

# Embedded Board

Catalogue



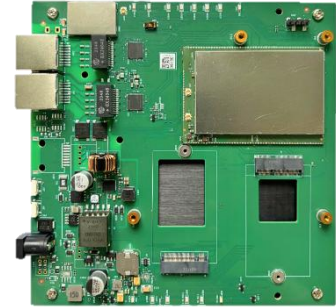
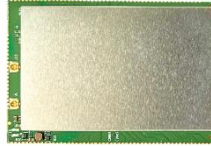
## 802.11be (WiFi 7)



### HARDWARE SPECIFICATIONS

MODEL	WPM530R JustWiFi7™_Cat8
PROCESSOR	Qualcomm IPQ5322 Soc + QCN6274
CPU SPEED	1.5GHz
SYSTEM MEMORY	512MB
NAND FLASH	128MB
NOR FLASH	4MB, 8MB (Max Option)
WIRELESS	2x2 MU-MIMO OFDMA 802.11be
OPERATING FREQUENCY	2.4GHz, 5GH, 6GHz Concurrent
THEORETICAL RATE	688Mbps @ 2.4GHz 4324Mbps @ 5GHz 5765Mbps @ 6GHz
WIRELESS TRANSMIT POWER (per chain)	22dBm @ 2.4GHz, 17dBm @ 5GHz, 17dBm @ 6GHz
EXPANSION	NA
ETHERNET	1x 10Gbps Ethernet Port
POWER OPTION	USB-C PD support. Can be powered from a 25W phone charger
OPERATING VOLTAGE	5V
POWER CONSUMPTION	18W (Max)
OPENWRT SUPPORT JTAG	x
SERIAL PIN	✓
JTAG	x
RESET SWITCH	✓
SURGE SUPPRESSOR	x
LED INDICATORS	x
SIM HOLDER	x
DUAL SIM HOLDER	x
OPERATING ENVIRONMENT	-20°C to 50°C
CERTIFICATION	REACH & RoHS Compliance
DIMENSIONS (WxHxD) in mm (WITH HEATSINK)	65 x 45 x 7.4

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### HARDWARE SPECIFICATIONS

MODEL	WSB530 Ginger SoM	WP5530MRH Ginger-DVK
PROCESSOR	Qualcomm IPQ5322	Qualcomm IPQ5322
CPU SPEED	1.5GHz	1.5GHz
SYSTEM MEMORY	1GB	1GB
NOR FLASH	NA	NA
EMMC	16GB	16GB
WIRELESS	2x2 MU-MIMO OFDMA 802.11be	2x2 MU-MIMO OFDMA 802.11be
OPERATING FREQUENCY	2.4GHz	2.4GHz
THEORETICAL RATE	688Mbps @ 2.4GHz	688Mbps @ 2.4GHz
WIRELESS TRANSMIT POWER (per chain)	22dBm @ 2.4GHz	22dBm @ 2.4GHz
AVAILABLE INTERFACES	33x GPIOs, 2x PCIe 3.0, 1x USB 3.0 (or 1x USB 2.0 + PCIe 3.0 option), 3x BLSIP ports (UART, I2C, and SPI interfaces), 4x PWM, 2x multi-GbE Ethernet SerDes supporting external IOG/5G/2.5G/1G PHYs	NA
EXPANSION	NA	1x M.2 (NGFF) E Key Socket with PCIe 3.0 1x M.2 (NGFF) B Key Socket with USB3.0
ETHERNET	NA	2x 25Gbps Ethernet Ports
POWER OPTION	Power drawn from main board	DC Jack, PoE (IEEE 802.3bt)
POWER CONSUMPTION	6W (Max)	11.3W (Max)
OPENWRT SUPPORT JTAG	✓	✓
SERIAL PIN	✗	✓
JTAG	✗	✗
RESET SWITCH	✗	✓
SURGE SUPPRESSOR	✗	✗
LED INDICATORS	✗	✓
SIM HOLDER	✗	✓
DUAL SIM HOLDER	✗	✓
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance
DIMENSIONS (WxHxD) in mm (WITH HEATSINK)	65 x 45 x 7.4	142 x 142 x 21

