

Banana Pi BPI-W2 - Banana Pi Wiki

wiki.banana-pi.org/Banana_Pi_BPI-W2

Banana Pi BPI-W2

Introduction

The Banana Pi BPI-W2 is a router based development board, which can run on a variety of open source operating systems including OpenWrt, Android, and linux. It has 1 Gigabit LAN ports, 1 Gigabit WAN.



Overview



Banana Pi BPI-W2

RTD1296 Quad-core A53

2GB DDR4&8GB eMMC

HDMI IN/OUT

PCI-e &SATA

2 GigE network

Key Features

- Realtek RTD1296, Quad-core ARM Cortex-A53
- Mali T820 MP3 GPU
- 2G DDR4 SDRAM
- 8G eMMC flash
- Mini PCIE 2.0 , 1.1 interface ,SDIO,M.2 interface
- MicroSD slot supports up to 256GB expansion
- 2xMIC int/Audio out
- 2 SATA interface

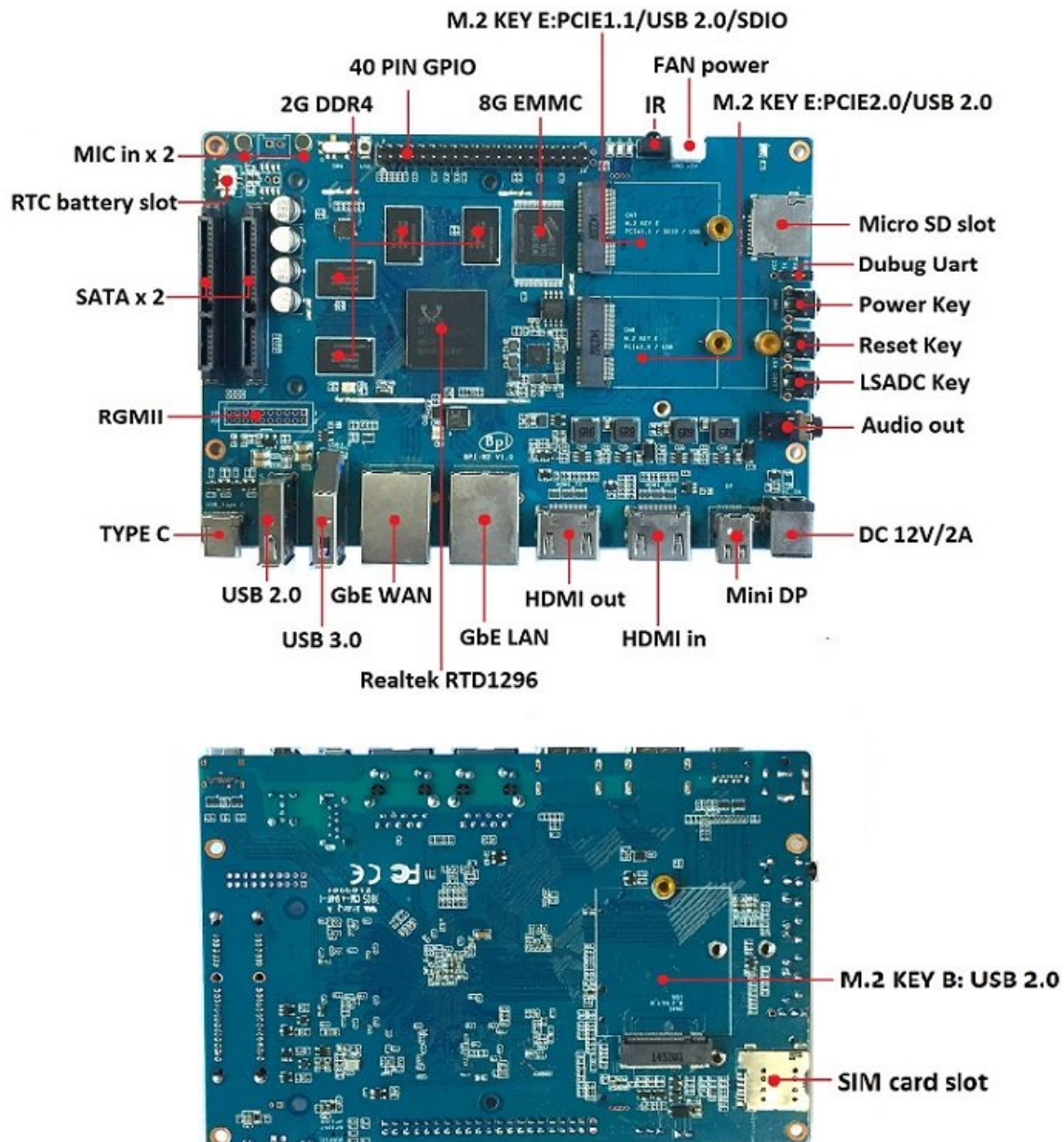
- 1XGigabit LAN 1x Gigabit WAN
- 1xUSB 3.0 2xUSB 2.0
- HDMI in & HDMI out
- Mini DP
- TYPE C

