



DR6018(CP01)

11AX MU-MIMO OFDMA DUALBAND DUAL CONCURRENT EMBEDDEDBOARD

Features

- Quad-core ARM 64bit A53@1.8GHz Processor
- 1GB DDRL3L System Memory
- 32MB NOR Flash, 256MB NAND Flash
- Supports Dynamic Frequency Selection (DFS)
- 2x2 On-board 2.4GHz radio, up to 573Mbps physical Data Rate
- 2x2 On-board 5GHz radio, up to 1201Mbps physical Data Rate



Applications

- 802.11ax MU-MIMO OFDMA Access Point
- Mesh routers supporting EasyMesh Hotel Wireless application
- Smart AP TWT

Product Description

DR6018(CP01) based on IPQ6018 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, warehouses establishment.

Absolute Maximum Rating

| Parameter | Rating | Unit |
|-----------------------------|---------------------------|------|
| Supply Voltage | 24V~48 | 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 IPQ6018 |
| 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 | 5x 1Gbps Ethernet Ports , 1x 2.5Gbps Ethernet Port |
| NGFF Slot | M.2 (NGFF) “E Key” Socket with MiniPCle 3.0 |
| SD Card Slot | 1x SD Card Slot |
| USB /header | 1x USB 2.0 Port, 1x USB 3.0 Type-C Port |
| POE | 24V~48V passive POE |
| DC Jack | 12V power supply |
| LED header | FFC/FPC Connector |
| Serial Port | 1x Serial Port 12 Pin Connector |
| Wireless | On-board 2x2 2.4GHz MU-MIMO OFDMA 802.11b/g/n/ax, max 23dBm per chain On-board 2x2 5GHz MU-MIMO OFDMA 802.11a/n/ac/ax, max 20dBm per chain 4x U.FL Connectors |
| Nor Flash | 32MB |
| Nand Flash | 256MB |
| DDR | 256MB~512MB |
| Dimension (W x H x D) | 219mm x 150mm x 16.5mm (Without Heatsink) |

Radio TX Specifications(5180MHz-5825MHz)

