as below. This is marked on the Banana Pi board as “CSI”.

CSI pin define:

please see: BPI-M1 GPIO pine define

BPI-M1 CSI camera accessories

https://bananapi.gitbooks.io/bpi-accessories/content/bpim1m1+m2camera.html

BPI-M1 RGB DSI interface

RGB DSI (Display Serial Interface)：

The display Connector is a 40-pin FPC connector which can connect external LCD panel (RGB DSI) and touch screen (I2C) module as well. The pin definitions of this connector are shown as below. This is marked on the Banana Pi board as “DSI”.

DSI pin define:

please see: BPI-M1 GPIO pine define

BPI-M1 LCD touch panel accessories

https://bananapi.gitbooks.io/bpi-accessories/content/bpi70lcdtouchpanel.html

- note:the touch panel accessories support RGB interface and MIPI interface ,when you use BPI-M1, please choose RGB interface.

BPI-M1 SATA interface

BPI-M1 support sata interface and onboard power port.

you can use sata line connect your hardisk on BPI-M1.

Note:

if you use 3.5 big hardisk ,you may need power with outside power. on board power can not support enough current

BPI-M1 MIC

thank chaos.dennis do this test:

i write about this, because i found very few sources and had to tumble a lot around to get it working. This is a quick walk through to give you a hint where to start. I asume for simplicity that you stay always in /root directory as root user. If something fails, look if the files are written and paths are right. It is adressed for more advanced users who know what they are basically doing.

This is done with bananian 15.08 on Kernel 3.4. Other kernels < 4.4 do not work. It is a headless server with no HDMI pluged in.

A. Basic Setup

- Install alsa (renove pulseaudio if present):

  ```
  # apt-get install alsa-base alsa-utils
  ```

- Configure asound.conf

  ```
  # nano /etc/asound.conf
  ```

- Should look like:

  ```
  pcm.!default {
        type hw
        card 0 # for headphone, turn 1 to 0
        device 0
  }
  ctl.!default {
        type hw
        card 0 # for headphone, turn 1 to 0
  }
  ```

- Shutdown, make a cold boot
- Call the alsamixer

  ```
  # alsamixer
  ```

  Press F5. Your channels should be setup like the attached file at the bottom of this post, or compare it to amixer output:

  ```
  # amixer
  Simple mixer control 'Master',0
  Capabilities: pvolume pvolume-joined
  ```

```
Playback channels: Mono
Limits: Playback 0 - 63
Mono: Playback 45 [71%]
Simple mixer control 'Master Capture Mute',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [off]
Simple mixer control 'LineL',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'LineR',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Linein Pre-AMP',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 7 [100%]
Simple mixer control 'Mic Input Mux',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 15
Mono: 15 [100%]
Simple mixer control 'Mic Power',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Mic1 Boost',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Mic1 gain',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 3
Mono: 3 [100%]
Simple mixer control 'Mic2 Boost',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Mic2 gain',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 0 [0%]
Simple mixer control 'MicL',0
Capabilities: volume volume-joined
```

```
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 3
Mono: 1 [33%]
Simple mixer control 'MicR',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 3
Mono: 3 [100%]
Simple mixer control 'Playback',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Capture',0
Capabilities: cvolume cvolume-joined
Capture channels: Mono
Limits: Capture 0 - 7
Mono: Capture 7 [100%]
Simple mixer control 'ADC Input Mux',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 7 [100%]
Simple mixer control 'Fm output',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 7 [100%]
Simple mixer control 'FmL',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'FmR',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'LINEIN APM',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 7 [100%]
Simple mixer control 'Ldac Left Mixer',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Ldac Right Mixer',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
```

```
Simple mixer control 'Left Capture Mute',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'MIC output volume',0
Capabilities: volume volume-joined
Playback channels: Mono
Capture channels: Mono
Limits: 0 - 7
Mono: 7 [100%]
Simple mixer control 'Rdac Right Mixer',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
Simple mixer control 'Right Capture Mute',0
Capabilities: pswitch pswitch-joined
Playback channels: Mono
Mono: Playback [on]
```

This step is critical. One false muted channel and you are out of the game.

- Test recording.

  `# arecord -L`

  Should show a device.

  `# arecord -f S16_LE -r 44100 -t wav test.wav`

  Should make kind of Sound. Stop it with ctr-c and check the file.

B. SoX Recording / Streaming

- Install SoX

  `# apt-get install sox libsox-fmt-all` Sox gives you tools like: sox, rec and play. I would suggest you install it on the client pc too.

- Record striaght to mp3

  ```
  # rec -c 2 -C 64 test.mp3
  ```

  -c 2 two channels

  -C 64 tell the encoder to produce a 64kbit/s mp3

  Stop it with ctr-c, check the output.

- Listen to it live over LAN

  Banana:

```
# rec -c 2 -C 64 -t mp3 - | netcat -l -p 9000
```

-t mp3 - produce mp3 stream to stdout

Client:

```
# netcat <banana ip> 9000 | vlc
```

Works? Great! Live listening is important to play around and test the mic.

- Listen and record at same time

```
# rec -c 2 -C 64 -t mp3 - | tee test.mp3 | netcat -l -p 9000
```

- Poor man's streaming server

```
# apt-get install openbsd-inetd tcpd
```

Edit config file:

```
# nano /etc/inetd.conf
```

Insert this at the end:

```
9000            stream  tcp     nowait  nobody  /usr/bin/tail       tail -f /test.mp3
```

Restart service

```
# service openbsd-inetd restart
```

Start recording on banana:

```
# rec -c 2 -C 64 /test.mp3
```

Connect via client:

```
# netcat <banana ip> 9000 | vlc -
```

C. Advanced Recording

- Devide recording and postprocessing in two parts

```
# rec -t raw - remix - | sox -t raw -r 48000 -c 1 -b 16 -e signed-integer - -t mp3 -c
```

Recording:

-t raw - forward raw input to pipe

remix - Mix the two channels to one

Encoding:

-t raw -r 48000 -c 1 -b 16 -e signed-integer - tell sox what kind of strean comes from stdin

-t mp3 -c 1 -C 32 test.mp3 and what goes out

Note that it is switched to mono from here with -c 1 and the mp3 bitrate is cut in half. Live listening to the strean does not work anymore, i asume it is because of the non regulare output from pipeing and processing in a second step.

- Reduce noise

  The mic input is pretty bad, lot of white noise. Sox can deal with it.

  Make a sample "silent" file:

  ```
  # rec -t raw test.raw remix - trim 0 10
  ```

  trim 0 10 record 10 seconds

  Test it at client pc:

  ```
  # play -r 48000 -c 1 -b 16 -e signed-integer test.raw
  ```

  Create profile file:

  ```
  # sox -r 48000 -c 1 -b 16 -e signed-integer test.raw -n trim 0 2 noiseprof raw-profil
  ```

  Record with noise canceld

  ```
  # rec -t raw - remix - noisered raw-profile 0.2 | sox -t raw -r 48000 -c 1 -b 16 -e s
  ```

  Play with the factor of 0.2 to regulate the intensity of cancellation.

D. Record 24/7

My goal of this....

Create a script:

```
# nano /root/record.sh
```

Insert the following:

```
#!/bin/bash

# send sigterm and wait for exit of the process
function stop() { kill $@; while kill -0 $@; do sleep 1; done; }
function log() { echo $(date +%T) $@; }

log "Stopping previus recording"
stop `pidof rec` &> /dev/null

DATE=`date "+%Y.%m.%d"`
log "Recording $DATE.mp3"
rec -q -t raw - remix - noisered /root/raw-profile 0.2 | \
        sox -v 2.0 -t raw -r 48000 -c 1 -b 16 -e signed-integer -   \
                   -t mp3 -r 22050 -c 1 -C -9.2 /root/$DATE.mp3
log "Done $DATE.mp3"
```

Recording:

-q less output

Encoding: -v 2.0 Make the input stream louder

-r 22050 encode to a lower sample rate

-C -9.2 Create a low quality VBR mp3

Fileszie ~100mb per day. If you want smaller files, a 8000 sanple rate gives you a gsm grade quality.

A very good article to sample rate: http://wiki.audacityteam.org/wiki/Sample_Rates

Make it executable

```
# chmod +x record.sh
```

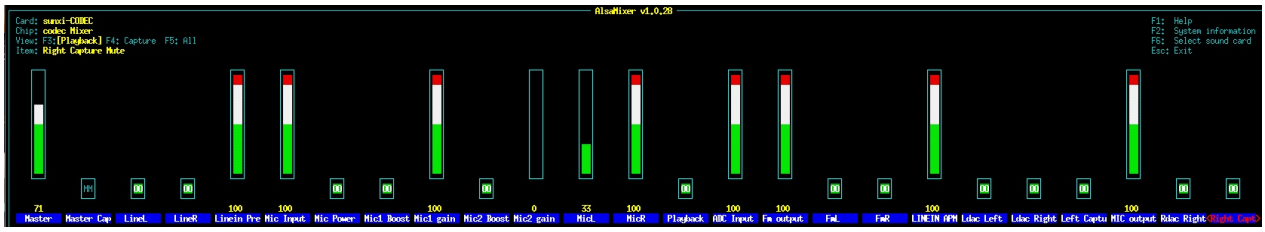
Edit crontab:

```
# env EDITOR=nano crontab -e
```

Insert at the end the following:

```
 PATH=/usr/local/bin:/usr/local/sbin:/sbin:/usr/sbin:/bin:/usr/bin
0 0 * * * /root/record.sh >> /root/record-mic.log
```

A new recording should start every day at midnight.



BPI-M1 Audio

Banana pi BPI-M1 support two audio device HDMI and headphone

- How to choose HDMI or headphone for audio output

```
sudo nano /etc/asound.conf
```

```
pcm.!default {
type hw
card 0    //If you want to set HDMI as output ,turn 0 to 1.
device 0
}
ctl.!default {
type hw
card 0   //If you want to set HDMI as output ,turn 0 to 1.
}
```

- Plug in the headphone and type

```
speaker-test -twav -c2
```

- The sound "sound left，sound right，sound left" will output from headphone.

```
sudo apt-get install espeak
espeak "hello"              //say: hello
espeak "hello_bananapi"     //say: hello banana pi
```

- Run the sound volume controler,you can see

```
sudo alsamixer
```

BPI-M1 OTG interface

banana pi BPI-M1 have 1 OTG port on board.

Note:

you also can use OTG port power BPI-M1

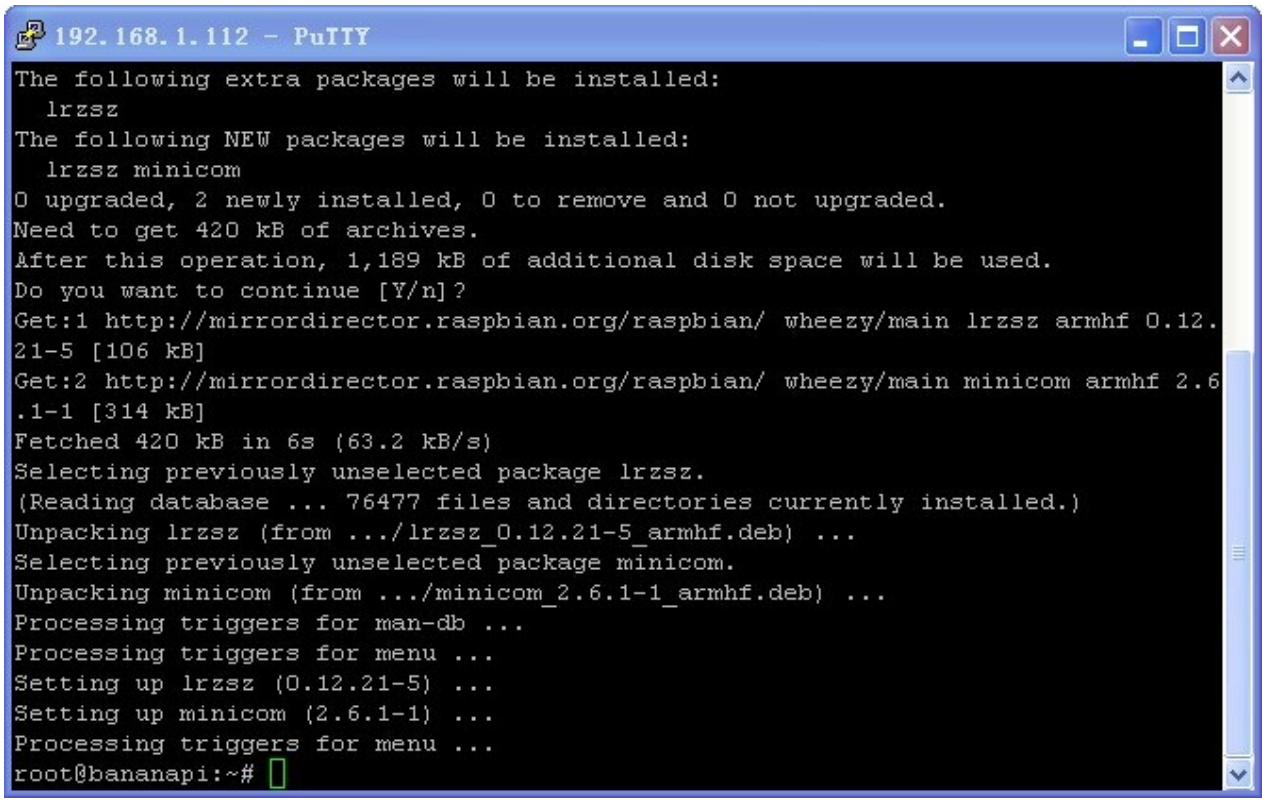
BPI-M1 UART interface

BPI-M1 have 4 UART port on board.

How to use serial port with minicom.