Getting Start

Read more: [Getting Start with BPI-W2](#)

Hardware

Hardware interfact



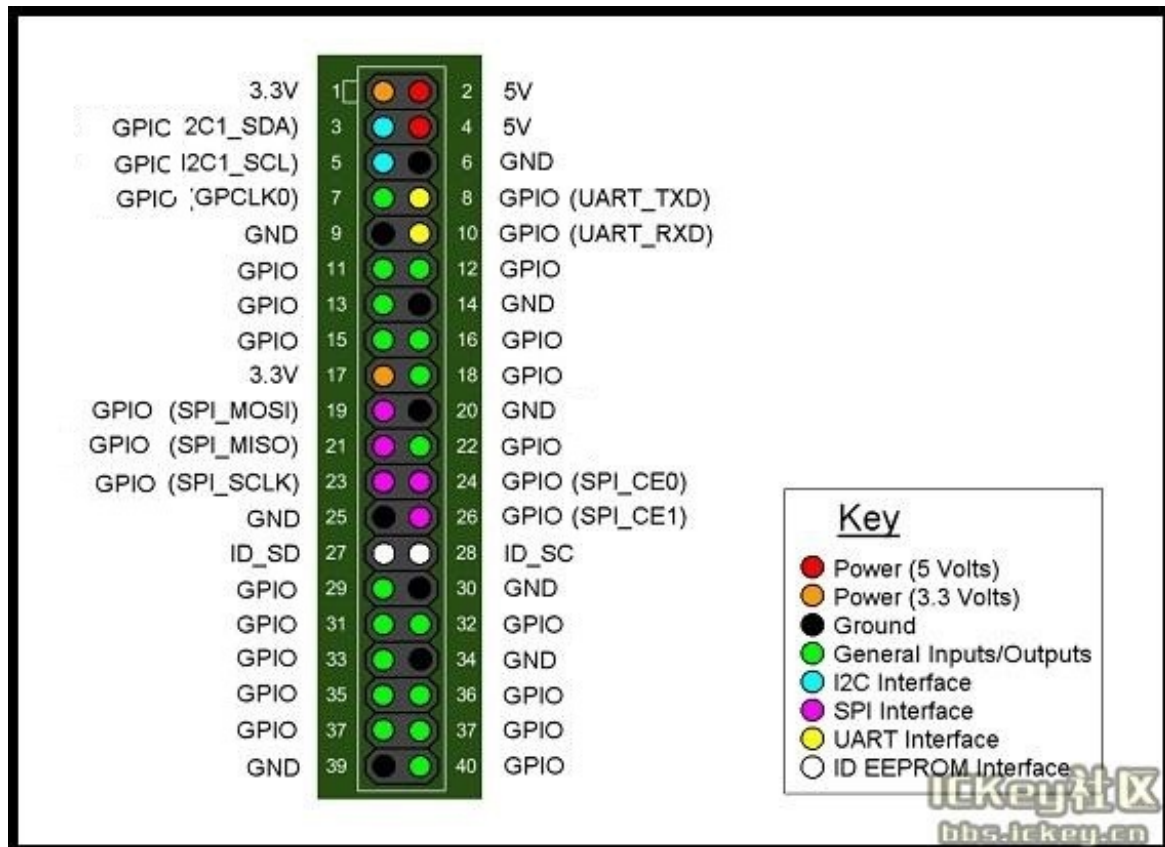
Hardware spec

HardWare Specification of Banana pi BPI-R2	
Soc	Realtek RTD1296 quad-core ARM A53
GPU	Mali T820 MP3 GPU
SDRAM	2GB DDR4 \(\shared with GPU\)
Power	12V @ 2A via DC power
Low-level peripherals	40 Pins Header, 28×GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, I2S.
Onboard Network	2x 10/100/1000Mbps Ethernet
Wifi/Bluetooth	**Option** ,not support onboard WIFI & BT
RGMII	1 RGMII interface with PIN
On board Storage	MicroSD \(\TF\)
Display	HDMI \(\Type A\)
Video decoder/encode	The Video DSP of RTD1296 is dedicated to manipulating,decoding and encoding of video streams in various formats, e.g. decoding 4K2K H.265,Full HD MPEG1/2/4/H.264/H.264 MVC,AVC/VC-1,VP8,AVS,AVS Plus,HD jpeg,etc.Video decoding and encoding can run simultaneously. support 3D de-interlacing,video scaling up to 4K2K and so on.
Aideo decoding	Audio decoding is carried out by an Audio DSP that is capable of decoding a set of audio formats,e.g. DTS HD,Dolby Digital Plus,TrueHD,and other popular formats.the Audio DSP also performs audio post processing
