

## Key Features

- Allwinner R16/A33 Quad Core ARM Cortex A7 CPU.
- 512MB DDR3 SDRAM.
- WiFi (AP6212) & Bluetooth onboard.
- 8G eMMC flash
- CSI camera interface
- DSI display interface

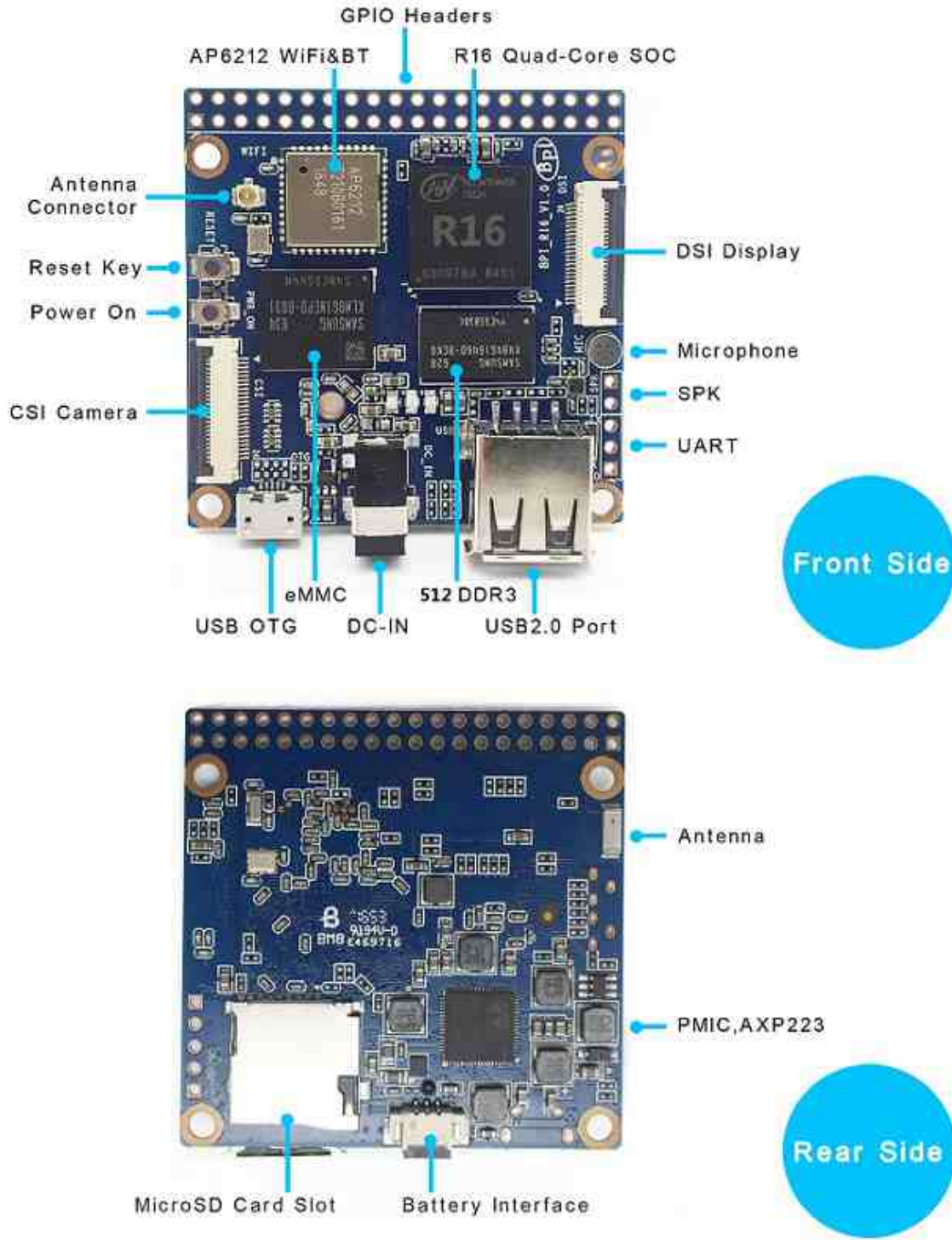
## Getting Start

- how to burn image : Quick Start Banana pi SBC

- how to development BPI-M2 Magic : Getting Started with M2M

# Hardware

## Hardware interface



## Hardware spec

<b>Banana Pi M2 Magic</b>	
<b>CPU</b>	Allwinner R16 ARM Cortex-A7 Quad-Core
<b>GPU</b>	PowerVR SGX544MP1 Comply with OpenGL ES 2.0 OpenCL 1x, DX9_3
<b>Memory</b>	512MB LPDDR3 (shared with GPU)
<b>Storage</b>	On Board 8GB eMMC Flash, Micro SD-Card slot.
<b>Network</b>	Wi-Fi 802.11 b/g/n (AP6212) + Bluetooth BT4.0
<b>Video Input(s)</b>	A CSI input connector allows for the connection of a designed camera module
<b>Video Output(s)</b>	MIPI Display Serial Interface (DSI) for raw LCD Panel
<b>Audio Input(s)</b>	On board microphone
<b>Audio Output(s)</b>	3.5mm jack
<b>USB ports</b>	USB 2.0 PORT (x1), USB OTG (x1)
<b>Remote</b>	Not IR Receiver
<b>GPIO</b>	40 Pin Header : GPIO (x28) and Power (+5V, +3.3V and GND). Some of I/O Pin can be used for specific functions as UART, I2C, SPI or PWM
<b>Switches</b>	Reset, Power and U-boot
<b>LED</b>	Power Status and 8P8C
<b>Power Source</b>	5 volt @2A via DC Power and/or Micro USB (OTG)
<b>Size &amp; Weight</b>	51x51mm, 48g
<b>OS</b>	Android and Linux

## GPIO PIN define

Banana Pi BPI-M2 Magic has a 40-pin GPIO header that matches that of the Model Raspberry Pi 3. Following is the Banana Pi GPIO Pinout:

<b>40 PIN GPIO of Banana pi BPI-M2 Magic</b>		
PIN number	Default Function	Function2: GPIO
CON1-P01	VCC-3V3	
CON1-P02	DCIN	
CON1-P03	TWI1-SDA	PH5
CON1-P04	DCIN	
CON1-P05	TWI1-SCK	PH4
CON1-P06	GND	
CON1-P07	PWM1	PH1
CON1-P08	UART2-TX	PB0
CON1-P09	GND	
CON1-P10	UART2-RX	PB1
CON1-P11	UART3_TX	PH6
CON1-P12	AP-PCM-CLK-CTS	PG11
CON1-P13	UART3_RX	PH7
CON1-P14	GND	
CON1-P15	LVDS_V1N	PD21
CON1-P16	UART2-RTS	PB2
CON1-P17	VCC-3V3	
CON1-P18	UART2-CTS	PB3
CON1-P19	SPI0_MOSI	PC0
CON1-P20	GND	
CON1-P21	SPI0_MISO	PC1
CON1-P22	LVDS_V1P	PD20
CON1-P23	SPI0_CLK	PC2
CON1-P24	SPI0_CS	PC3
CON1-P25	GND	
CON1-P26	LVDS_VCN	PD25
CON1-P27	LVDS_V0N	PD19
CON1-P28	LVDS_VCP	PD24
CON1-P29	LVDS_V0P	PD18
CON1-P30	GND	
CON1-P31	LVDS_V2N	PD23
CON1-P32	LVDS_V2P	PD22
CON1-P33	LVDS_V3N	PD27
CON1-P34	GND	
CON1-P35	AP-PCM-SYNC	PG10
CON1-P36	LVDS_V3P	PD26

CON1-P37	PL11-EINT11	PL11-EINT11
CON1-P38	AP_PCM_DIN	PG13
CON1-P39	GND	
CON1-P40	AP-PCM-DOUT	PG12

### CSI Camera Connector specification:

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 “Camera”.

CSI Camera pin define of Banana pi BPI-M2 Magic		
PIN number	Default Function	Function2: GPIO
CN3-P01	NC	
CN3-P02	GND	
CN3-P03	CSI0-SDA	PE13
CN3-P04	CSI0-AVDD	
CN3-P05	CSI0-SCK	PE12
CN3-P06	CSI0-Reset	PE14
CN3-P07	CSI0-VSYNC	PE3
CN3-P08	CSI0-PWDN	PE15
CN3-P09	CSI0-HSYNC	PE2
CN3-P10	CSI0-DVDD	
CN3-P11		
CN3-P12	CSI0-D7	PE11
CN3-P13	CSI0-MCLK	PE1
CN3-P14	CSI0-D6	PE10
CN3-P15	GND	
CN3-P16	CSI0-D5	PE9
CN3-P17	CSI0-PCLK	PE0
CN3-P18	CSI0-D4	PE8
CN3-P19	CSI0-D0	PE4
CN3-P20	CSI0-D3	PE7
CN3-P21	CSI0-D1	PE5
CN3-P22	CSI0-D2	PE6
CN3-P23	GND	
CN3-P24	CSI0-AFVCC	