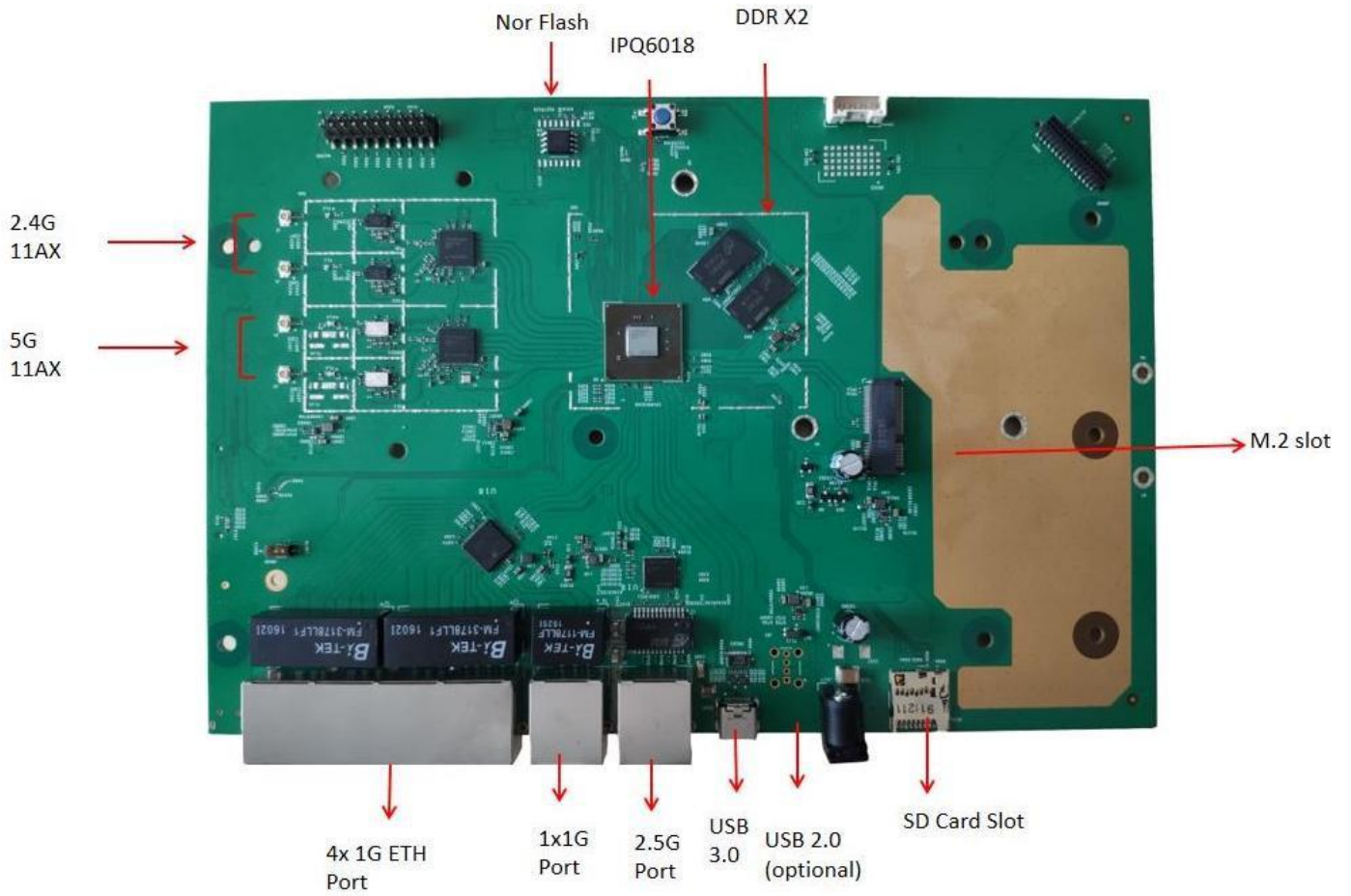
| Operating Mode | Data Rate | Power | | Tolerance |
|------------------------|-----------|---------|----------|-----------|
| | | 1 Chain | 2 Chains | |
| 5Ghz 802.11ax HE20 | MCS0 | 20dBm | 23dbm | ±2dB |
| | MCS1 | 20dBm | 23dBm | ±2dB |
| | MCS2 | 20dBm | 23dBm | ±2dB |
| | MCS3 | 20dBm | 23dBm | ±2dB |
| | MCS4 | 19dBm | 22dBm | ±2dB |
| | MCS5 | 18dBm | 21dBm | ±2dB |
| | MCS6 | 17dBm | 20dBm | ±2dB |
| | MCS7 | 16dBm | 19dBm | ±2dB |
| | MCS8 | 15dBm | 18dBm | ±2dB |
| | MCS9 | 14dBm | 17dBm | ±2dB |
| | MCS10 | 13dBm | 16dBm | ±2dB |
| 5Ghz 802.11ax HE400 | MCS0 | 20dBm | 23dbm | ±2dB |
| | MCS1 | 20dBm | 23dBm | ±2dB |
| | MCS2 | 20dBm | 23dBm | ±2dB |
| | MCS3 | 20dBm | 23dBm | ±2dB |
| | MCS4 | 19dBm | 22dBm | ±2dB |
| | MCS5 | 18dBm | 21dBm | ±2dB |
| | MCS6 | 17dBm | 20dBm | ±2dB |
| | MCS7 | 16dBm | 19dBm | ±2dB |
| | MCS8 | 15dBm | 18dBm | ±2dB |
| | MCS9 | 14dBm | 17dBm | ±2dB |
| | MCS10 | 13dBm | 16dBm | ±2dB |
| 5Ghz 802.11ax HE80 | MCS0 | 20dBm | 23dbm | ±2dB |
| | MCS1 | 20dBm | 23dBm | ±2dB |
| | MCS2 | 20dBm | 23dBm | ±2dB |
| | MCS3 | 20dBm | 23dBm | ±2dB |
| | MCS4 | 19dBm | 22dBm | ±2dB |
| | MCS5 | 18dBm | 21dBm | ±2dB |
| | MCS6 | 17dBm | 20dBm | ±2dB |
| | MCS7 | 16dBm | 19dBm | ±2dB |
| | MCS8 | 15dBm | 18dBm | ±2dB |
| | MCS9 | 14dBm | 17dBm | ±2dB |
| | MCS10 | 13dBm | 16dBm | ±2dB |

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

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 | |

Interface MAP



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

| Boot_Config Switch1(S7) | | | |
|-------------------------|-----|--------------------------|------------------------------|
| Boot_Config | | | Boot up Interface Select |
| S7A | S7B | S7C | |
| 0 | 0 | 0 | SPI NOR. (Default) |
| 0 | 0 | 1 | eMMC |
| 0 | 1 | 0 | QPIC, Parallel NAND |
| 0 | 1 | 1 | USB2.0 |
| 1 | 0 | 0 | SPI-NOR-GPT |
| S7D | | | Boot up Interface Select |
| 0 | | | Boot from code ram.(Default) |
| 1 | | | Boot from ROM |
| Boot_Config Switch2(S9) | | | |
| Boot_Config | | Boot up Interface Select | |
| 0 | | No auth.(Default) | |
| 1 | | Auth is required | |