

### Features

- Dual-core ARM 64 bit A53@1.0GHzProcessor
- 512MB DDRL3L System Memory
- 8MB NOR Flash, 256MB NAND Flash
- Support BT5.1(optional)
- 2x2 On-board 2.4GHz radio, up to 573Mbps physical Data Rate
- 2x2 On-board 5GHz radio,up to 2402Mbps physical Data Rate
- 2x2 On-board 6GHz radio,up to 2402Mbps physical Data Rate
- Support GPS(optional)
- Support Openwifi



### Applications

- 802.11ax MU- MIMO OFDMA Access Point
- Mesh router supporting Easy Mesh Hotel Wireless
- Smart AP TWT

### Product Description

The DR5018S, based on the IPQ5018 chipset, is an enterprise-grade wireless module that integrates a BT5.1 radio module, along with 2x2 2.4GHz, 2x2 5GHz, and 2x2 6GHz high-power radio modules. It is specifically designed to provide users with mobile access to high-bandwidth video streaming, voice communication, and data transmission, making it ideal for office environments as well as challenging RF conditions in factories and warehouses.

### Absolute Maximum Rating

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

### Hardware Specifications

Symbol	Parameter
CPU	Qualcomm-Atheros IPQ5018
CPU Frequency	Quad-core ARM 64 bit A53 @ 1.0 GHz processor
System Memory	512MB DDR3L 16-bit interface with 32-bit memory bus design
Ethernet Port	1 x 1Gbps Ethernet Port, 1x2.5Gbps Ethernet Port
USB3.0	1x USB2.0 Interface
SGMII	1x SGMII Interface
UART	1x UART Interface
LEDs	
Wireless	2x2 On-board 2.4GHz radio, up to 573Mbps physical Data Rate 2x2 On-board 5GHz radio, up to 2402Mbps physical Data Rate 2x2 On-board 6GHz radio, up to 2402Mbps physical Data Rate
Channel Spectrum Widths for WLAN	Support 20/40MHz at 2.4GHz Support 20/40/80/160MHz at 5GHz Support 20/40/80/160MHz at 6GHz
Modulation Techniques	OFDMA: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM
Power	1) DC Jack: 12V-52V DC power supply 2) POE: Active POE, 802.3at/BT, 48V passive POE
Nor Flash	8 MB
Nand Flash	128 MB
DDR	512MB
Dimension	

**Radio TX Specifications (2412MHz-2482MHz)**

Operating Mode	Data Rate	Power		Tolerance
		1 Chain	2 Chains	
2.4Ghz 802.11ax 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 802.11ax 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

**Radio RX Specifications (2412MHz-2482MHz)**

Operating Mode	Data Rate	RX Sensitivity	Tolerance
2.4Ghz 802.11b	1Mbps	-98	±2dB
	2Mbps	-95	±2dB
	5.5Mbps	-92	±2dB
	11Mbps	-92	±2dB
2.4Ghz 802.11g	6Mbps	-94	±2dB
	54Mbps	-80	±2dB
2.4Ghz 802.11n/ac VHT20	MCS0	-92	±2dB
	MCS7	-75	±2dB
2.4Ghz 802.11n/ac VHT40	MCS0	-90	±2dB
	MCS7	-70	±2dB
2.4Ghz 802.11ax HE20	MCS0	-92	±2dB
	MCS8	-74	±2dB
	MCS9	-72	±2dB
	MCS10	-69	±2dB
	MCS11	-64	±2dB
2.4Ghz 802.11ax HE40	MCS0	-89	±2dB
	MCS8	-72	±2dB
	MCS9	-69	±2dB
	MCS10	-66	±2dB
	MCS11	-61	±2dB