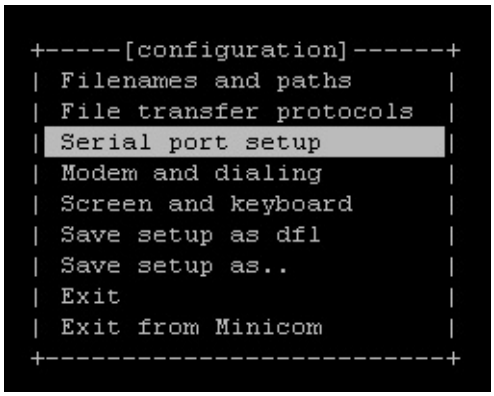
1 use ssh connect to BPI-M1 and install minicom

```
sudo apt-get install minicom
```



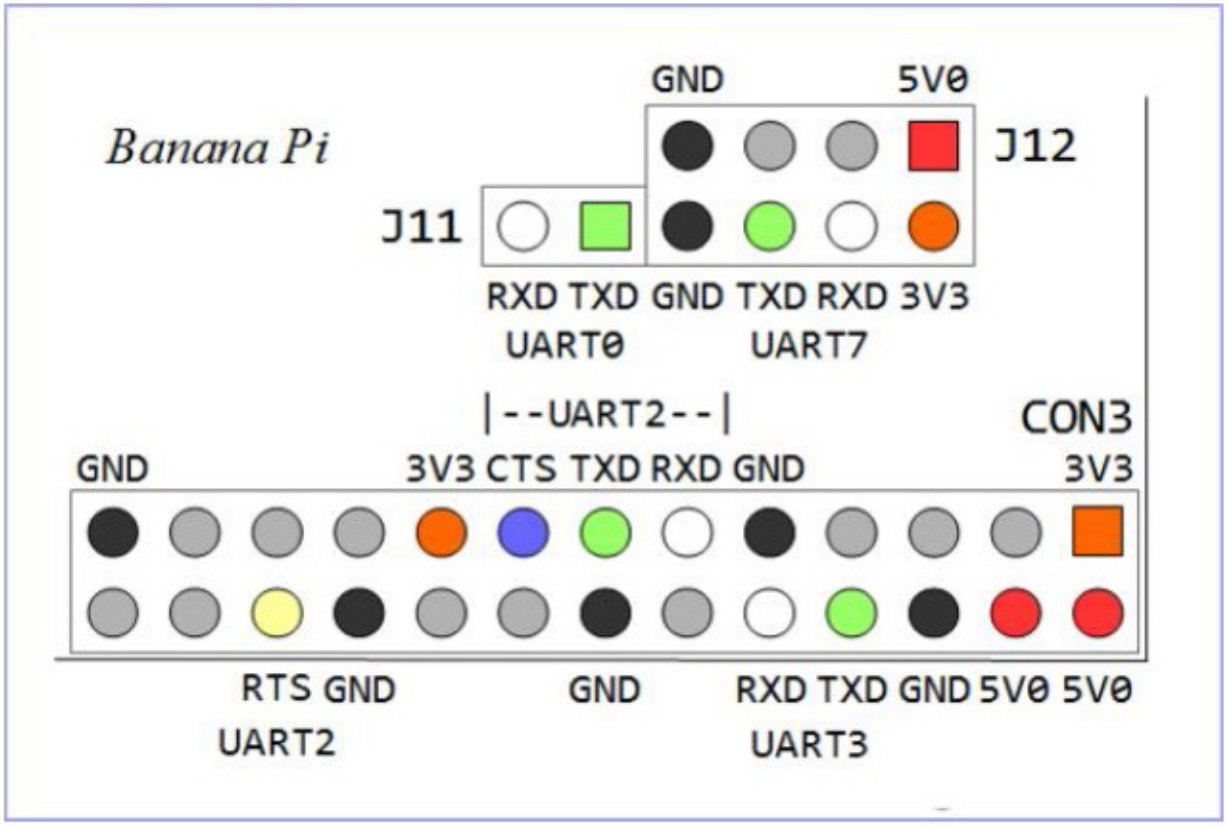
2 choose serial port

```
minicom -s
```

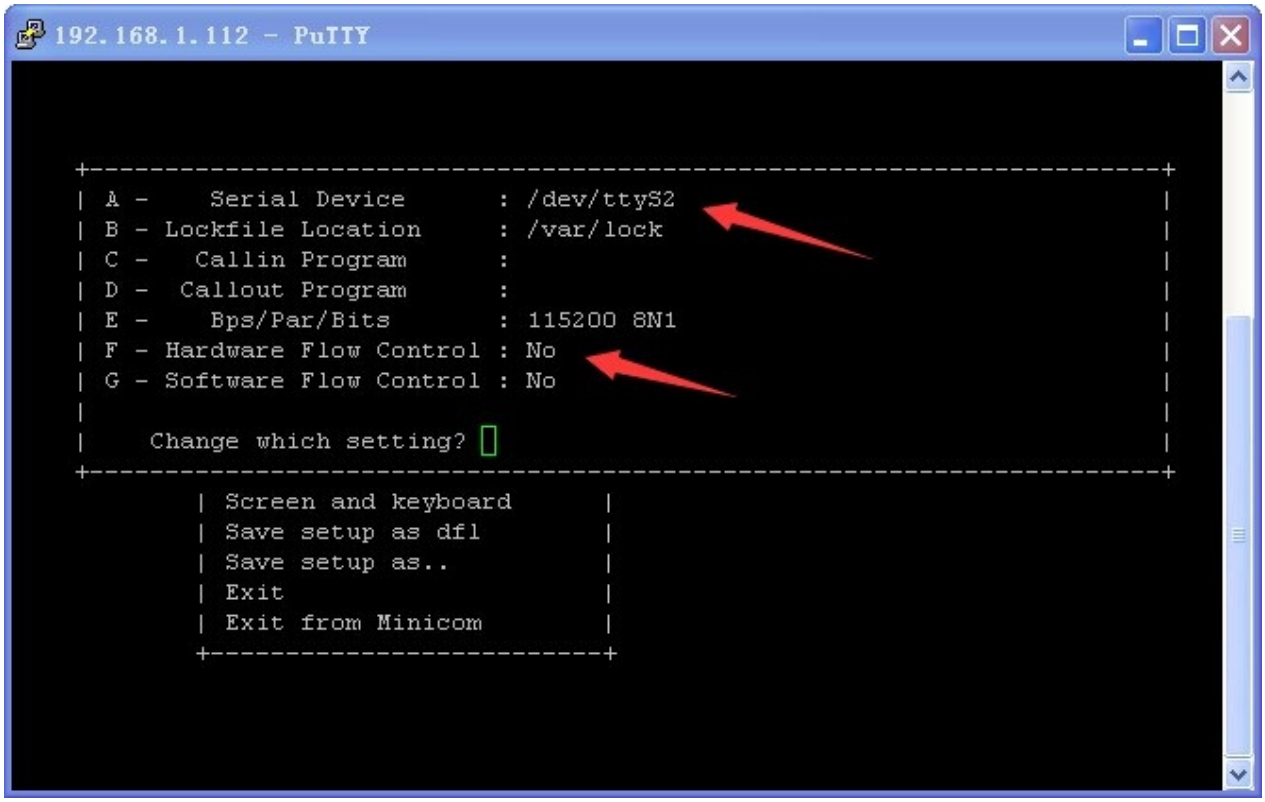


Uart port for BPI-M1

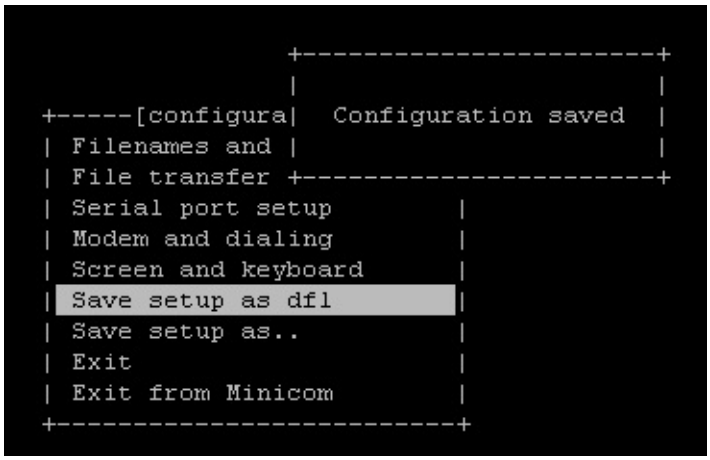
UART0 for debug, at J11, but need use GND from J12, UART1,UART3 from 26pin GPIO, UART7 is J12



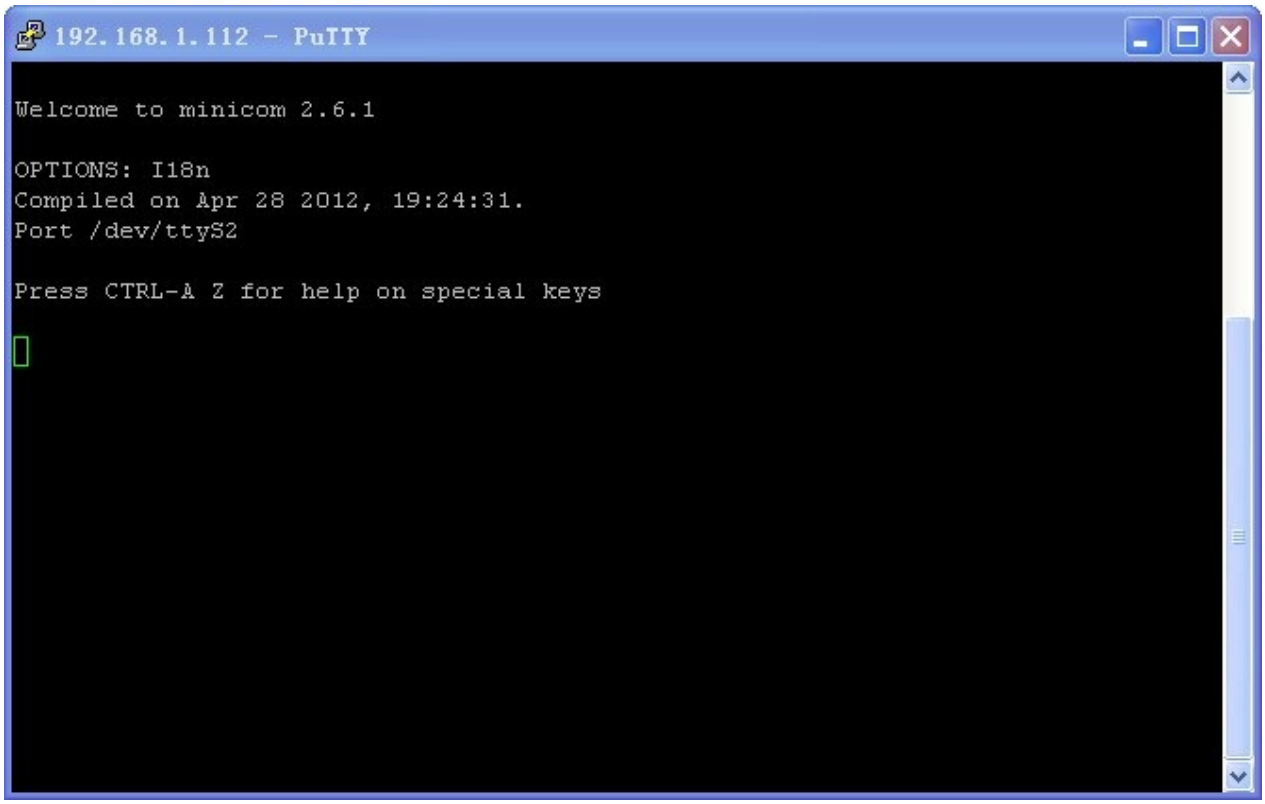
now , we test UART2 ,setting as below:



save:



exit, minicom runing:

