



Comparing VIM4, Raspberry Pi5, and BPI-M2S

	VIM4	Raspberry Pi5	Banana Pi BPI-M2S
SoC Process	12nm	16nm	12nm
CPU	Amlogic A311D2 2.2GHz Quad core ARM Cortex-A73 and 2.0GHz Quad core Cortex-A53 CPU	BCM2712 Cortex-A76x4 @2.4GHz	Amlogic A311D Quad core ARM Cortex-A73 and Dual core Cortex-A53 CPU
GPU	ARM Mali-G52 MP8(8EE) GPU up to 800MHz	VideoCore VII GPU @ 800 MHz	ARM G52 MP4(6EE) GPU
NPU	3.2 TOPS	-	5.0 TOPS
RAM	8GB LPDDR4X, 2016MHz, 64bit	1/2/4/8 GB LPDDR4X-4267 SDRAM	4GB LPDDR4
eMMC	32GB	-	16GB
SPI Flash	32MB	-	-
TF Card	Molex Slot, Spec Version 2.x/3.x/4.x(SDSC/SDHC/SDXC)	Yes	Yes
Output	x1 HDMI2.1, up to 4K2K HDR Video, Dynamic HDR, CEC and HDCP 1.4/2.3, x1 MIPI-DSI, 4 lanes MIPI-DSI Interface, Resolution up to 1920*1200, x1 V-by-One, 8 lanes Interface, Resolution up to 4096*2160 30 Pin 0.5mm Pitch FPC Connector, x1 eDP, 4 lanes eDP Interface, Resolution up to 2560*1600	Dual 4kp60 HDMI display output	HDMI 2.1 output up to 4Kp60 MIPI DSI connector for display
Decoder	8K 24fps decoder, Support multi-video decoder up to 4Kx2K@60fps+1x1080P@60fps	4kp60 HEVC decoder	-
Encoder	H265/H264 4K@60fps	-	H265/H264 1080P@60fps
HDR	HDR10, HDR10+, HLG and PRIME HDR video processing	HDR support	-
Wi-Fi	AP6275S Wi-Fi 6 Module 802.11a/b/g/n/ac/ax, 2T2R MIMO with RSDB	Dual-band 802.11ac Wi-Fi 5	-
PCIe	PCIe 2.0 (1 lane) M.2 2280 NVMe SSD Supported USB 2.0, I2S, I2C, GPIO, MCU-I/O	1× 2.0 port, additional HAT required	-
Ethernet	10/100/1000M	Gigabit Ethernet	2x Gigabit Ethernet ports one via RTL8211F GbE transceiver, the other through RTL8111H PCIe to Gigabit Ethernet transceiver
USB Host	1x USB3.0 (1500mA Load), 1x USB2.0 (1300mA Load)	2× USB 3.0 (capable of simultaneous full throughput) 2× USB 2.0	1x USB 2.0 Type-A port
USB-C	1xUSB2.0 OTG & USB PD	1x USB-C Power jack	1x USB port
MIPI CSI/DSI	x2 MIPI-CSI (4 lanes MIPI-CSI supports Dual Cameras Up to 16 MP ISP 30 Pin & 20 Pin 0.5mm Pitch FPC Connectors), x1 MIPI-DSI and eDP Combo Interface (4 lanes MIPI-DSI Interface, Resolution up to 1920*1200 or 4 lanes eDP Interface, Resolution up to 2560*1600 I2C and GPIO Signals for Touch Panel 40 Pin 0.5mm Pitch FPC Connector)	Dual 4-lane MIPI CSI/DSI transceivers, supporting 2× display; or 2× camera; or 1× display and 1× camera	MIPI DSI connector for display MIPI CSI connector for camera
V-by-One	8 lanes Interface, Resolution up to 4096*2160 30 Pin 0.5mm Pitch FPC Connector	-	-
DMIC	Stereo Digital Microphones	-	-
40-Pin Header	CPU: USB, I2C, I2S, SPDIF, UART, PWM, ADC, GPIO MCU: SWCLK, SWDIO	GPIO, I2C, SPI, UART, PWM, CAN bus, S/PDIF, PCM/I2S, ADC, 5V, 3.3V, GND power	VCC, DCIN, GPIO, GND
Sensor	KXTJ3-1057 Tri-axis Digital Accelerometer	-	-
RTC Battery Header	0.8mm Pitch Header	powered from an external battery, power button, UART debug connector	-
Cooling Fan Header	4-Pins 0.8mm Pitch Header, with PWM Speed Control	between the 40-pin GPIO header and the USB 2 ports	-
User Buttons	x3 (Power / Func / Reset)	x1 Power	x3
LEDs	White LED x1, Red LED x1	-	-
Board Dimensions	82.0 x 58.0 x 11.5 mm	85.0 x 56.0 mm	65.0 x 65.0 mm
Board Weight	31g	-	-
Linux Kernel	Linux 5.15, Linux 5.4	-	-
Linux Distros	Ubuntu 22.04, Armbian, CoreELEC, Batocera	-	Ubuntu 20.04
Android	Android 11	-	Android 9
Khadas Only	Khadas TST, Khadas KBI, OOWOW, Fenix	-	-

* VIM4's advantages are highlighted in blue.