### RF Parameter(5.15GHz-5.9GHz)

Operating Mode	Data Rate	TX Power	RX Sensitivity	Tolerance
5GHz 802.11a	6Mbps	27dbm	-96	±2dB
	54Mbps	25dbm	-81	±2dB
5Ghz 802.11n/ac VHT20	MCS0	27dbm	-96	±2dB
	MCS7	25dbm	-78	±2dB
	MCS8	24dBm	-76	±2dB
5Ghz 802.11n/ac VHT40	MCS0	27dbm	-93	±2dB
	MCS7	25dBm	-75	±2dB
	MCS8	24dBm	-73	±2dB
	MCS9	23dBm	-72	±2dB
5Ghz 802.11n/ac VHT80	MCS0	26dbm	-90	±2dB
	MCS7	25dBm	-72	±2dB
	MCS8	24dBm	-70	±2dB
	MCS9	23dBm	-68	±2dB
5Ghz 802.11ax HE20	MCS0	27dbm	-95	±2dB
	MCS9	23dBm	-74	±2dB
	MCS10	22dBm	-69	±2dB
	MCS11	22dBm	-66	±2dB
5Ghz 802.11ax HE40	MCS0	27dbm	-92	±2dB
	MCS9	23dBm	-71	±2dB
	MCS10	22dBm	-66	±2dB
	MCS11	22dBm	-63	±2dB
5Ghz 802.11ax HE80	MCS0	26dbm	-89	±2dB
	MCS9	24dBm	-68	±2dB
	MCS10	22dBm	-63	±2dB
	MCS11	20dBm	-60	±2dB



# DR5018S

## 11AX MU-MIMO OFDMA TriBand Concurrent Embedded Board

5Ghz 802.11ax HE160	MCS0	24dbm	-86	$\pm 2$ dB
	MCS9	21dBm	-65	$\pm 2$ dB
	MCS10	20dBm	-60	$\pm 2$ dB
	MCS11	17dBm	-57	$\pm 2$ dB

### RF Parameter(5.955GHz-7.125GHz)

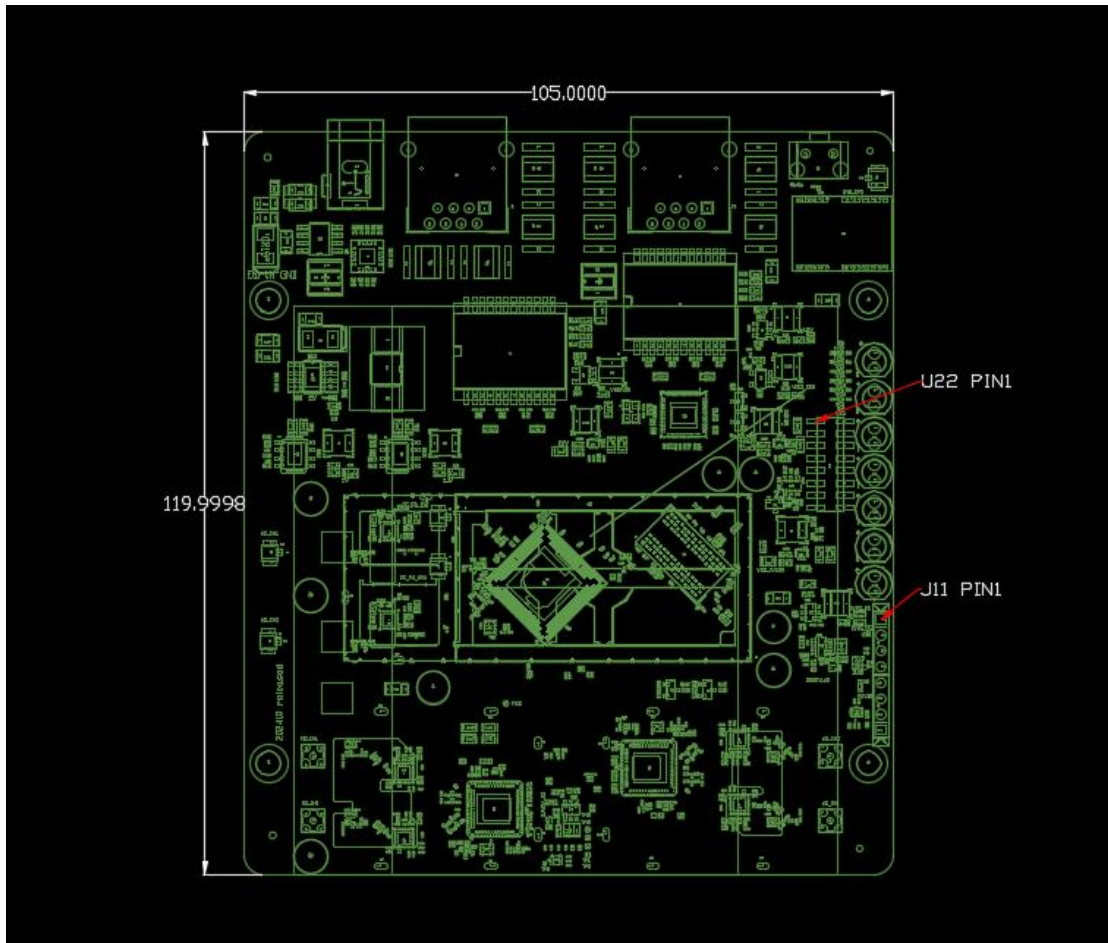
Operating Mode	Data Rate	TX Power	RX Sensitivity	Tolerance
6GHz 802.11a	6Mbps	27dbm	-96	±2dB
	54Mbps	25dbm	-81	±2dB
6Ghz 802.11n/ac VHT20	MCS0	27dbm	-96	±2dB
	MCS7	25dbm	-78	±2dB
	MCS8	24dBm	-76	±2dB
6Ghz 802.11n/ac VHT40	MCS0	27dbm	-93	±2dB
	MCS7	25dBm	-75	±2dB
	MCS8	24dBm	-73	±2dB
	MCS9	23dBm	-72	±2dB
6Ghz 802.11n/ac VHT80	MCS0	26dbm	-90	±2dB
	MCS7	25dBm	-72	±2dB
	MCS8	24dBm	-70	±2dB
	MCS9	23dBm	-68	±2dB
6Ghz 802.11ax HE20	MCS0	27dbm	-95	±2dB
	MCS9	23dBm	-74	±2dB
	MCS10	22dBm	-69	±2dB
	MCS11	22dBm	-66	±2dB
6Ghz 802.11ax HE40	MCS0	27dbm	-92	±2dB
	MCS9	23dBm	-71	±2dB
	MCS10	22dBm	-66	±2dB
	MCS11	22dBm	-63	±2dB
6Ghz 802.11ax HE80	MCS0	26dbm	-89	±2dB
	MCS9	24dBm	-68	±2dB
	MCS10	22dBm	-63	±2dB
	MCS11	20dBm	-60	±2dB

