



WALLYS DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board Owner's Manual

[Home](#) » [WALLYS](#) » WALLYS DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board Owner's Manual 

Contents

- 1 WALLYS DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board
- 2 Product Information
- 3 Product Usage Instructions
- 4 Features
- 5 Applications
- 6 Absolute Maximum Rating
- 7 Hardware Specifications
- 8 Interface MAP
- 9 Block diagram
- 10 GPIO Pin Mapping
- 11 Documents / Resources
 - 11.1 References



WALLYS DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board



Product Information

The DR6018-S is an embedded board with dual-band dual-concurrent capabilities. It features a quad-core ARM 64-bit A53 processor running at 1.8GHz, 1GB of DDR3L system memory, and 8MB NOR Flash and 256MB NAND Flash storage. The board supports Dynamic Frequency Selection (DFS) and has a 2x2 on-board 2.4GHz radio with a physical data rate of up to 573Mbps, as well as a 2x2 on-board 5GHz radio with a physical data rate of up to 1201Mbps.

This product is designed for various applications such as 802.11ax MU-MIMO OFDMA access points, mesh routers supporting EasyMesh, hotel wireless applications, smart AP TWT, and more. It is based on the IPQ6010 chipset and is specifically designed to provide high-bandwidth video streaming, voice, and data transmission in challenging RF environments like offices, factories, and warehouses.

The product has a dimension of 120mm x 105mm x 20mm and comes with various hardware specifications. It features a Qualcomm-Atheros IPQ6010 CPU, 1GB system memory, Ethernet ports with POE support, NGFF and SD card slots, USB 3.0 port, LED header, serial port, wireless capabilities with MMCX connectors, and optional GPS support.

Product Usage Instructions

1. Connect the DR6018-S board to a power supply with a voltage rating between 24V and 48V using the DC Jack.
2. Ensure that the operating temperature remains within the range of -40°C to +70°C and the storage temperature within the range of -45°C to +105°C.
3. Maintain the operating humidity between 5% and 95% (non-condensing) and the storage humidity between 0% and 90% (non-condensing).
4. Make sure to properly install any optional components such as SD cards or USB devices into their respective slots/ports.
5. If using the POE feature, connect the appropriate Ethernet cables to the designated ports.
6. For wireless functionality, ensure that the MMCX connectors are securely connected to the appropriate antennas.
7. Refer to the provided documentation for further instructions on configuring and utilizing the various features of the DR6018-S board.

For more information and support, visit the official website at <http://www.wallystech.com>

Features

- Quad-core ARM 64bit A53@1.8GHzProcessor
- 1GB DDRL3L System Memory
- 8MB NOR Flash, 256MB NAND Flash
- Supports Dynamic Frequency Selection (DFS)
- 2x2On-board2.4GHzradio,upto 573Mbps physical Data Rate
- 2x2On-board5GHzradio, upto 1201Mbps physical Data Rate

Applications

- 802.11ax MU-MIMO OFDMA Access Point
- MeshroutersupportingEasyMeshHotelWireless application
- Smart AP TWT

Product Description

DR6018 – S based on IPQ6010 chipset is an enterprise wireless module integrated with 2x2 5G high power Radio module and 2x2 2.4G high power Radio module designed specifically to provide users with mobile access to high-bandwidth video streaming,voice, and data transmission for office and challenging RF environment in factories, warehouse establishment.

Absolute Maximum Rating

Parameter	Rating	Unit
Supply Voltage	24V~48V(DC Jack)	V
Operating Temperature Range	-40 to +70	°C
Storage Temperature Range	-45 to +105	°C
Operating Humidity Range	5 to +95 (non-condensing)	%
Storage Humidity Range	0 to +90 (non-condensing)	%

