



Hardware spec

| HardWare Specification of Banana pi BPI-M64 | |
|---|---|
| CPU | Allwinner 64 Bit Quad Core ARM Cortex A53 1.2 GHz CPU |
| GPU | Dual core Mali 400 MP2 GPU |
| Memory | 2GB LPDDR3 (shared with GPU) |
| Storage | MicroSD slot with support for up to 256GB expansion and 8G eMMC flash with support for up to 64GB |

| | |
|-----------------|--|
| Network | 10/100/1000 Mbit/s Ethernet + Wi-Fi 802.11 b/g/n + Bluetooth 4.0 |
| Video Input(s) | A CSI input connector allows for the connection of a designed camera module |
| Video Output(s) | 1080p capable HDMI port and multi-channel audio output (NO H./X.265 capabilities) |
| Audio Input(s) | On board microphone |
| Audio Output(s) | 3.5mm jack and HDMI |
| USB ports | USB 2.0 PORT (x2), USB OTG (x1) |
| Remote | IR Receiver |
| 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 8P8C |
| Power Source | 5 volt @2A via DC Power and/or Micro USB (OTG) |
| Size & Weight | 92x60mm, 48g |
| OS | Android and Linux |

GPIO PIN define

Banana Pi BPI-M64 has a 40-pin GPIO header . Following is the Banana Pi GPIO Pinout:

| 40 PIN GPIO of Banana pi BPI-M64 | | | |
|---|------------------|------------------|-----------|
| GPIO Pin Name | Default Function | Function2 : GPIO | Function3 |
| CON2-P01 | VCC-3V3 | | |
| CON2-P02 | VCC-5V | | |
| CON2-P03 | TWI1-SDA | PH3 | |
| CON2-P04 | VCC-5V | | |
| CON2-P05 | TWI1-SCK | PH2 | |
| CON2-P06 | GND | | |
| CON2-P07 | PH6 | PH6 | |
| CON2-P08 | UART2-TX | PB0 | |
| CON2-P09 | GND | | |
| CON2-P10 | UART2-RX | PB1 | |
| CON2-P11 | PH7 | PH7 | |
| CON2-P12 | UART2-CTS | PB3 | |

| | | | |
|----------|-----------|------|----------|
| CON2-P13 | DMIC-CLK | PH10 | |
| CON2-P14 | GND | | |
| CON2-P15 | DMIC-DIN | PH11 | |
| CON2-P16 | UART2-RTS | PB2 | |
| CON2-P17 | VCC-3V3 | | |
| CON2-P18 | PD4 | PD4 | |
| CON2-P19 | SPI1-MOSI | PD2 | UART4-TX |
| CON2-P20 | GND | | |
| CON2-P21 | SPI1-MISO | PD3 | UART4-RX |
| CON2-P22 | PC0 | PC0 | |
| CON2-P23 | SPI1-CLK | PD1 | UART3-RX |
| CON2-P24 | SPI1-CS | PD0 | UART3-TX |
| CON2-P25 | GND | | |
| CON2-P26 | PC2 | PC2 | |
| CON2-P27 | PC4 | PC4 | |
| CON2-P28 | PC3 | PC3 | |
| CON2-P29 | PC7 | PC7 | |

| | | | |
|----------|-----------|------|--|
| CON2-P30 | GND | | |
| CON2-P31 | PCM0-BCLK | PB5 | |
| CON2-P32 | PCM0-DIN | PB7 | |
| CON2-P33 | PCM0-SYNC | PB4 | |
| CON2-P34 | GND | | |
| CON2-P35 | PCM0-DOUT | PB6 | |
| CON2-P36 | PL9 | PL9 | |
| CON2-P37 | PL12 | PL12 | |
| CON2-P38 | PL7 | PL7 | |
| CON2-P39 | GND | | |
| CON2-P40 | PL8 | PL8 | |