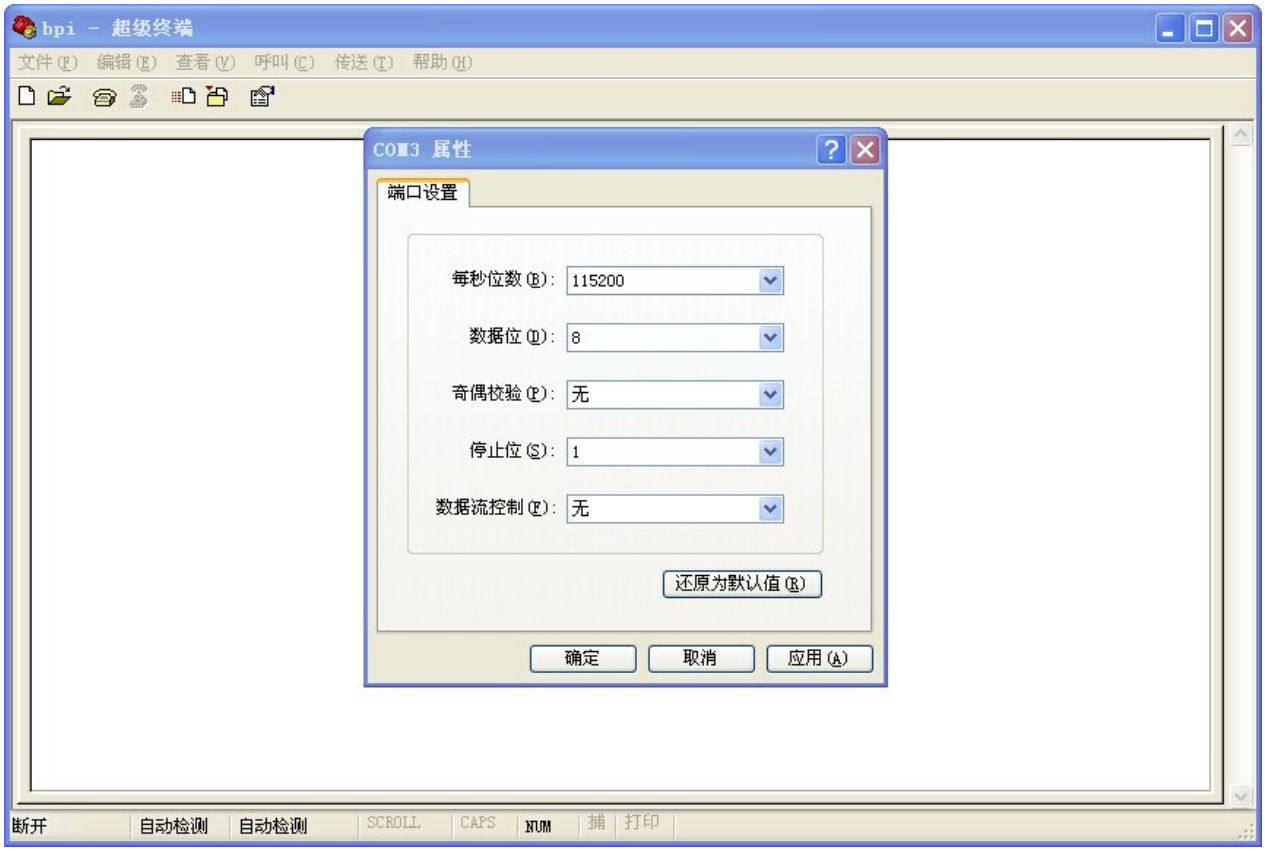


check Uart number:

```
dmesg | grep ttyS*
```

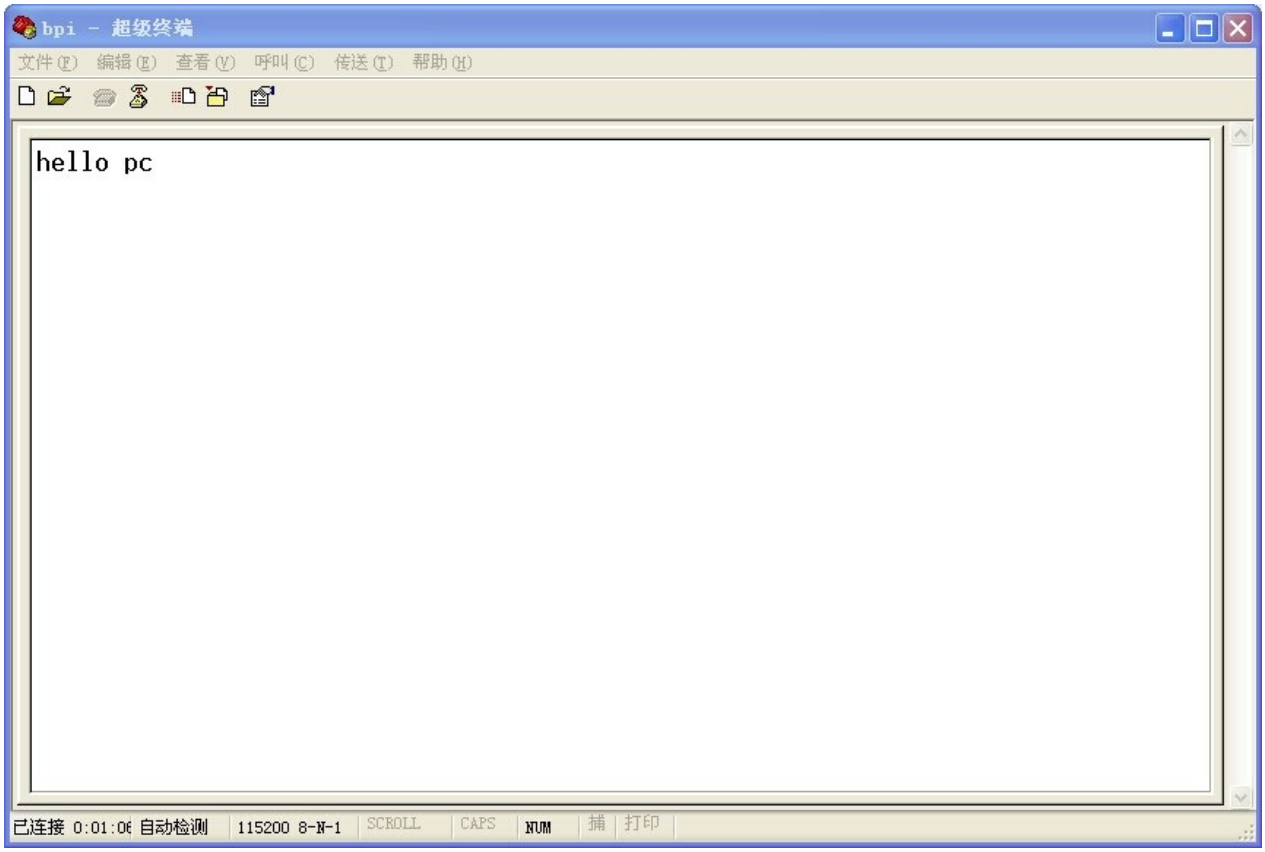
so you can see UART0 is ttyS1

3 you can use windows hyperterminal or putty on you PC，and setting the right Uart number.

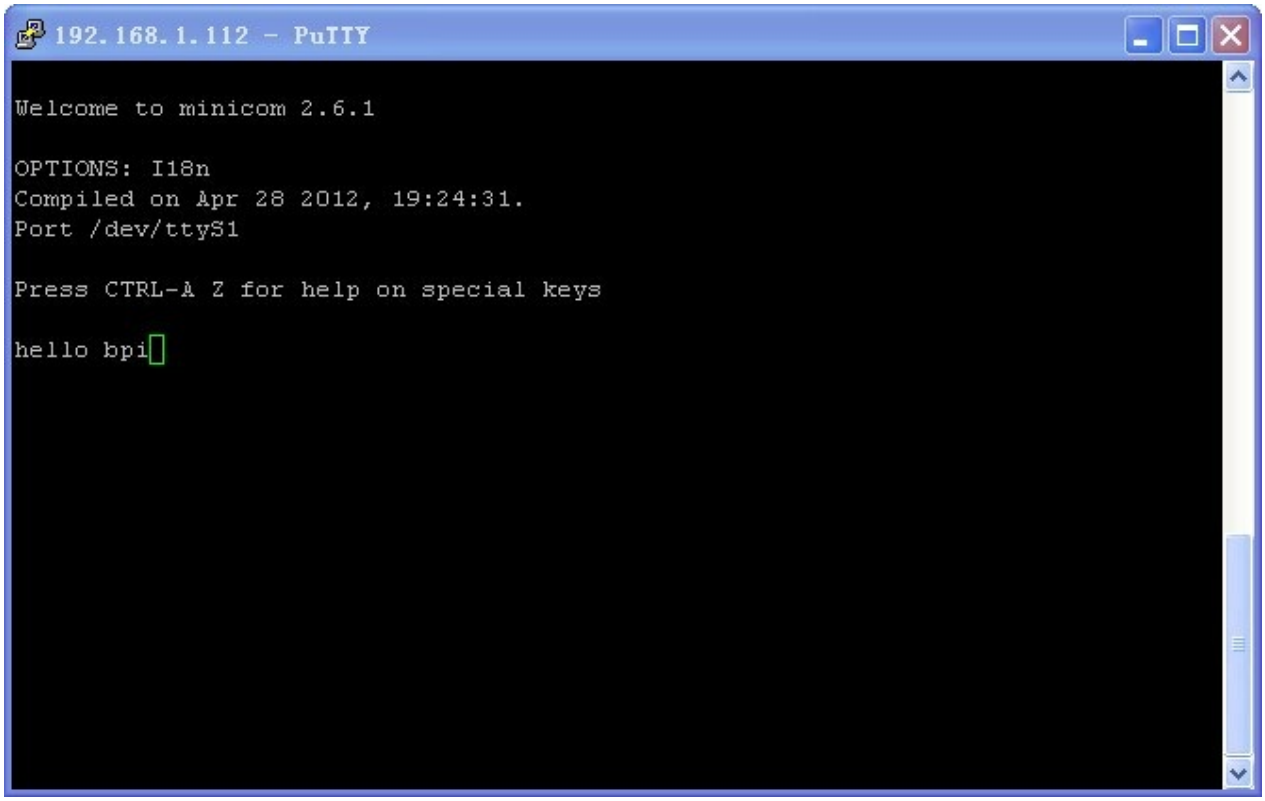


4,test function:

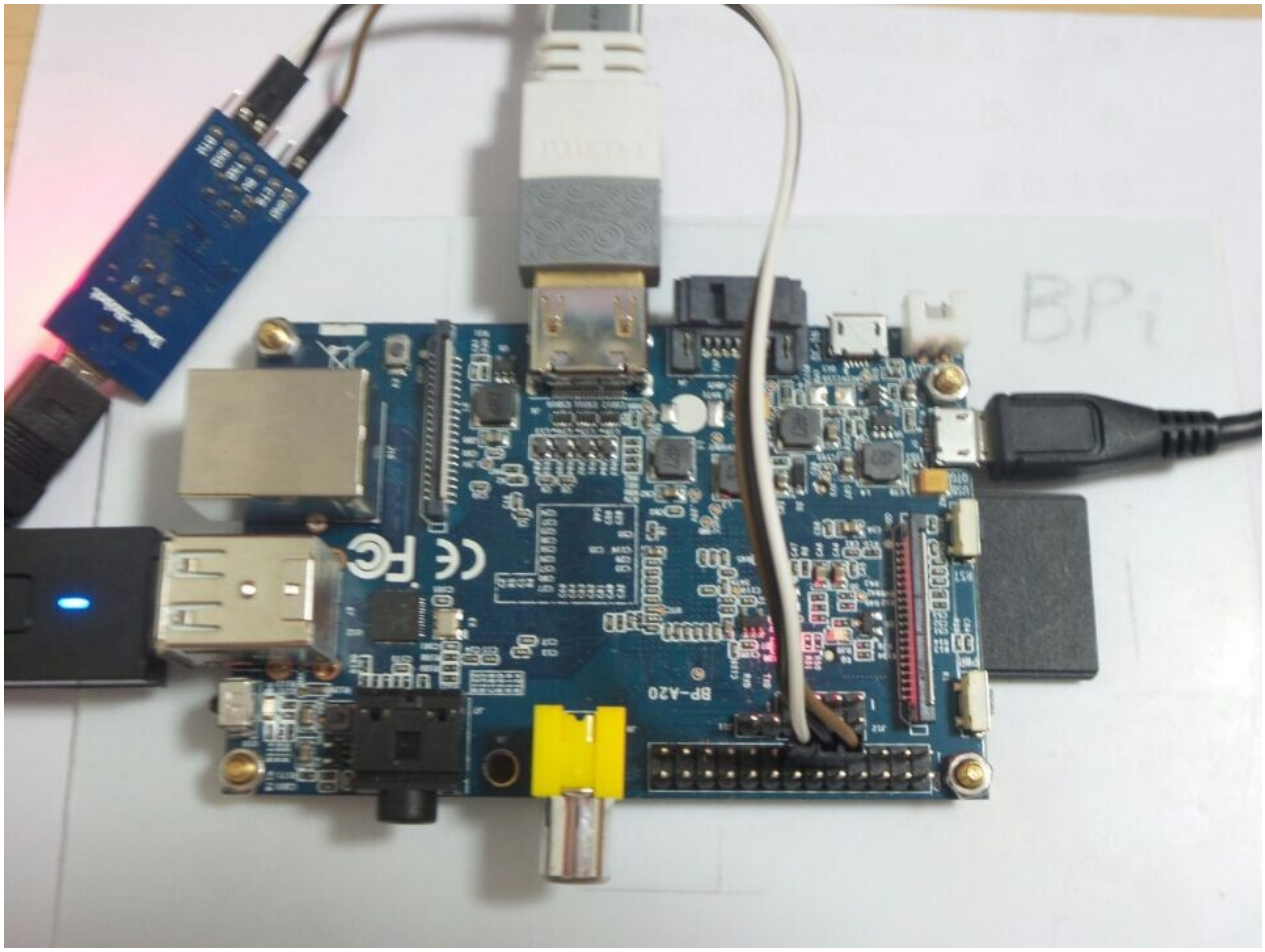
BPI-M1 send "hello, pc"



BPI-M1 receive " hello Ok"



5 you can use the same way to test UART3(ttyS2)、UART7(ttyS3).so all is working fine.



BPI-M1 DC Power interface

BPI-M1 DC power is micro USB interface. you need use 5V/2A micro USB power adapter.

BPI-M1 schematic diagram

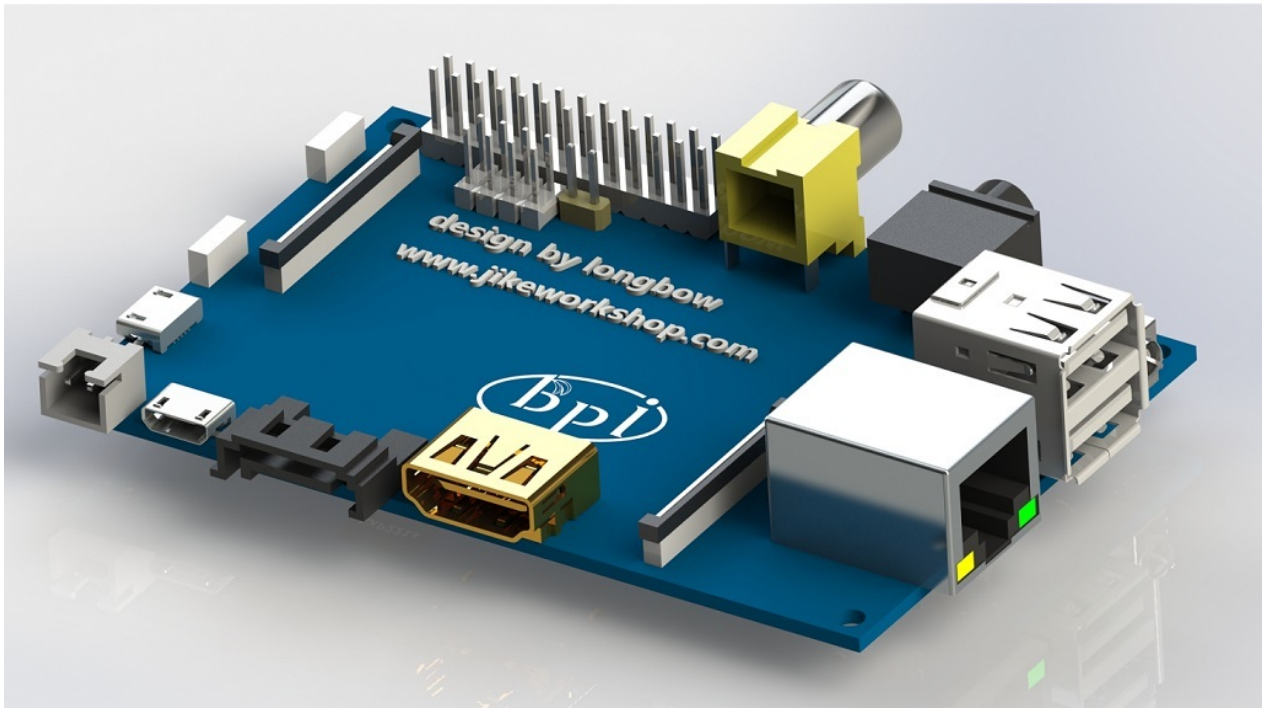
You can refer to the contents of our forum from this link:

Google driver

File name:BPI-M1 schematic.pdf

BPI-M1 DXF and 3D design

banana pi BPI-M1 have public DXF file and 3D design file ,so user can DIY case by theyself.



