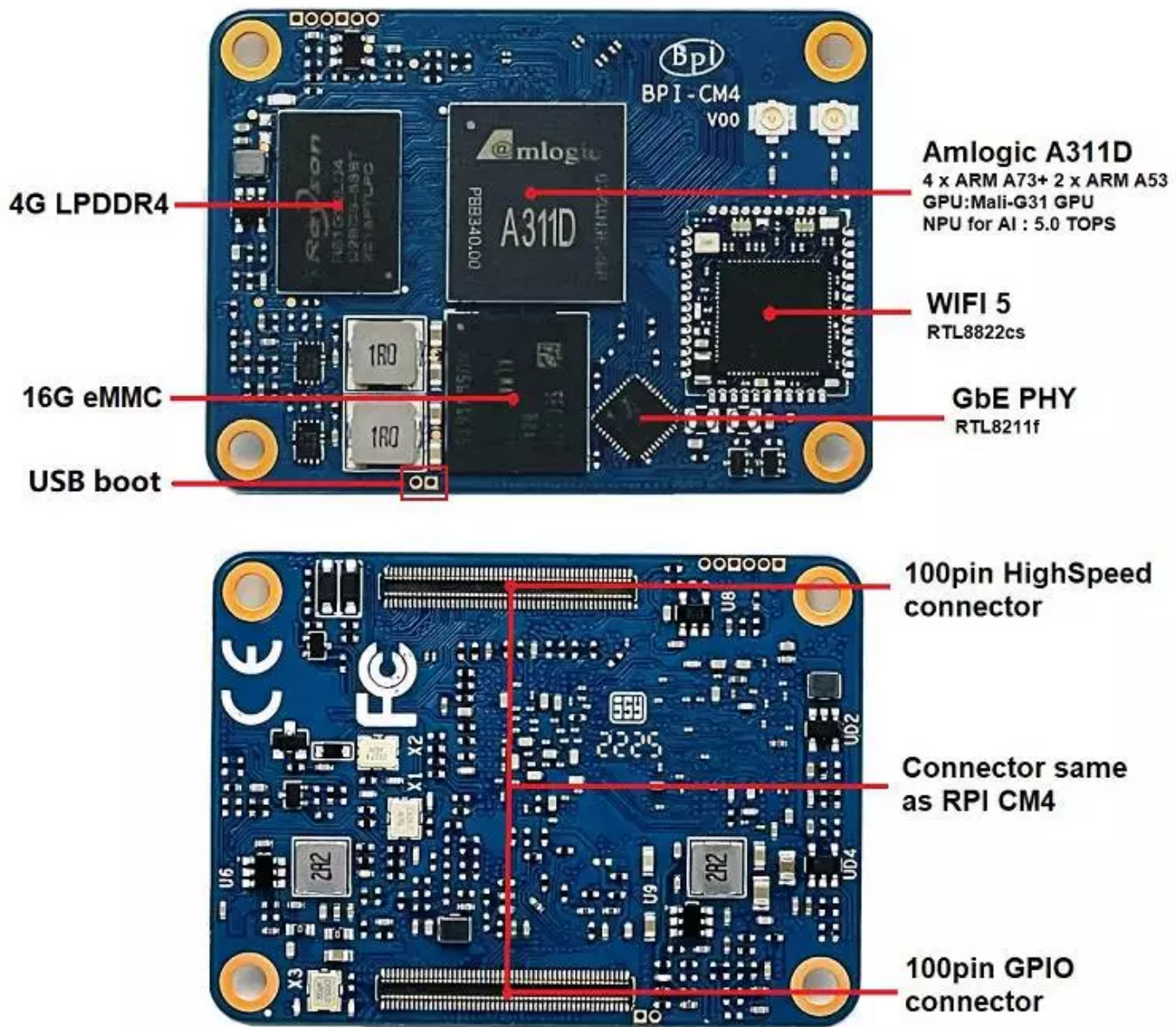


# Development

- Getting Started with CM4

# Hardware

## BPI-CM4 Module Hardware interface



## BPI-CM4 Module PIN Out