Hardware Specifications

Symbol	Parameter
CPU	Qualcomm- Atheros IPQ6010
CPU Frequency	Quad-core ARM 64 bit A53 @ 1.8 GHz processor
System Memory	1GB (2x 512MB) DDR3L 16-bit interface with 32-bit memory bus design
Ethernet Port	1 x 1Gbps Ethernet Ports & POE 1 x 1Gbps Ethernet Ports
NGFF Slot	M.2 (NGFF) "E Key" Socket with MiniPCle 3.0(For WiFi Module)
SD Card Slot	1x SD Card Slot(Optional)
USB / header	1x USB 3.0 Port(Optional)
POE	24V~48V passive POE/Active POE(Support 802.3bt)
DC Jack	24V~48V power supply
LED header	2.0 pitch pin header
Serial Port	1x Serial Port 4 Pin Connector
Wireless	On-board 2x 2.4GHz MU-MIMO OFDMA 802.11b/g/n/ax, max 23dBm per chain On-board 2x 5GHz MU-MIMO OFDMA 802.11a/n/ac/ax, max 20dBm per chain 4 x MMCX Connectors
Nor Flash	8MB
Nand Flash	256MB
DDR	256MB~512MB
Dimension	120mm x 105mm x 20mm
GPS	Support(Option)

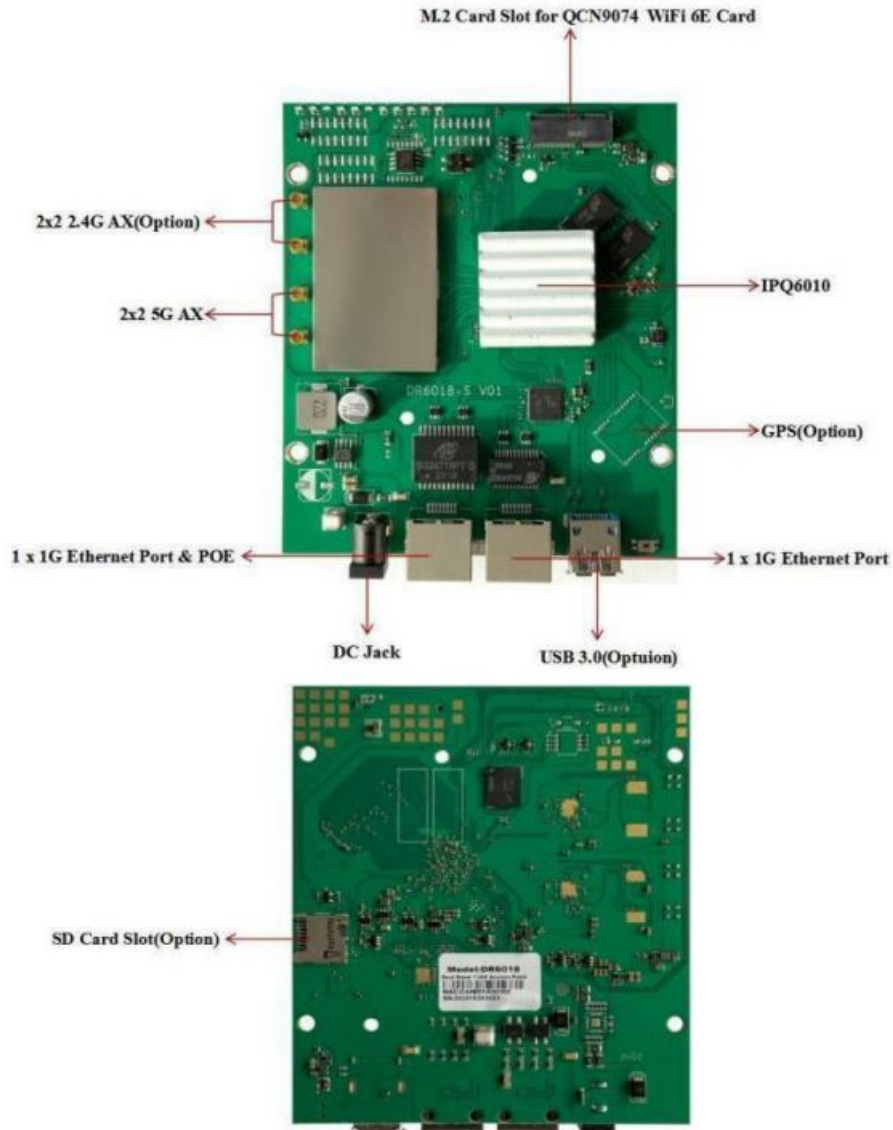
	MCS11	13dBm	16dbm	±2dB
--	-------	-------	-------	------