Audio	support two audio device HDMI and headphone, also support Audio In/Out with PIN define. support 2 MIC in
HDMI Out/In	1* HDMI 2.0a out port and 1* HDMI 2.0a In port
Audio outputs/Inputs	HDMI, I2S audio,Audio micro out, Audio out/in with PIN define
M.2 KEY E : PCIE 2.0/USB 2.0	1 pcie 2.0 interface
M.2 KEY E:PCle 1.1 / SDIO / USB 2.0	1 pcie 1.1 and SDIO interface
USB 3.0	1x USB 3.0 host
USB 2.0	2x USB 2.0 OTG, 1 with standard USB port , 1 define with PIN
M.2 KEY B	1 * M.2 interface USB 2.0 for 4G with Micro SIM card slot
Mini DP	1* Mini DP
TYPE C	1 type C interface
RTC battery	RTC battery power interface
Buttons	Reset button, Power button, U-boot button

Leds	Red, Green, Blue
Other	IR reciever
Sizes	148 mm × 100.5mm
Weight	100g

GPIO PIN define

Banana Pi BPI-W2 has a 40-pin GPIO header that matches that of the Model Raspberry Pi 3. Following is the Banana Pi GPIO Pinout:



Banana Pi BPI-W2 40-pin GPIO

GPIO Pin Name	Default Function	Function 2 : GPIO
CON1-P01	VCC-3V3	
CON1-P02	5VD	
CON1-P03	I2C5_SCL	GPIO13
CON1-P04	5VD	
CON1-P05	I2C5_SDA	GPIO14
CON1-P06	GND	
CON1-P07	PWM0_0	IGPIO21
CON1-P08	UR2_TX	IGPIO3
CON1-P09	GND	