define

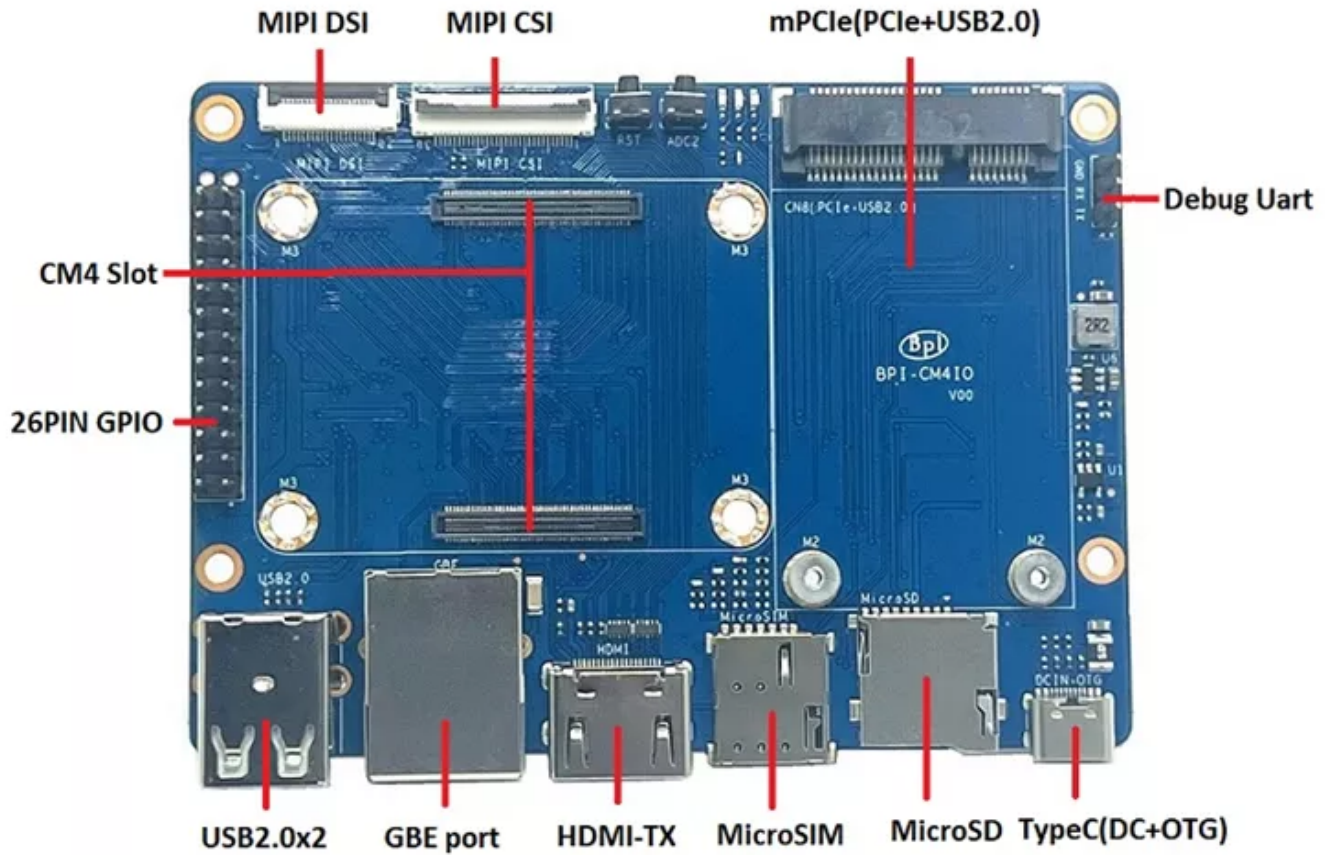
Banana pi BPI-CM4 PIN Out define VS Raspberry PI CM4					
BPI-CM4	RPI CM4	PIN	PIN	RPI CM4	BPI-CM4
GND	GND	1	2	GND	GND