Radio TX Specifications(5180MHz-5825MHz)

Operating Mode	Data Rate	Power		Tolerance
		1 Chain	2 Chains	
2.4Ghz 802. 1 1ax HE20	MCS0	23dbm	26dbm	±2dB
	MCS1	23dBm	26dBm	±2dB
	MCS2	23dBm	26dBm	±2dB
	MCS3	23dBm	26dBm	±2dB
	MCS4	23dBm	26dBm	±2dB
	MCS5	23dBm	26dBm	±2dB
	MCS6	23dBm	26dBm	±2dB
	MCS7	22dBm	25dBm	±2dB
	MCS8	21dBm	24dBm	±2dB
	MCS9	21dBm	24dBm	±2dB
	MCS10	18dBm	21dBm	±2dB
	MCS11	17dbm	20dbm	±2dB
2.4Ghz 802. 1 1ax HE40	MCS0	23dbm	26dbm	±2dB
	MCS1	23dBm	26dBm	±2dB
	MCS2	23dBm	26dBm	±2dB
	MCS3	23dBm	26dBm	±2dB
	MCS4	23dBm	26dBm	±2dB
	MCS5	23dBm	26dBm	±2dB
	MCS6	23dBm	26dBm	±2dB
	MCS7	22dBm	25dBm	±2dB
	MCS8	21dBm	24dBm	±2dB
	MCS9	21dBm	24dBm	±2dB
	MCS10	21dBm	24dBm	±2dB
	MCS11	19dbm	22dbm	±2dB