CON1-P10	UR2_RX	IGPIO2
CON1-P11	GPIO17	GPIO17
CON1-P12	AO_BCK	GPIO58
CON1-P13	I2C3_SDA	GPIO25
CON1-P14	GND	
CON1-P15	I2C3_SCL	GPIO27
CON1-P16	UR2_RTS	IGPIO5
CON1-P17	VCC-3V3	
CON1-P18	UR2_CTS	IGPIO4
CON1-P19	G_MOSI	GPIO7
CON1-P20	GND	
CON1-P21	G_MISO	GPIO4
CON1-P22	IR_TX	IGPIO9
CON1-P23	G_SCK	GPIO5
CON1-P24	G_CS	GPIO6
CON1-P25	GND	
CON1-P26	GPIO8	GPIO8
CON1-P27	I2C4_SDA	GPIO12
CON1-P28	I2C4_SCL	GPIO11
CON1-P29	GPIO100	GPIO100
CON1-P30	GND	
CON1-P31	AI_CK	GPIO21
CON1-P32	SPDIF	GPIO54
CON1-P33	AO_CK	GPIO59
CON1-P34	GND	
CON1-P35	AO_LRCK	GPIO57
CON1-P36	AI_BCK	GPIO22
CON1-P37	AI_LRCK	GPIO23
CON1-P38	AI_SDO	GPIO24
CON1-P39	GND	
CON1-P40	AO_D0	GPIO60

UART specification:

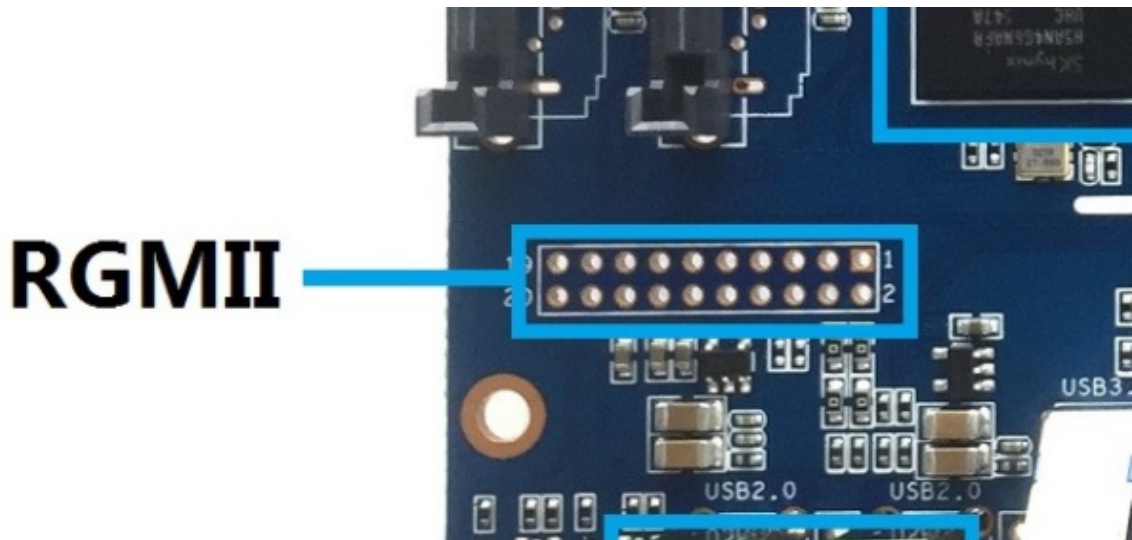
The header CON3 is the UART interface. For developers of Banana Pi, this is an easy way to get the UART console output to check the system status and log message.