BPI-M1 DXF file download link:

Google driver

BPI-M1 3D design file download link:

Google driver

BPI-M1 CE FCC RoHS Certification

BPI-M1 CE Certification

GST Legal Entity: Global-Standard Testing Service Co., Ltd.
Room 1911-1914 , Noble Plaza, Qian Jin 1st Road,
Bao An 30th district, Shenzhen, Guangdong, China.
Tel : +86 755 33863798 Fax : +86 755 33863718
Website: www.gstslab.com

Global-Standard Testing

Certificate of Conformity

Certification No.	:	GST1402260088E
Applicant	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Manufacturer	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Certification Marking	:	CE-EMC
Product Description	:	Banana Pi
Model	:	BP-A20
Trademark	:	N/A

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	EN 55022: 2010 EN 55024: 2010 EN 61000-3-2:2006+A1:2009+A2:2009 EN 61000-3-3:2008

When tested as specified, the submitted sample complies with EMC Directives 2004/108/EC
The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer:
Kevin Liu/Manager
March 04, 2014

BPI-M1 FCC Certification

Legal Entity: Global-Standard Testing Service Co., Ltd.
Room 1911-1914 , Noble Plaza, Qian Jin 1st Road,
Bao An 30th district, Shenzhen, Guangdong, China.
Tel : +86 755 33863798 Fax : +86 755 33863718
Website: www.gstslab.com

Global-Standard Testing

Certificate of Conformity

Certification No.	:	GST1402260088F
Applicant	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Manufacturer	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Certification Marking	:	FCC
Product Description	:	Banana Pi
Model	:	BP-A20
Trademark	:	N/A

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	FCC Part 15 This device may not cause harmful interference and This device must accept any interference received.

The certification holder above has the right to fix FCC mark on the products complying with the specified standard.
The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

FC

Authorized Signer:
Kevin Liu/Manager
March 04, 2014

BPI-M2 RoHS Certification

Legal Entity: Global-Standard Testing Service Co., Ltd.
Room 1911-1914 , Noble Plaza, Qian Jin 1st Road,
Bao An 30th district, Shenzhen, Guangdong, China.
Tel : +86 755 33863798 Fax : +86 755 33863718
Website: www.gstslab.com

Global-Standard Testing

Certificate of Conformity

Certification No.	:	GST1402260088R
Applicant	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Manufacturer	:	SINOVOIP CO.,LIMITED
Address	:	Five-Story North Building, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen
Certification Marking	:	CE-RoHS
Product Description	:	Banana Pi
Model	:	BP-A20
Trademark	:	N/A

An independent evaluation on the above-mentioned product(s) has been conducted pursuant to 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and concluded that the equipment under evaluation met the legislative requirements of this directive.

RoHS

Authorized Signer:
Kevin Liu /Manager
March 04, 2014

BPI-M1 quick start

Step 1: Get what you need

First time to enjoy your Banana Pi, you need at least the accessories in the table below.

No.	Item	Minimum recommended specification & notes
1	MicroSD card	SD card is optional. If need to boot form SD card, Minimum size 8GB, class 10 (the class indicates how fast the card is). We recommend using branded SD cards as they are more reliable.
2	avHDMI(Full sized) to HDMI / DVI lead	HDMI to HDMI lead (for HD TVs and monitors with HDMI input).OR HDMI to DVI lead (for monitors with DVI input).
3	Keyboard and mouse	Any standard USB keyboard and mouse should work. keyboards or mice that take a lot of power from the USB ports, however, may need a powered USB hub. This may include some wireless devices.
4	Ethernet cable	Networking is optional, although it makes updating and getting new software for your Banana Pi much easier.
5	Micro USB power adapter	A good quality, USB Power supply that can provide at least 5V/2A is essential.OTG also can power the board, but it is not recommended.
6	Audio lead (Optional)	You can choose a 3.5mm jack audio led to connect to audio port to get stereo audio.
7	Mobile Hard disk (Optional)	You can choose to connect a mobile hard disk to USB port to store more files.

Base you need below:

	
HDMI to HDMI lead	HDMI to DVI lead
	
MicroSD card	USB power adapter

Step 2: Download the relevant Image file:

Please visit our webmaster: www.banana-pi.org to download image, banana pi all image can be download form this web.

Step3: Prepare your SD card for the Banana Pi

In order to enjoy your Banana Pi BPI-M3, you will need to install an Operating System (OS) onto an SD card. Instructions below will teach you how to write an OS image to your SD card under Windows os and Linux os.

1.Insert your SD card into your computer. The size of SD should be larger than the OS image size, generally 8GB or greater.

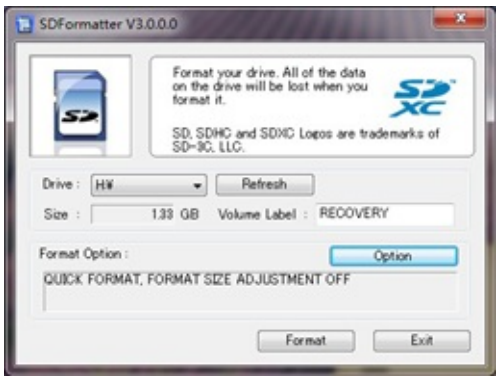
2.Format the SD card.

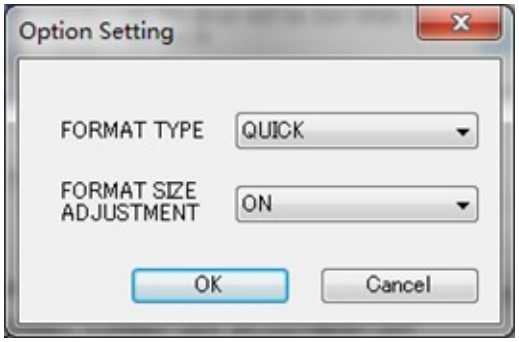
Format your SD under Windows os :

Download the a SD card format tool such as SD Formatter from https://www.sdcard.org/downloads/formatter_4/eula_windows/

*Unzip the download file and run the setup.exe to install the tool on your machine.

*In the "Options" menu, set "FORMAT TYPE" option to QUICK, "FORMAT SIZE ADJUSTMENT" option to "ON".





*Check that the SD card you inserted matches the one selected by the Tool.

*Click the “Format” button.

Format your SD under Linux os :

*Run fdisk –l command to check the SD card node.

*Run sudo fdisk /dev/sdx command to delete all partition of SD card.

*Run mkfs –t vfat /dev/sdx command to format the entire SD card as FAT. (x should be replaced according to your SD card node)

3,Download the OS image from Download district(http://www.banana-pi.org)

4.Unzip the download file to get the OS image.

Windows: Right click on the file and choose “Extract all”.

Linux: Run unzip [downloaded filename] command.

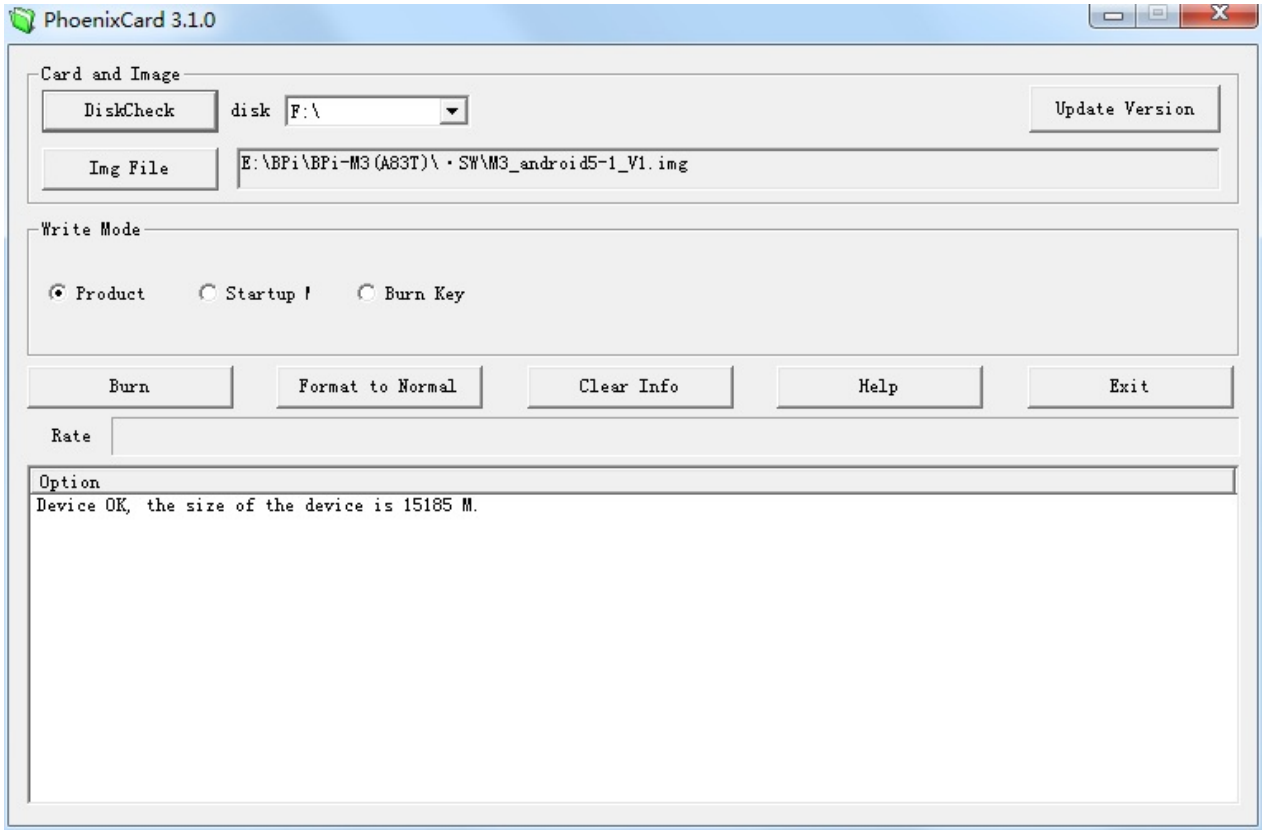
5.Write the image file to the SD card.

Android image

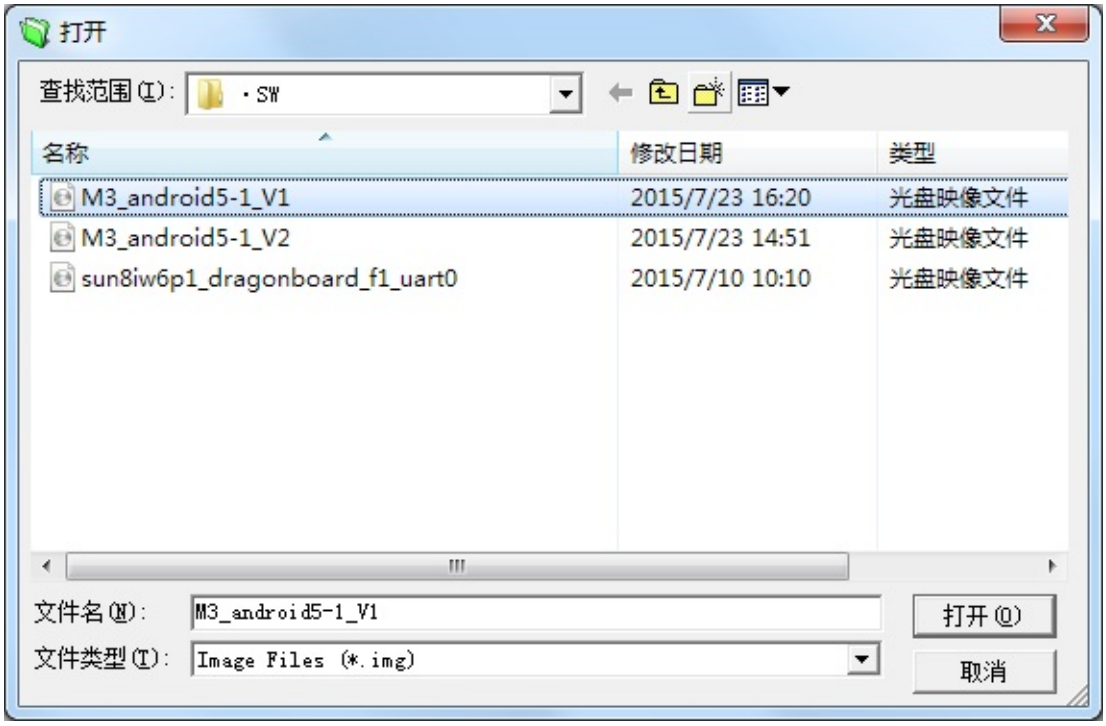
5.1 You need to use Phoenix Card to make the SD card. Download the Phoenix Card from https://drive.google.com/open?id=0BzoTh3Vdt47ffi1ld0RuWXhUVzdYdjFjaHEtMlNQWVFTRmIxcC1OQnczSTV6OGRZWG

pINU0

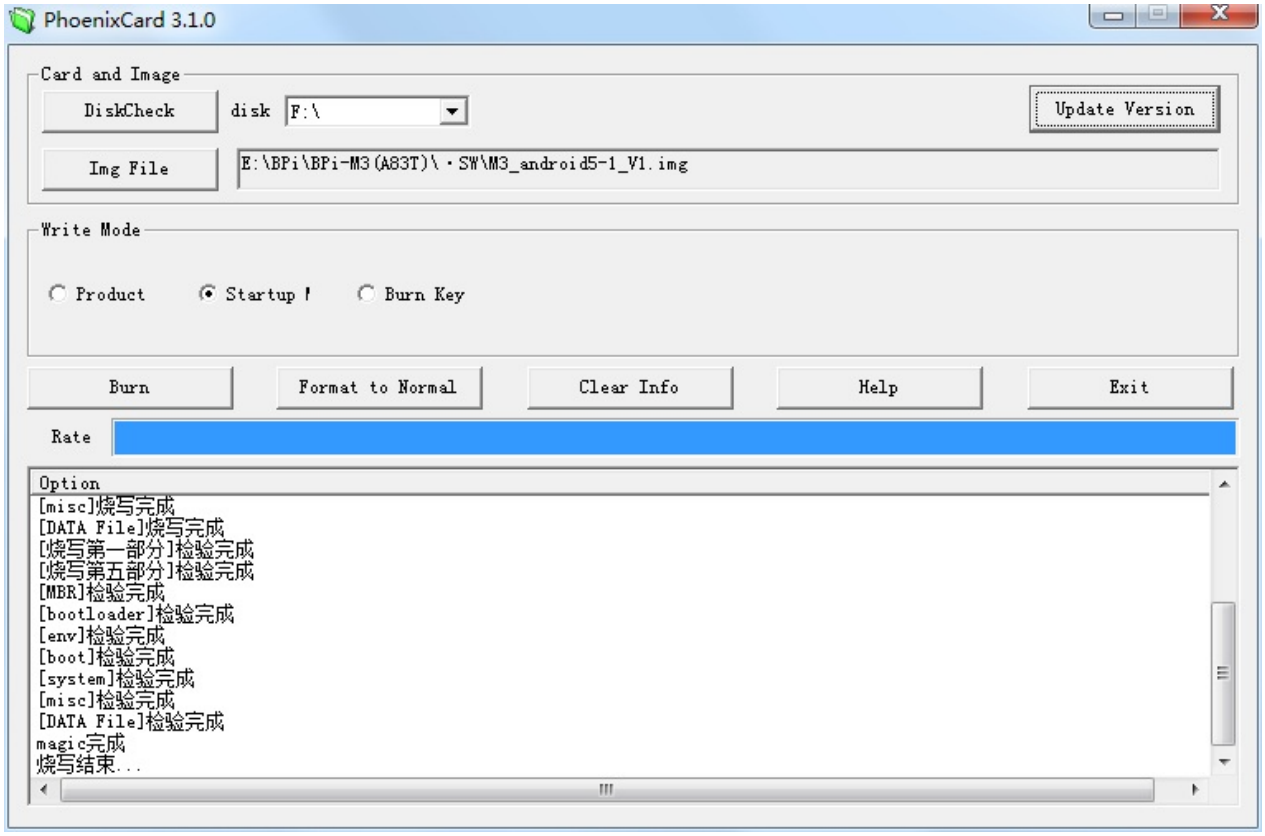
5.2 Run PhoenixCard.exe, Press “Disk Check” and select disk of SD Card.



