

524WiFi™ Pulse B9574-4M2 Pro Plus

524WiFi™ Pulse B9574-4M2 Pro Plus - Qualcomm IPQ9574 Alder Wi-Fi 7 Development Router Board with Four M.2 E-Key Slots and Dual 10GbE

Technical configuration

Model	Pulse B9574-4M2 Pro Plus
Platform	Qualcomm IPQ9574
Radio bands	Expandable multi-radio platform
Configuration	Quad-core ARM Cortex-A73; 2 GB DDR4; 4 M.2 E-Key slots; 2 x 10GbE + 4 x Gigabit Ethernet
Software integration	Board-specific QSDK/Linux image and matching boot configuration
CPU architecture	Quad-core ARM Cortex-A73
CPU clock	2.2 GHz
System memory	2 GB DDR4
Ethernet	2 x 10GbE RJ45 + 4 x Gigabit Ethernet
Expansion	4 x M.2 E-Key PCIe 3.0 slots
Supply	12 V DC
USB	USB 3.0
Wireless expansion	Select the required Wi-Fi 7 plug-in radios for the intended bands
Integration focus	Allocate one slot and its RF paths to each added radio; plan power and cooling for the complete populated board.

Hardware and integration

Parameter	Pulse B9574-4M2
Processor	IPQ9574; four Cortex-A73 cores at 2.2 GHz
Memory interface	DDR4, 32-bit interface; delivered memory option as ordered
Copper network	Two 10GbE ports and four 1GbE ports
Expansion	Four PCIe 3.0 M.2 E-Key slots and USB 3.0
Onboard radio	Four 2.4 GHz RF paths; four U.FL connectors; 20/40 MHz channel profiles
Power references	12 V input; 13 W board-only, 23 W with onboard Wi-Fi; add plug-in module loads
Mechanical envelope	203 x 139 x 20 mm
Environmental design	-20 to +70 C operating; -40 to +90 C storage

Software and firmware

This board uses Qualcomm QSDK firmware with QCA drivers. A board-specific OpenWrt port is available as a separately charged service. A test image is supplied before ordering the source-code service; agree the exact software scope and licence terms with 524WiFi™ support.

Pro Plus and Signal Plus™

Pro Plus provides model-specific integration guidance and technical support. Signal Plus™ matches the antenna bands, connectors, RF paths, placement and cable losses to the intended installation.

Ordering identity

Model: B9574-4M2 | SKU: 524WIFI-PULSE-B9574-4M2-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B9574-2x2-SFP Pro Plus

524WiFi™ Pulse B9574-2x2-SFP Pro Plus - Qualcomm IPQ9574 Alder Wi-Fi 7 Tri-Band 2x2 Router Board with 10GbE, Dual 2.5GbE and 10G SFP

Technical configuration

Model	Pulse B9574-2x2-SFP Pro Plus
Platform	Qualcomm IPQ9574
Radio bands	2.4 + 5 + 6 GHz
Configuration	2x2 radio configuration; 2 x 2.5GbE, 1 x 10GbE RJ45 and 1 x 10G SFP; 2 M.2 E-Key slots
Software integration	Board-specific QSDK/Linux image and matching boot configuration
CPU architecture	Quad-core ARM Cortex-A73
CPU clock	2.2 GHz
Ethernet	2 x 2.5GbE RJ45 + 1 x 10GbE RJ45
Optical uplink	1 x 10G SFP interface
Expansion	2 x M.2 E-Key PCIe 3.0 slots
RF interface	6 x MMCX
Theoretical PHY by band	573.6 Mb/s at 2.4 GHz; 2882 Mb/s at 5 GHz; 5765 Mb/s at 6 GHz
Channel widths	Up to 40 / 160 / 320 MHz at 2.4 / 5 / 6 GHz respectively

Hardware and integration

Parameter	Pulse B9574-2x2-SFP
Processor	IPQ9574; four Cortex-A73 cores at 2.2 GHz
Memory interface	DDR4, 32-bit interface; delivered memory option as ordered
Copper and optical network	One 10GbE RJ45, one 10G SFP and two 2.5GbE ports
RF allocation	Three two-stream radio groups; six MMCX connectors
Engineering interfaces	UART and SGMII; two M.2 positions with purpose matched to the assembly
Power integration	Match DC/PoE input and M.2 slot wiring to the delivered board revision
Mechanical envelope	161 x 110 x 16 mm
Environmental design	-40 to +70 C operating; -40 to +90 C storage

Software and firmware

This board uses Qualcomm QSDK firmware with QCA drivers. A board-specific OpenWrt port is available as a separately charged service. A test image is supplied before ordering the source-code service; agree the exact software scope and licence terms with 524WiFi™ support.