NAT0_MDI3p	Ethernet_Pair3_P	3	4	Ethernet_Pair1_P	NAT0_MDI1p
NAT0_MDI3n	Ethernet_Pair3_N	5	6	Ethernet_Pair1_N	NAT0_MDI1n
GND	GND	7	8	GND	GND
NAT0_MDI2n	Ethernet_Pair2_N	9	10	Ethernet_Pair0_N	NAT0_MDI0n
NAT0_MDI2p	Ethernet_Pair2_P	11	12	Ethernet_Pair0_P	NAT0_MDI0p
GND	GND	13	14	GND	GND
Ethernet_LED2/1G_Active	Ethernet_nLED3_1G-Active	15	16	Ethernet_SYNC_IN	LINUX_Debug_RX
Ethernet_LED1/Link	Ethernet_nLED2_1G-Link	17	18	Ethernet_SYNC_OUT	LINUX_Debug_TX
Ethernet_0_LED0/CFG_EXT	Ethernet_nLED1_Y	19	20	EEPROM_nWP	NC
SYS_LED2	Pi_nLED_Activity	21	22	GND	GND
GND	GND	23	24	I2S_MCLK/GPIO26	GPIOA_0
GPIOA_3	GPIO21/I2S_DO	25	26	I2S_LRCLK/GPIO19	GPIOA_2
GPIOA_4	GPIO20/I2S_DI	27	28	GPIO13	GPIOA_7
GPIOAO_11	GPIO16	29	30	GPIO6	GPIOAO_10
GPIOH_5	GPIO12	31	32	GND	GND
GND	GND	33	34	GPO5	GPIOH_4
GPIOA_15	ID_SC	35	36	ID_SD	GPIOA_14
GPIOAO_5	GPIO7/SPI-CE1	37	38	SPI-CLK/GPIO11	GPIOX_11
GPIOX_10	GPIO8/SPI-CE0	39	40	SPI-MISO/GPIO9	GPIOX_9
GPIOA_11	GPIO25	41	42	GND	GND
GND	GND	43	44	SPI-MOSI/GPIO10	GPIOX_8
GPIOA_12	GPIO24/UART0-CTS	45	46	GPIO22	GPIOA_5
GPIOA_13	GPIO23/UART0-RTS	47	48	UART1-RXD/GPIO27	GPIOA_6
GPIOA_1	GPIO18/I2S_SCLK	49	50	UART1-TXD/GPIO17	GPIOA_9
GPIOX_7	GPIO15/UART0-RXD	51	52	GND	GND
GND	GND	53	54	PWM/GPIO4	GPIOA_10
GPIOX_6	GPIO14/UART0-TXD	55	56	SCL/GPIO3	GPIOX_18
SD_CLK_B	SD_CLK	57	58	SDA/GPIO2	GPIOX_17
GND	GND	59	60	GND	GND
SD_D3_B	SD_DAT3	61	62	SD_CMD	SD_CMD_B
SD_D0_B	SD_DAT0	63	64	SD_DAT5	NC
GND	GND	65	66	GND	GND
SD_D1_B	SD_DAT1	67	68	SD_DAT4	NC
SD_D2_B	SD_DAT2	69	70	SD_DAT7	NC
GND	GND	71	72	SD_DAT6	NC
NC	SD_VDD_Override	73	74	GND	GND
TF_VDD_EN	SD_PWR_ON	75	76	Reserved/SD_DET	CARD_DET
+5V_Input	+5V_Input	77	78	GPIO_VREF	NC