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 camer PIN define of Banana pi BPI-M64 | | |
|--|------------------|------------------|
| CSI Pin Name | Default Function | Function2 : GPIO |
| CN5-P01 | NC | |
| CN5-P02 | GND | |
| CN5-P03 | CSI0-SDA | PE13 |

| | | |
|---------|------------|------|
| CN5-P04 | CSI0-AVDD | |
| CN5-P05 | CSI0-SCK | PE12 |
| CN5-P06 | CSI0-Reset | PE16 |
| CN5-P07 | CSI0-VSYNC | |
| CN5-P08 | CSI0-PWDN | PE17 |
| CN5-P09 | CSI0-HSYNC | PE2 |
| CN5-P10 | CSI0-DVDD | |
| CN5-P11 | CSI0-DOVDD | |
| CN5-P12 | CSI0-D7 | PE11 |
| CN5-P13 | CSI0-MCLK | PE1 |
| CN5-P14 | CSI0-D6 | PE10 |
| CN5-P15 | GND | |
| CN5-P16 | CSI0-D5 | PE9 |
| CN5-P17 | CSI0-PCLK | PE0 |
| CN5-P18 | CSI0-D4 | PE8 |
| CN5-P19 | CSI0-D0 | PE4 |
| CN5-P20 | CSI0-D3 | PE7 |

| | | |
|---------|------------|-----|
| CN5-P21 | CSI0-D1 | PE5 |
| CN5-P22 | CSI0-D2 | PE6 |
| CN5-P23 | GND | |
| CN5-P24 | CSI0-AFVCC | |

MIPI DSI (Display Serial Interface)

The display Connector is a 40-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".

| MIPI DSI display PIN define of Banana pi BPI-M64 | | |
|--|------------------|------------------|
| DSI Pin Name | Default Function | Function2 : GPIO |
| CN6-P01 | VCC | |
| CN6-P02 | IPSOUT | |
| CN6-P03 | VCC | |
| CN6-P04 | IPSOUT | |
| CN6-P05 | GND | |
| CN6-P06 | IPSOUT | |
| CN6-P07 | GND | |
| CN6-P08 | IPSOUT | |
| CN6-P09 | NC | |
| CN6-P10 | GND | |

| | | |
|---------|-----------|-----|
| CN6-P11 | NC | |
| CN6-P12 | DSI-D0N | |
| CN6-P13 | NC | |
| CN6-P14 | DSI-D0P | |
| CN6-P15 | NC | |
| CN6-P16 | GND | |
| CN6-P17 | TWI0-SDA | PH1 |
| CN6-P18 | DSI-D1N | |
| CN6-P19 | TWI0-SCK | PH0 |
| CN6-P20 | DSI-D1P | |
| CN6-P21 | CTP-INT | PH4 |
| CN6-P22 | GND | |
| CN6-P23 | CTP-RST | PH8 |
| CN6-P24 | DSI-CKN | |
| CN6-P25 | GND | |
| CN6-P26 | DSI-CKP | |
| CN6-P27 | LCD-BL-EN | PD5 |

| | | |
|---------|------------|------|
| CN6-P28 | GND | |
| CN6-P29 | LCD-RST | PD6 |
| CN6-P30 | DSI-D2N | |
| CN6-P31 | LCD-PWR-EN | PD7 |
| CN6-P32 | DSI-D2P | |
| CN6-P33 | GND | |
| CN6-P34 | GND | |
| CN6-P35 | LCD-PWM | PL10 |
| CN6-P36 | DSI-D3N | |
| CN6-P37 | GND | |
| CN6-P38 | DSI-D3P | |
| CN6-P39 | NC | |
| CN6-P40 | GND | |

UART specification:

The header CON2 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.

| Uart PIN define of Banana pi BPI-M64 | | |
|--------------------------------------|------------------|------|
| CON2 Pin Name | Default Function | GPIO |
| CON2 P03 | UART0-TXD | PB8 |
| CON2 P02 | UART0-RXD | PB9 |
| CON2 P01 | GND | |