



Hardware spec

HardWare Specification of Banana pi BPI-M5	
CPU	Amlogic S905X3 Quad-Core Cortex-A55 (2.0xxGHz)
GPU	Mali-G31 MP2 GPU with 4 x Execution Engines (650Mhz)
Memory	4 GB LPDDR4
Storage	MicroSD slot with support for up to 256GB expansion and 16G eMMC flash with support for up to 64GB

Network	10/100/1000 Mbit/s Ethernet ,Optional WiFi USB dongle
Video Output(s)	1 x HDMI 2.1 (up to 4K@60Hz with HDR, CEC, EDID)
Audio Output(s)	3.5mm jack and 1 x HDMI digital output
USB ports	USB 3.0 PORT (x4)
GPIO	40 Pin Header : GPIO (x28) and Power (+5V, +3.3V and GND). GPIO pins can be used for UART, I2C, SPI or PWM
Switches	Reset, Power and U-boot
LED	Power Status and Activity status
Power Source	5 volt @3A via Micro USB (TYPE C)
Size & Weight	92x60mm, 48g
OS	Android and Linux

Wifi & BT support via expansion board

SDIO interface Wifi&BT

- WiFi&BT board, 802.11 a/b/g/n/ac 2T2R WiFi and Bluetooth 5.0 , support BPI-M5 and BPI-F2P
- how to use : http://wiki.banana-pi.org/Getting_Started_with_BPI-M5#Wifi.2FBT_support
- discuss on forum : <http://forum.banana-pi.org/t/bpi-m5-wifi-bt-board-sdio-interface-802-11-a-b-g-n-ac-2t2r-wifi-and-bluctooch-5-0/11846>
- RT8822CS Bluetooth and WiFi adapter for Banana Pi BPI-M5 : https://www.magazinme-hatronika.com/en/rt8822cs-bluetooth-and-wifi-adapter-for-banana-pi-m5/?fbclid=IwAR0Oqm4TCa2SAX-BTMJgRmWMJI-VQREqFxlh1-LnT_XzA5MAvYh_BL9-L7Xk
- easy to buy sample : <https://www.aliexpress.com/item/1005002550783568.html?spm=5261.ProductMan- ageOnline.0.0.34ed4edfgdV59j>

standard USB interface Wifi&BT

- Banana Pi Wifi&BT 4.2 expansion Board, standard USB interface, so support all open source boards via USB port.IEEE 802.11b/g/n/ac(1T1R) USB WLANAnd BT Module
- how to use : http://wiki.banana-pi.org/Getting_Started_with_BPI-M5#Wifi.2FBT_support

- discuss on forum : <http://forum.banana-pi.org/t/banana-pi-wifi-bt-4-2-expansion-board-standard-usb-interface/12162>

BPI-M2 Pro VS BPI-M5 VS Odroid C4 VS RPI 4

BPI-M2 Pro VS BPI-M5 VS Odroid C4 VS RPI 4				
	Banana Pi BPI-M2 Pro	Banana Pi BPI-M5	Odroid C4	Raspberry Pi 4
Processor	Amlogic S905X3 Quad-Core Cortex-A55 ARMv8.2-A 64-bit 1.5GHz	Amlogic S905X3 Quad-Core Cortex-A55 ARMv8.2-A 64-bit 1.5GHz	Amlogic S905X3 Quad-Core Cortex-A55 ARMv8.2-A 64-bit 1.5GHz	Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
GPU	Mali-G31 MP2 GPU	Mali-G31 MP2 GPU	Mali-G31 MP2 GPU	Broadcom VideoCore VI
RAM	2GB LPDDR4	4GB LPDDR4	DDR4 4GiB with 32-bit bus width	2GB, 4GB or 8GB LPDDR4-3200 SDRAM
Storage	micro SD card slot & 16GB eMMC flash on board	micro SD card slot & 16GB eMMC flash on board	micro SD card slot , eMMC connector for option	micro SD card slot, non EMMC
Network	1 GbE ,WiFi&BT5.0 onboard	GbE ,Optional WiFi USB dongle	GbE	GbE, 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE
Video Output	1 x HDMI 2.1 (up to 4K@60Hz with HDR, CEC, EDID)	1 x HDMI 2.1 (up to 4K@60Hz with HDR, CEC, EDID)	1 x HDMI 2.1 (up to 4K@60Hz with HDR, CEC, EDID)	2 x micro-HDMI 2.0
Audio Output	1 x HDMI digital output	3.5mm jack and 1 x HDMI digital output	Optional SPDIF optical output	3.5 mm analogue audio-video jack
DSI	N/A	N/A	N/A	2-lane MIPI DSI display port