+5V_Input	+5V_Input	79	80	SCL0_Camera_3V3	GPIOH_7
+5V_Input	+5V_Input	81	82	SDA0_Camera_3V3	GPIOH_6
+5V_Input	+5V_Input	83	84	CM4_3V3_OUTPUT	CM4_3V3_OUTPUT
+5V_Input	+5V_Input	85	86	CM4_3V3_OUTPUT	CM4_3V3_OUTPUT
+5V_Input	+5V_Input	87	88	CM4_1V8_OUTPUT	CM4_1V8_OUTPUT
NC	WL_nDisable_3V3	89	90	CM4_1V8_OUTPUT	CM4_1V8_OUTPUT
NC	BT_nDisable_3V3	91	92	RUN_PG/Reset_3V3	CPU_RST
NC	nRPIBOOT_3V3	93	94	AnalogIP1/USBC_CC2	SARADC_CH3
SYS_LED	PI_LED_nPWR	95	96	AnalogIP0/USBC_CC1	ADC_KEY
NC	Camera_PWD_GPIO	97	98	GND	GND
NC	GLOBAL_EN_5V	99	100	nEXTRST	GPIOH_8
USBOTG_B_ID	USB_OTG_ID_3V3	101	102	PCIe_CLK_nREQ_3V3	PCIECK_REQN
USBOTG_B_DM	USB_N	103	104	Reserved	USB_A_DP
USBOTG_B_DP	USB_P	105	106	Reserved	USB_A_DM
GND	GND	107	108	GND	GND
PERST0_N	PCIe_nRST_3V3	109	110	PCIe_CLK_P	PCIE_CLKP
NC	VDAC_COMP_TV	111	112	PCIe_CLK_N	PCIE_CLKN
GND	GND	113	114	GND	GND
MIPI_CSI_D0N	CAM1_D0_N	115	116	PCIe_RX_P	PCIE_SOC_RXP
MIPI_CSI_D0P	CAM1_D0_P	117	118	PCIe_RX_N	PCIE_SOC_RXN
GND	GND	119	120	GND	GND
MIPI_CSI_D1N	CAM1_D1_N	121	122	PCIe_TX_P	PCIE_TX0_P
MIPI_CSI_D1P	CAM1_D1_P	123	124	PCIe_TX_N	PCIE_TX0_N
GND	GND	125	126	GND	GND
MIPI_CSI_CLKAN	CAM1_C_N	127	128	CAM0_D0_N	NC
MIPI_CSI_CLKAP	CAM1_C_P	129	130	CAM0_D0_P	NC
GND	GND	131	132	GND	GND
MIPI_CSI_D2N	CAM1_D2_N	133	134	CAM0_D1_N	NC
MIPI_CSI_D2P	CAM1_D2_P	135	136	CAM0_D1_P	NC
GND	GND	137	138	GND	GND
MIPI_CSI_D3N	CAM1_D3_N	139	140	CAM0_C_N	MIPI_CSI_CLKBN
MIPI_CSI_D3P	CAM1_D3_P	141	142	CAM0_C_P	MIPI_CSI_CLKBP
NC	HDMI1_HOTPLUG_5V	143	144	GND	GND
NC	HDMI1_SDA_5V	145	146	HDMI1_TX2_P	NC
NC	HDMI1_SCL_5V	147	148	HDMI1_TX2_N	NC
NC	HDMI1_CEC_5V	149	150	GND	GND
HDMI_TXCEC	HDMI0_CEC_5V	151	152	HDMI1_TX1_P	NC
HDMI_HPDC	HDMI0_HOTPLUG_5V	153	154	HDMI1_TX1_N	NC

GND	GND	155	156	GND	GND
NC	DSI0_D0_N	157	158	HDMI1_TX0_P	NC
NC	DSI0_D0_P	159	160	HDMI1_TX0_N	NC
GND	GND	161	162	GND	GND
NC	DSI0_D1_N	163	164	HDMI1_CLK_P	NC
NC	DSI0_D1_P	165	166	HDMI1_CLK_N	NC
GND	GND	167	168	GND	GND
NC	DSI0_C_N	169	170	HDMI0_TX2_P	HDMI_TX2P
NC	DSI0_C_P	171	172	HDMI0_TX2_N	HDMI_TX2N
GND	GND	173	174	GNF	GND
MIPI_D0_N	DSI1_D0_N	175	176	HDMI0_TX1_P	HDMI_TX1P
MIPI_D0_P	DSI1_D0_P	177	178	HDMI0_TX1_N	HDMI_TX1N
GND	GND	179	180	GND	GND
MIPI_D1_N	DSI1_D1_N	181	182	HDMI0_TX0_P	HDMI_TX0P
MIPI_D1_P	DSI1_D1_P	183	184	HDMI0_TX0_N	HDMI_TX0N
GND	GND	185	186	GND	GND
MIPI_CLK_N	DSI1_C_N	187	188	HDMI0_CLK_P	HDMI_TXCP
MIPI_CLK_P	DSI1_C_P	189	190	HDMI0_CLK_N	HDMI_TXCN
GND	GND	191	192	GND	GND
MIPI_D2_N	DSI1_D2_N	193	194	DSI1_D3_N	MIPI_D3_N
MIPI_D2_P	DSI1_D2_P	195	196	DSI1_D3_P	MIPI_D3_P
GND	GND	197	198	GND	GND
HDMI_SDA	HDMI0_SDA_5V	199	200	HDMI0_SCL_5V	HDMI_SCL