### MIPI DSI (Display Serial Interface)

The display Connector is a 24-pin FPC connector which can connect external LCD panel \ (MIPI 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 Name\*\*

MIPI DSI PIN define of Banana pi BPI-M2 Magic		
PIN number	Default Function	Function2: GPIO
CN2-P01	DSI-D0N	
CN2-P02	DSI-D0P	
CN2-P03	DSI-D1N	
CN2-P04	DSI-D1P	
CN2-P05	DSI-CKN	
CN2-P06	DSI-CKP	
CN2-P07	DSI-D2N	
CN2-P08	DSI-D2P	
CN2-P09	DSI-D3N	
CN2-P10	DSI-D3P	
CN2-P11	NC	
CN2-P12	NC	
CN2-P13	TP-SDA	PH3
CN2-P14	TP-SCK	PH2
CN2-P15	TP-INT	PB5
CN2-P16	TP-RST	PB6
CN2-P17	LCD-BL-EN	PL4
CN2-P18	LCD-RST	PL5
CN2-P19	LCD-PWR-EN	PB7
CN2-P20	LCD-PWM	PH0
CN2-P21	GND	
CN2-P22	GND	
CN2-P23	PS	
CN2-P24	PS	

### UART specification:

The header CON4 is the UART0 interface. **kernel debug uart is UART2 of 40pin header.**

Uart PIN define of Banana pi BPI-M2 Magic	
CON3-P1	GND
CON3-P2	UART0-RX
CON3-P3	UART0-TX

## Resources

### android 6.0 source code

google driver : <https://drive.google.com/file/d/1FhHAVjNWTi8Uq-LNMn0liqcHS4cSN5xY/view?usp=drivesdk>

### documents

- Because of the Google security update some of the old links will not work if the images you want to use cannot be downloaded from the new link bpi-image Files
- All banana pi docement(SCH file,DXF file,and doc)
- allwinner R16 chip Datasheet-V1.4  
(1): <https://drive.google.com/file/d/0B4PAo2nW2KfnVW9FSUpPX2FLcU0/view?usp=sharing>
- Allwinner\_R16\_User\_Manual\_V1.2: <https://drive.google.com/file/d/0B4PAo2nW2KfnUjZUNVdyN1RkVIE/view?usp=sharing>
- SCH : google driver
- AXP223 Datasheet V1.0\_en : <https://drive.google.com/file/d/0B4PAo2nW2KfnckxWZFBBMUNWSUk/view?usp=sharing>
- BPI-M2 Magic DXF file public <https://drive.google.com/file/d/0B4PAo2nW2KfnalhDRG5EclU1dHM/view?usp=sharing>

## Image Release

### Android 6.0 LCD7-Version

- 2019-08-06 update ,BPI-M2 Magic Android 6 new image release ,This release is for banana pi M2m board with BPI 7" panel, and it is based on Android 6.0 Operation system with kernel 3.4.

Android 6

Fetures Map: [http://wiki.banana-pi.org/M2M\\_Image\\_Map#Kernel\\_3.4](http://wiki.banana-pi.org/M2M_Image_Map#Kernel_3.4)

Google Drive : <https://drive.google.com/open?id=1QH9v37XCpOAXFJLaazsSzzFyFj2LdPtg>

Baidu Drive : <https://pan.baidu.com/s/1xO9jZQsNXoTAmDpDFBiwYg> (PinCode: alyr)

MD5 : 90e2f11480b54ba6fa5b630770913a85

FAQ

How to install Android image,Please see here: [http://wiki.banana-pi.org/Install\\_Linux\\_%26\\_Android\\_images\\_on\\_Banana\\_pi\\_SBC#Install\\_Android\\_Images](http://wiki.banana-pi.org/Install_Linux_%26_Android_images_on_Banana_pi_SBC#Install_Android_Images)

- Image Link:
  - Google Drive: [https://drive.google.com/open?id=0B\\_YnvHgh2rwjbnNuaEt4OTlyQjg](https://drive.google.com/open?id=0B_YnvHgh2rwjbnNuaEt4OTlyQjg)
  - Baidu Drive: <https://pan.baidu.com/s/1qY8zAmo>
- Forum thread:

- <http://forum.banana-pi.org/t/bpi-m2-magic-new-image-android-6-0-version-v1-2017-10-24/4077>

## Linux

How to flash Linux Image

## Ubuntu

- 2021-03-24 release, Ubuntu Mate Desktop 16.04 with kernel 3.4.39

Download: 2021-03-24-ubuntu-16.04-mate-desktop-bpi-m2m-sd-emmc.img.zip  
MD5: 393407f3433acf69eabc19e8730f63f0

- 2021-03-24 release, Ubuntu Server 16.04 with kernel 3.4.39

Download: 2021-03-24-ubuntu-16.04-server-bpi-m2m-sd-emmc.img.zip  
MD5: 80f6bef4628eef0da8c5800819cc1cfd

- 2019-05-11 update This release is for banana pi M2 Magic board which is based on R16, and it is based on Ubuntu 16.04 Operation system with kernel 3.4.