5.3 Press “Image File” and Select system.img.



5.4 Press “Burn” to start upgrading, Upgraded complete, Press “Exit”.

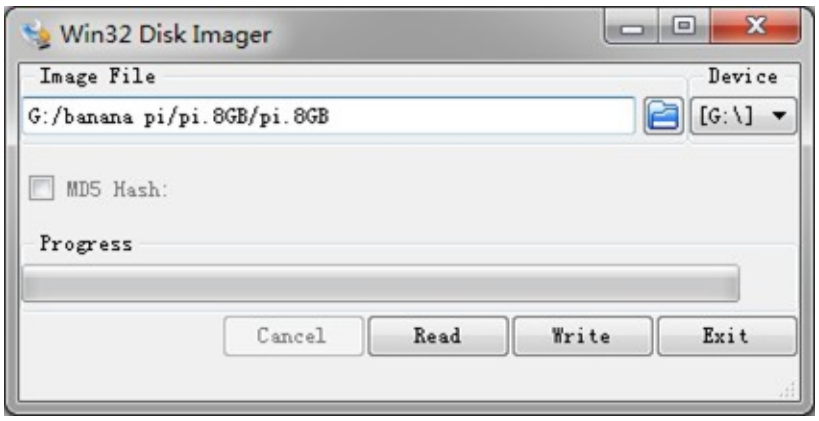


Linux image:

5.6 burun Linux image under Windows os:

*Download a tool that can wirte image to SD card, such as Win32 Diskimager from: http://sourceforge.net/projects/win32diskimager/files/Archive/

*Open the unzipped image file



*Click Write button. Wait patiently to successfully complete writing.

5.7 burun Linux image under Linux os:

*Run fdisk –l command to check the SD card node.

*Run dd if=[imagename] of=/dev/sdx command to write image file to SD card. Wait patiently to successfully complete writing.

Step4: Set up your Banana Pi M1

According to the set up diagram below, you can easily set up your Banana Pi.

1. Insert the written-image SD card that to the SD card spot on the left side edge of the underside of the board.
2. 2.On the bottom "edge" in the middle of the board is the HDMI Type A (Full sized) port.Just connect any HDMI cable from the board to your TV or HDMI Monitor.
3. Plug a USB keyboard and mouse into the USB slots located on the right edge.
4. Just under the USB ports on the right edge is the Ethernet connector for anyone who wants to plug the Banana Pi into a wired network.
5. 5.Finally, at the very left of the bottom edge is the USB power connector. Plug in a regulated power supply that is rated at 5V ±5% / 2000mA (or 2A). Any number bigger than 700 mA will also work. Avoid using the smaller chargers used for small GSM phones, as these are often unregulated, even if they claim "5V 1A", they may do "5V" and may do "1A", but not at the same time!

If all goes well, the Banana Pi will boot in a few minutes. The screen will display the OS GUI.

Step5: Shut down your Banana Pi BPI-M1

You can use the GUI to shut down the Banana Pi safely.

Also you can run the command in the terminal:

`sudo halt` or `sudo shutdown –h`

This will shut down the PI safely, (just use the power key to turn off might damage the SD-cards file system).After that you can press the power key for 5 seconds to turn it off.

If all is well ,so you can use banana pi BPI-M1 now.

Android software

Banana pi BPI-M1 support android 4.2 and android 4.4.

Image download link:

http://www.banana-pi.org/download.html

Android Mattrix XBMC/KODI Image - V3.1

share by mattrix

It's been a long time coming, but I finally got around to creating a new XBMC Image

Here are the main features:

- Latest KODI 14.0
- Auto-setup of KODI, MX Player & SMB Wrapper
- Autostart KODI on boot
- SMB Wrapper to allow playback of Network files
- 720p & 1080p Versions Available
- HIDRaw and Joystick Drivers + XPAD module loaded on boot

Both images playback videos fine, but the 720p image is quite a bit faster in the GUI. The latest KODI is now capable of playing back most videos I tried natively. However, it is still using quite a bit of CPU and may not playback everything. I therefore decided to use MX Player for playback for a more consistent user experience.

V3.1 720p (297 MB)

https://mega.nz/#!uIxBFbYY!NAlXzkLFpvEkgevM3VyHfYK6ZKfVW7MJPcAtPtqEhOc

1080p (297 MB)

https://mega.nz/#!WIhUSJZA!RfpRGGHn6L0HQF2gdDlYqQtOs-DwVNLBVVrQxltqJGw

INSTRUCTIONS:

- Unzip image & burn with PhoenixCard
- Boot, and then wait.... (about 1-2 mins)
- KODI will automatically start (signalling the end of the installation process)
- That's it.
- If using 1080p version, exit KODI and set 1080P in Android Display settings

KODI is setup to use SMB Wrapper / MX Player for network files and to use MX Player for any local files. You can easily edit or remove the playercorefactory.xml file in sdcard/Android/data/org.xbmc.kodi/files/.kodi/userdata folder. To disable KODI autostart, remove sdcard/Android/data/mattrix/autostartkodi

Here are the changes:

Changes 02/01/2015 (3.1):

- Updated to Kodi 14.0
- Replace XBMC Wrapper with SMB Wrapper

Changes 13/11/2014 (3.0):

- Update XBMC to latest Kodi
- Remove "allow unverified apps" popup on boot
- Add HDIRaw and Joystick drivers
- Load xpad module on boot
- Fix "Mobile Networks" settings option doesn't work

Changes 11/11/2014 (2.0):

- Latest 3.4.39 Kernel
- Automated setup on first boot (no copying / pasting needed - just ready to roll)
- Autoboot into XBMC
- Added XBMC Wrapper App to wrap network files as HTTP streams
- Removed SuperSu App (this can be added via Playstore if required)
- Set CPU frequency settings on boot

Changes (Initial Release - 1.0):

- Rooted
- SD Card Storage Mount Fix
- Set to stock Android Launcher
- Ethernet Default to ON
- Remove all apps (can be added back via PlayStore if required)
- Add XBMC App
- Add MX Player
- Add SuperSu App

Give it a go and let me know any suggestions / problems!

This looks promising

http://forum.kodi.tv/showthread.php?tid=155526&page=2449

Thanks,

Matt

Linux software

Banana pi have support raspbian, ubuntu,debian....linux os.

image download link:

http://www.banana-pi.org/download.html

Note: you need download BPI-M1 image.

Arch Linux

Arch Linux have official support BPI-M1,BPI-M1+

Image download and wiki page:

https://wiki.archlinux.org/index.php/Banana_Pi

Armbian Linux

Armbian Linux have official support BPI-M1,BPI-M1+

Image download and armbian forum page:

http://www.armbian.com/download/

OpenSuse

Installing the openSUSE Tumbleweed Image

- Download the latest image at http://download.opensuse.org/ports/armv7hl/tumbleweed/images/ and choose:
    1. JeOS image for a minimal system openSUSE-Tumbleweed-ARM-JeOS-bananapi.armv7l-1.12.1-*.raw.xz' or
    2. Once kernel support for the Mali GPU has been implemented, graphical options will be published as well.
- As root extract the image onto your SD-Card (replace sdX with the device name of your SD-Card). WARNING: all previous data on the SD-Card will be lost.

    ```
    xzcat [image].raw.xz | dd bs=4M of=/dev/sdX; sync
    ```

- Insert the SD-Card with the openSUSE image into your Banana Pi.
- Connect the Banana Pi to your PC via serial port.
- Power on the Banana Pi.
- Walk through the first boot steps on the serial console.
- Have a lot of fun...

more please see : https://en.opensuse.org/HCL:BananaPi

Bananian Linux

Bananian Linux is a pre-installed Debian 8 image optimized for Banana Pi/Pro. It uses the official Debian Jessie armhf repositories with a kernel and bootmanager (u-boot), customized for Banana Pi.

A Debian 7/Wheezy image (Bananian 15.04) is also available and maintained.

We support the Banana Pi (M1, M1+), Banana Pro and BPI-R1 with just one single image.

The main focus is to provide a lightweight headless platform for home servers, small webservers, ownCloud hosting, Linux based wifi access points, router, NAS systems, monitoring devices, etc.

Official web for image download and support:

https://www.bananian.org/

OpenWRT

OpenWRT have support BPI-M1,BPI-M1+,BPI-R1

BPI-R1_OpenWrt_V4.0

MD5: CB597EE79A6E27630AD7F903D23C4A7B

http://pan.baidu.com/s/1mg8Gjna

https://drive.google.com/file/d/0B3EGHv0FSPOGeHJNdmVXS3UtMUU/view?usp=sharing

source Code on github:

https://github.com/BPI-SINOVOIP/BPI-OpenWRT

Officeal OpenWRT

WIFI for Officeal OpenWRT

https://wiki.openwrt.org/toh/lemaker/bananapi

image download

https://downloads.openwrt.org/chaos_calmer/15.05/sunxi/generic/uboot-sunxi-Bananapi/

How to build OpenWRT image from github

we test it with deepin2014(base on ubuntu14.04)

1,install depend package :

```
apt-get install subversion build-essential libncurses5-dev zlib1g-dev gawk git ccache get
```

2,get openwrt source code

```
git clone https://github.com/BPI-SINOVOIP/BPI-OpenWRT.git
```

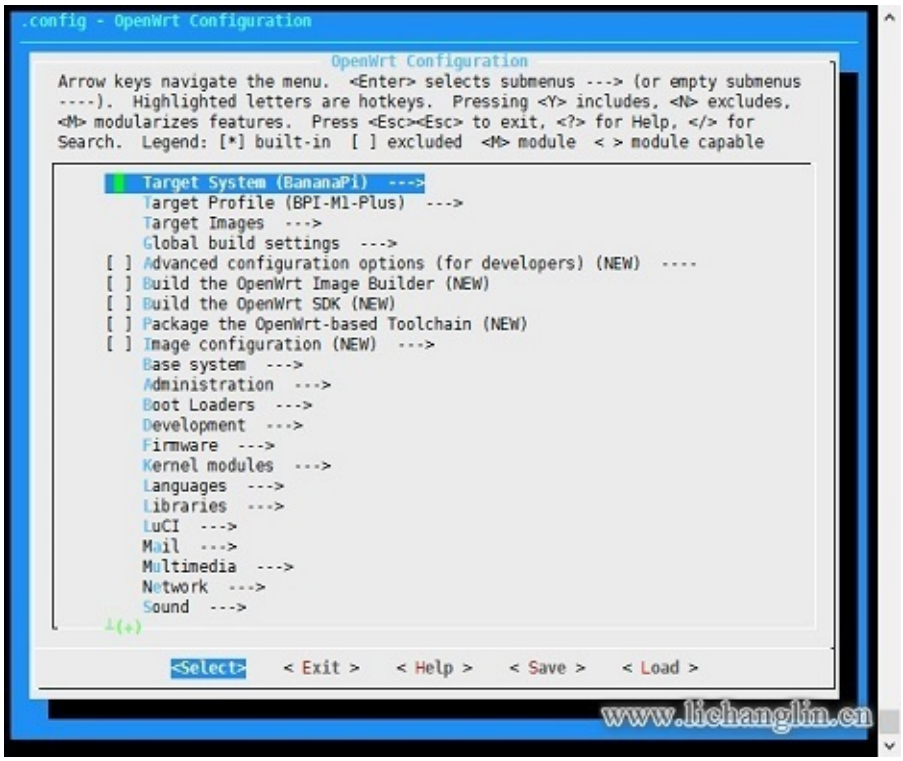
3,enter openwrt dir:

```
cd BPI-OpenWRT
```

4,update package and install

```
./scripts/feeds update -a
./scripts/feeds install -a
```

5 Enter the customization interface:



please choose your need:

Target System default is BananaPi，its the only choice on that matte.，Please change the device selection under Target Profile. The OpenWrt image supports M1, M1+ and R1.

example : i need web and add chinese support

```
LuCI—> 1. Collections  ---> <*> luci  add Luci support , it mean web GUI support, it is de
LuCI—>2. Modules  ---> <*> luci-i18n-chinese   add chinese also you can choose others.
```

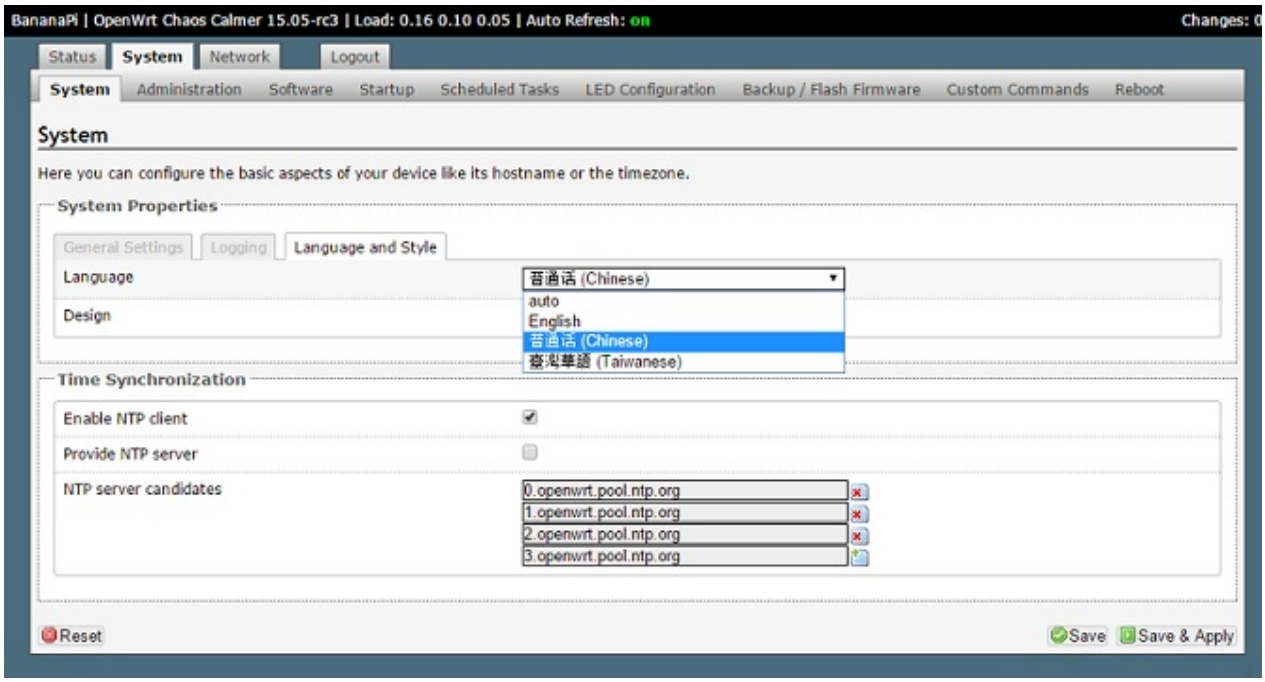
6 Make ,you can add V=s to see more message ,also add -j4 to use quad core to work .

```
make
```

when compile finish bin/sunxi/ dir have a image，file name：openwrt-sunxi-BPI-XX-sdcard-vfat-ext4.img，i compile is BPI-R1，so name is ：openwrt-sunxi-BPI-R1-sdcard-vfat-ext4.img，

7, use USB Image Tool(http://www.alexpage.de/) burn image to sd，insert BPI and booting it.