## 802.11be (WiFi 7)



### HARDWARE SPECIFICATIONS

MODEL	AP.AR02.1	WPQ530MR	WPQ530
PROCESSOR	Qualcomm IPQ5424	Qualcomm IPQ5322	Qualcomm IPQ5322
CPU SPEED	1.8GHz	1.5GHz	1.5GHz
SYSTEM MEMORY	4GB, 8GB (Max Option)	1GB	1GB
NAND FLASH	256MB	512MB	512MB
NOR FLASH	32MB	8MB	8MB
WIRELESS	4x4 MU-MIMO OFDMA 802.11be	2x2 MU-MIMO OFDMA 802.11be	2x2 MU-MIMO OFDMA 802.11be
OPERATING FREQUENCY	2.4GHz, 5GHz and 6GHz concurrent	2.4GHz	2.4GHz and 5-7GHz concurrent
THEORETICAL RATE	1376Mbps @ 2.4GHz 8647Mbps @ 5GHz 11530Mbps @ 6GHz	688Mbps @ 2.4GHz	688Mbps @ 2.4GHz 5764Mbps @ 5-7GHz
WIRELESS TRANSMIT POWER (per chain)	23dBm @ 2.4GHz, 21dBm @ 5GHz, 19dBm @ 6GHz	22dBm @ 2.4GHz	24dBm @ 2.4GHz, 19dBm @ 5-7GHz
EXPANSION	N.A	1x M.2 (NGFF) E Key Socket with PCIe 3.0 1x M.2 (NGFF) B Key Socket with USB3.0	N.A
ETHERNET	2x 10Gbps Ethernet Ports, 4x 2.5Gbps Ethernet Ports	2x 2.5Gbps Ethernet Ports	1x 2.5Gbps Ethernet Port
POWER OPTION	DC Jack	DC Jack, PoE (IEEE 802.3bt)	PoE (IEEE 802.3at)
POWER CONSUMPTION	39.3W (Max)	11.3W (Max)	16W (Max)
OPENWRT SUPPORT	✓	✓	✓
SERIAL PIN	✓	✓	✓
JTAG	✓	✓	✓
RESET BUTTON	✗	✗	✗
SURGE SUPPRESSOR	✗	✗	✗
LED INDICATORS	✓	✓	✓
SIM HOLDER	✗	✗	✗
DUAL SIM HOLDER	✗	✗	✗
OPERATING ENVIRONMENT	-15°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance	REACH & RoHS Compliance
DIMENSIONS (W x H x D) in mm (WITH HEATSINK)	215 x 180 x 25.5	142 x 142 x 19.2 (non-cooling)	135x 110 x 20 (non-cooling)

## 802.11be (WiFi 7)



### HARDWARE SPECIFICATIONS

MODEL	WPQ951	AP.MIO1.2	AP.ALO23
PROCESSOR	Qualcomm IPQ9550	Qualcomm IPQ5322	Qualcomm IPQ9570/IPQ9574
CPU SPEED	1.5GHz	1.5GHz	2.2GHz
SYSTEM MEMORY	2GB	1GB	2GB
NAND FLASH	256MB	128MB	256MB
NOR FLASH	32MB	4MB	32MB
WIRELESS	4x4 MU-MIMO OFDMA 802.11be	2x2 MU-MIMO OFDMA 802.11be	4x4 MU-MIMO OFDMA 802.11be
OPERATING FREQUENCY	No On-Board Radio (IPQ9550)	2.4GHz	2.4GHz
THEORETICAL RATE	N.A	573Mbps @ 2.4GHz	1182Mbps @ 2.4GHz
WIRELESS TRANSMIT POWER (per chain)	N.A	25dBm @ 2.4GHz	24dBm @ 2.4GHz
EXPANSION	3x M.2 (NGFF) E Key Socket with PCIe 3.0 1x M.2 (NGFF) B Key Socket with PCIe 3.0	3x M.2 (NGFF) E Key Socket with PCIe 3.0	4x M.2 (NGFF) E Key Socket with PCIe 3.0
ETHERNET	2x 25Gbps Ethernet Ports, 1x 10Gbps Ethernet Port	4x 1Gbps Ethernet Port	4x 1Gbps Ethernet Ports, 2x 10Gbps Ethernet Ports
POWER OPTION	DC Jack, PoE (IEEE 802.3bt)	DC Jack	DC Jack
POWER CONSUMPTION	8.5W	15.8W	13W (Board only), 23W (with onBoard WiFi, IPQ9574)
OPENWRT SUPPORT	✓	✓	✓
SERIAL PIN	✓	✗	✗
JTAG	✓	✓	✓
RESET BUTTON	✓	✓	✗
SURGE SUPPRESSOR	✗	✗	✗
LED INDICATORS	✓	✓	✓
SIM HOLDER	✗	✗	✗
DUAL SIM HOLDER	✗	✗	✗
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance	REACH & RoHS Compliance
DIMENSIONS (W x H x D) in mm (WITH HEATSINK)	205 x 140x 27.8 (non-cooling)	203 x 139 x 20	203 x 139 x 20