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Ordering identity

Model: B9574-2x2-SFP | SKU: 524WIFI-PULSE-B9574-2X2-SFP-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B6010-2x2 Pro Plus

524WiFi™ Pulse B6010-2x2 Pro Plus - Qualcomm IPQ6010 Wi-Fi 6 Dual-Band 2x2 Router Board with 2.5GbE and Five Gigabit Ethernet Ports

Technical configuration

Model	Pulse B6010-2x2 Pro Plus
Platform	Qualcomm IPQ6010
Radio bands	2.4 + 5 GHz
Configuration	Quad-core Cortex-A53; 1 GB DDR3L; published PHY 573 + 1201 Mb/s; 2.5GbE uplink
Software integration	Board-specific QSDK/Linux image and matching boot configuration
CPU architecture	Quad-core ARM Cortex-A53
CPU clock	1.8 GHz
System memory	1 GB DDR3L
Ethernet	1 x 2.5GbE + 5 x Gigabit Ethernet
Radio architecture	2x2 at 2.4 GHz + 2x2 at 5 GHz
Theoretical PHY by band	573 Mb/s + 1201 Mb/s
Integration focus	Use the board-specific image and preserve the calibration and boot partitions during upgrades.

Hardware and integration

Parameter	Pulse B6010-2x2
Processor and memory	IPQ6010; four Cortex-A53 cores at 1.8 GHz; 1 GB DDR3L
System storage	256 MB NAND; NOR size matched to delivered revision
Copper network	One 2.5GbE and four 1GbE ports
Expansion	M.2 E-Key radio socket; SD slot; supported cellular-module integration
Engineering interfaces	USB 2.0 and four-pin serial connector
RF allocation	Two 2.4 GHz paths and two 5 GHz paths; four MMCX connectors
Power integration	24 V DC input; use the matched PoE option for the installed revision
Mechanical and environment	185 x 116 mm; -40 to +70 C operating

Software and firmware

The original configuration supports OpenWiFi and OpenWrt integration and uses a Qualcomm CP01-derived reference image. Preserve the NOR-plus-NAND boot layout, device calibration and working bootloader. Apply the board-approved application/image update procedure; do not replace U-Boot with a file from another board.

Pro Plus and Signal Plus™

Pro Plus provides model-specific integration guidance and technical support. Signal Plus™ matches the antenna bands, connectors, RF paths, placement and cable losses to the intended installation.

Ordering identity

Model: B6010-2x2 | SKU: 524WIFI-PULSE-B6010-2X2-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B6010-2x2-SFP Pro Plus

524WiFi™ Pulse B6010-2x2-SFP Pro Plus - Qualcomm IPQ6010 Wi-Fi 6 Dual-Band 2x2 Router Board with SFP, 2.5GbE and Four Gigabit Ethernet Ports

Technical configuration

Model	Pulse B6010-2x2-SFP Pro Plus
Platform	Qualcomm IPQ6010
Radio bands	2.4 + 5 GHz
Configuration	Quad-core Cortex-A53; 1 GB DDR3L; 1 SFP port; 1 x 2.5GbE + 4 x Gigabit Ethernet
Software integration	Board-specific QSDK/Linux image and matching boot configuration
CPU architecture	Quad-core ARM Cortex-A53
CPU clock	1.8 GHz
System memory	1 GB DDR3L
Ethernet	1 x 2.5GbE + 4 x Gigabit Ethernet
Optical interface	1 x SFP port
RF interface	4 x MMCX
Theoretical PHY by band	573 Mb/s at 2.4 GHz; 1201 Mb/s at 5 GHz
Mechanical footprint	185 x 116 mm