BPI-W2 Debug UART(CON3)

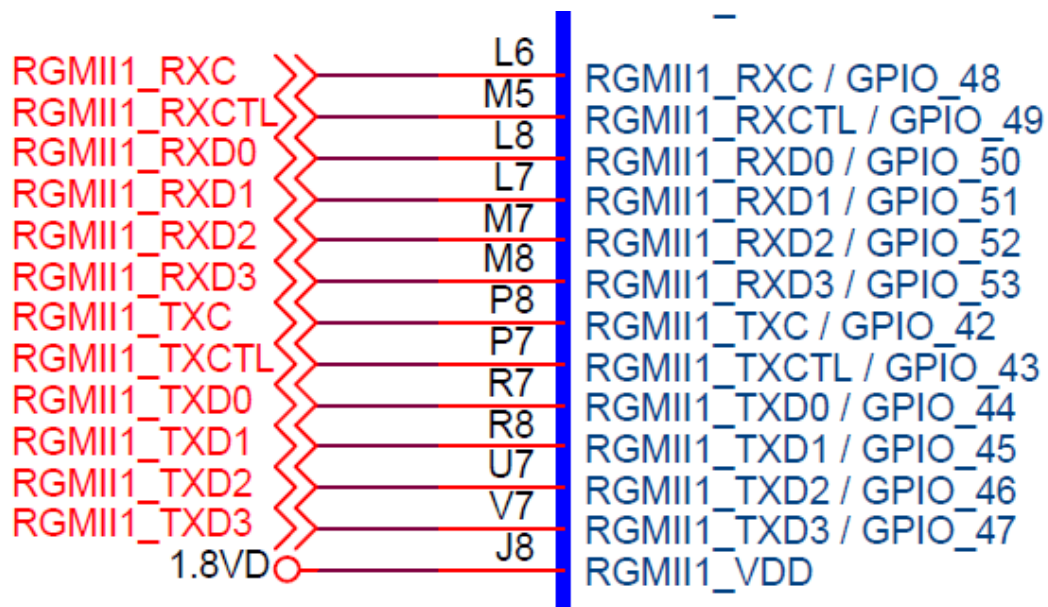
CON2-P1	GND
CON2-P2	UART0-RX
CON2-P3	UART0-TX

RGMII Interface with PIN define

BPI-W2 support RGMII Interface with PIN define:



voltage domain is RGMII.



Software

Development

Basic Development

Resources

Image Release

Android

Android 7.1.1

- Image Link:
 - This release is for banana pi W2 board which is based on Realtek RTD1296, and it is based on Android 7.1.1 peration system.
 - Baidu cloud : https://pan.baidu.com/s/1WP_TRe9PeNZvf5bEJy0AQ
 - Google Drive :
- Forum thread:
<http://forum.banana-pi.org/t/bpi-w2-new-image-android-7-1-1-v0-1-beta-2018-5-29/5867>

Android 6.0.1

- Image Link:
 - This release is for banana pi W2 board which is based on Realtek RTD1296, and it is based on Android 6.0 Operation system.
 - Baidu cloud : <https://pan.baidu.com/s/1i-J71bup8jr8ML7pSN3wtw>
 - Google Drive : https://drive.google.com/file/d/16DRWS1FcdduG3c_4YWnbGXj_ayLmds0N/view?usp=sharing
- Forum thread:
 - <http://forum.banana-pi.org/t/banana-pi-bpi-w2-with-realtek-new-image-release-android-6-0-v1-0/5394>
 - video demo on youtube: <https://www.youtube.com/watch?v=jePsbqgp2zk&feature=youtu.be>

OpenWRT

- Image Link:
 - Baidu Drive : <https://pan.baidu.com/s/1Rs9F46wNJibORaeCfVh4wg>
PinCode : 1w4w
 - Google Drive : <https://drive.google.com/file/d/10kfP142Jw0sA92uwalYZt7CeXcDKelO1/view?usp=sharing>
- Forum thread:
<http://forum.banana-pi.org/t/bpi-w2-new-image-burn-openwrt-with-linux-kernel-4-4-2018-4-25/5510>

Ubuntu 16.04

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- Image Link:
 - Baidu Drive :
 - Google Drive :
 - Forum thread:
<http://forum.banana-pi.org/t/bpi-w2-new-image-how-to-make-and-run-the-64-bit-ubuntu-16-04-on-sd-card-2018-4-28/5546>

FAQ