8 running ：



9 Kernel booting message display:

```
[    0.000000] Booting Linux on physical CPU 0x0
[    0.000000] Linux version 3.18.19 (charli@charli-pc) (gcc version 4.8.3 (OpenWrt/Linar
[    0.000000] CPU: ARMv7 Processor [410fc074] revision 4 (ARMv7), cr=10c5387d
```

```
[    0.000000] CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache
[    0.000000] Machine model: BPI R1
[    0.000000] Memory policy: Data cache writealloc
[    0.000000] On node 0 totalpages: 260096
[    0.000000] free_area_init_node: node 0, pgdat c0503740, node_mem_map ef00a000
[    0.000000]   Normal zone: 1520 pages used for memmap
[    0.000000]   Normal zone: 0 pages reserved
[    0.000000]   Normal zone: 194560 pages, LIFO batch:31
[    0.000000]   HighMem zone: 512 pages used for memmap
[    0.000000]   HighMem zone: 65536 pages, LIFO batch:15
[    0.000000] psci: probing for conduit method from DT.
[    0.000000] psci: Using PSCI v0.1 Function IDs from DT
[    0.000000] PERCPU: Embedded 9 pages/cpu @eefe1000 s6272 r8192 d22400 u36864
[    0.000000] pcpu-alloc: s6272 r8192 d22400 u36864 alloc=9*4096
[    0.000000] pcpu-alloc: [0] 0 [0] 1
[    0.000000] Built 1 zonelists in Zone order, mobility grouping on.  Total pages: 25857
[    0.000000] Kernel command line: console=ttyS0,115200 earlyprintk rootwait root=/dev/m
[    0.000000] PID hash table entries: 4096 (order: 2, 16384 bytes)
[    0.000000] Dentry cache hash table entries: 131072 (order: 7, 524288 bytes)
[    0.000000] Inode-cache hash table entries: 65536 (order: 6, 262144 bytes)
[    0.000000] Memory: 1025388K/1040384K available (3811K kernel code, 169K rwdata, 1068K
[    0.000000] Virtual kernel memory layout:
[    0.000000]     vector  : 0xffff0000 - 0xffff1000   (   4 kB)
[    0.000000]     fixmap  : 0xffc00000 - 0xffe00000   (2048 kB)
[    0.000000]     vmalloc : 0xf0000000 - 0xff000000   ( 240 MB)
[    0.000000]     lowmem  : 0xc0000000 - 0xef800000   ( 760 MB)
[    0.000000]     pkmap   : 0xbfe00000 - 0xc0000000   (   2 MB)
[    0.000000]     modules : 0xbf000000 - 0xbfe00000   (  14 MB)
[    0.000000]       .text : 0xc0008000 - 0xc04cbef4   (4880 kB)
[    0.000000]       .init : 0xc04cc000 - 0xc04fe000   ( 200 kB)
[    0.000000]       .data : 0xc04fe000 - 0xc0528738   ( 170 kB)
[    0.000000]        .bss : 0xc0528738 - 0xc05c0048   ( 607 kB)
[    0.000000] SLUB: HWalign=64, Order=0-3, MinObjects=0, CPUs=2, Nodes=1
[    0.000000] Preemptible hierarchical RCU implementation.
[    0.000000]     RCU restricting CPUs from NR_CPUS=4 to nr_cpu_ids=2.
[    0.000000] RCU: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=2
[    0.000000] NR_IRQS:16 nr_irqs:16 16
[    0.000000] Architected cp15 timer(s) running at 24.00MHz (phys).
[    0.000009] sched_clock: 56 bits at 24MHz, resolution 41ns, wraps every 2863311519744n
[    0.000022] Switching to timer-based delay loop, resolution 41ns
[    0.000352] sched_clock: 32 bits at 24MHz, resolution 41ns, wraps every 178956969942ns
[    0.000510] sched_clock: 32 bits at 160MHz, resolution 6ns, wraps every 26843545593ns
[    0.000673] Console: colour dummy device 80x30
[    0.000702] Calibrating delay loop (skipped), value calculated using timer frequency..
[    0.000718] pid_max: default: 32768 minimum: 301
[    0.000824] Mount-cache hash table entries: 2048 (order: 1, 8192 bytes)
[    0.000837] Mountpoint-cache hash table entries: 2048 (order: 1, 8192 bytes)
[    0.001454] CPU: Testing write buffer coherency: ok
[    0.001761] /cpus/cpu@0 missing clock-frequency property
[    0.001778] /cpus/cpu@1 missing clock-frequency property
[    0.001791] CPU0: thread -1, cpu 0, socket 0, mpidr 80000000
[    0.001847] Setting up static identity map for 0x40011b68 - 0x40011b9c
[    0.060422] CPU1: Booted secondary processor
```

```
[    0.060466] CPU1: thread -1, cpu 1, socket 0, mpidr 80000001
[    0.060535] Brought up 2 CPUs
[    0.060557] SMP: Total of 2 processors activated (96.00 BogoMIPS).
[    0.060564] CPU: All CPU(s) started in HYP mode.
[    0.060569] CPU: Virtualization extensions available.
[    0.064967] VFP support v0.3: implementor 41 architecture 2 part 30 variant 7 rev 4
[    0.065370] pinctrl core: initialized pinctrl subsystem
[    0.065762] regulator-dummy: no parameters
[    0.071879] NET: Registered protocol family 16
[    0.072229] DMA: preallocated 256 KiB pool for atomic coherent allocations
[    0.111482] reg-fixed-voltage ahci-5v: could not find pctldev for node /soc@01c00000/p
[    0.111521] platform ahci-5v: Driver reg-fixed-voltage requests probe deferral
[    0.111550] reg-fixed-voltage usb1-vbus: could not find pctldev for node /soc@01c00000
[    0.111565] platform usb1-vbus: Driver reg-fixed-voltage requests probe deferral
[    0.111589] reg-fixed-voltage usb2-vbus: could not find pctldev for node /soc@01c00000
[    0.111603] platform usb2-vbus: Driver reg-fixed-voltage requests probe deferral
[    0.111817] vcc3v0: 3000 mV
[    0.112040] vcc3v3: 3300 mV
[    0.112264] vcc5v0: 5000 mV
[    0.112345] reg-fixed-voltage gmac-3v3: could not find pctldev for node /soc@01c00000/
[    0.112362] platform gmac-3v3: Driver reg-fixed-voltage requests probe deferral
[    0.112811] SCSI subsystem initialized
[    0.112885] libata version 3.00 loaded.
[    0.113197] usbcore: registered new interface driver usbfs
[    0.113274] usbcore: registered new interface driver hub
[    0.113403] usbcore: registered new device driver usb
[    0.113546] pps_core: LinuxPPS API ver. 1 registered
[    0.113553] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giom
[    0.113584] PTP clock support registered
[    0.114654] Switched to clocksource arch_sys_counter
[    0.121779] NET: Registered protocol family 2
[    0.122818] TCP established hash table entries: 8192 (order: 3, 32768 bytes)
[    0.122902] TCP bind hash table entries: 8192 (order: 4, 65536 bytes)
[    0.123024] TCP: Hash tables configured (established 8192 bind 8192)
[    0.123105] TCP: reno registered
[    0.123122] UDP hash table entries: 512 (order: 2, 16384 bytes)
[    0.123179] UDP-Lite hash table entries: 512 (order: 2, 16384 bytes)
[    0.123443] NET: Registered protocol family 1
[    0.124957] futex hash table entries: 512 (order: 3, 32768 bytes)
[    0.125108] audit: initializing netlink subsys (disabled)
[    0.125185] audit: type=2000 audit(0.110:1): initialized
[    0.133939] VFS: Disk quotas dquot_6.5.2
[    0.134207] Dquot-cache hash table entries: 1024 (order 0, 4096 bytes)
[    0.135970] squashfs: version 4.0 (2009/01/31) Phillip Lougher
[    0.135994] jffs2: version 2.2 (NAND) (SUMMARY) (LZMA) (RTIME) (CMODE_PRIORITY) (c) 20
[    0.136719] msgmni has been set to 1490
[    0.138903] bounce: pool size: 64 pages
[    0.138931] io scheduler noop registered
[    0.138946] io scheduler deadline registered
[    0.138996] io scheduler cfq registered (default)
[    0.139318] platform 1c13400.phy: Driver sun4i-usb-phy requests probe deferral
[    0.142025] sun7i-a20-pinctrl 1c20800.pinctrl: initialized sunXi PIO driver
[    0.184985] Serial: 8250/16550 driver, 8 ports, IRQ sharing disabled
```

```
[    0.187319] console [ttyS0] disabled
[    0.207743] 1c28000.serial: ttyS0 at MMIO 0x1c28000 (irq = 33, base_baud = 1500000) is
[    0.828354] console [ttyS0] enabled
[    0.854828] 1c28c00.serial: ttyS1 at MMIO 0x1c28c00 (irq = 36, base_baud = 1500000) is
[    0.886744] 1c29c00.serial: ttyS2 at MMIO 0x1c29c00 (irq = 52, base_baud = 1500000) is
[    0.899279] platform 1c50000.ethernet: Driver stmmaceth requests probe deferral
[    0.906754] ehci_hcd: USB 2.0 'Enhanced' Host Controller (EHCI) Driver
[    0.913282] ehci-platform: EHCI generic platform driver
[    0.918683] platform 1c14000.usb: Driver ehci-platform requests probe deferral
[    0.926000] platform 1c1c000.usb: Driver ehci-platform requests probe deferral
[    0.933320] ohci_hcd: USB 1.1 'Open' Host Controller (OHCI) Driver
[    0.939546] ohci-platform: OHCI generic platform driver
[    0.944901] platform 1c14400.usb: Driver ohci-platform requests probe deferral
[    0.952185] platform 1c1c400.usb: Driver ohci-platform requests probe deferral
[    0.959587] usbcore: registered new interface driver usb-storage
[    0.965867] mousedev: PS/2 mouse device common for all mice
[    0.971551] 1c22800.lradc supply vref not found, using dummy regulator
[    0.978474] input: 1c22800.lradc as /devices/soc@01c00000/1c22800.lradc/input/input0
[    0.991771] axp20x-regulator axp20x-regulator: regulators node not found
[    0.998630] LDO1: 1300 mV
[    1.001767] LDO2: at 3000 mV
[    1.005157] LDO3: at 2275 mV
[    1.008294] LDO4: at 2800 mV
[    1.011695] LDO5: at 2800 mV
[    1.015085] DCDC2: at 1400 mV
[    1.018533] DCDC3: at 1250 mV
[    1.021668] axp20x 0-0034: AXP20X driver loaded
[    1.027508] sunxi-wdt 1c20c90.watchdog: Watchdog enabled (timeout=16 sec, nowayout=0)
[    1.036066] sunxi-mmc 1c0f000.mmc: No vqmmc regulator found
[    1.041994] sunxi-mmc 1c0f000.mmc: Got CD GPIO
[    1.084877] sunxi-mmc 1c0f000.mmc: base:0xf00fa000 irq:64
[    1.092685] sunxi-ss 1c15000.crypto-engine: Die ID 0
[    1.099853] TCP: cubic registered
[    1.103201] Initializing XFRM netlink socket
[    1.107611] NET: Registered protocol family 17
[    1.112178] bridge: automatic filtering via arp/ip/ip6tables has been deprecated. Upda
[    1.124806] 8021q: 802.1Q VLAN Support v1.8
[    1.129125] Registering SWP/SWPB emulation handler
[    1.134455] registered taskstats version 1
[    1.139223] ahci-5v: 5000 mV
[    1.142597] usb1-vbus: 5000 mV
[    1.147273] usb2-vbus: 5000 mV
[    1.150752] gmac-3v3: 3300 mV
[    1.192892] mmc0: host does not support reading read-only switch, assuming write-enabl
[    1.203577] mmc0: new high speed SDHC card at address 0001
[    1.209591] mmcblk0: mmc0:0001 00000 7.44 GiB
[    1.215221]  mmcblk0: p1 p2
[    1.264746] stmmaceth 1c50000.ethernet: no reset control found
[    1.270578]  Ring mode enabled
[    1.273630]  No HW DMA feature register supported
[    1.278179]  Normal descriptors
[    1.281500]  TX Checksum insertion supported
[    1.292504] libphy: stmmac: probed
```

```
[    1.295950] eth0: PHY ID 03625f24 at 0 IRQ POLL (stmmac-0:00) active
[    1.302298] eth0: PHY ID 03625f24 at 1 IRQ POLL (stmmac-0:01)
[    1.308050] eth0: PHY ID 03625f24 at 2 IRQ POLL (stmmac-0:02)
[    1.313789] eth0: PHY ID 03625f24 at 3 IRQ POLL (stmmac-0:03)
[    1.319538] eth0: PHY ID 03625f24 at 4 IRQ POLL (stmmac-0:04)
[    1.325287] eth0: PHY ID 03625f24 at 30 IRQ POLL (stmmac-0:1e)
[    1.331456] ehci-platform 1c14000.usb: EHCI Host Controller
[    1.337154] ehci-platform 1c14000.usb: new USB bus registered, assigned bus number 1
[    1.345031] ehci-platform 1c14000.usb: irq 71, io mem 0x01c14000
[    1.364665] ehci-platform 1c14000.usb: USB 2.0 started, EHCI 1.00
[    1.370952] usb usb1: New USB device found, idVendor=1d6b, idProduct=0002
[    1.377753] usb usb1: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[    1.384988] usb usb1: Product: EHCI Host Controller
[    1.389862] usb usb1: Manufacturer: Linux 3.18.19 ehci_hcd
[    1.395353] usb usb1: SerialNumber: 1c14000.usb
[    1.400464] hub 1-0:1.0: USB hub found
[    1.404250] hub 1-0:1.0: 1 port detected
[    1.408963] ehci-platform 1c1c000.usb: EHCI Host Controller
[    1.414564] ehci-platform 1c1c000.usb: new USB bus registered, assigned bus number 2
[    1.422482] ehci-platform 1c1c000.usb: irq 72, io mem 0x01c1c000
[    1.444681] ehci-platform 1c1c000.usb: USB 2.0 started, EHCI 1.00
[    1.450961] usb usb2: New USB device found, idVendor=1d6b, idProduct=0002
[    1.457766] usb usb2: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[    1.464991] usb usb2: Product: EHCI Host Controller
[    1.469865] usb usb2: Manufacturer: Linux 3.18.19 ehci_hcd
[    1.475355] usb usb2: SerialNumber: 1c1c000.usb
[    1.480460] hub 2-0:1.0: USB hub found
[    1.484246] hub 2-0:1.0: 1 port detected
[    1.488775] ohci-platform 1c14400.usb: Generic Platform OHCI controller
[    1.495451] ohci-platform 1c14400.usb: new USB bus registered, assigned bus number 3
[    1.503327] ohci-platform 1c14400.usb: irq 96, io mem 0x01c14400
[    1.568861] usb usb3: New USB device found, idVendor=1d6b, idProduct=0001
[    1.575669] usb usb3: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[    1.582883] usb usb3: Product: Generic Platform OHCI controller
[    1.588814] usb usb3: Manufacturer: Linux 3.18.19 ohci_hcd
[    1.594296] usb usb3: SerialNumber: 1c14400.usb
[    1.599360] hub 3-0:1.0: USB hub found
[    1.603146] hub 3-0:1.0: 1 port detected
[    1.607711] ohci-platform 1c1c400.usb: Generic Platform OHCI controller
[    1.614350] ohci-platform 1c1c400.usb: new USB bus registered, assigned bus number 4
[    1.622242] ohci-platform 1c1c400.usb: irq 97, io mem 0x01c1c400
[    1.688838] usb usb4: New USB device found, idVendor=1d6b, idProduct=0001
[    1.695643] usb usb4: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[    1.702858] usb usb4: Product: Generic Platform OHCI controller
[    1.708790] usb usb4: Manufacturer: Linux 3.18.19 ohci_hcd
[    1.714271] usb usb4: SerialNumber: 1c1c400.usb
[    1.719358] hub 4-0:1.0: USB hub found
[    1.723148] hub 4-0:1.0: 1 port detected
[    1.732286] ahci-5v: disabling
[    1.735459] vcc5v0: disabling
[    1.738427] vcc3v0: disabling
[    1.743698] EXT4-fs (mmcblk0p2): couldn't mount as ext3 due to feature incompatibiliti
[    1.752677] EXT4-fs (mmcblk0p2): couldn't mount as ext2 due to feature incompatibiliti
```

```
[    1.766260] EXT4-fs (mmcblk0p2): mounted filesystem without journal. Opts: (null)
[    1.773791] VFS: Mounted root (ext4 filesystem) readonly on device 179:2.
[    1.780839] Freeing unused kernel memory: 200K (c04cc000 - c04fe000)
[    1.804732] usb 2-1: new high-speed USB device number 2 using ehci-platform
[    1.896387] init: Console is alive
[    1.900086] init: - watchdog -
[    1.956437] usb 2-1: New USB device found, idVendor=0bda, idProduct=8178
[    1.963264] usb 2-1: New USB device strings: Mfr=1, Product=2, SerialNumber=3
[    1.970476] usb 2-1: Product: 802.11n WLAN Adapter
[    1.975289] usb 2-1: Manufacturer: Realtek
[    1.979482] usb 2-1: SerialNumber: 00e04c000001
[    2.114708] ahci-sunxi 1c18000.sata: controller can't do PMP, turning off CAP_PMP
[    2.122202] ahci-sunxi 1c18000.sata: forcing PORTS_IMPL to 0x1
[    2.128109] ahci-sunxi 1c18000.sata: AHCI 0001.0100 32 slots 1 ports 3 Gbps 0x1 impl p
[    2.137085] ahci-sunxi 1c18000.sata: flags: ncq sntf pm led clo only pio slum part ccc
[    2.146090] scsi host0: ahci_platform
[    2.150140] ata1: SATA max UDMA/133 mmio [mem 0x01c18000-0x01c18fff] port 0x100 irq 88
[    2.504668] ata1: SATA link down (SStatus 0 SControl 300)
[    2.903980] init: - preinit -
[    3.049304] b53_common: found switch: BCM53125, rev 4
[    3.064921]  RX IPC Checksum Offload disabled
[    3.069283]  No MAC Management Counters available
[    4.240130] random: mktemp urandom read with 5 bits of entropy available
[    5.044697] stmmaceth 1c50000.ethernet eth0: Link is Up - 1Gbps/Full - flow control of
[    7.303617] mount_root: mounting /dev/root
[    7.313783] EXT4-fs (mmcblk0p2): re-mounted. Opts: (null)
[    7.324800] procd: - early -
[    7.327825] procd: - watchdog -
[    8.196631] procd: - ubus -
[    9.200629] procd: - init -
[    9.740779] NET: Registered protocol family 10
[    9.750621] ip6_tables: (C) 2000-2006 Netfilter Core Team
[    9.781222] Loading modules backported from Linux version master-2015-03-09-0-g141f155
[    9.789242] Backport generated by backports.git backports-20150129-0-gdd4a670
[    9.797957] ip_tables: (C) 2000-2006 Netfilter Core Team
[    9.808055] nf_conntrack version 0.5.0 (16024 buckets, 64096 max)
[    9.895305] xt_time: kernel timezone is -0000
[    9.909554] cfg80211: Calling CRDA to update world regulatory domain
[    9.916314] cfg80211: World regulatory domain updated:
[    9.921471] cfg80211:  DFS Master region: unset
[    9.926943] cfg80211:   (start_freq - end_freq @ bandwidth), (max_antenna_gain, max_ei
[    9.936834] cfg80211:   (2402000 KHz - 2472000 KHz @ 40000 KHz), (N/A, 2000 mBm), (N/A
[    9.944963] cfg80211:   (2457000 KHz - 2482000 KHz @ 40000 KHz), (N/A, 2000 mBm), (N/A
[    9.952992] cfg80211:   (2474000 KHz - 2494000 KHz @ 20000 KHz), (N/A, 2000 mBm), (N/A
[    9.961171] cfg80211:   (5170000 KHz - 5250000 KHz @ 80000 KHz), (N/A, 2000 mBm), (N/A
[    9.969328] cfg80211:   (5250000 KHz - 5330000 KHz @ 80000 KHz, 160000 KHz AUTO), (N/A
[    9.978922] cfg80211:   (5490000 KHz - 5730000 KHz @ 160000 KHz), (N/A, 2000 mBm), (0
[    9.987125] cfg80211:   (5735000 KHz - 5835000 KHz @ 80000 KHz), (N/A, 2000 mBm), (N/A
[    9.995867] cfg80211:   (57240000 KHz - 63720000 KHz @ 2160000 KHz), (N/A, 0 mBm), (N/
[   10.033695] PPP generic driver version 2.4.2
[   10.039216] NET: Registered protocol family 24
[   10.057795] rtl8192cu: Chip version 0x11
[   10.148074] rtl8192cu: MAC address: ac:a2:13:5c:96:bf
```

```
[   10.153232] rtl8192cu: Board Type 0
[   10.164227] rtl_usb: rx_max_size 15360, rx_urb_num 8, in_ep 1
[   10.170284] rtl8192cu: Loading firmware rtlwifi/rtl8192cufw_TMSC.bin
[   10.177753] ieee80211 phy0: Selected rate control algorithm 'rtl_rc'
[   10.179863] usbcore: registered new interface driver rtl8192cu
[   11.862773] random: nonblocking pool is initialized
[   14.869421] b53_common: found switch: BCM53125, rev 4
[   14.899568]  RX IPC Checksum Offload disabled
[   14.916057]  No MAC Management Counters available
[   14.921020] IPv6: ADDRCONF(NETDEV_UP): eth0: link is not ready
[   16.864711] stmmaceth 1c50000.ethernet eth0: Link is Up - 1Gbps/Full - flow control of
[   16.872809] IPv6: ADDRCONF(NETDEV_CHANGE): eth0: link becomes ready
[  220.810635] IPv6: ADDRCONF(NETDEV_UP): br-lan: link is not ready
[  221.264426] rtl8192cu: MAC auto ON okay!
[  221.301871] rtl8192cu: Tx queue select: 0x05
[  221.725855] IPv6: ADDRCONF(NETDEV_UP): wlan0: link is not ready
[  221.734477] device wlan0 entered promiscuous mode
[  221.739510] br-lan: port 1(wlan0) entered forwarding state
[  221.745096] br-lan: port 1(wlan0) entered forwarding state
[  221.752455] IPv6: ADDRCONF(NETDEV_CHANGE): br-lan: link becomes ready
[  221.772506] IPv6: ADDRCONF(NETDEV_CHANGE): wlan0: link becomes ready
[  223.741765] br-lan: port 1(wlan0) entered forwarding state
```