Interface MAP

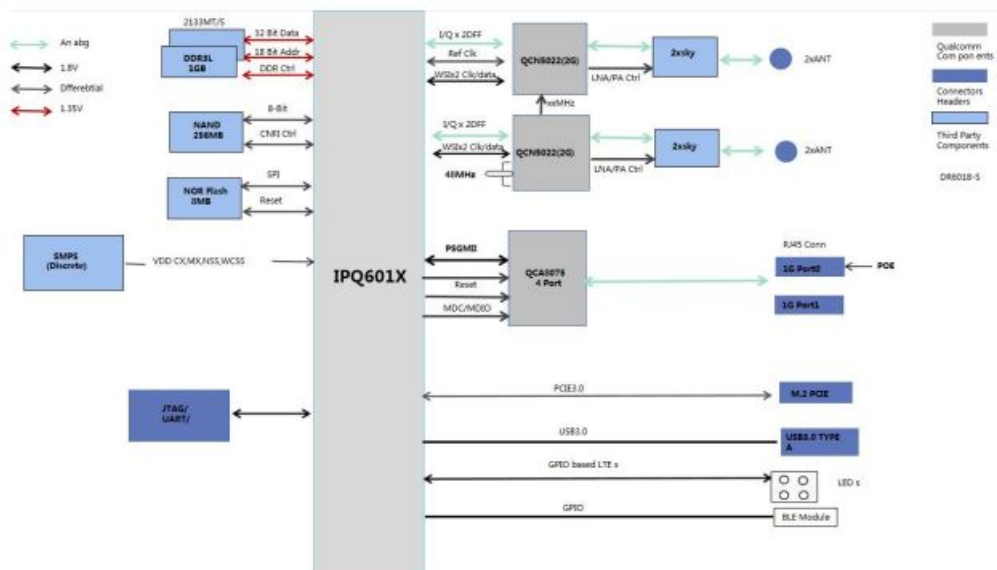
125mm x 105mm x 20mm



<http://www.wallstech.com/>

5

Block diagram



GPIO Pin Mapping

GPIO Pin Mapping			
Pin	Signal	Pin	Signal
GPIO_0	AUDIO _ MUTE_ BUT	GPIO_1	QPIC_ BUSY _ N
GPIO_2	MIC_ VOL_ M	GPIO_3	QPIC_ WE_ N
GPIO_4	QPIC_ RE_ N	GPIO_5	QPIC_ DAT4
GPIO_6	QPIC_ DAT5	GPIO_7	QPIC_ DAT6
GPIO_8	QPIC_ DAT7	GPIO_9	WPS
GPIO_10	QPIC_ CLE_ N	GPIO_11	QPIC_ NAND _CE_ N
GPIO_12	QPIC_ DAT1	GPIO_13	QPIC_ DAT2
GPIO_14	QPIC_ DAT3	GPIO_15	QPIC_ DAT0
GPIO_16	MIC_ KPD_ PWR_ N	GPIO_17	QPIC_ ALE
GPIO_18	KYPD_ HOME_ N	GPIO_19	GND
GPIO_20	Boot_ Config(PULL_ DOWN)	GPIO_21	MUTE_ ON
GPIO_22	ADC_ RST	GPIO_23	WSA_ SWR_ CLK
GPIO_24	WSA_ SWR_ DATA	GPIO_25	PWM_ LED_ RST
GPIO_26	Boot_ Config(PULL_ DOWN)	GPIO_27	WSA_ EN_ R
GPIO_28	WSA_ EN_ L	GPIO_29	PDM_ CLK0
GPIO_30	PDM_ DATA0	GPIO_31	PDM_ CLK1
GPIO_32	PDM_ DATA1	GPIO_33	EXT_ MCLK2 _ ADC
GPIO_34	MIC_ VOL_ P	GPIO_35	LED_ 5G
GPIO_36	PCIE0_ WAKE	GPIO_37	LED_ 2GS

GPIO_38	SPI0_ CLK	GPIO_39	SPI0_ CS_NI
GPIO_40	SPI0_ MISO	GPIO_41	SPI0_ MOSI
GPIO_42	BLSP2_ SCL	GPIO_43	BLSP2_ SDA
GPIO_44	BLSP2_ UART_RX	GPIO_45	BLSP2_ UART_TX
GPIO_46	BLSP5_ SCL	GPIO_47	BLSP5_ SDA
GPIO_48	NC	GPIO_49	Boot_ Config(PULL_ DOWN)
GPIO_50	LED_ USB0	GPIO_51	BT_ PRIORITY _PTA11
GPIO_52	WLA_ ACTI _PTA12	GPIO_53	BT_ ACT _PTA10
GPIO_54	Boot_ Config(PULL_ DOWN)	GPIO_55	NC
GPIO_56	NC	GPIO_57	NC

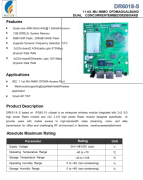
GPIO_58	NC	GPIO_59	PCIE0_CLK_REQ
GPIO_60	PCIE0_RSTn	GPIO_61	NC
GPIO_62	SD_DET	GPIO_63	SD_WP
GPIO_64	MDC	GPIO_65	MDIO
GPIO_66	SD_LDO_EN	GPIO_67	NC
GPIO_68	NC	GPIO_69	SPI_CLK_UART_RTSn
GPIO_70	SPI_CS_UART_CTSn	GPIO_71	SPI_MISO_UART_RX
GPIO_72	SPI_MOSI_UART_TX	GPIO_73	USB_OTG
GPIO_74	NC	GPIO_75	Malibu_RESET
GPIO_76	NAPA_INT0	GPIO_77	NAPA_RESET
GPIO_78	QTZ_INT	GPIO_79	QTZ_RESET

Boot Config Switch

S7 A	Boot_ Config S7B			Boot_Config Switch1(S7) Boot up Interface Select S7C	
	0		0	SPI NOR. (Default)	
	0		1	eMMC	
	0		1	QPIC, Parallel NAND	
	0		1	USB3.0	
1	0			0	SPI-NOR-GPT
	S7D				Boot up Interface Select
	0				Boot from code ram (Default)
	1				Boot from ROM
	Boot_ Config				Boot_Config Switch2(S9) Boot up Interface Select
	0				No auth.(Default)
1					Auth is required

<http://www.wallystech.com>

Documents / Resources

	WALLYS DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board [pdf] Owner's Manual DR6018-S, DR6018-S WiFi 6 Multi-function IPQ 6018 Embedded Board, WiFi 6 Multi-function I PQ 6018 Embedded Board, Multi-function IPQ 6018 Embedded Board, IPQ 6018 Embedded B oard, 6018 Embedded Board
---	--

References

- [Wallys 802.11ax, wifi 6, IPQ4029,IPQ4019,IPQ6018,IPQ6000.Router board, wireless card.Access Point.](#)