Hardware and integration

Parameter	Pulse B6010-2x2-SFP
Processor and memory	IPQ6010; four Cortex-A53 cores at 1.8 GHz; 1 GB DDR3L
System storage	8 MB NOR and 256 MB NAND in the hardware table
Network interfaces	One SFP, one 2.5GbE and four 1GbE ports
Expansion	M.2 E-Key radio socket; SD card slot
Engineering interfaces	USB 2.0 and four-pin serial connector
RF allocation	Two 2.4 GHz paths and two 5 GHz paths; four MMCX connectors
Power integration	24 V DC input; matched PoE option
Mechanical and environment	185 x 116 mm; -40 to +70 C operating

Software and firmware

Use the software image approved for the delivered board, matching radio firmware and calibration data. The supplied assembly and revision determine the correct image and update procedure; retain the working boot and recovery configuration.

Pro Plus and Signal Plus™

Pro Plus provides model-specific integration guidance and technical support. Signal Plus™ matches the antenna bands, connectors, RF paths, placement and cable losses to the intended installation.

Ordering identity

Model: B6010-2x2-SFP | SKU: 524WIFI-PULSE-B6010-2X2-SFP-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B5018-2x2 Pro Plus

524WiFi™ Pulse B5018-2x2 Pro Plus - Qualcomm IPQ5018 Wi-Fi 6E Tri-Band 2x2 Router Board with 2.5GbE and Gigabit PoE

Technical configuration

Model	Pulse B5018-2x2 Pro Plus
Platform	Qualcomm IPQ5018
Radio bands	2.4 + 5 + 6 GHz
Configuration	Dual-core Cortex-A53; 512 MB DDR3L; 1 x 2.5GbE + 1 x Gigabit Ethernet; 2x2 radios
Software integration	Board-specific QSDK/Linux image and matching boot configuration
CPU architecture	Dual-core ARM Cortex-A53
CPU clock	1.0 GHz
System memory	512 MB DDR3L
Ethernet	1 x 2.5GbE + 1 x Gigabit Ethernet
Theoretical PHY by band	573 / 2402 / 2402 Mb/s at 2.4 / 5 / 6 GHz
Channel widths	Up to 40 / 160 / 160 MHz at 2.4 / 5 / 6 GHz respectively
USB	USB 2.0
Integration focus	Keep the complete three-radio software image and its calibration data together for deployment.

Hardware and integration

Parameter	Pulse B5018-2x2
Processor and memory	IPQ5018; Cortex-A53 platform; 512 MB DDR3L
System storage	8 MB NOR and 128 MB NAND
Network interfaces	One 2.5GbE and one 1GbE port
Engineering interfaces	USB 2.0, SGMII and UART
RF allocation	Two U.FL at 2.4 GHz; two MMCX at 5 GHz and two MMCX at 6 GHz
Channel profiles	20/40 MHz at 2.4 GHz; 20/40/80/160 MHz at 5 and 6 GHz
Power integration	12-48 V DC input; matched active/passive PoE configuration
Mechanical and environment	122 x 105 x 21 mm including heatsink; -40 to +70 C operating

Software and firmware

The original configuration supports OpenWrt-based mesh firmware and OpenWiFi integration. Use the board-specific software image, matching firmware and calibration data for all three integrated radios.

Pro Plus and Signal Plus™

Pro Plus provides model-specific integration guidance and technical support. Signal Plus™ matches the antenna bands, connectors, RF paths, placement and cable losses to the intended installation.