Lamobo Openwrt image

OpenWrt firmware for BPI-R1 is updated, it support by Lamobo.

This firmware is built based on the OpenWrt master branch r42830.

Q&A

- I am a new BPI-R1 user, how to use this firmware?
    1. For a new user, we recommend to use the ready configured firmware. please download it from forum download page: http://elastos.org/elorg_common/Lamobo-R1/2015-01-12/openwrt-sunxi-Lamobo-R1-sdcard-vfat-ext4.img
    2. BPI-R1 accepts TF-card. Make sure your TF-card is bigger than 512MB. Using below command to generate a bootable TD-card: `$ sudo dd if=openwrt-sunxi-BPI-R1-sdcard-vfat-ext4-configured.img of=/dev/sdX bs=1MB`
    3. Notes for the ready configured firmware:
        - The login username/password are root/root.
        - The software installation source has been set to “http://elastos.org/elorg_common/Lamobo-R1/2015-01-12/”. For details please refer “/etc/opkg.conf”. If you like to install your R1 from chaos.
        - Router address is: 10.0.1.1
- If I want to use the original firmware, what can I do?
    1. The original firmware is built directly from source code. It almost does not install software, except OpenWrt base software. Please download it from:elastos.org/elorg_common/Lamobo-R1/2015-...sdcard-vfat-ext4.img.
    2. Prepare a TTL thread for to connent OpenWrt bash terminal.
    3. Connect to OpenWrt terminal throught TTL thread, modify OpenWrt packages source. All Of OpenWrt packages is released on:

```
elastos.org/elorg_common/Lamobo-R1/2014-01-12/packages. You can change opkg.conf
src/gz chaos_calmer_base http://elastos.org/elorg_common/Lamobo-R1/2014-01-12/pa
src/gz chaos_calmer_luci http://elastos.org/elorg_common/Lamobo-R1/2014-01-12/pa
src/gz chaos_calmer_management http://elastos.org/elorg_common/Lamobo-R1/2014-01
src/gz chaos_calmer_packages http://elastos.org/elorg_common/Lamobo-R1/2014-01-1
src/gz chaos_calmer_routing http://elastos.org/elorg_common/Lamobo-R1/2014-01-12
src/gz chaos_calmer_telephony http://elastos.org/elorg_common/Lamobo-R1/2014-01-
```

    And then, update opkg database: $ opkg update

4. Install OpenWrt packages. The below packages are needed:

```
$ opkg install kmod-b53
$ opkg install kmod-rtl*
$ opkg install hostapd
$ opkg install wpa-supplicant
$ opkg install luci-proto-ppp
$ opkg install ppp-mod-pptp
$ opkg install luci
$ opkg install luci-theme-bootstrap
```

   Full package list please refer: kingone.elastos.org/2015/01/13/lamobo-r1-package-list/

5. Modify the network config.Append below text to “/etc/config/network”:

```
config switch ‘eth0'
option enable ’1'
option enable_vlan ’1'
option reset ’1'

config interface ‘lan’
option proto ‘static’
option ipaddr ’10.0.1.1'
option netmask ’255.255.255.0'
option defaultroute ’0'
option peerdns ’0'
option nat ’1'
option ifname ‘eth0.1'
option type ‘bridge’

config switch_vlan
option device ‘eth0'
option ports ’0 1 2 4 8t’
option vlan ’1'

config interface ‘wan’
option ifname ‘eth0.2'
option proto ‘dhcp’

config switch_vlan
option device ‘eth0'
option vlan ’2'
option ports ’3 8t’
```

start router web server:

```
$ /etc/init.d/uhttpd start
$ /etc/init.d/uhttpd enable
```

That’s all. Good luck!

forum discuss link:

http://www.bananapi.com/index.php/forum/general/417-banana-pi-bpi-r1-openwrt-image-2-0-release-note#1229

Wiki link:

http://wiki.geiges.net/doku.php?id=openwrt_bpi-r1

Asterisk for VOIP

Asterisk is a software implementation of a telephone private branch exchange (PBX); it was created in 1999 by Mark Spencer of Digium. Like any PBX, it allows attached telephones to make calls to one another, and to connect to other telephone services, such as the public switched telephone network (PSTN) and Voice over Internet Protocol (VoIP) services. Its name comes from the asterisk symbol:

Source: Wikipedia

https://en.wikipedia.org/wiki/Asterisk_%28PBX%29

Asterisk is like a box of Legos for people who want to create communications applications. It includes all the building blocks needed to create a PBX, an IVR system, a conference bridge and virtually any other communications app you can imagine.

Source: Official Asterix Website:http://www.asterisk.org/

Banana Pi is a single-board computer built with ARM Cortex-A7 Dual-core (Allwinner A20 based) CPU and Mali400MP2 GPU, and open source software, Banana Pi can serve as a platform to make lots of applications for different purposes.

This is a project dedicated to Asterisk and FreePBX running on the banana pi. more message ,please visit: http://dostmuhammad.com/asterix-for-banana-pi-freepbx-img-file-for-banana-pi-included/

http://www.banana-pi.org download webpage also have image download.