.BPI-M2M Ubuntu Server 16.04 Features Map : [http://wiki.banana-pi.org/M2M\\_Image\\_Map](http://wiki.banana-pi.org/M2M_Image_Map)  
LCD7 SD & Emmc version images:

Google

Drive : <https://drive.google.com/file/d/1jrW7BKWb1RyYYpgB6SEMnRWoGjREVexe/view>

Baidu Drive : <https://pan.baidu.com/s/1QIXnZHg7MS9pR7pRXvZu1w> (PinCode:n20l)

MD5 : 9dcd344f0a6433bc649301930599d45b

CD7 Emmc version image:

Notes : Because sd pins and uart0 pins are the same, so we have to use uart2 as debug console before, and I release this image is just in order to release uart2 to use and set uart0 as debug console.

How to burn image : you just need to use m2m boot from a sd image, then use sd image to install this emmc image on emmc.

Google Drive : <https://drive.google.com/open?id=1vJqO2O47Ekq9diny7kZQKBQLXylCGuTG>

Baidu Drive : [https://pan.baidu.com/s/1xE5tpw0DqNAV2mqKg\\_TbpQ](https://pan.baidu.com/s/1xE5tpw0DqNAV2mqKg_TbpQ) (PinCode: awpy)

MD5 : 9f576cfaeb0329648b14b541ff2f5dd4

FAQ: For more operation details please see Wiki: [http://wiki.banana-pi.org/Getting\\_Started\\_with\\_M2M](http://wiki.banana-pi.org/Getting_Started_with_M2M)  
forum pthread: <http://forum.banana-pi.org/t/bpi-m2m-r16-new-image-release-ubuntu-server-16-04-2019-05-09/9205>

- Unbutu 16.04 2018-08-25 Image Link: This release is for banana pi M2 Magic board which is based on R16, and it is based on Ubuntu 16.04 Operation system with kernel 3.4.

BPI-M2M Ubuntu 16.04 Features Map:[http://wiki.banana-pi.org/M2M\\_Image\\_Map](http://wiki.banana-pi.org/M2M_Image_Map)  
LCD 7'-Version Google Drive : <https://drive.google.com/open?id=14LH4NGAyfeCXhnKlzc75-K6p2gmO5RrM>

LCD 7'-Version Baidu Drive : <https://pan.baidu.com/s/17jiGC4fCSTfVKPWUgh-VXA>

Forum pthread:<http://forum.banana-pi.org/t/bpi-m2m-r16-new-image-release-ubuntu-16-04-2018-08-25/6596>

For more operation details please see Wiki: [http://wiki.banana-pi.org/Getting\\_Started\\_with\\_M2M](http://wiki.banana-pi.org/Getting_Started_with_M2M)

- Unbutu 16.04 2018-01-04 Image Link:

Baidu Drive: <https://pan.baidu.com/s/1kVKjxOF>



Google Drive: [https://drive.google.com/file/d/1GKwVO03Z5VHOaodVVyboLC-F7r\\_qyk7e/view?usp=sharing2](https://drive.google.com/file/d/1GKwVO03Z5VHOaodVVyboLC-F7r_qyk7e/view?usp=sharing2)  
MD5: df72548c26cd42b8138f334f5b383f31

- Unbutu 16.04 2017-10-23 Image Link:

Baidu Drive: <http://pan.baidu.com/s/1hsGhxWS>  
Google Drive: [https://drive.google.com/file/d/0B\\_YnvHgh2rwjU2xWQ3otX0JZb1E/view?usp=sharing](https://drive.google.com/file/d/0B_YnvHgh2rwjU2xWQ3otX0JZb1E/view?usp=sharing)  
MD5: 23cd3f0891d8ad274984eea3f4981eab

## Tina Linux

- 2017-11-15 update : tina astar m2magic

more about Tina Linux Tina Linux

image name : 2017-11-15-tina\_astar-m2magic\_card0\_burn\_by\_PhoenixCard.img

google downlad : <https://drive.google.com/open?id=13iVMJJVY6i8GJjMjoAyk62IDW83MagDX>

forum pthread: <http://forum.banana-pi.org/t/bpi-m2-magic-new-image-2017-11-15-tina-astar-m2magic-card0-burn-by-phoenixcard/4184>