Ordering identity

Model: B5018-2x2 | SKU: 524WIFI-PULSE-B5018-2X2-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B5424-4x4 Pro Plus

524WiFi™ Pulse B5424-4x4 Pro Plus - Qualcomm IPQ5424 Marina Wi-Fi 7 Tri-Band Router Board with Dual 10GbE and Quad 2.5GbE

Technical configuration

Processor	Qualcomm IPQ5424 Marina; quad-core ARM Cortex-A55 at 1.8 GHz	
Wireless generation	Wi-Fi 7 / IEEE 802.11be; MU-MIMO and OFDMA	
Radio bands	2.4 GHz + 5 GHz + 6 GHz	
RF connectors	12 U.FL connectors	
Network interfaces	2 x 10GbE RJ45 + 4 x 2.5GbE RJ45	
Memory interface	4 GB DDR4, 32-bit interface	
Flash	32 MB NOR + 256 MB NAND	
USB	USB 2.0 and USB 3.0	
Debug	20-pin JTAG and 12-pin UART	
Power	12 V DC; 5 A supply design	
Board power consumption	Up to 39.3 W, board only	
Footprint	215 x 180 mm; allow clearance for the supplied heatsink	
Operating temperature	-15 to +70 degrees C	
Storage temperature	-40 to +90 degrees C	
Operating humidity	5-95%, non-condensing	
Compliance	REACH and RoHS according to the hardware documentation	

Band	Radio configuration	Maximum theoretical PHY rate
2.4 GHz	4x4 MU-MIMO	Up to 1376 Mb/s
5 GHz	4x4 MU-MIMO	Up to 8647 Mb/s
6 GHz	4x4 MU-MIMO	Up to 11530 Mb/s

Software and firmware

Use the board-specific Qualcomm QSDK image with matching drivers, boot configuration and calibration data. An OpenWrt port is available as a separately arranged, chargeable service. A test image can be supplied before ordering the source-code service. Agree software scope and licence terms with support for the exact delivered configuration.

Pro Plus and Signal Plus™

Pro Plus provides model-specific integration guidance and technical support. Signal Plus™ matches the antenna bands, connectors, RF paths, placement and cable losses to the intended installation.

Ordering identity

Model: B5424-4x4 | SKU: 524WIFI-PULSE-B5424-4X4-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.

524WiFi™ Pulse B5424-4x4-2x2-2x2-SFP Pro Plus

524WiFi™ Pulse B5424-4x4-2x2-2x2-SFP Pro Plus - Qualcomm IPQ5424 Marina Wi-Fi 7 Tri-Band Router Board with 10GbE, 2.5GbE and 10G SFP

Technical configuration

Processor	Qualcomm IPQ5424 Marina; quad-core ARM Cortex-A55 at 1.8 GHz	
Wireless generation	Wi-Fi 7 / IEEE 802.11be; MU-MIMO and OFDMA	
Radio bands	2.4 GHz + 5 GHz + 6 GHz	
RF connectors	8 MMCX connectors	
Network interfaces	1 x 10GbE RJ45 with PoE input + 1 x 2.5GbE RJ45 with PoE output + 1 x 10G SFP	
Memory interface	DDR4, 32-bit interface assembled from two 16-bit devices; confirm installed capacity for the supplied configuration	
Expansion	2 x M.2 E-key sockets with PCIe 3.0	
Debug and board integration	UART and SGMII interfaces	
Power integration	DC jack and PoE input; match the supply and downstream PoE load to the delivered assembly	
Power specification	Confirm the supplied DC voltage and PoE budget for the delivered configuration before installation	
Operating temperature	-15 to +70 degrees C	
Storage temperature	-40 to +90 degrees C	
Operating humidity	5-95%, non-condensing	
Compliance	REACH and RoHS according to the hardware documentation	

Band	Radio configuration	Maximum theoretical PHY rate
2.4 GHz	4x4 MU-MIMO	Up to 1376 Mb/s
5 GHz	2x2 MU-MIMO	Up to 2882 Mb/s
6 GHz	2x2 MU-MIMO	Up to 5765 Mb/s

Software and firmware

Use the board-specific Qualcomm QSDK image with matching drivers, boot configuration and calibration data. An OpenWrt port is available as a separately arranged, chargeable service. A test image can be supplied before ordering the source-code service. Agree software scope and licence terms with support for the exact delivered configuration.

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Ordering identity

Model: B5424-4x4-2x2-2x2-SFP | SKU: 524WIFI-PULSE-B5424-4X4-2X2-2X2-SFP-PP

Theoretical PHY rates describe radio link signalling. Select the supplied assembly, firmware, antennas, power and cooling for the actual installation and operating country.