OpenMediaVault for BPI-M1

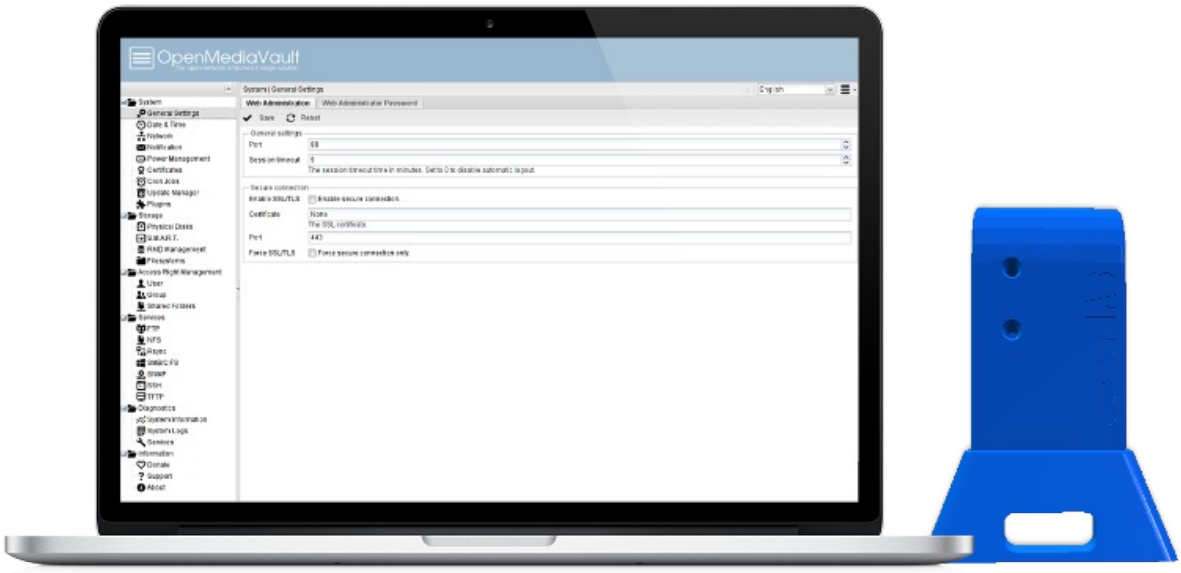
OpenMediaVault is a next generation Network Attached Storage (NAS) solution based on Debian Linux (BanaNAS based on Raspbian). It contains services like SSH, (S)FTP, SMB/CIFS, DAAP media server, RSync, BitTorrent client and many more. Thanks to the modular design of the framework ,it can be enhanced using various plug-ins.

website link:

http://www.openmediavault.org/

Image for Banana Pi is based on Debian/Linux. Image already have instaled OpenMediaVault software and includes omv-extras.org reposytory for larger base of plugins.

System image requires at least 8GB SD card.



Download link:

for Banana Pi BPI-M1 http://simplenas.com/download/banana-pi-m1

for Banana pi BPI-M1+ http://simplenas.com/download/banana-m1p

discuss forum:

http://forums.openmediavault.org/index.php/Thread/5667-OMV-on-Banana-Pi-BanaNAS/

RaspBSD on BPI-M1

RaspBSD is a volunteer project headed by FreeBSD Committer Brad Davis (brd@).

The Goal of this project is to build images easily useable by anyone. Sometimes that means images preloaded with different packages to help new users get started. Initially they will start off pretty basic, but will expand in different directions to support different goals. Initial goals include Education and Entertainment. All of our images are built using publicly available tools and any enhancements will be pushed upstream.

If you like what we are doing, please consider donating to the FreeBSD Foundation

Image for banana pi BPI-M1

http://raspbsd.org/bananapi.html

BPI-M1 WiringPi

install BPI-M1 WiringPi:

1，Download WiringPi from github For BPI-M1

```
git clone https://github.com/BPI-SINOVOIP/BPI-WiringPi.git -b BPI_M1
```

2，Installation：

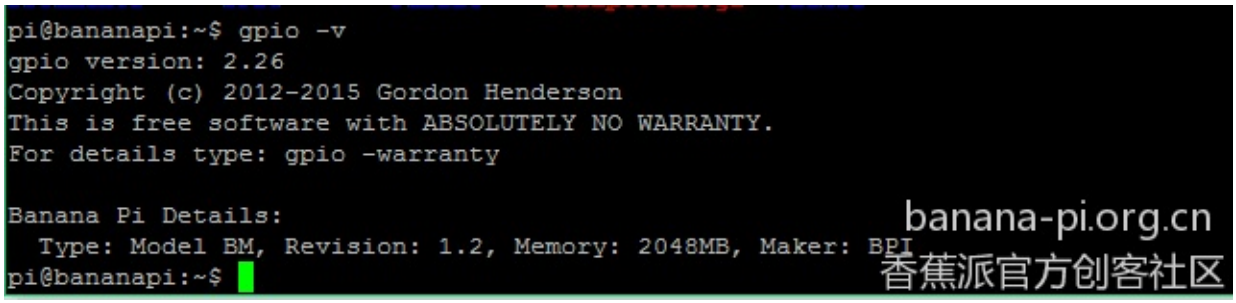
```
cd BPI-WiringPi
```

```
chmod +x ./build
```

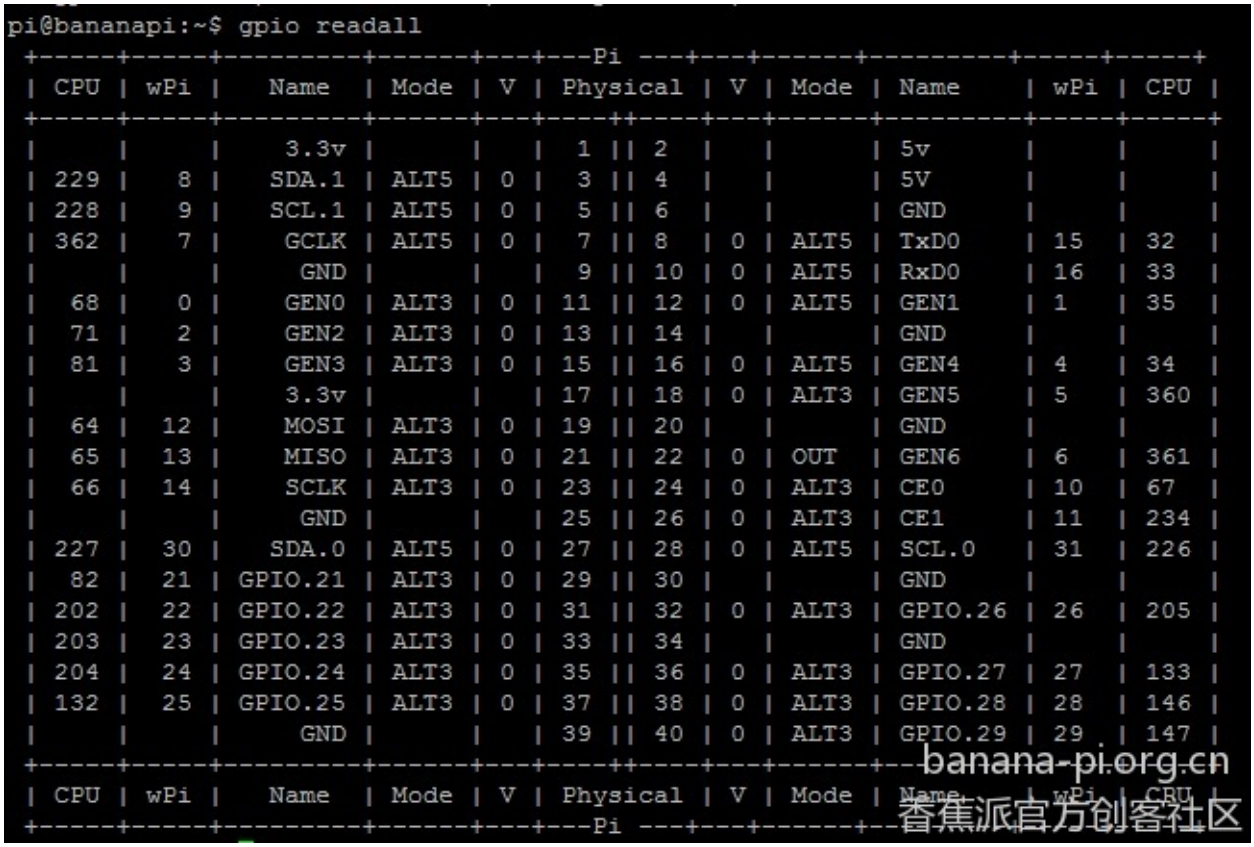
```
sudo ./build
```

3，test wiringPi is install success

```
gpio -v
```




```
gpio readall
```



4，create new : blink.c

```
#include <wiringPi.h>
int main(void)
{
  wiringPiSetup() ;
  pinMode (0, OUTPUT) ;
  for(;;)
  {
    digitalWrite(0, HIGH) ; delay (500) ;
    digitalWrite(0,  LOW) ; delay (500) ;
  }
}
```

compile and run it:

```
gcc -Wall -o blink blink.c -lwiringPi
```

runing it:

```
sudo ./blink
```

BPI have many extend board support WiringPi. so you can free DIY by youself:

more about BPI extend board,please see:

https://bananapi.gitbooks.io/bpi-accessories/content/

WiringPi python for BPI-M1

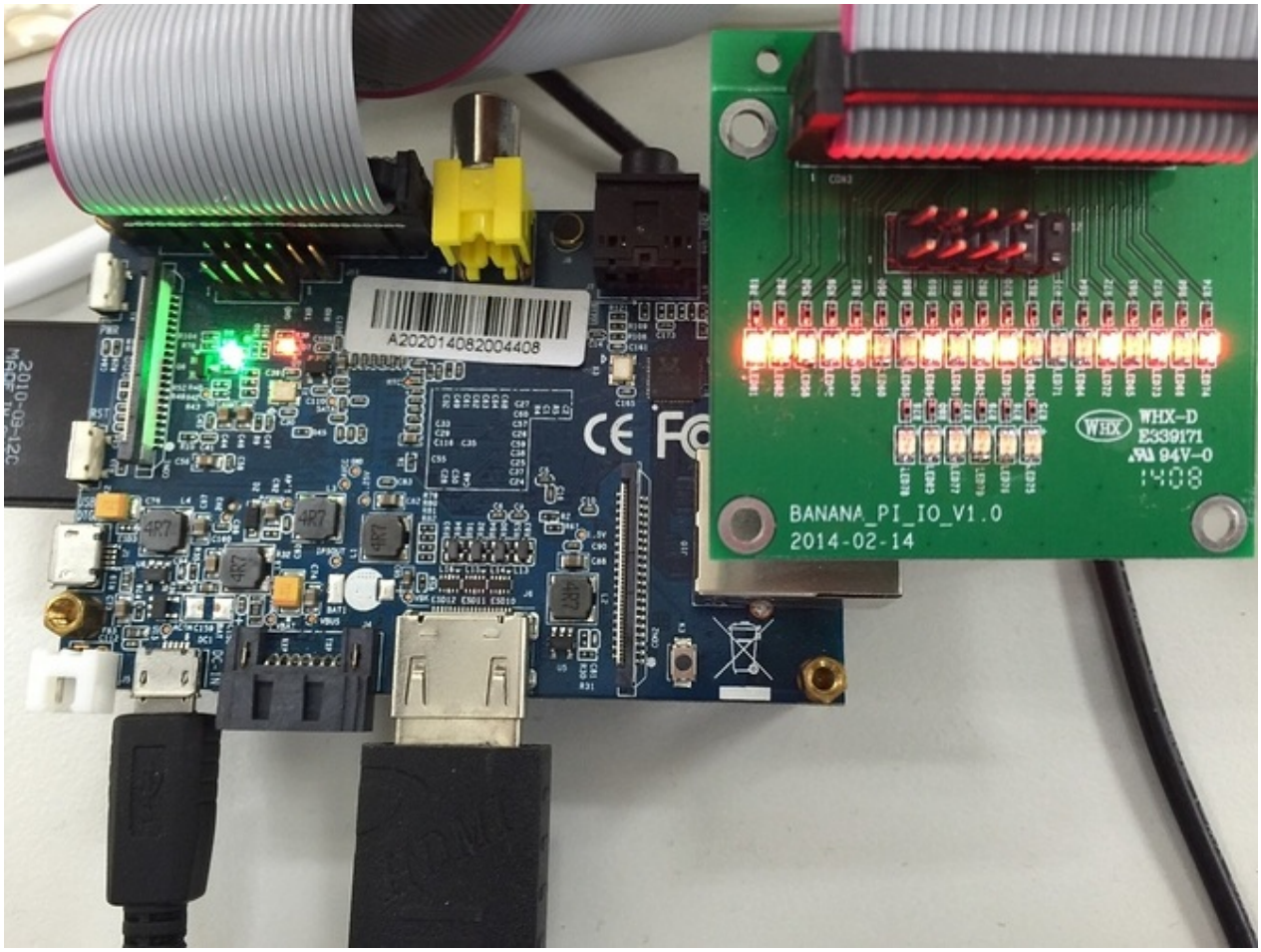
With all the hard work being done by the BPI team, BPI Github now officially releases BPI-WiringPi2-Python.

We've customized WiringPi for BPI products with the latest WiringPi2-Python version, V1.1.1

Source on github:

https://github.com/BPI-SINOVOIP/BPI-WiringPi2-Python

Test:



Discuss on forum:

http://forum.banana-pi.org/t/do-you-develop-apps-with-python-banana-pi-gpio-python-test-is-ok-code-uploaded-to-github/276

Reference documents

linux-sunxi wiki

lemaker banana pi is same as banana pi BPI-M1

http://linux-sunxi.org/LeMaker_Banana_Pi

NetBSD/evbarm on Allwinner Technology SoCs

NetBSD is a free, fast, secure, and highly portable Unix-like Open Source operating system. It is available for a wide range of platforms, from large-scale servers and powerful desktop systems to handheld and embedded devices. Its clean design and advanced features make it excellent for use in both production and research environments, and the source code is freely available under a business-friendly license. NetBSD is developed and supported by a large and vivid international community. Many applications are readily available through pkgsrc, the NetBSD Packages Collection

NetBSD 7.0 has support for A20 and A31 SoCs. NetBSD -current adds support for A80 SoCs.

more please see:

https://wiki.netbsd.org/ports/evbarm/allwinner/#index1h1

Arch linux wiki for BPI-M1

https://wiki.archlinux.org/index.php/Banana_Pi