



Banana Pi BPI-M2S SBC specifications

- SoC – Amlogic A311D hexa-core processor with 4x Arm Cortex-A73 cores, 2x Arm Cortex-A53 cores, Arm Mali-G52 MP4 (6EE) GPU with OpenGL ES 3.2, Vulkan 1.0 and OpenCL 2.0 support, 5 TOPS NPU
- System Memory – 4GB LPDDR4
- Storage – 16GB eMMC flash (option up to 128GB), MicroSD card slot
- Video interfaces
 - HDMI 2.1 output up to 4Kp60
 - MIPI DSI connector for display
 - MIPI CSI connector for camera
- Networking – 2x Gigabit Ethernet ports one via RTL8211F GbE transceiver, the other through RTL8111H PCIe to Gigabit Ethernet transceiver
- USB – 1x USB 2.0 Type-A port, 1x USB Type-C port
- Expansion – 40-pin GPIO header
- Debugging – 3-pin header for serial console
- Misc – 3x buttons
- Power Supply – Via USB-C port or pin header
- Dimensions – 65 x 65mm

PoE Wifi&BT

BPI-M5 rtl8822cs WiFi&BT board,SDIO interface, 802.11 a/b/g/n/ac 2T2R WiFi and Bluetooth 5.0

- discuss on forum : <https://forum.banana-pi.org/t/bpi-m5-rtl8822cs-wifi-bt-board-sdio-interface-802-11-a-b-g-n-ac-2t2r-wifi-and-bluetooth-5-0/11846>

GPIO PIN define

BPI-M2S 40PIN GPIO (CON2)

| GPIO Pin Name | Default : GPIO | Function2 | Function3 |
|---------------|----------------|---------------|--------------|
| CON2-P01 | VCC-3V3 | | |
| CON2-P02 | DCIN | | |
| CON2-P03 | GPIOX_17 | I2C_EE_M2_SDA | BT_EN |
| CON2-P04 | DCIN | | |
| CON2-P05 | GPIOX_18 | I2C_EE_M2_SCL | BT_WAKE_HOST |
| CON2-P06 | GND | | |
| CON2-P07 | GPIOX_5 | PWM_C | WIFI_SD_CMD |
| CON2-P08 | GPIOX_12 | UART_EE_A_TX | |
| CON2-P09 | GND | | |
| CON2-P10 | GPIOX_13 | UART_EE_A_RX | |
| CON2-P11 | GPIOX_3 | | WIFI_SD_D3 |
| CON2-P12 | GPIOA_1 | | I2SB_SCLK |
| CON2-P13 | GPIOX_4 | | WIFI_SD_CLK |
| CON2-P14 | GND | | |

| | | | |
|----------|----------|------------|----------------|
| CON2-P15 | GPIOX_7 | | WIFI_WAKE_HOST |
| CON2-P16 | GPIOX_0 | | WIFI_SD_D0 |
| CON2-P17 | VCC-3V3 | | |
| CON2-P18 | GPIOX_1 | | WIFI_SD_D1 |
| CON2-P19 | GPIOX_8 | SPI_A_MOSI | BTPCM_DIN |
| CON2-P20 | GND | | |
| CON2-P21 | GPIOX_9 | SPI_A_MISO | BTPCM_DOUT |
| CON2-P22 | GPIOX_2 | | WIFI_SD_D2 |
| CON2-P23 | GPIOX_11 | SPI_A_CLK | BTPCM_CLK |
| CON2-P24 | GPIOX_10 | SPI_A_CS | BTPCM_SYNC |
| CON2-P25 | GND | | |
| CON2-P26 | GPIOX_16 | | BT_32K |
| CON2-P27 | GPIOH_5 | | |
| CON2-P28 | GPIOH_4 | | |
| CON2-P29 | GPIOX_14 | | BTUART_A_CTS_N |
| CON2-P30 | GND | | |
| CON2-P31 | GPIOX_15 | | BTUART_A_RTS_N |

| | | | |
|----------|----------|--|-----------------|
| CON2-P32 | GPIOX_19 | | HOST_WAKE_BT |
| CON2-P33 | GPIOX_6 | | WIFI_PWREN |
| CON2-P34 | GND | | |
| CON2-P35 | GPIOA_2 | | I2SB_LRCLK |
| CON2-P36 | GPIOA_5 | | IR_IN |
| CON2-P37 | GPIOA_0 | | I2S_MCLK_0 |
| CON2-P38 | GPIOA_4 | | I2SB_DOUT_DIN_1 |
| CON2-P39 | GND | | |
| CON2-P40 | GPIOA_3 | | I2SB_DOUT_DIN_0 |

BPI-M2S Debug UART(CON1)

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

BPI-M2S Camera(CN10)

| CSI Pin Name | Default Function | Function2 : GPIO |
|--------------|------------------|------------------|
| CN10-P01 | GND | |
| CN10-P02 | MIPI_CSI_D3N | |
| CN10-P03 | MIPI_CSI_D3P | |

| | | |
|----------|----------------|--|
| CN10-P04 | GND | |
| CN10-P05 | MIPI_CSI_D2N | |
| CN10-P06 | MIPI_CSI_D2P | |
| CN10-P07 | GND | |
| CN10-P08 | MIPI_CSI_CLKBN | |
| CN10-P09 | MIPI_CSI_CLKBP | |
| CN10-P10 | GND | |
| CN10-P11 | MIPI_CSI_D1N | |
| CN10-P12 | MIPI_CSI_D1P | |
| CN10-P13 | GND | |
| CN10-P14 | MIPI_CSI_D0N | |
| CN10-P15 | MIPI_CSI_D0P | |
| CN10-P16 | GND | |
| CN10-P17 | MIPI_CSI_CLKAN | |
| CN10-P18 | MIPI_CSI_CLKAP | |
| CN10-P19 | NC | |
| CN10-P20 | CAM0_MCLK | |

| | | |
|----------|--------------|--|
| CN10-P21 | CAM0_IRCUT | |
| CN10-P22 | CAM0_SCL | |
| CN10-P23 | CAM0_SDA | |
| CN10-P24 | CAM0_RESET | |
| CN10-P25 | VCC1V8_DOVDD | |
| CN10-P26 | GND | |
| CN10-P27 | GND | |
| CN10-P28 | VCC33 | |
| CN10-P29 | VCC33 | |
| CN10-P30 | VCC33 | |

BPI-M2S LCD(CN9)

| DSI Pin Name | Default Function | Function2 : GPIO |
|--------------|------------------|------------------|
| CN9-P01 | MIPI_D0_N | |
| CN9-P02 | MIPI_D0_P | |
| CN9-P03 | MIPI_D1_N | |
| CN9-P04 | MIPI_D1_P | |
| CN9-P05 | MIPI_CLK_N | |
| CN9-P06 | MIPI_CLK_P | |

| | | |
|---------|----------------|--|
| CN9-P07 | MIPI_D2_N | |
| CN9-P08 | MIPI_D2_P | |
| CN9-P09 | MIPI_D3_N | |
| CN9-P10 | MIPI_D3_P | |
| CN9-P11 | TP_INT_3V3 | |
| CN9-P12 | TP_RST_3V3 | |
| CN9-P13 | I2C_M3_SCL_3V3 | |
| CN9-P14 | I2C_M3_SDA_3V3 | |
| CN9-P15 | LCD_BL_EN_3V3 | |
| CN9-P16 | LCD_PWM_3V3 | |
| CN9-P17 | GND | |
| CN9-P18 | GND | |
| CN9-P19 | VLCD_5V | |
| CN9-P20 | VLCD_5V | |