6Ghz 802.11ax HE160	MCS0	24dbm	-86	±2dB
	MCS9	21dBm	-65	±2dB
	MCS10	20dBm	-60	±2dB
	MCS11	17dBm	-57	±2dB

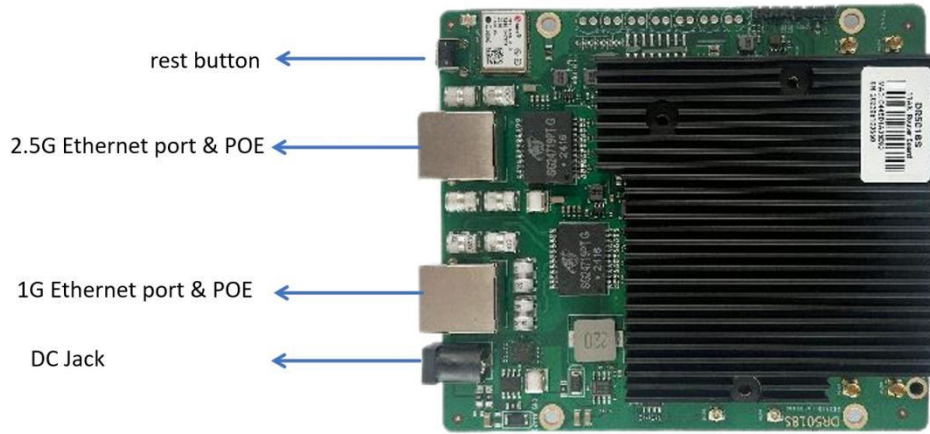
### Pin Definitions

Pin	Signal	Description
1	GND	
2	NC	
3	NC	
4	NC	
5	NC	
6	NC	
7	NC	
8	NC	
9	GPIO26	
10	GPIO25	
11	GPIO24	
12	GPIO23	
13	2.5G LINK ACT IED	
14	1GE LINK LED CONN	
15	POWER LED	
16	VCC	3.3V





## Interface MAP



## Product Version

	P/N	Radio	Frequency
1	DR5018S-5G	5Ghz	1G Ethernet & POE
2	DR5018S	2.4Ghz 5Ghz 6Ghz	2.5G+1G Ethernet & POE
3	DR5018S-DB	2.4Ghz 5Ghz	1G Ethernet & POE