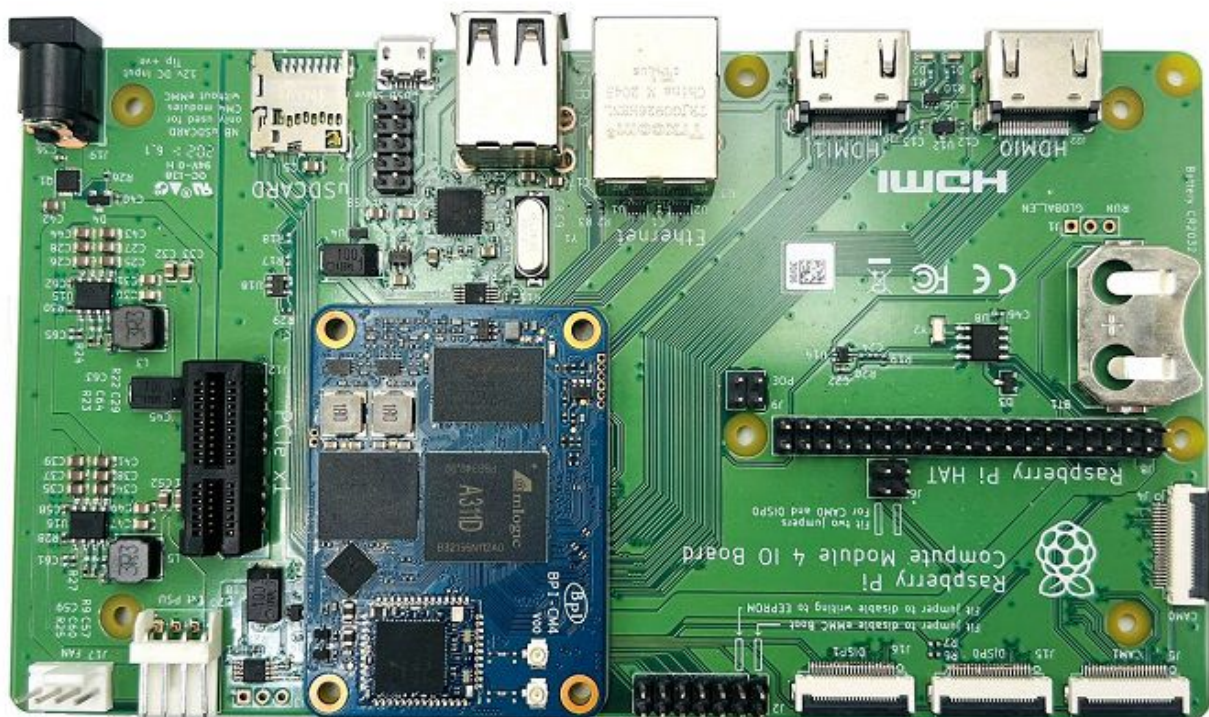
## BPI-CM4 module base board interface



## Same size as RPI CM4

The BPI-CM4 computer module is exactly the same size as the raspberry PI CM4, and adopts the same interface, You can use the universal raspberry PI CM4 module expansion board





## Software

### Source code

- BPI-M2S also with A311D code on github: <https://github.com/BPI-SINOVOIP/BPI-M2S-bsp>
- Android 9 :<https://github.com/BPI-SINOVOIP/BPI-A311D-Android9>

### Documents

- Amlogic A311D datasheet: [https://drive.google.com/file/d/1SRAY\\_RDxKhW819uyo9H13zNN2w1G6LDq/view?usp=sharing](https://drive.google.com/file/d/1SRAY_RDxKhW819uyo9H13zNN2w1G6LDq/view?usp=sharing)
- BPI-CM4 Schematic: <https://drive.google.com/file/d/1IXXok1P2OLiW3p8tavkbfEPTGTrM3b-R/view?usp=sharing>
- BPI-CM4 Base board Schematic:<https://drive.google.com/file/d/1IErCKqfWdU7gL7kUod2-wlpG7uE9EiVZ/view?usp=sharing>
- BPI-CM4 DXF file: <https://drive.google.com/file/d/1hTLNCwmYhCuZt9rL6fP0PjK4MTIE5dK6/view?usp=sharing>

- BPI-CM4 Base board DXF file: <https://drive.google.com/file/d/1-K3ESgU63S4ynwwNbe0p3O11ajOsufQ8/view?usp=sharing>

## **Image**

### **Android**

How to flash Android Image

### **Linux**

How to flash Linux Image