CSI	N/A	N/A	N/A	2-lane MIPI CSI camera port
USB	USB 3.0 x 2 1 Micro USB 2.0	USB 3.0 x 4 TYPE C	USB 3.0 x 4, 1 x Micro USB 2.0 port (OTG)	2 USB 3.0 ports; 2 USB 2.0 ports;
Power	5 volt @3A via DC power	5 volt @3A via Micro USB (TYPE C)	1 x DC power jack (Outer diameter : 5.5mm, inner diameter : 2.1mm)	5V DC via USB-C connector (minimum 3A*)
IR	Yes	Yes	Yes	N/A
GPIO	40 Pin Header : GPIO (x28) and Power (+5V, +3.3V and GND).	40 Pin Header : GPIO (x28) and Power (+5V, +3.3V and GND).	40 x GPIO pins	40-pin GPIO header, populated
Button	Reset, user and U-boot	Reset, user and U-boot	N/A	N/A
LED	Power Status and Activity status	Power Status and Activity status	Power Status and Activity status	Power Status and Activity status
Dimensions & weight	65mm x 65mm,58g	85mm x 56mm, 48g	85mm x 56mm 59g	88 mm × 58 mm, 46 g
System Support	Linux & Android	Linux & Android	Linux & Android	Linux & Android

GPIO PIN define

BPI-M5 40PIN GPIO (CON2)

GPIO Pin Name	Default Function	Function2	Function3
CON1-P01	VCC-3V3		
CON1-P02	VCC5V		
CON1-P03	GPIOX_17	I2C_M2_SDA	

CON1-P04	VCC5V		
CON1-P05	GPIOX_18	I2C_M2_SCL	
CON1-P06	GND		
CON1-P07	GPIOX_5 SDIO_CMD		
CON1-P08	GPIOX_12	UART_A_TX	
CON1-P09	GND		
CON1-P10	GPIOX_13	UART_A_RX	
CON1-P11	GPIOX_3 SDIO_D3		
CON1-P12	GPIOAO_8	TDMB_SCLK	
CON1-P13	GPIOX_4 SDIO_CLK		
CON1-P14	GND		
CON1-P15	GPIOX_7 PWM_F		
CON1-P16	GPIOX_0 SDIO_D0		
CON1-P17	VCC-3V3		
CON1-P18	GPIOX_1 SDIO_D1		
CON1-P19	GPIOX_8 PCM_DIN		
CON1-P20	GND		

CON1-P21	GPIOX_9 PCM_DOUT		
CON1-P22	GPIOX_2 SDIO_D2		
CON1-P23	GPIOX_11	PCM_CLK	
CON1-P24	GPIOX_10	PCM_SYNC	
CON1-P25	GND		
CON1-P26	GPIOX_16	PWM_E	
CON1-P27	GPIOA_14	I2C_M3_SDA	
CON1-P28	GPIOA_15	I2C_M3_SCL	
CON1-P29	GPIOX_14	UART_A_CTS	
CON1-P30	GND		
CON1-P31	GPIOX_15	UART_A_RTS	
CON1-P32	GPIOX_19	PWM_B	
CON1-P33	GPIOX_6 PWM_A		
CON1-P34	GND		
CON1-P35	GPIOAO_7	TDMB_FS	
CON1-P36	GPIOH_5 SPDIF_IN		
CON1-P37	GPIOAO_7	I2S_MCLK	

CON1-P38	GPIOAO_10	TDMB_DIN	SPDIF_OUT
CON1-P39	GND		
CON1-P40	GPIOAO_4	TDMB_DOUT	

BPI-M5 Debug UART(CON1)

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