## 802.11ax (WiFi 6)



### HARDWARE SPECIFICATIONS

MODEL	HK01.2	WPQ873	WPQ872
PROCESSOR	Qualcomm Atheros IPQ8074A	Qualcomm Atheros IPQ8072A	Qualcomm Atheros IPQ8072A
CPU SPEED	2.2GHz	2.2GHz	2.2GHz
SYSTEM MEMORY	1GB	512MB	512MB
NAND FLASH	QPIC 256MB, eMMC 8GB	256MB	256MB
NOR FLASH	32MB	8MB	8MB
WIRELESS	4x4 MU-MIMO OFDMA 802.11ax @ 2.4GHz, 2x (4x4) or 8x8 MU-MIMO OFDMA 802.11ax @ 5GHz	4x4 MU-MIMO OFDMA 802.11ax	4x4 MU-MIMO OFDMA 802.11ax
OPERATING FREQUENCY	2.4GHz and 5GHz concurrent	2.4GHz and 5GHz concurrent	2.4GHz and 5GHz concurrent
THEORETICAL RATE	1147Mbps @ 2.4GHz, 4804Mbps @ 5GHz	1182Mbps @ 2.4GHz, 2475Mbps @ 5GHz	1182Mbps @ 2.4GHz, 2475Mbps @ 5GHz
WIRELESS TRANSMIT POWER (per chain)	23dBm @ 2.4GHz, 20dBm @ 5GHz	17dBm @ 2.4GHz, 17dBm @ 5GHz	17dBm @ 2.4GHz, 17dBm @ 5GHz
EXPANSION	1x MiniPCIe Slot with PCIe 2.0	1x M.2 (NGFF) B Key Socket with PCIe 3.0 1x M.2 (NGFF) B Key Socket with USB 3.0 and PCIe 2.0	1x MiniPCIe Slot with PCIe 3.0
ETHERNET	5x 1Gbps Ethernet Ports, 1x 10Gbps Ethernet Port	3x 1Gbps Ethernet Ports, 1x 2.5Gbps Ethernet Port	1x 1Gbps Ethernet Port, 1x 2.5Gbps Ethernet Port
POWER OPTION	DC Jack	DC Jack	DC Jack
POWER CONSUMPTION	30W	22.5W (Included Bluetooth)	22.5W (Included Bluetooth)
OPENWRT SUPPORT	✓	✓	✓
SERIAL PIN	✓	✓	✓
JTAG	✓	✓	✓
RESET BUTTON	✓	✓	✓
SURGE SUPPRESSOR	✗	✗	✗
LED INDICATORS	✓	✓	✓
SIM HOLDER	✓	✓	✗
DUAL SIM HOLDER	✓	✓	✗
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance	REACH & RoHS Compliance
DIMENSIONS (W x H x D) in mm (WITH HEATSINK)	165 x 200 x 32.9	128 x 255 x 36.8	132 x 180 x 41.7

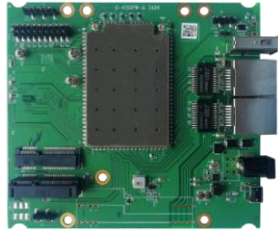
## 802.11ax (WiFi 6)



### HARDWARE SPECIFICATIONS

MODEL	WPQ618	CPO1
PROCESSOR	Qualcomm Atheros IPQ6018	Qualcomm Atheros IPQ6018
CPU SPEED	1.8GHz	1.8GHz
SYSTEM MEMORY	1GB	1GB
NAND FLASH	256MB	256MB
NOR FLASH	32MB	32MB
WIRELESS	2x2 MU-MIMO OFDMA 802.11ax	2x2 MU-MIMO OFDMA 802.11ax
OPERATING FREQUENCY	2.4GHz and 5GHz concurrent	2.4GHz and 5GHz concurrent
THEORETICAL RATE	573Mbps @ 2.4GHz, 1201Mbps @ 5GHz	573Mbps @ 2.4GHz, 1201Mbps @ 5GHz
WIRELESS TRANSMIT POWER (per chain)	20dBm @ 2.4GHz, 20dBm @ 5GHz	23dBm @ 2.4GHz, 23dBm @ 5GHz
EXPANSION	1x M.2 (NGFF) B Key Socket with PCIe 3.0, 1x M.2 (NGFF) B Key Socket with USB 3.0	1x M.2 (NGFF) E Key Socket with PCIe 3.0
ETHERNET	4x 1Gbps Ethernet Ports, 1x 2.5Gbps Ethernet Port	5x 1Gbps Ethernet Ports, 1x 2.5Gbps Ethernet Port
POWER OPTION	DC Jack	DC Jack
POWER CONSUMPTION	17.5W (Including Bluetooth)	17W (Max)
OPENWRT SUPPORT	✓	✓
SERIAL PIN	✓	✓
JTAG	✓	✓
RESET BUTTON	✓	✓
SURGE SUPPRESSOR	✗	✗
LED INDICATORS	✓	✗
SIM HOLDER	✓	✗
DUAL SIM HOLDER	✓	✗
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance
DIMENSIONS (WxHxD) in mm (WITH HEATSINK)	128 x 210 x 33.9	146.5 x 219.3 x 44.9

## 802.11ac Wave 2 (WiFi 5)



### HARDWARE SPECIFICATIONS

MODEL	WPJ419	WSB419 Wasabi-A	WPJ428
PROCESSOR	Qualcomm Atheros IPQ4019	Qualcomm Atheros IPQ4019	Qualcomm Atheros IPQ4028
CPU SPEED	710MHz	710MHz	710MHz
SYSTEM MEMORY DDR3	256MB (Up to 1GB)	256MB (Up to 1GB)	256MB
NAND FLASH	128MB	128MB	128MB
NOR FLASH	16MB	16MB	32MB
WIRELESS	2x2 MU-MIMO 802.11ac Wave 2	2x2 MU-MIMO 802.11ac Wave 2	2x2 MU-MIMO 802.11ac Wave 2
OPERATING FREQUENCY	2.4GHz and 5GHz concurrent	2.4GHz and 5GHz concurrent	2.4GHz and 5GHz concurrent
THEORETICAL RATE	400Mbps @ 2.4GHz, 867Mbps @ 5GHz	400Mbps @ 2.4GHz, 867Mbps @ 5GHz	400Mbps @ 2.4GHz, 867Mbps @ 5GHz
WIRELESS TRANSMIT POWER (per chain)	23dBm @ 2.4GHz, 23dBm @ 5GHz	23dBm @ 2.4GHz, 23dBm @ 5GHz	20dBm @ 2.4GHz, 16dBm @ 5GHz
EXPANSION	2x MiniPCIe Slots with USB 3.0	N.A	1x M.2 (NGFF) B Key Socket with USB 3.0
ETHERNET	2x 1Gbps Ethernet Ports	Supports 1Gbps Ethernet on main board	2x 1Gbps Ethernet Ports
POWER OPTION	DC Jack, IEEE 802.3af/at	Power drawn from main board	DC Jack, Passive PoE 24V or IEEE 802.3af/at
POWER CONSUMPTION	12W (Max)	12W (Max)	19W
OPENWRT SUPPORT	✓	✓	✓
SERIAL PIN	✓	✗	✓
JTAG	✓	✗	✓
RESET BUTTON	✓	✗	✓
SURGE SUPPRESSOR	✗	✗	✓
LED INDICATORS	✓	✗	✓
SIM HOLDER	✓	✗	✓
DUAL SIM HOLDER	✗	✗	✓
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	REACH & RoHS Compliance	REACH & RoHS Compliance	CE, FCC, REACH & RoHS Compliance
DIMENSIONS (W x H x D) in mm (WITH HEATSINK)	117 x 105 x 20.4	40 x 58 x 4.4	105 x 117 x 31.8